



ARE INDIGENOUS PEOPLE AVERSE TO RELOCATION IN THE FACE OF DISASTERS? A STUDY OF FLOOD PRONE COMMUNITIES IN SOUTH EAST, NIGERIA

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Abstract

The study examined the reactions and responsiveness of indigenous populations to early warning signs of floods in selected vulnerable communities in South East Nigeria. The study locations were three usually flooded communities of Umuleri, Umunze Anam and Onitsha in Anambra State, South East Nigeria. The study adopted the survey research design. 400 households were randomly selected from the three communities for study. The questionnaire was used to elicit information from household heads and community leaders. Variables of interest included, experiences with floods in terms of occurrences, frequency, attitude to flood hazards, early warning signs, knowledge of causes, resilience to and sources of early warning information on floods. Other variables include; reasons for non-relocation, land ownership, occupation, length of stay in the community, religion, among others. Data were summarized using frequency tables, percentages, and charts. The logit regression was used to test the postulated hypotheses. Findings show that the respondents rely on age long tested early warnings signs than official government's agencies predictions, and broadcast. Formal early warning information are considered by the local populations as technically coated jargons that are devoid of real life application and meaning to the people. Water colour changes in the river, aquatic animal upland relocation, intensity and duration of rains are indigenous vital indications of impending flooding. In spite of these early warning signals, residents of these flood prone communities generally adopt a wait and see attitude to the periodic floods than relocate permanently to relatively safe areas. Relocation to other locations is the last option as families are afraid of losing their ancestral lands. Based on these findings, it is concluded that the issue of land ownership and indigene-ship need to be redressed to give disaster induced migrants a chance of assimilation in new abodes that they may find themselves.

Key Words: Attitude, Disaster, early warning, relocation, Floods, Vulnerability

Introduction

Background of the study

Climate change is associated with many untoward disasters of varying magnitudes across the World. Floods are one of the hazards associated with climate change. Most hazards cannot be prevented from occurring but vulnerability associated with some of these hazards can be mitigated by adequate preparation (Tierney, Lindell, and Perry, 2001)).



Recent floods are known to have occurred in many parts of the World, but low lying areas and coastal areas are more prone to flooding. The frequency, magnitude and reach of floods across the World in recent times are of increasing concern to humanity. These concerns arise basically due to the devastation that follow (Askew, 1999; MunichRe 2005, Lara, et.al. 2017)). More worrisome is the fact that incidences of recent floods are not limited to coastal or low lying regions but extend to places previously not known for floods (Awosika 2001; Ologunorisa, 2004; Mmom, 2010, Okpala, 2013). Besides, the frequency of floods and dangers arising from flooding appears to be defying human abilities and knowledge to correctly predict with accuracy.

Aderogba (2012) in his study of incidences of flooding in 25 towns in Nigeria's sub national States found that Anambra State was among the worst hit by floods in the country. It was noted that aside from geography of the area, human activities exacerbate the disaster. (Ojigi et al, 2013) opine that in most cases, the devastation caused by floods especially on households is usually a reflection of their lack of preparedness. This neglect could be by the individuals as well as governments (IFRC, 2007). The 2012 flood disaster in Anambra State that resulted to widespread loses, internal displacement of populations as well as the submergence in part or whole of over 10,000 homes is typical of such lack of preparedness.

The Federal Government of Nigeria and its agency, National Emergency Management Agency (NEMA), as part of its awareness campaigns and early warning admonitions to communities who live in flood prone areas is that they should relocate to safer places preferably in upland areas. The communities, on the other hand, most often refuse to relocate. Are these communities oblivious of the dangers? Rather than heed the advice, it is not uncommon for fresh people to migrate to the flood prone areas (NEMA, 2015). This occurs despite government warnings. Some scholars have studied households' willingness or otherwise towards resettlement in the face of disasters whether natural or man -made.

A growing body of research exists that currently address the issue of responses to climate change (IPCC, 2014). In anticipation of natural disasters and its aftermath, those who experience and survive these events face difficult choices: to stay, or to leave? To relocate, or rebuild destroyed properties and remain in the same areas and risk future property damage, losses and even death which may become more acute in the face of deepening climate crisis?

