International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 12, pp: 310-321 www.ijaem.net ISSN: 2395-5252

Flood Risk Perceptions and Preparedness of Residents In The Niger Delta, Nigeria.

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Date of Submission: 20-11-2021 Date of Acceptance: 05-12-2021

ABSTRACT
This study assessed the flood risk perceptions and preparedness of residents in the communities in the Niger Delta of Nigeria. The cross sectional survey and descriptive designs were used in the study. The purposive sampling technique was used to select 6 states (that is, Bayelsa, Rivers, Akwa Ibom, Cross Rivers, Edo and Delta) out of the 9 states that make up the study area; while the multi-stage random sampling technique was used to select 3 communities from 3 vulnerable Local Government Areas in each of the 6 selected states, making a total of 54 communities. The Taro Yamane formula was used to derive a sample size of 400 upon which the survey questionnaire was distributed to the selected communities based on proportional allocation with regard to the population of the communities. The primary data was collected with the aid of the questionnaire administered to the respondents, while the secondary data originated from literature and institutional publications. The major findings revealed significant differences in the perceptions of flood risk among the residents of the communities across the Niger Delta with an overwhelming greater proportion of the respondents being either highly aware (56.0%) or just aware (31.5%) of flood risks. Prominent heights/depths of flood water was waist height (43.3%); while the flood experience was found to be extremely severe for greater proportion of the respondents (44.0%). The ANOVA test revealed that there was significant variation in the awareness of flood risk (H= 128.301; p=0.000), frequency of flooding (H= 228.437; p=0.000), height of last flooding (H= 231.414; p=0.000) and severity in the flood experience (H= 258.387; p=0.000). The study concludes that in the face of the high level of flood risk awareness among residents, prior information and warning, and the spread of people affected; majority of the residents in the communities were still not ever prepared for floods and also the government took no preparedness actions in the communities prior to floods. Therefore, the study recommends that authorities should ensure that they do not issue approvals for buildings and other undertakings within flood zones or natural water channels; early information and warning media should be improved; indigenous town-crying system should be encouraged; governments should be proactive by creating policy frameworks for flood preparedness plans (FPP) relative to all susceptible; and funds to local governments should be increased since they are the tier of government closest to the communities often flooded, and lastly funds to local governments should be increased since they are the tier of government closest to the communities often flooded.

KEYWORDS: Flood, Risk, Perception, Preparedness, Residents.

I. INTRODUCTION

Since olden times, human societies have developed their habitats on flood plains and along river banks or close to them for several reasons which include but not limited to agrarian, economic, commercial and ease of moving from place to place (Adelekan and Asiyanbi, 2015; Nardi et al. 2019 in Ridolfi et al., 2019). In this adventure, floods are regarded as much more than just a threat since these areas usually depict the main sources of income, livelihood, and housing to these communities (World Meteorological Organization (WMO) and Global Water Partnership (GWP), 2016) and cultural systems (Nardi et al. 2019 in Ridolfi et al., 2019). Really, it is exemplified by the primordial human civilisation that habited Mesopotamia within the Tigris and Euphrates river framework that rivers played a central role in the economic growth and progression of societies (Ridolfi et al., 2019).

No wonder also in contemporary time, nine of the 10 largest metropolitan agglomerates in the world are found in deltas or floodplain zones (Di Baldassarre et al. 2013a in Ridolfi et al., 2019), even as it is evident that residing on a floodplain go with disastrous costs (Ridolfi et al., 2019). Consequently, most of these metropolises are experiencing rising cases of flood risk due to climate change and sea level rise (IPCC 2014, Tren-berth, 2006 and 2011 in Adelekan and Asiyanbi, 2015) as well as their low-

lying nature (Adelekan and Asiyanbi, 2015). Not surprised that globally, as world population grew by 87%, rising from 3.7 billion to 6.9 billion, especially between 1970 and 2010; the average number of people exposed to floods annually increased by 114% (WMO and GWP, 2016).

