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Economic Costs of the Impact of Flood on Health of Selected rural Households in Rivers State, Nigeria

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Abstract: *To address associated problems of economic cost of health issues treatment of rural households arising from flood event like reduced household disposable income led to this study. Against this backdrop, this study is directed at estimating the economic costs of health issues treatment resulting from flood event on selected rural households in Rivers State, Nigeria. This objective was transformed into one research question and one null hypothesis. This study used cross-sectional survey design. Multi-stage sampling technique that involved purposive and random sampling was applied to select the 500 subjects. A structured questionnaire was the main data collection instrument. The estimated total economic cost value is ₦55,215,104 only. Furthermore, the test was found to be statistically significant. Thus, the null hypothesis that flood has no significant health cost on selected rural households is false and should be rejected. Hence, government and non-governmental organisations (NGOs) as a part of policy should make medicals available through mobile medical outfit during flood events.*

Key words: *Economic Costs, Flood, Health, Household, Nigeria.*

I. Introduction

Flood a prevalent seasonal catastrophic event is one form of natural disaster that occurs across the globe with an alarming concern. Flood events vary from country or area to country or area. Associated with its occurrence, is that, it creates health issues for the people among other life fundamentals as well as loss of life and property damage. As for the impact of flood on health, Weiwei, Gerald, Michele, & Xiang-Yu (2010) and WHO (2017, 2021) among other researchers have adequately documented it. The human, material, and ecological costs of flooding has been considered to be unprecedented by United Nations Educational, Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), United Nations University (UNU), and International Strategy for Disaster Reduction (ISDR) (2007). It is estimated to affect 520 million people across the world yearly and accounts for up to 25,000 deaths annually. Furthermore, the authors maintained that in conjunction with other water-related diseases the cost to world economy is about US$50 to US$60 billion per annum.

Nigeria is a mirror of the world in terms of flood-induced health impact. For instance, Federal Government of Nigeria (FGN) (2013) reveals that the 2012 flood event in Nigeria led to the death and injury of 363 persons and 5,871 persons respectively, affected 3,891,314, displaced 3,871,063 as at November 15, 2012. With respect to the twelve most affected states in Nigeria, FGN (2013) estimated the monetary value of physical and durable assets destroyed to be ₦1.48trillion (US$9.5billion). While for economic activity sectors, the total monetary value of losses was quantified at ₦1.14trillion ((US$7.3billion), recovery from this historic flood is a concern for many Nigerians. Thus, the sum of damages and losses is about ₦2.6trillion ((US$16.9billion). Moreover, the total consequences of the flood on real gross domestic product (RGDP) in 2012 are 1.4%, which is ₦570billion in nominal terms. Nevertheless, the value of the damage to the health sector is ₦18,204.8million while total losses amount to ₦9,476.8million. However, ₦4,448.6million was estimated to facilitate recovery of the health sector and ₦23,568.0 million for its reconstruction.

FGN (2013) unequivocally stated that there were flood-induced health issues and they varied across the flood affected states in Nigeria. It could therefore be inferred, that its effects on rural and urban areas might not be the same. The flood-induced health issues could either be direct or indirect. The direct includes illness, injury and loss of life. While the indirect include distortion of spread and transmission of vector borne diseases like malaria and contagious disease like cholera

It is pertinent to point out that in Nigeria and some other clime, government and some researchers did estimate in monetary terms the cost of some past flood-induced physical damage and losses as well as recovery and reconstruction of the health sector. Yet, it neglected estimation of the economic cost of treatment of flood-induced health issues. The implication is that government has not taken into account the households' direct out-of-pocket payment for health care services received and its dynamics. Therefore, it would not be properly understood empirically that this lapse and absence from work due to flood-induced health issues and attendant treatment economic costs reduces personal and household disposable income which in turn adversely affects macroeconomic aggregate growth. Hence, one cannot but say that when the status of costs of treatment of flood-induced health issues especially with respect to households is not known and therefore not factored into defining of priorities meant for recovery intervention, integration of concept of living with flood, reducing underlying risk factors, then such a policy or plan may be weak and realization of its target goals might be difficult. In addition, scope and impact of flood on rural and urban households are not likely to be the same. Besides, this study would benefit the academic and policy makers' particularly from the axis of provision of baseline information against which planning and flood risk management options could be chosen.