The goal of this article is an attempt to provide answers in the developing Country context with regards to the reasons why people living in flood-prone areas reject relocation, especially in the face of known, proven and impending danger. It seeks to provide answers to the overarching question of the place of beliefs, laws, culture, poverty and governance



on indigenous population averseness to relocation in the face of the dangers of flooding in Anambra, South East Nigeria. Some studies on victims' willingness to relocate after disasters were found to be related to individual characteristics, resettlement distance, and resettlement cost (Li, and Qin 2015; Pei, 2017). These studies have laid an important theoretical foundation for this study. However, more need to be done on the cost of relocation by extending to include who bears the financial cost of relocation, cultural affinity to ancestral lands, and available public support for the relocation as evident in budgetary allocation to support relocation, the untoward effect of indigene ship as specified in several laws of the nation and sub national States. In the context of Nigeria, where insurance against Natural disasters are nonexistent, and access to mortgage finance is limited, relocation may be less appealing even in the face of looming danger. The social dimension of living with ones' kit and kins as well as occupation is also often neglected. As have been noted by Muttarak (2017), religious beliefs of people and how it impacts on their responses to hazards have also been often neglected.

Vulnerability to Flood Disasters

Most studies on vulnerability to natural disasters often neglect the people's religion as a factor that impact on vulnerability. Muttark (2017) notes that, religious affiliation shape beliefs and social identities (belonging). Religious beliefs shape risk perceptions and behaviours. Some studies highlight the fact that some religions view disasters as acts of God. This can lead to fatalistic attitudes on disaster risk and mitigation. Ready examples as reported by Merli, (2010) and Adiyoso and Kanegae (2012) about Satun, Thailand and Aceh, Indonesia where Islamic religious leaders considered the 2004 tsunami as collective punishment while in Indonesia (Chester et al., 2012) reported that the Hindus believe that disaster is part of god's creation. The authors are of the opinion that when disasters are considered as the will of God, it may discourage engagement in disaster risk reduction. Could this be the case in Anambra State where all residents profess one religion or the other? Faith thus can impact how disaster events are interpreted and prepared for. If this is so, then understanding the role of religion can help reverse the fatalistic attitudes and acceptance of disaster risk reduction with ease (Adiyoso, 2016). Another dimension with regards to religion and disasters as elaborated by Vandentorren et al., (2006) is in terms of ready emotional, psychological and material support. They noted that religious networks and religious engagement often serve as a source for social capital. They point to real life evidence in which the elderly people who engaged in religious activities were 84% less likely to die in the August 2003 heat wave in France compared to those who did not participate in any religious activities.

Fletcher et al., 2013 found that those who were members of a Christian church were likely to receive support networks in times of hardship from their churches. According to them,



Christian churches in Fiji, for example, rendered assistance including food and provisions, reconstruction of housing, relocation and financial aid after the hurricanes that swept through the islands. The Islamic Mosques and Hindu Temples they noted had far more limited resources to support and assist their members during the crisis (Gillard and Paton, 1997). Religion therefore influences vulnerability both through beliefs and the assistance from concerned members of the body to their fellow members affected by flood to adapt. There is need therefore to explore the relationship between religion and the willingness of the affected persons in flood prone areas in Anambra State to relocate.

Education is yet another important characteristic of a population that is considered as an important determinant in vulnerability to natural disaster. For instance, it has been found that in the absence of disaster experience, the highly educated exhibit higher level of disaster preparedness, thanks to their better abstraction skills in anticipating the consequences of disasters (Hoffmann and Muttarak, 2017; Muttarak and Pothisiri, 2013). Not only were educated individuals more likely to survive and had a lower risk of injuries such as was found in the 2004 Indian ocean tsunami (Frankenberg et al., 2013; Guha-Sapir et al., 2006), communities and countries with higher average levels of education also experienced much lower losses in human lives from climate-related disasters (KC, 2013; Lutz et al., 2014; Padli and Habibullah, 2009; Striessnig et al., 2013). This suggests that public investment in education can have positive externality in reducing vulnerability to climate risks.