The concept of risk is addressed from different backgrounds of endeavours in which every domain creates and propagates its own meaning relative to the context of their endeavours (WMO and GWP, 2017). Nonetheless, in the domain of disasters, UNISDR (2009b) in WMO and GWP (2017) defines risk as the incorporation of the likelihood of an incident and its deleterious penalties; while, Decree no. 49/2010 and 2007/60 UE Flood Directive defined risk as "the combination of the probability of a flood event and of the potential adverse consequences for human health, the environment, cultural heritage and economic activity associated with a flood event" (Franzi et al., 2016). On its part, the Federal Emergency Management Agency (FEMA) (2001) in Samuel et al. (2017) defined risk as the possibility of a threat-laden event causing unfavourable situation that result to harm or destructions. Notwithstanding the multiplicity of definitions of risk, two common elements are generally discernable. The one is the probability of the appearance of an event and the other is the consequences resulting from the advent of the event (WMO and GWP, 2017).

According to WMO and GWP (2017) flood risk is the damages anticipated to result from a particular deluge at a certain time; which is founded on its magnitude, volume and rapidity in the upsurge of the water; the exposure to the flood of people and their undertakings; and the susceptibility of the entities that are exposed. Kellens et al. (2011) contemplate the study of flood risk perception as an enquiry on human consciousness, emotions and behaviours with regard to hazards, thus, WMO and GWP (2016) define risk perception as a personal opinion or view of the possibility that an event will occur according to a major or minor probability and intensity. This suggests that perception is a very malleable and non-static idea and subjective act and can change from one context to another, subject to the environmental, economic, socio-political attributes (WMO and GWP, 2016). This implies that perception of flood risk is peculiar and particular to individuals in a given community and to the whole community in some respect. Thus, understanding the demographic characteristics of the particular population is consequently essential in order to appraise risk perception by the different groups of (WMO and GWP, 2016).

As important component as perception of flood risk is in flood risk management (Onwumele, 2018 in Berezi et al., 2019), it is often ignored when developing flood risk management plans (Bradford et al; 2012 in Berezi et al., 2019). But then understanding and having information about public risk perception tend to guarantee an enhancement in the effectiveness of flood risk management, and this is why it is opined that its importance in disaster evaluation and management is founded on grounds that it determines the attitude (the level of preparedness to a flood) and the likely behaviour of the inhabitants of flood zones when faced with a flood (Kellens et al., 2011). Again, it is vital in determining a suitable method of information dissemination of the flooding, increase the community's trust in its government and engenders better ability to respond to floods as well as increase social resilience; and therefore, must take the centre stage of consideration and care since the authorities' failure in the politics of flood risk management is due to their lack of knowledge and understanding of the society (Bradford et al. 2012 in Lechowska, 2018).

Preparedness encompasses both the preparatory actions in advance prior to the flood, the deployment of mitigating measures and the aptitude to cope with flood as well as the possibility of subsequently recovering after the flood (Raaijmakers et al., 2008; van der Veen and Logtmeijer, 2005 in Lechowska, 2018). Abdulmajid (2020) noted that absence of flood risk preparedness by people has been indicated in most circumstances in the destruction resulting from floods. This underscores the fact that though no country is totally protected from flooding, the impacts are amplified by absence of capacity and preparedness. This is worse in developing countries such as those in Africa where none preparedness, poor and low budgetary allocation for disaster prevention put them at worse experience in terms of the excessive impacts of natural disaster (International Federation of Red Cross and Red Crescent Societies (IFRC), (2007) in Abdulmajid, 2020). It has been advocated that preparedness measures are greatly beneficial because it is potent and competent in taking care of foundational causes and dynamic pressures instead of symptoms in a system, which is more constant than after a disaster (Enenkel, 2010 in Abdulmajid, 2020).

While some communities, states or nations have adjusted and become accustomed to live with floods due to their level of preparedness; others are so absolutely taken by surprise with the upwelling and overflowing of a river or the rising of sea to a level that has never been experienced before by nearby resident in their lives time (Wolfgang, 2005 in Peter and Adeoti, 2018). In comparison with other

International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 12, pp: 310-321 www.ijaem.net ISSN: 2395-5252

continents therefore, the cities of African are more susceptible to flooding (Adelekan, 2010 in Samuel et al., 2017); and this is why the loss of life to floods in industrialised nations is commonly lesser than in their developing counterparts due to existence of flood control structures, zoning regulations that preclude residing in extremely vulnerable sites and emergency preparedness in those countries (Ogah et al., 2013), which are most often absent in African and other less developed and developing nations.

