



THE EFFECT OF MEDIA CAMPAIGN AND ENVIRONMENTAL EDUCATION ON FLOOD CONTROL IN OSUN STATE, NIGERIA

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ABSTRACT: *According to a report by the Nigerian Meteorological Agency (NIMET), Osun State was identified as one of the flood-prone areas and the residents believe that the government should have been proactive to avert this occurrence. It is expected that relevant government agencies and policy makers would be well prepared to respond adequately to the incidence of flood in their area following the release of the outlook. To achieve this, media campaign and environmental education are suggested to be veritable tools to combat incessant flooding in Nigeria, Osun State in particular. The aim of this paper is to evaluate the effect of media campaign and environmental education on flood control and sustainable development in Osun State. Hence, to achieve this, quantitative survey research method was employed for this study and the data used were collected through administered questionnaires in Osogbo, Ife, Ede and Ilesha. Data collected were described and analysed using statistical tools of frequency, percentage and Inferential statistics of Optimal Scaling Regression analysis (ORS) for categorical data. The study discovered that media campaign and environmental education are among the steps that aid flood control and sustainable development in Osun State. It is recommended that policies should be made and implemented on teaching environmental studies in basic schools to start the sensitization process regarding flood management and prevention. Also, the media industry in Nigeria should step up their surveillance role.*

KEYWORDS: Flood, Media, Newspaper, Information, Environmental education, Media campaign.



INTRODUCTION

Flood has become a rabid threat to human existence. It has been observed that densely populated areas are at a high risk of flash floods. The construction of buildings, highways, driveways, and parking lots increases runoffs by reducing the amount of rain absorbed by the ground. This runoff increases the flash flood potential. All over the world, the hazard caused by flood has become a great concern to all and sundry. It has posed tremendous danger to people's lives and properties. Askew (2007) remarks that "Floods cause about one third of all damage from natural disasters" (Oyewale, 2013). It is often reported in the media the havoc wrecked on major towns in Nigeria, especially the South Western part of the country. Flooding has been a perennial incidence in which lives and invaluable materials are usually lost, emanating from heavy downpour, poor logical management, prevention, control and education.

Flooding is **an overflowing of water onto land that is normally dry**. Floods can happen during heavy rains, when ocean waves come on shore, when snow melts quickly, or when dams or levees break. Damaging flooding may happen with only a few inches of water, or it may cover a house to the rooftop (NSSL, 2021).

It is no longer history how the inhabitants of Osun State have been subjected to serious hardship as a result of flooding. Millions of people are being rendered homeless, while many farmers are impoverished and thousands of children are turned into overnight orphans. According to a report by the Nigerian Meteorological Agency (NIMET), Osun State was identified as one of the most flood-prone areas and the residents believe that the government should have been proactive to avert this occurrence (Channelstv, 2016). Some residents in areas like Testing Ground, Rasco, Oke-Onitea, Fiwasaye, Gbomi and Iludun in Osogbo have been counting their losses since the rain came down heavily for three hours, causing flooding in many parts of the city.

The Nigeria Hydrological Services Agency had in July predicted flash flood in Lagos, Ibadan, Port Harcourt, Sokoto, Kaduna, Maiduguri, Makurdi and Yola. The outlook also predicted that some of the nation's rivers would overflow its bounds, naming Niger, Benue, Sokoto-Rima, Anambra-Imo, Cross River and Ogun-Osun rivers among those (Aderogba, 2012). Some of the affected states have since the 2016 prediction embarked on programmes to prevent the level of devastation just witnessed in Osun. The State Emergency Management Agency (SEMA), and Ministry of Environment, suggested that building emergency camps would be necessary in order to accommodate victims, should a flood disaster occur.

Nigeria has experienced its fair share of flooding and its attendant consequences over the years. In 2012, Nigeria witnessed what has been described as the most devastating flood in its history. Since then, the Nigeria Hydrological Service Agency has been making public the flood outlook for each year. It is expected that relevant government agencies and policy makers will be well prepared to respond adequately to the incidence of flood in their areas following the release of the outlook.