Education equips individuals with cognitive and problem-solving skills as well as enhancing access to knowledge and information. Education therefore can contribute to vulnerability reduction in a similar way as found in other circumstances such as reducing infant mortality and promoting healthy behaviours (Montez and Friedman, 2015; Pamuk et al., 2011). Hence, better educated societies are more resilient and hold greater adaptive capacity to climate change related disasters. These empirical studies have demonstrated consistent evidence showing that countries, communities, households and individuals with higher average levels of education experience lower vulnerability to natural disasters (Muttarak and Lutz, 2014). Anambra State is reputed as among the most literate States in Nigeria with a literacy rate of over 75% which is higher than Nigeria literacy rate of 62%. How has this high literacy impacted on vulnerability to flood disasters in the area?

Knowledge of Hazard and Preparedness for the Hazard

Ezemonye and Emeribe (2014) investigated households' preparedness for floods in Benin City, Nigeria using multiple correlation analysis. They found that religious belief and access to funds determined households' preparedness for floods. With regards to faith, 95% of the respondents believed no harm would befall them as they had faith in God. The study



focused mostly on temporary relives as seen in its recommendation of sensitization of households on the need for saving money towards ameliorating flood impact as well as the strengthening of institutional preparedness targeted at disaster risk reduction. However, preparedness should go beyond this narrow focus more on permanent measures such as relocation. This requires probing into factors inhibiting residents of flood prone areas to relocation in the face of known dangers.

A similar study was conducted by Araen, Ali, Abubakar, Shenpam and Danjuma (2015), among the residents of Katsina metropolis, Katsina State, Nigeria. The aim of the study was to “assess the flood hazard responses among households residing in the four flood prone wards of Wakilin Yamma, Wakilin Gabas, Wakilin Arewa and Wakilin Kudu of Katsina State. The questionnaire was the main instrument used in data collection. 156 copies of the questionnaires were administered to randomly sampled households in the area. Findings of the study revealed that gender, and respondent’s duration of stay in the community had significant impact on flood hazard response. According to the authors, most respondents (64.1%) knew that their buildings were located on flood prone areas as against (30.1%) who felt that their buildings were located at places safe from floods. Given this knowledge, it therefore became intriguing as to what explained their choice of location in such flood prone place. The current study was thus an attempt to investigate the reluctance of community members from relocating from the flood areas in Anambra State.

Indigenous Practices and Adaptation to Flooding

Oluseyi and Oloukoi (2013) investigated existing indigenous knowledge system and local adaptation strategies to flooding in coastal rural communities of Nigeria. The study examined the nature and types of indigenous knowledge systems used in the measurement of ocean (cold) and river (warm) flooding in some coastal rural communities in Nigeria. Focus Group Discussion, participant observation, and anecdotal sources were used to collect data from household members in the selected rural coastal communities in Nigeria. Content analysis was used in putting together qualitative data. The study observed that the communities had undocumented knowledge of local meteorology which were based on experiences rooted in traditional practices and belief systems. The Ilajes, Itshekiris and Ijaws who live in the study area had specific knowledge of meteorology that enable them to predict flooding to some extent. The people’s entire lifestyles, tradition and religious believe were found to revolve around excess water management from the distributaries of river Niger and the Atlantic Ocean. The study identified local engineering approaches to manage flood disasters at the community and household levels. The study thus recommended modern adaptation strategies should incorporate the existing knowledge of the people of the rural coastal communities in Nigeria and similar other areas.



Francisco *et al.* (2011), in yet another study on adaptation strategy in selected Asian countries presented an adaptation framework which classified adaptation strategies used by households in response to natural disasters into four types: behavioural, structural, technological, and financial. It also explained that broadly, adaptation strategies could be classified into reactive and proactive measures. Reactive strategies refer to actions that are done at the very last minute or when the event is already happening, while proactive strategies come from anticipating the event in advance. The study further explained that the decision of the household on whether or not to undertake adaptation strategies for extreme climate events could be considered under the general framework of utility maximization or loss minimization. In this case, it is assumed that the households use adaptation options only when their perceived utility or net benefit from using a particular option was significantly greater than in the case without it.

A study analysing coping mechanisms of households in Philippines was presented by Patnaik and Narayanan (2010). This study analysed the interactions between natural disasters and household poverty and discussed the coping strategies used by households in response to natural disasters. The study categorized coping strategies as ex-ante and ex-post. Ex-post strategies include adaptive behaviour such as dissenting, borrowing, and sale of assets. On the other hand, ex-ante strategies may include income diversification (or crop diversification in rural areas).