Many studies have been carried out in the domain of flood risks perception and its ancillary trade-offs both globally, in Nigeria and the Niger Delta particularly. But while few of these studies merely assessed the flood risk perception of a particular population (Agusomu and Paki, 2011; Gobo et al., 2013; Adelekan and Asiyanbi, 2015; Oyatayo et al., 2016; Lechowska, 2018; Ridolfi et al., 2019); some others focused on flood mitigation and coping strategies (Amangabara and Gobo, 2010; Mmom and Aifesehi, 2013; Peter and Adeoti, 2018; Berezi et al., 2019; Week et al., 2019). However, none of these previous studies captured the preparedness of residents of Niger Delta communities before the flood events in the face of their perceptions of flood risk; which is an obvious gap in the literature that this study seeks to fill. Thus, it is against these backdrops that this study attempted to realise the following objectives:

i. Assess the spatial variations in the perception of flood risk of residents of the selected communities in the Niger Delta
ii. Examine the preparedness of residents of the selected communities in the Niger Delta towards floods before to floods

The study hypothesis is:

H_O: There is no statistically significant difference in the perception of flood risk among the residents the selected communities across the Niger Delta.

II. MATERIALS AND METHODS

2.1 Study Area

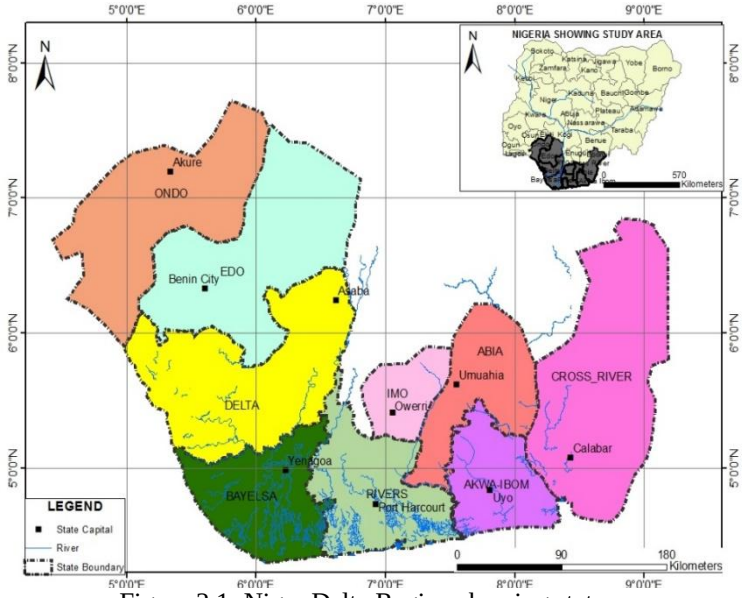

Figure 2.1: Niger Delta Region showing states

The study was carried out in the Niger Delta Region of Nigeria located between latitude 4º and 6º north of the equator and longitude 5º and 7º East of Greenwich (Mmom and Aifesehi, 2013). The Niger Delta falls within the tropical rainforest climate characterising wet and dry seasons (Ayoade, 2004), hence it experiences very high annual rainfall of between 3000mm to 4500mm with greatest in July and September as peaks (Mmom and Aifesehi, 2013) and average temperature of 27°C along the coastal fringe to about 28°C in the interiors (Emielu, 2000 in Adejuwon, 2012). It is the third largest wetland in the world, covering an area of approximately 70,000 km^2 (NDDC, 2006; Mmom and Aifesehi, 2013) and has an ecology that is rich in plants and animals species (NDDC, 2006; Mmom and Aifesehi, 2013). The region is endowed with copious crude oil and natural gas reserves which jointly serves as the main stay of Nigeria's economy as they accounts for about 90% of the nation's annual forex earnings (NDDC, 2006;

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Mmom and Aifesehi, 2013) in addition to other resources such as timber and non-timber forest products, agricultural resources, marine resources, wildlife, bitumen and other solid minerals (NDDC, 2006). The region spans across nine states (Abia, Akwa Ibom, Bayelsa, Cross Rivers, Edo, Delta, Imo, Ondo, and Rivers) and plays home to about 40 ethnic nationalities speaking over 250 indigenous languages and dialects. The projected population of the region in 2021 is 51,778,831. Besides the oil and gas and its ancillary industries there is also a host of other private and public sector activities in the region which are the major sources of livelihood such as construction, artisans, agriculture, fishing, farming, trading and traditional arts (NDDC, 2006).