Against this background, this study generally intends to empirically estimate in monetary terms the economic costs of health issues treatment resulting from the 2020 flood event on selected rural households in Rivers State, Nigeria.

II. Methodology

Analytical Framework

The analytical framework of this study is built around the economic theory of cost, in which cost is seen as opportunity cost. In addition, the opportunity cost apart from been seen as forgone alternative, is concluded to be made up of explicit and implicit costs. It is on this strength profit is defined as total revenue less the sum of total explicit and implicit costs. Despite this, firms and accountants have settled for explicit and historical costs in their accounts process.

From the foregoing, it could be imputed that the value of resources utilised in the production process is what underlies cost. It could therefore be said, that what a resource produces when it is deployed to its best alternative use is known as value. It is this value that is the benefit. The utilisation of the resource produces satisfaction to a group while to others it gives discomfort and inconvenience. This gave birth to private externality and social costs distinctions which assists in evaluating impact of disasters particularly those that are climate-based. Among such authors are Leontief (1941) that came up with the econo-ecological input-output approach, the multiple regression approach of Lave and Seskin (1970, 1971 & 1972) used to establish the relationship between a given climate factor and selected economic activity. Despite the approach's robust precision and reliability, their functioning requires dose-response data over a time period. This lapse has been seen to be taken care of in the study of Dawson (1971) on current cost of road accidents in Great Britain. In this study, Dawson (1971) came up with a technique to estimate economic costs of non-fatal injuries sustained in road accidents arising from thick fog-induced poor visibility. The author expressed cost of injury (CI) as the product of direct costs in terms of money cost that is direct out-of-pocket expenses incurred by a victim and person(s) taking care of the victim. It includes transportation costs, hospital registration and consultation fees. While indirect cost is the value of lost time or output by the injured victim as well as the person taking care of the victim. These costs were assessed using willingness-to-pay approach (WTP). However, WTP is no longer popular among economists for computing cost. Little wonder most studies in the medical literature no longer use it. What is obtainable is cost of illness being simply seen as the product of direct cost of illness and indirect cost of illness as evident in Cropper, Haile, Lampietti, Poulos, and Whittington (2003).

Mathematically, $C = f(\beta, \varphi)$

Where:

C = Total cost of illness.

β = Direct cost of illness which includes laboratory service charges.

φ = Indirect cost of illness which include patients wage or output loss and person(s) taking care of the patient caretaker((s)) wage or output due to the illness.

Since the studies were silent on the setting of the health issues. Applying the theory to health issues created by flood is considered appropriate for this study.

Model Specification

The model specified below is used to address the objective of the study. It draws from the studies of Dawson (1971) as well as Cropper, Haile, Lampietti, Poulos, and Whittington (2003) and the functional form is as presented below:

$$C = f(\beta, \varphi) \quad \text{.....1}$$

where:

C = total economic costs in monetary terms of flood-induced health issues treatment for the period of concern.

β = direct costs in monetary terms of drugs, herbs, hospital registration and consultation fees, travelling cost, etc.

φ = the opportunity cost in monetary terms which include time costs of sick person, time costs of care taker and daily wages.

The above functional form is transformed into equation 2 below:

$$C = \beta + \varphi \quad \text{..... 2}$$

For flood-induced health issue 1, the total cost, direct cost and indirect cost of its treatment for all selected households are $C_1, \beta_1 \; and \; \varphi_1$ respectively. Hence, the economic cost of treatment of flood-induced health issue 1, can be expressed as:

$$C_1 = \beta_1 + \varphi_1 \quad \text{..... 3}$$

For flood-induced health issue 2, the total cost, direct cost and indirect cost of its treatment for all selected households are $C_2, \beta_2 \; and \; \varphi_2$ respectively. Hence, the economic cost of treatment of flood-induced health issue 2, can be expressed as:

$$C_2 = \beta_2 + \varphi_2 \quad \text{..... 4}$$

For nth flood-induced health issue, the total cost, direct cost and indirect cost of its treatment for all selected households are $C_n, \beta_n \; and \; \varphi_n$ respectively. Hence, the economic cost of treatment of nth flood-induced health issue can be expressed as:

$$C_n = \beta_n + \varphi_n \quad \text{..... 5}$$

From equations 3, 4 and 5 total cost of treatment of all flood-induced health issues under consideration for all selected households is given by:

$$C = C_1 + C_2 + \cdots + C_n \quad \text{..... 6}$$

Similarly, that of direct costs is as follows:

$$\beta = \beta_1 + \beta_2 + \cdots + \beta_n \quad \text{..... 7}$$

Also, that of indirect costs is as stated below:

$$\varphi = \varphi_1 + \varphi_2 + \cdots + \varphi_n \quad \text{.....8}$$

By summation of equations 6, 7, and 8, the model for the total economic cost of treatment of flood-induced health issues of selected households becomes:

$$C = \sum_{i=1}^{n} (\beta + \varphi) \quad \text{.....} \quad 9$$

Research Design

This study used a multistage cross-sectional survey design

Population

The population of this study consists of the total number of regular households in Rivers State, which are 1,123,998.

Subjects

The subject (respondents) who constitutes the sample size of the study is 500 regular households in Rivers State. The choice of the sample size was guided by Yamane Taro (1967) standard technique. The choice of the technique is predicated on the simplicity of its application.

Instrumentation

The research instrument used for this study was a structured questionnaire titled "Economic Costs Flood-induced Health Issues Treatment Questionnaire" (EFHTQ). It was developed by the researcher in order to collect relevant data from the selected households with respect to their payments for the 2020 Flood-induced health issues treatment in Rivers State. The questionnaire is designed with relevant items to elicit information that will adequately address the objectives of this study as spelt out above. The content validity of the questionnaire was ascertained by a team of experts which is made up of three economists and a medical practitioner. All agreed that based on the face value of the instrument, it is capable of measuring what it is designed to measure.

Sampling Technique

The 500 households that are the subjects of the study were selected through multi-stage sampling technique. First, four local government areas were purposively selected from among the twenty-three local government areas (LGAs) that make up the state. This is due to the fact that these four LGAs consistently experience severe flooding. Second, from each of the four LGAs, five communities in the rural areas which sum up to twenty communities were also purposively selected. Third, using random sampling, twenty five households were selected from each of the communities which sum up to the 500 households (subjects).

Data Collection

The questionnaire administration was carried out, after the instrument has been established to be valid and reliable. It was administered to the 500 selected households with respect to the 2020 flood event. The respondents are the household head or their representative (spouse or the eldest adult). However, if a household has no spouse or adult, the household was left out and replaced with another randomly selected household. Each of the instrument was administered and collected on the spot.

Each of the four LGAs had one interviewer that collected the data and one supervisor for two LGAs. One person coordinated the entire process. They were persons that possess census enumeration and supervisory experiences with a minimum of bachelor degree qualification. In addition, they spoke English and language of where the selected households are situated.

A two-day training was organised for them, after which a pilot survey or mock trial was organised to among other things established whether they will be able to effectively and efficiently put the knowledge they have acquired into use.

Estimation and evaluation Procedures

With the data collected through the main instrument of this study, the procedure used to attain the study's objective, was to monetarily assess and value the treatment costs of flood-induced health issues of the selected rural and urban

households respectively. This involved costing of treatment of each of all the flood related health issues experienced by a household taking cognisance of direct and indirect costs. Then add up the amount from the costing for each of the health issues which gives that household's treatment cost for flood-induced health issues. This was done for all selected rural and urban households that constitutes subject of this study. After which, the cost for each of the selected rural and urban households were summed up to give the economic costs of health issues treatment resulting from the 2020 flood event on selected rural households. Finally, the null hypothesis was tested using appropriate inferential statistics.