A similar classification was adopted by Ghorpade (2012). Households coping strategies according to him fell into three types, namely, as risk reducing (ex-ante), self-insurance, and risk sharing.

Risk reducing strategies include strategies that seek to achieve income smoothing in order to reduce household exposure to more volatile sources of income and choosing more secured ones (e.g. pursuance of diversification, less risky specialization, self-sufficiency, and flexibility in their livelihood activities). Self-insurance include strategies the accumulation and sale of household assets to deal with disaster shocks (e.g. accumulation and later sale of land, livestock, farm implements and other assets; increasing household labour supply; reducing consumption; borrowing from others). Risk sharing strategies include strategies that share risks within a group either implicitly or explicitly (e.g. mutual assistance, barter of goods, joint cultivation, labour pooling).

Olorunfemi and Raheem (2013) studied “Flood and Rainstorms Impacts, Responses and Coping among households in Ilorin, Kwara State. This study investigated the impacts of flooding and rainstorms in the city, responses and coping among the affected households. The social risk management (SRM) and asset-based approaches on which the study was



based provided a conceptual framework for understanding the sequential links between risks; human exposure and sensitivity; the impacts of risky events; and risk management (or adaptation) strategies. Both primary and secondary data were used for the study. The secondary data include data from the Kwara State Emergency Management Agency (KSEMA) on flood in the State between 2007 and 2009, while the primary data was obtained with the aid of a structured questionnaire administered randomly to flood victims in the KSEMA records. Multiple linear regression model was used ascertain the predisposing variable to vulnerability. Finding show that the housing characteristics, neighbourhood quality contributed significantly to vulnerability to rainstorm and flooding. The study revealed that the indigenous coping mechanisms employed by the poor were less effective to withstand disaster shocks. The study recommended that strategies to reduce vulnerability should be rooted in vulnerability analysis and greater understanding of both household-level and macro-response options that are available to decrease the poor's exposure to climate risk.

Anikpo, Ogbanga and Ifeanacho (2015), studied flood disaster, adaptation and coping strategies in selected communities of Ahoada East and West Local Government Areas of Rivers State Nigeria. The study population was drawn from 802 households with 6,400 members. Out of this number, a total of 268 households and 1340 respondents were randomly selected for the study. The instruments of data collection were the questionnaires and Focus Group Discussions. The study adopted the descriptive case study research design. The study findings showed that the flood destroyed farm produce, stocks and economic assets. This forced the locals to develop various indigenous coping strategies which include; venturing into alternative livelihoods and changes in traditional occupations, changes in farming and fishing methods to help augment income for faster recovery, build flood resistant houses such as bricks and blocks as against the predominant mud/thatch houses and plant flood resistant crops. The study recommends that the government and other stakeholders should in addition to building community early warning systems, provide emergency relieve materials and assistance amongst others to reduce impact and vulnerability.

Bawa, Seidu and Abukari (2015) studied Community Based Initiatives and Strategies for Adapting to Annual floods along the Black and White Volta Rivers in the Central Gonja District of Northern Region, Ghana. They were interested in understanding how communities along the Black and White Volta Rivers adapt to the flood hazard. One hundred (100) respondents, 10 each from 5 communities along the Black and White Volta Rivers were randomly selected and interviewed on their knowledge of and how they respond to floods. They found that indigenous early warning systems for alerts were widely used on impending floods. Their coping strategies varied and their resilience levels were



very low. They recommended the need to build the capacity of communities' members for better adaptation and resilience.

Adeoti, Olayide and Coster (2010), studied the effect of flooding on fishing households' welfare in Lagos State, Nigeria. Sample consisted of 412 fishers, selected through a multi stage random sampling technique. Data were collected with the aid of structured questionnaire. Data were analysed using descriptive statistics, budgetary techniques and inferential statistics. They found that 81.1% of the respondents experienced loss in income due to flooding. Respondents reported higher net income during the dry season. The mean income for the fishers that use boat with outboard engine ranged between N51, 032.38 and N105, 619.47 for dry and rainy season respectively. Household size, membership of association, access to credit and proportion of loss due to flooding were the significant factors in fishers. The fishers often relocated temporarily to other fishing sites with less or no flooding to mitigate loss of income as a result of flooding.