2.2 Methods

The cross sectional and descriptive survey designs were used in the study. The purposive sampling technique was used to select 6 states known as the BRACED states (that is, Bayelsa, Rivers, Akwa Ibom, Cross Rivers, Edo and Delta) out of the nine (9) states that make up the study area based on the Nigeria Hydrological Services Agency (NIHSA) (2020) 2020 Annual Flood Outlook (AFO) highly probable and probable flood risk states, and for reason that they are the contiguous coastal states in the region. The multi-stage random sampling technique was used to derive the sample frame. The first stage involved the use of the simple random sampling technique to select 3 highly probable and probable flood risk Local Government Areas in each of the 6 selected states, making a total of 18. The second stage similarly involved the use of the simple random sampling technique to select 3 communities each from the 18 selected LGAs, making a total of 54 communities. This approach yielded valuable result for Samuel et al. (2017) and Week and Wizor (2020). The population of the sampled Local Government Areas are presented in table 2.1.

Table 2.1: Sample Size Determination for Selected Local Government Areas

S/N	States	LGAs Selected by Random Sampling	Population of States by 1991 Census	Population of LGAs by 2006 Census	Population of LGAs by 2021 Projected from 2006	Distribution of sample size by Proportional Allocation
		Eket	82,610	172,856	292,206	20
1	Akwa	Ibesikpo Asutan	-	137,127	231,808	16
	Ibom	Uyo	244,762	305,961	512,214	35
Akwa Ibom State Total						**71**
		Ogbia	-	179,606	280,000	19
2	Bayelsa	Southern Ijaw	-	321,808	501,676	34
		Yenagoa	-	352,285	549,188	37
Bayelsa State Total						**90**
		Abi	-	144,317	224,306	15
3	Cross	Calabar	-	183,681	285,488	19
	Rivers	Municipal				
		Calabar South	-	191,515	297,664	20
Cross Rivers State Total						**54**
		Ndokwa East	75,578	103,224	168,578	11
4	Delta	Patani	-	67,391	110,058	8
		Ughelli North	166,029	320,687	523,724	35
Delta State Total						**54**
		Esan South-East	83,643	166,309	252,358	17
5	Edo	Etsako Central	-	94,228	142,982	10
		Ovia North-East	121,769	155,344	235,719	16
Edo State Total						**43**
		Abua/Odual	134,420	282,410	420,336	28
6	Rivers	Ahoada West	-	249,232	415,044	28
		Onelga	190,751	283,294	471,767	32
Rivers State Total						**88**
Grand Total	**6**	**18**	**1,099,562**	**3,711,275**	**5,915,116**	**400**

Source: Researcher's field work (2021)

NB: *The population figures are based on the National Population Commission 1991 census and 2006 national census final results, while 2021 population are based on the researcher's projections estimated from 2006 national census figures using individual state's growth rate.*

The primary data was collected with the aid of the questionnaire administered to the respondents, while the secondary data originated from literature and institutional publications. The Taro Yamane (1967) formula was used to derive a sample size of 400 upon which the survey questionnaire was

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distributed to the selected communities based on proportional allocation with regard to the population of the communities. The formula is expressed as:

$$n = \frac{N}{1 + N(e)^2} \quad \text{..... Eqn. 2.1}$$

Where;
n is sample size required
N is total population
1 is constant
e is level of significance $(0.05)^2$ or level of tolerance.
This approach was also used by Oyatayo et al. (2016).
Thus,

$$n = \frac{5{,}915{,}116}{1 + 5{,}915{,}116\ (0.05)^2}$$

$$n = \frac{5{,}915{,}116}{1 + 5{,}915{,}116\ (0.0025)}$$

n = 400

The descriptive statistics such as the arithmetic mean, percentages and frequency generally expressed in tables were used to simplify the data, show and explain comparisons among the variables of interest; while inferential statistics in the form of analysis of variance (ANOVA) was used to test the study hypothesis at 0.05 level of significance (Samuel et al., 2017; Week et al., 2019). All analyses were done with the aid of the Statistical Packages for Social Sciences (SPSS) version 22.