III. Results and Discussion

Economic costs of health issues treatment resulting from flood event on selected rural households

Research question results

In this sub-section, the findings to the research question which states that "What is the economic costs of health issues treatment resulting from flood event on selected rural households? "is presented and it is as in Tables 1 and 2 below that was facilitated by Appendix 1. Appendix 1 shows the respective health issues faced by the 500 (Households) respondents of this study. It is reported according to the selected four local governments' areas and five communities chosen from them. It is based on these identified health issues and other information provided by the respondents, that the economic costs of flood-Induced health issues treatment was estimated. Table 1 presents picture of the total direct cost and total indirect cost and total cost for each of the five communities in each of the four local government areas. For example, Aminowere community in Abua-Odual local government area had a total direct cost value of ₦1,431,000 and ₦491,617 as total indirect cost and with total cost as ₦1,922,617. Aggregation of the data as per local government with indication of minimum, average and maximum values were made and constitute Table 2.

As shown in Table 2, Ahoada East Local Government Area has the highest total direct cost of health issues treatment resulting from flood by selected households, which is ₦7,450,500, followed by Abua-Odual Local Government Area (₦7,265,000). Next, was Ogba/Egbema/Ndoni Local Government Area (₦4,909,500), followed by Ahoada West Local Government Area that has the least total direct cost which is ₦4,701,400. With respect to total indirect cost of health issues treatment resulting from flood by selected households, Ogba/Egbema/Ndoni Local Government Area has the highest monetary value of ₦13,786,699, followed by Ahoada West Local Government Area (₦8,945,300). Next, was Ahoada East Local Government Area (₦5,446,683) while Abua-Odual Local Government Area has the least value with ₦2,710,022. As regards total cost of health issues treatment resulting from flood by selected households, Table 2 also indicated that Ogba/Egbema/Ndoni Government Area has the highest value of ₦18,696,199. Coming next was Ahoada West Local Government Area with value of ₦13,646,700.This was followed by Ahoada East Local Government Area (₦12,897,183) and Abua-Odual Local Government Area has the least value as ₦9,975,022. Finally, it is intriguing to point out that for the entire rural households that was studied, the total direct cost was estimated to be ₦24,326,400 while the total indirect cost ₦30,888,704 and the total cost is ₦55,215,104. Besides, the outcome is an indication that the households made out-of-pocket payment for the treatment of health issues contracted as a result of the flood event.

Table 1: **Economic costs of health issues treatment resulting from flood event on selected rural households**

LGA	City/Town	**Total direct cost (₦)**	**Total Indirect cost (₦)**	**Total Cost ₦**
Abua-Odual	Aminowere	1,431,000	491,617	1,922,617
	Odaga	1,618,000	549,335	2,167,335
	Ogbema	1,251,500	601,600	1,853,100
	Otari	1,671,000	548,430	2,219,430
	Umulaka	1,293,500	519,040	1,812,540

Ahoada East	Edegha	1,591,000	1,030,248	2,621,248
	Ihuowo	1,005,000	601,220	1,606,220
	Obumeze	1,445,000	1,023,600	2,468,600
	Ochigba	1,624,000	1,691,515	3,315,515
	Okporowo	1,785,500	1,100,100	2,885,600
Ahoada West	Akieoniso	932,200	2,028,700	2,960,900
	Eliabi Fai	796,500	1,374,000	2,170,500
	Ishiayi	1,817,500	2,764,500	4,582,000
	Mbiama	846,000	1,560,100	2,406,100
	One Man Country	1,105,700	2,592,000	3,697,700
Ogba/Egbema/Ndoni	Aggah	991,400	3,067,000	4,058,400
	Ebocha	1,469,200	2,985,799	4,454,999
	Kreigani	1,192,600	4,695,000	5,887,600
	Ndoni	546,700	1,171,800	1,718,500
	Utu-Umuoriji	709,600	1,867,100	2,576,700

Source: Computed from data collected from author's field survey, Rivers State,2022

Table 2: Economic costs of health issues treatment resulting from flood event on selected rural households

LGA		**Total direct cost (₦)**	**Total Indirect cost (₦)**	**Total Cost (₦)**
Abua-Odual	Minimum	25,000	3,500	35,000
	Average	58,120	22,033	79,800
	Maximum	106,000	68,830	173,830
	Total	7,265,000	2,710,022	9,975,022
Ahoada East	Minimum	15,000	7,200	25,200
	Average	59,604	43,573	103,177
	Maximum	150,000	161,000	258,000
	Total	7,450,500	5,446,683	12,897,183
Ahoada West	Minimum	2,700	0	2,700
	Average	37,611	91,279	109,174
	Maximum	250,000	730,000	960,000
	Total	4,701,400	8,945,300	13,646,700
Ogba/Egbema/ Ndoni	Minimum	0	5,500	17,500
	Average	39,276	110,294	149,570