Materials and Methods

A survey research design was employed for this study. This study design was adopted for this study as it involved the administration of the *survey* questionnaire to a sample after which the outcome was generalized for the entire population who share similar attributes. A structured questionnaire and interview guide were used to collect data for the study. The first part of the questionnaire elicited demographic and socio-economic data from the respondents while the second part elicited information on the factors that influence resistance to relocation from flood prone areas.

The study was carried out in Anambra State, South East Nigeria. It is a state in southeastern Nigeria located on Latitude 6°20'N and 6° 33'' N Longitude 7°00'E and 6° 9'' E. Anambra State is bounded by Delta State to the west, Imo State and Rivers State to the south, Enugu State to the east and Kogi State to the north. Anambra has a Population of 5,527,800. It occupies an area of 4865 km², with an average population density of 859 persons per square kilometer. The State enjoys annual rainfalls of between 15000 mm to 22732 mm. Major rivers that drain the State are river Niger, and Anam, from where the State derives its name. The study was carried out in the three local government areas of Anambra East, Anambra West and Onitsha South local government, all in Anambra Central Senatorial District of Anambra State.

The study selected household heads in the three Local Government Areas (Anambra East, Anambra West and Onitsha South), all in Anambra Central Senatorial District of Anambra State. The 2006 projected household of the three local governments under study is 103703. A sample size of 400 was determined using Krejcie and Morgan (1970) formula for sample size selection.



Data Analysis

The Binary Logit model was adopted for this study. The model is intended to measure the probability that residents are willing to pay for waste disposal or not. The Logit model is used for prediction of the probability of occurrence of an event by fitting data to a logistic function. The Logit model is specified below.

$$P_i = \text{Pr}(y_i = 1) = \frac{e^{X\beta}}{1 + e^{X\beta}}$$

Based on the formulations, the model was therefore stated mathematically as:
 $X\beta$ for the model:

$$\text{WTR} = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + \beta_6x_6 + \beta_7x_7 + \beta_8x_8 + \beta_9x_9 + \beta_{10}x_{10} + \beta_{11}x_{11} + \beta_{12}x_{12} + \beta_{13}x_{13} + \beta_{14}x_{14} + \mu_0$$

Where, WTR = Willingness to Relocate (1 for Yes; 0 for No), β_0 is a constant term that represents the regression intercept, β_n represents the regression coefficient of the influencing factors μ_0 ...is the Stochastic term (include all omitted variables that can influence the dependent variables)

Table 1: Logistic model specification

Variable description	Variable		Expected application
Explanatory variable	symbol	Variable description	direction
<i>Socio-economic characteristics</i>			
Gender	A1	Male = 1, female = 0	+
Age	A2	<35 = 1, ≥36–50 = 2, ≥51–65 = 3, ≥65 = 4	+
Occupation		Unemployed = 1, Farmer = 2, Civil servant = 3, Artisan = 4	
House ownership status	A5	Rented = 1, Owner = 2	+
Education level	A3	No formal education = 1, primary school = 2, Secondary school = 3, University and above = 4	+
Marital status		Married = 1, single = 2, divorced = 3, widowed = 4	



Variable description	Variable		Expected application
Explanatory variable	symbol	Variable description	direction
Household size		1-3 = 1, 4-6 = 2, 7 persons and above =	
Family income (30,000 naira)	A4	<₦50,000 = 1, ₦51,000-₦100,000 = 2, ₦101,000-₦150,000 = 3, ₦151,000-₦200,000 = 4, ≥ ₦200,000	+
<i>Cultural and religious beliefs</i>			
Floods are from the gods and will go away naturally	A7	Yes = 1, No = 0	-
Belief in protecting ancestral land and heritage	A8	Yes = 1, No = 0	-
Floods are spiritual and prayer is the only way	A9	Agree = 1, Neutral = 2, Disagree = 3	-
<i>Resettlement area and infrastructure</i>			
Resettlement position	A10	Suburb = 1, centre town = 2, safety zone = 3	+
Infrastructure	A11	Good = 1, general = 2, bad = 3	+
Distance to resettlement area	A12	Far = 1, Near = 3	+
Cost of relocation	A13	Very costly = 1, Fair = 2, Not costly = 3	+
<i>Government subsidy and support</i>			
Compensation from government	A14	Received = 1, Never received = 0	-
Mistrust for government support	A15	Yes = 1, No = 0	-