III. RESULTS AND DISCUSSIONS

3.1 *Socio-economic and Demographic Characteristics*

The analysis of the socio-economic and demographic characteristics of the residents are presented in table 3.1. It is discovered that male respondents were more (62.0%) than their female counterparts (38.0%). Age bracket 26 - 35 years was 28.0%; 36 - 45 years was 26.3%; 18 - 25 years was 18.3%; 46 – 55 years was 16.8% and 56 years and above was 10.8%, implying that the popular age bracket in the study area was age 26 - 35 years (28.0%). Married respondents were more and covered 60.3%; while singles were 27.0%; separated/divorced 7.3%; and the widowed 5.5%. It is revealed that on the respondents' highest academic qualification 35.3% have WASC/SSC or its equivalents; 20.0% BSc; 13.5% HND; 11.8% ND; 8.0% FSLC; 5.3% MSc; 5.0% none; and 1.0% PhD, thus WASC/SSC and its equivalents are the highest educational qualification attained by the respondents the Niger Delta states. The result on the respondents' occupation in ranking are farming and fishing (25.3%), students (21.3%), civil/public service (17.7%), trading/business (16.7%), skilled/self-employed (9.7%) and the unemployed (9.3%), signifying that those engaged in farming and fishing activities and the student population were the preponderant occupation across the Niger Delta. This result on the majority of the population being engaged in fishing and farming in these states would not entirely be surprising because the Niger Delta states have quite good amount of inland, coastal and seaward waters. The analysis on annual income of respondents shows that 31.3% earn ₦216,000 and below; 18.5% earned ₦217,000 - ₦400,000; 14.3% ₦401,000 - ₦600,000; 11.3% earned ₦601,000 - ₦800,000; 6.8% ₦801,000 - ₦100,000; while 3.8% earned ₦1000,000 and above; while 14.3% have no income; hence, the members of the population that earn N216,000 and below per annum dominated the communities across the states (31.3%).

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Table 3.1: Socio-economic and Demographic Characteristics

Variable	Frequency	Valid Percent
Gender of Respondents		
Male	248	62.0
Female	152	38.0
Total	**400**	**100.0**
Age of Respondents		
18-25	73	18.3
26-35	112	28.0
36-45	105	26.3
46-55	67	16.8
56 and above	43	10.8
Total	**400**	**100.0**
Marital Status of Respondents		
Single	108	27.0
Married	241	60.3
Separated/Divorced	29	7.3
Widowed	22	5.5
Total	**400**	**100.0**
Highest Educational Qualification		
FSLC	32	8.0
WASC/SSC	141	35.3
ND	47	11.8
HND	54	13.5
BSc	81	20.3
MSc	21	5.3
PhD	4	1.0
None	20	5.0
Total	**400**	**100.0**
Occupation		
Student	85	21.3
Farming/Fishing	101	25.3
Civil/Public Service	71	17.7
Trading/Business	67	16.7
Skilled/Self Employed	39	9.7
Unemployed	37	9.3
Total	**400**	**100.0**
Annual Income of Respondents (₦)		
216000 and below	125	31.3
217000-400000	74	18.5
401000-600000	57	14.3
601000-800000	45	11.3
801000-1000000	27	6.8
1000000 and above	15	3.8
None	57	14.3
Total	**400**	**100.0**

Source: Researcher's field work, 2021.

3.2 Residents' Perception of Flood Risk

3.2.1 Flood Risk Awareness Frequency of Flood Risk, Severity and Magnitude of Flood

Table 3.2 shows the analyses of flood risk perception of the residents across the communities. It is discovered that 56.0% of the entire respondents were highly aware of flood risk; 31.5% were just

aware and 4.5% were slightly aware of flood risk; while 6.8% were not aware. This is just revealing that majority of the respondents were aware of flood risk in their communities and the reason might be due to incessant annual flood usually experienced in many areas within the Niger Delta. This high level of flood risk and vulnerability awareness found among residents of the communities in the study area is akin to the findings of Berezi et al. (2019) among communities in Bayelsa state; that of Gobo et al. (2013) in Bonny Island, Rivers State and that of Bamidele and Badiora (2019) who evaluated the vulnerability of residents and their livelihoods to flood disaster in North Central Nigeria.