	Maximum	186,200	845,000	921,000
	Total	4,909,500	13,786,699	18,696,199
Total	Minimum	0	0	2,700
	Average	48,653	65,581	110,430
	Maximum	250,000	845,000	960,000
	Total	**24,326,400**	**30,888,704**	**55,215,104**

Source: Computed from data collected from author's field survey, Rivers State,2022

Evaluation of hypothesis

The null Hypothesis is that "Flood has no significant health cost on selected rural households". The results are as shown in Tables 3, 4 and 5. Regression analysis on the significance of the health cost of flood on the total economic cost of health issue treatment during flood showed a strong coefficient. The test was statistically significant: R^2 = .347, F (1, 498) = 264.454, $p < 0.001$; $\beta = .589$, t = 16.262, $P < 0.001$. Hence, flood has significant health cost on selected rural households. Thus, the null hypothesis that flood has no significant health cost on selected rural households is false and should be rejected.

Table 3: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.589[a]	.347	.346	79174.284

a. Predictors: (Constant), Total cost of flood induced health issues treatment

Source: Computed from data collected from author's field survey, Rivers State,2022

Table 4 : ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.658E12	1	1.658E12	264.454	.000[a]
	Residual	3.122E12	498	6.269E9		
	Total	4.779E12	499			

a. Predictors: (Constant), Total cost of flood induced health issues treatment

Dependent Variable: Total economic cost of health issue treatment during flood

Source: Computed from data collected from author's field survey, Rivers State,2022

le 5 : Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21850.787	6496.689		3.363	.001
	Total cost of flood induced health issues treatment	1.821	.112	.589	16.262	.000

Table 4 : ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.658E12	1	1.658E12	264.454	.000[a]
	Residual	3.122E12	498	6.269E9		
	Total	4.779E12	499			

a. Predictors: (Constant), Total cost of flood induced health issues treatment

Dependent Variable: Total economic cost of health issue treatment during flood

Source: Computed from data collected from author's field survey, Rivers State,2022

IV. Conclusion and Policy Issues

This paper made concerted attempt to estimate the economic costs of health issues treatment resulting from 2020 flood event on selected rural households in Rivers State, Nigeria. The study revealed that in absolute terms the monetary value of the economic costs is ₦55,215,104. Statistically, the flood has significant health costs on the selected rural households. The implication of the result is that the households will experience reduced personal and household disposable income which could affect the welfare level of the household. Productivity and by extension gross domestic product would be adversely impacted. Hence, the need for specific interventions to reduce the rural household's economic costs of health issues treatment arising from flood event on rural household cannot be underscored.

Since the outcome of this study constitutes baseline information, it should be used in planning and flood risk health management policy in other to reduce incidences of flood related health issues. Thus, likely reduction in economic costs stemming from reduction of households out-of-pocket expenses on flood related health issues.

To reasonably reduce or ensure that households do not bear the economic costs, the National Assembly should intervene by amending the Petroleum Industry Act of 2021. The amendment should spell out in a section that communities which are beneficiaries of the act that are in flood prone areas should set out specific percentage of their entitlements for the purpose of addressing flood-induced health issues treatment.

Another intervention is that government and non-governmental organizations should make medicals available through mobile medical outfit during flood event. It should be made an issue of policy for Niger Delta Development Commission to decentralise their mobile medical outreach during flood and make their services available as much as possible to flood affected rural households within the Niger Delta region of Nigeria.

Provision of basic amenities is another aspect of possible intervention. In this respect, safe drinking water and sewage system should be provided for them.

Mass literacy campaign and public enlightenment through health workers before, during and after flood event is another area of intervention being put up. The fulcrum of its content should be the adverse impact of flood on health with emphasis on its ability to make one die as well as reduce income of the living. Also, that it has the potential of impoverishing individuals and their households. Finally, the study's outcome should be used to integrate them into the concept of living with flood by drawing their attention to the fact that flood will always be there with its attendant health issues and it leads to out-of-pocket payment for treatment of the health issues. Therefore, they should follow strictly instructions from health officers such as drinking safe water, using treated net and maintaining acceptable personal hygiene.