Results and Discussion

Table 2: Demographic Characteristics of respondents

Item	Frequency	Percentage
Sex		
Male	202	67%
Female	98	33%
Age		
18-35years	30	10%
36-50years	154	51%
51-65years	90	30%
65years and above	26	9%
Occupation		
Unemployed	10	3%
Farmer	147	49%
Civil Servants	58	19%
Artisans	85	28%
House Ownership Status		
Owner	193	64%
Rented	107	36%
Educational Qualification		
No formal education	30	10%
Primary school	58	19%
Secondary school	124	41%
Tertiary Education	88	29%
Marital Status		
Married	194	65%
Single	41	14%
Divorced	20	7%
Widowed	45	15%
Household size		
1-3 persons	71	24%



Item	Frequency	Percentage
4-6 persons	130	43%
7 persons and above	99	33%
Monthly Income		
Below N50,000	26	9%
N50,000 – N100,000	177	59%
N101,000 – N150,000	48	16%
N151,000 – N200,000	32	11%
Above N200,000	17	6%

Source: Authors field Work

From result presented in table 3 highlights the factors that predisposes community members willingness or unwillingness to relocate when faced with dangers.

Table 3: Logistic Regression

Item	B	Wald	Sig.	Exp (B)
<i>Socio-economic factors</i>				
Sex	0.547	3.126	0.632	0.571
Age	0.723	9.132	0.034	0.876
Occupation	0.632	4.679	0.001	0.742
House Ownership Status	0.348	5.342	0.016	2.169
Educational Qualification	0.375	5.789	0.024	0.483
Marital Status	0.842	2.654	0.742	1.765
Household size	1.964	5.886	0.001	1.892
Monthly Income	0.826	4.132	0.013	0.777
<i>Cultural and religious beliefs</i>				
Floods are from the gods and will go away naturally	0.734	5.742	0.026	1.643
Belief in protecting ancestral land and heritage	0.469	1.985	0.042	2.363
Floods are spiritual and prayer is the only way	0.284	3.673	0.023	0.874
<i>Resettlement area and infrastructure</i>				
Resettlement position	1.643	3.843	0.634	1.568



Item	<i>B</i>	Wald	Sig.	Exp (<i>B</i>)
State of infrastructure	0.343	1.645	0.007	0.28
Distance to resettlement area	1.423	3.126	0.002	1.235
Cost of relocation	0.952	1.645	0.042	0.643
Government subsidy and support				
Compensation from government	1.785	3.745	0.038	2.346
Mistrust for government support	0.766	3.843	0.026	1.598

Cox and Snell R-square=0.721: Nagelkerke R- square=0.808: Chi-square=85.648: P-value=0.001
Significance at 5% level of confidence

In this model, the Cox & Snell R² and Nagelkerke R² values were 0.641 and 0.808, indicating that the model had very good fit as shown in Table 2.

Discussion of Results

Socio-economic factors and Willingness to Relocate

The relationship between occupation and willingness to relocate was significant (0.001). Given that majority of the respondents are farmers, relocation from the flood areas was found to be difficult considering the fact that their livelihood depends on the land they are expected to leave. To them leaving the land means dying, and staying on means dying in the worst case scenario, and most persons decide to stay on the land despite flood hazard warnings. Nature of occupation is also another factor often under played when the various government agencies advise afflicted communities to relocate. Most of the affected persons in the riverside communities rely on fishing for sustenance. When they are asked to relocate, they are often not given another alternative livelihood. This in part explains their reluctance to relocate even in the face of known dangers resulting from flooding.