Awareness level of flood risk is critical to individual's knowledge of flood and decisions thereto. Being unaware of flood risk not only makes the residents more vulnerable but puts them more in a dangerous plight. The lack of awareness among residents may be instigated by dearth of information and communication; whereas exchange and dissemination of information and the education of society increases awareness in a hazard zone (Raaijmakers et al., 2008, King, 2000 in Lechowska, 2018); while in turn awareness of flood risk reduces vulnerability. Therefore, knowledge of flood and information transmission by media must go in pari passu. It may also be conjectured that the unawareness status of some of the residents was premised on the fact that they have not had flood disaster experienced. This view is strengthened by the stance of the findings of Lindell and Hwang (2008) in Lechowska (2018) that people who experienced disaster were by far aware than those not conversant with it; thus, awareness increases correspondingly with the experience of flood (Lechowska, 2018).

Also, majority (20.8%) indicated that flood do not always occur; 18.5% said it occurs very often; 15.5% said throughout the season; 14.0% opined quite often; 13.8% said it is seasonal event; and 12.0% said it seldom happen while 5.5% do not know about its occurrence. The result also shows that the heights/depths of flood water in ranking were waist height (43.3%); between waist and shoulder (15.0%); above my height (14.3%); between ankle and knee (10.0%); ankle level (8.0%); between knee and waist (6.0%); and knee height (3.5%). This result showed that the height of flood water varied across the study area, however, it was the height at waist level that was dominant. The flood experience was extremely severe for greater proportion of the respondents (44.0%); severe for 28.0%; moderately severe for 21.3%; and not sever for 5.0%; while 1.8% were undecided. This result agrees with that of Samuel et al. (2017) in their post-disaster assessment of the 2012 flood event in the riverine communities of Lokoja, Nigeria, in which they found that majority of the residents suffered extreme severity from the flood; and the same finding was made by Bamidele and Badiora (2019) in North Central Nigeria.

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Table 3.2: Flood Risk Perception of Residents

Variables		Frequency	Valid Percent
Awareness of flood risk			
	Undecided	5	1.3
	Not Aware	27	6.8
	Slightly aware	18	4.5
	Aware	126	31.5
	Highly aware	224	56.0
	Total	**400**	**100.0**
Frequency of Flooding			
	I do not know	22	5.5
	Seldom	48	12.0
	Throughout the season	62	15.5
	Not always	83	20.8
	Seasonal	55	13.8
	Quite often	56	14.0
	Very Often	74	18.5
	Total	**400**	**100.0**
Depth/Height of Last Flood			
	Ankle Level	32	8.0
	Between ankle and knee	40	10.0
	Knee height	14	3.5
	Between knee and waist	24	6.0
	Waist height	173	43.3
	Between waist and shoulder	60	15.0
	Above my height	57	14.3
	Total	**400**	**100.0**
Severity of Flood Experience			
	Undecided	7	1.8
	Not severe	20	5.0
	Moderately severe	85	21.3
	Severe	112	28.0
	Extremely severe	176	44.0
	Total	**400**	**100.0**

Source: Researcher's field work (2021)

3.3. Preparedness to Flood Risk

The result on residents' preparedness to floods is presented in Table 3.3. It is observed that about 2/3 majority of the respondents (65.5%) were affected by the most recent flood; while 33.0% were not and 1.5% were neutral; whereas greater proportion of the respondents (47.8%) were never prepared for floods as against a smaller proportion that are always prepared (47.0%); and 5.3% were undecided. This result is in conformity with the earlier findings of Berezi et al. (2019) where more than 2/3 of the respondents (77.4%) were affected by flooding; whereas less than half of the population (47.8%) were prepared for floods.

Ordinarily, the high level of awareness of flood cum prior Information and warning could only translate to sufficient knowledge and thus adequate preparation, but surprisingly amid the high level of knowledge observed among the respondents, the opposite is what was observed in the Niger Delta as the result showed that a greater proportion of the population sampled are not always prepared for flood. The above scenario defiles both the contention of Raaijmakers et al. (2008) in Lechowska (2018) that making information about the flood risk available to the people generally increases their perception; and also the supposition of Botzen et al. (2009a), Raaijmakers et al. (2008) and Działek et al. 2013b in Lechowska (2018) that where the knowledge about the causes of floods is meagre, the risk perception is accordingly lower. This is because the inverse of the above assertion would mean that where the knowledge about the causes of floods is sufficient, the risk perception is consequently higher.