Government should put in place interventions that will enhance income generated by the rural households. This could be by way of grants in terms of farm inputs and processing of outputs as well as acquisition of the farm outputs. Thus, the household income will increase and with less expenditure on health issues treatment, disposable income may not be too drained to impinge on the welfare level as flood occurs.

CONFLICT OF INTERESTS

We share no conflict of interest in this study.

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However, any shortcoming is entirely that of the Author.

References

[1]. Cropper, M. L., Haile, M., Lampietti, J. A., Poulos, C., & Whittington, D. (2003). The value of preventing malaria in Tembiem, Ethiopia.: Washington DC : The World Bank

[2]. Dawson, R.F.F. (1971). Current cost of road accident in Great Britain. Road Research Laboratory LR 396 Crowthorne, Berkshire.

[3]. Federal Government of Nigeria (2013). Nigeria Post-Disasters Needs Assessment (PDNA) 2012. Floods report.

[4]. Lave,L. & Seskin E.(1970). Air pollution and human health. environ Health Perspective, 34,Us National Institute of Health.

[5]. Lave,L. & Seskin E.(1971). Health and air pollution. Swedish Journal of Economics,73.

[6]. Lave,L. & Seskin E.(1972).Urban pollution damage: some difficulties in estimating the value of abatement Kneese and Bower edition of environmental analysis, Resource for the future. Baltimore:John Hopkins.

[7]. Leontief, W. (1941).The structure of the American economy, 1919–1939 : An empirical application of equilibrium analysis, 2ed., White Plains NY: International Arts and Science.

[8]. UNESCO, WMO, UNU, ISDR (2007). International flood initiative. Retrieved from C:/users/HP/Downloads/155652 eng .edf. www.UNESCO.ORG.

[9]. WHO (2017) Flooding: Managing health risks in the WHO European region. Denmark: WHO

[10]. WHO (2021) Floods. Retreved from Https://www.who..int>health topics

[11]. Weiwei, D., Gerald, J. F., Michele, C., & Xiang-Yu H. (2010). Health impacts of food. Prehospital and disaster Medicine, 25(3):265-272..

[12]. Yamane, T. (1967). Statistics: An introductory analysis. Harper and Raw: New York.

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Appendix I: Flood-Induced health issues in selected rural households

LGA	City/Town	Cholera	Malaria	Pneumonia	Bronchitis	Common cold	Cough	Nose bleeding	Stress disorder	Asthma	Dengue
Abua-Odual	Aminowere	11	29	4	3	5	3	0	1	1	0
	Odaga	4	19	8	3	5	9	0	0	0	0
	Ogbema	10	23	3	1	5	2	0	0	4	0
	Otari	3	20	9	1	7	7	0	2	0	0
	Umulaka	16	35	4	0	4	2	0	1	2	0
Ahoada East	Edegha	6	29	9	0	10	8	0	0	0	0
	Ihuowo	15	32	4	0	6	5	0	0	0	0
	Obumeze	8	37	4	1	4	4	0	0	0	0
	Ochigba	15	28	9	0	5	4	0	0	0	0
	Okporowo	14	24	0	3	4	14	1	5	2	0
Ahoada West	Akieoniso	1	22	0	0	14	13	2	3	0	4
	Eliabi Fai	4	24	4	0	11	11	0	4	2	4
	Ishiayi	6	16	6	3	13	3	0	3	1	2
	Mbiama	2	29	2	1	9	7	0	4	2	1
	One Man Country	1	23	2	1	9	8	0	4	2	5
Ogba/Egbema/ Ndoni	Aggah	18	34	2	4	25	21	2	5	0	6
	Ebocha	31	37	5	1	30	22	0	3	1	10
	Kreigani	13	28	5	2	22	16	1	2	0	7
	Ndoni	8	30	11	0	12	13	0	2	0	0
	Utu-Umuoriji	10	26	20	2	8	16	1	1	0	0

Source: **Computed from data collected from author's field survey, Rivers State,2022**