In support of this finding, Chawaa (2018) noted that farmers’ especially small holder farmers have a special attachment to their lands and its produce and hence it would be hard for them to abandon it unless an alternative is provided. Age was found to affect willingness to relocate by the households. The old would prefer to relocate to safer areas due to lack of strength and capacity to escape during the floods. In addition, older smallholder farmers indicated the same, whilst the younger generation who were still productive and have experienced floods in various dimensions were still willing to continue taking the risk, indicating that the risk is more valuable than relocating to other places where their livelihood would be neglected. As observed by Wang, Shi & Zhou (2019), younger householders have a stronger desire to accept new things and greater ability to adapt to new environments; they are also physically stronger and can more easily engage in nonagricultural work locally or outside the village, so their resettlement willingness will



be higher. The relationship between family income and the relocation decision is significant. The higher the household income, the more the household would opt for relocation. However, this relationship may not be linear. Other factors such as house ownership status and household size might aid the relationship between income and decision to relocate. For example, families that have spent lots of money building a house in the area might find it hard relocating. As a result, although the family's household income is high, the likelihood of choosing to relocate would be low. Households with rented housing showed a higher probability to move than homeowners.

The greater the ratio of agricultural income is, the more income depends on the land, and therefore, the lesser the likelihood that the householder especially farmers will choose to relocate.

The willingness of the households to relocate did not have a positive relationship with their marital status. Prior research found marital status as a factor in determining residential mobility and migration (Zumbro, 2013; Fattah, et al., 2015), the findings of this study show that this is not the case for flood-prone households. Family composition was found to influence relocation decisions, as seen in the study. A family with children was less likely to migrate than a family without children or with fewer children. This was related to the high cost of relocating and resettling a large family. Education attainment was found to have a significant impact on relocation willingness, suggesting that less educated people are more unwilling to relocate and that education level is positively related to relocation decision.

Influence of Religious and Cultural Belief on Willingness to Relocate

The results of the analysis show that the three items under cultural and religious belief were positively significant with the households' relocation decision. In these rural areas, most people are rooted in tradition, they believe strongly that floods are linked to some spirit beings and so will go away naturally. This belief influences their willingness to relocate to safer places as some of them noted that running away during times of flood will cause more harm and damages as the 'god of flood' will be angry with them. Furthermore, the belief in ancestral heritage and the need to protect their ancestral land affects willingness to relocate. Among the Igbo of Southeastern Nigeria, land is regarded as heritage bequeathed to them by their forebears and they too will keep, protect and hand over to their children. Land belongs to the living and the dead. The locals see land as the source of human sustenance and the eternal sacred pot from where all plants and humans draw their powers of fertility and reproduction. The Igbo venerate land as an earth goddess. As a predominantly agrarian society, they attach great importance to land. For a people who are mainly farmers, and who agriculture has been described as their "staff of life" (Uchedu,



1965, p. 30; Emeasoba, 2012), land is very important. Similar to the traditional belief in the sacredness of land, the spiritual meaning attached to flooding and the need for a spiritual remedy such as praying affect households' decision to relocate during flood hazards as those that relocate are often tagged as "not having faith".

Most members of rural communities in Nigeria trace their ancestry to the same progeny. They often share same language, practices and traditions. The major religion professed by most residents is Christianity and African Traditional religion. Muttark (2017) religious affiliation shape beliefs and social identities (belonging). Religious beliefs shape risk perceptions and behaviours. There is evidence that some religions view disasters as acts of God, which can lead to fatalistic attitudes on disaster risk and mitigation. The Islamic religious leaders in Satun, Thailand and some Islamic leaders in Aceh, Indonesia considered the 2004 tsunami as collective punishment (Adiyoso and Kanegae, 2012; Merli, 2010). Hindu also believes that disaster is part of god's creation (Chester et al., 2012). Seeing disasters as the will of God may discourage engagement in disaster risk reduction accordingly. Could this be the case in Anambra State where all residents profess one religion or the other? Faith thus can impact how disaster events are interpreted and prepared for. If this is so, then understanding the role of religion can help reverse the fatalistic attitudes and acceptance of disaster risk reduction with ease (Adiyoso, 2016). Another dimension with regards to religion and disasters is that pointed out by Vandentorren et al., (2006). They noted that religious networks and religious engagement often serve as a source for social capital. They point to real life evidence in which the elderly people who engaged in religious activities were 84% less likely to die in the August 2003 heat wave in France compared to those who did not participate in any religious activities.