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Again, the findings indicates that governments at all tiers took no actions prior to floods as affirmed by virtually all the respondents (94.7%); while 5.3% was undecided. Over the years, this "no-action" stance by the various tiers of government has become habitual, and can only signal that either the people's plight matters less to the governments or the governments are purposely being indifferent for selfish reasons. The result also indicates that above 2/3 of the population representing 72.8% were privy of earlier information and warning about floods; while 27.3% were not; and among this proportion that had prior Information and warning, majority of them (36.3%) got their information via radio stations. While 27.5% of the sampled population had no means or access to prior Information and warning; other major media of Information and warning observed were television (25.3%); mobile/internet (7.3%); print media (2.3%); traditional means (e.g. town crying) (1.0%) and volunteer groups/NGOs (0.5%).

Table 3.3: Flood Preparedness Actions

Variables	Frequency	Valid Percent
Affected by the most recent flood		
Yes	262	65.5
No	132	33.0
Neutral	6	1.5
Total	**400**	**100.0**
Preparedness towards flood event		
Never prepared	191	47.8
Undecided	21	5.3
Always prepared	188	47.0
Total	**400**	**100.0**
Governments Took Actions Prior to Flood		
Yes	0	0.00
Undecided	21	5.3
None	379	94.7
Total	**400**	**100.0**
Earlier information/communication/warning about floods		
Yes	291	72.8
No	109	27.3
Total	**400**	**100.0**
Medium of flood risk information warning		
Radio	145	36.3
Television	101	25.3
Volunteer groups/NGOs	2	0.5
Traditional means (e.g town crying)	4	1.0
Mobile/Internet	29	7.3
Print media	9	2.3
None	110	27.5
Total	**400**	**100.0**

Source: Researcher's field work, 2021.

Hypotheses Testing

H_O: There is no statistically significant difference in the perception of flood risk among the residents the selected communities across the Niger Delta.

H_1: There is statistically significant difference in the perception of flood risk among the residents the selected communities across the Niger Delta.

Table 3.4 shows the analysis of variance (ANOVA) in the flood risk perception among the communities in the Niger Delta. It revealed that there was significant variation in the awareness of flood risk (H= 128.301; p=0.000), frequency of flooding (H= 228.437; p=0.000), height of last flooding (H= 231.414; p=0.000) and severity in the flood experience (H= 258.387; p=0.000). Thus, the null hypothesis is rejected while the alternative hypothesis is retained. Hence, there is statistically significant difference in the perception of flood risk by the selected communities across the Niger Delta.

Table 3.4: Kruskal Wallis Test of Variation

Test Statistics[a,b]				
	Awareness of flood risk	Frequency of flooding	Depth/Height of Last Flood	Severity of Flood experience
Kruskal Wallis Index (H)	128.301	228.437	231.414	258.387
Df	53	53	53	53
Asymp. Sig.	.000	.000	.000	.000

a. Kruskal Wallis Test
b. Grouping Variable: Communities

IV. CONCLUSION AND RECOMMENDATIONS

This study assessed the perceptions and preparedness of the Niger Delta residents for flood risk. The findings showed that majority of the respondents were highly aware of flood risk in their communities perhaps due to relentless yearly flooding commonly experienced in several parts of the region; and flooding in the region is a seasonal event for which the residents suffer with extreme severity. Also, about 2/3 majority of the population were affected by the most recent floods; whereas on the other hand they were never prepared for the floods even as they were privy to earlier information and warning about the flood risks from different media fronts. To make matters worse, the governments at all tiers took no preparedness actions prior to floods, which of course exemplifies indifference and neglect of the people of the years. The study concludes that in the face of the high level of flood risk awareness among residents of the Niger Delta and the spread of people affected, majority of the residents in the communities were still not ever prepared for flood and also the government took no preparedness actions in the communities. Therefore, the study recommends that government authorities should ensure that they do not issue approvals for buildings and other undertakings within flood zones or natural water channels; early information and warning media should be improved; indigenous town-crying system should be encouraged; governments should be proactive by creating policy frameworks for flood preparedness plans (FPP) relative to all susceptible; and funds to local governments should be increased since they are the tier of government closest to the communities often flooded.

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