Fletcher et al., 2013 found that those who were members of a Christian church were likely to receive support networks in times of hardship from their churches. According to them, Christian churches in Fiji, for example, rendered assistance including food and provisions, reconstruction of housing, relocation and financial aid after the hurricanes that swept through the islands. The Islamic Mosques and Hindu Temples they noted had far more limited resources to support and assist their members during the crisis (Gillard and Paton, 1997). Religion therefore influences vulnerability both through beliefs and the assistance to adapt. There is need therefore to explore the relationship between religion and the willingness of the affected persons to relocate.

Resettlement area/infrastructure and Willingness to Relocate

Apart from resettlement position (0.634), other factors such as state of infrastructure, distance to resettlement area and cost of relocation were positively significant at 5%. The state of infrastructure variable is significant at the 5% level, and the coefficient is positive,



indicating that the more the households' perceived the infrastructure provided by the government as good, the more they are willing to relocate. Similarly, if the distance of the place of resettlement is far, they will be unwilling to relocate. The cost of relocation was found to be negatively significant with willingness to relocate. The higher the cost of relocation, the more unlikely that victims of floods will be willing to relocate and vice versa.

Li & Qin (2015) observed that costs of relocation increase with distance, noting that people will prefer to stay back in their present location if the cost of relocating to a newer place is high. Furthermore, Moeckel (2017) stated that household relocation decisions most times are spatial in nature.

Unlike previous studies (Yan, Shi, & Yi, 2012), the location of the resettlement area isn't necessarily an important factor that is directly related to households' willingness to relocate. Whether the resettlement area is in an urban or rural area isn't much of an issue, rather the state of the infrastructure (good or bad), distance to the resettlement area and cost of relocation were important factors and directly related to households' willingness to relocate from flood prone areas to safer areas provided by the government.

Artur & Hilhorst (2014) noted that the resettlement area should not be economically behind and more inconvenient than the current residence. In other words, the better the state and economy of the resettlement area is, the more likely the households' will decide to relocate.

Influence of Government subsidy and support on Willingness to Relocate

The variables for government subsidy and support were all significant and positive at the 5% level. This indicates that the higher the support from the government is, the more likely the households' will be willing to relocate, while the lower the support is, the less likely they will be willing to relocate. The variable of government compensation to victims of flood disaster is significant and positive showing that the households were more willing to relocate if there was compensation from the government and vice versa. Furthermore, as the mistrust for the government policies and actions grows, the households were less willing to relocate to the resettlement area provided by the government. Li & Qin (2015) observed that trust is the glue that binds the government and citizens together thus distrust makes problem-solving harder.

In terms of extent to which government actions/policies impact on willingness or unwillingness to relocate, findings show that most respondents were discouraged from relocating in the face of flood dangers due to the high cost this entail. Though the government encourages all residents in the flood prone areas to relocate, such admonitions were not followed with financial assistance.



Nigeria is a Federation consisting of thirty-six sub-national States. The Constitution specifies indigeneship of by birth or naturalization. To be a citizen of Nigeria you have to be an indigene of a State. State of Origin is used in terms of employment, scholarship, to be elected into elective positions, and claim over right to enjoy some privileges bestowed on persons that come from a given State. At the federal level, the states are accorded equal treatment in terms of employment, admission to schools, scholarship, federal appointments among other largesse.

When someone relocates from one State to another, his/her state of origin remains. This remains so, regardless of how long you have lived in your new abode and the taxes you pay. A migrant therefore remains a stranger in his new location no matter how long he/she has lived there. Flood affected community members therefore are averse to relocation to new communities where the host communities would perpetually see them as strangers.

Conclusion

Relocation decision was predicated on a host of factors including government actions and policies as well as social and economic considerations. The indigenous populations are not averse to relocation per se, but would rather contend with calamities as they come rather than be thrown into new locations where they would be discriminated against, and where they would not be able to practice their occupations especially in the absence of alternative means of survival. It is therefore not just enough to urge residents to relocate to safer areas in the face of impending floods if the existing policies of the State are discriminatory to people that are not indigenes of the new location. The fear of discrimination at the new settlement by the indigenous population affected the willingness of the community members to relocate. Most of the flood victims are often the most economically weak who on their own cannot afford the cost of relocation. Besides, when there are no sufficient alternative occupations for those that relocate or desire to relocate many would still not heed the call to relocate as there are no incentives.



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