The hazards incurred in the flood are usually more reported than the causes and precautionary measures that could be put in place to avert the dreadful disaster. Moreover, citizens are usually unaware of the complexity of a flooding disaster. For the city of Osogbo, the shortcomings can be summarized as follows:

- i. *Incomplete crisis plan*: A crisis plan was designed and many plans proposed, such as to improve the infrastructure of the city, to strengthen the dikes along the river, to broaden and deepen the riverbed and to create buffers for raising water. Some of these plans were realized but many of them are still waiting for execution.
- ii. *Complexity of a flooding disaster*: Many citizens underestimated the power and speed of the rising water. They did not respond until it was too late. However, series of events during a flooding disaster could be related to each other.
- iii. *Individual versus group decision*: During a disaster, the management team has to take group decisions conflicting individual interest, perception and behavior. In the case of mass evacuation, for example, the analysis showed that some individuals stayed behind until the very last moment and caused problems later on.
- iv. *Communication problems*: Experience shows that during crises like flooding there are usually communication crises like power and communication network failure.
- v. *Lack of training*: Fire services that are first responders have organized exercises and training at regular times. However, big disasters like flooding can only be simulated. A difficult aspect is how to involve citizens in such disaster trainings.
- vi. *Flow of events*: As mentioned above, events during a flooding disaster could result in and impact other series of events. Therefore, measures should be taken in time by the management and government team and not all at once. On the other hand, time and resources are usually limited.



Picture 1: Flood in Osun State, 2016

Source: *channelstv.com*, September 13th, 2016.



Environmental reporting—which is a branch of journalism that sensitizes, educates and investigates environmental issues, causes, and effects on the people—is not given a place of pride in the art of journalism, especially in Nigeria and particularly in the Osun State. Evidence from studies in Nigeria indicates that people seem to have a negative perception of media reportage of issues. For instance, Afolabi (2010) noted that the mass media have not been timely in their reportage of conflicts and insurgencies. Other researchers also show that the Nigerian media have not effectively played a surveillance function in the reportage of conflicts and insurgencies, neither have they displayed a high level of objectivity in their reports (Okpara, 2010; Oputa, 2011; Lawrence, 2011; Hamida & Baba, 2014). This can partly be attributed to the fact that most media organizations in the country are owned by state (sub-national) governments and individuals, and as such, they are primarily used to promote the interests of their owners. In addition, it has been revealed that the Nigerian mass media do not give significant coverage and provide effective awareness on climate change issues even as they fail to offer adequate explanations to environmental issues in general (Batta, Ashong, & Bashir, 2013; Moeti, Maraisane, & Marou, 2008; Ukonu, Akpan, & Anorue, 2012). Reporting environmental issues seems to be a green part of journalism, unlike other beats in the journalism profession. On a daily basis, the core areas of environmental issues—(i) climatic change (ii) environmental pollution (iii) deforestation (iv) destitution and (v) ecological issues or flood disasters—occur in all parts of the world. Nigeria is not left out of these critical environmental issues. The thrust of this paper therefore is on environmental education. This has to do with how the public could be educated against the incessant flooding ravaging the South Western part of the country.

Therefore, the aim of this research work is to assess the effect of media campaigns and environmental education on flood control for sustainable development in Osun State Nigeria. To achieve this aim, the study specifically seeks to find out whether there were differences in media reportage of the flood and in the attitudinal changes of citizens due to environmental education being carried out by the mass media. The results will be an addition to the literature on people's perception of environmental disasters as reported by the mass media especially in Osun State. The findings will also assist governments and policy makers to initiate policies that will ensure effective mass media reportage of environmental issues so as to minimize losses and damages due to future environmental disasters.

Aim and Objectives

The main aim of this research work is to assess the effect of media campaigns and environmental education on flood control for sustainable development in Osun State, Nigeria. In an attempt to answer the afore- mentioned research questions, the following objectives are set for the study:

1. To what extent does media campaign have a significant effect on sustainable development in Osun State, South-West Nigeria?
2. To what extent does environmental education have a significant effect on sustainable development in Osun State, South-West Nigeria?



Hypotheses of the Study

In view of the formulated research questions and objectives, the following null hypotheses are being proposed in order to establish empirical inference from the study.

- H₀₁: Media campaign has a significant effect on sustainable development in Osun State, South-West Nigeria.
- H₀₂: Environmental education has a significant effect on sustainable development in Osun State, South-West Nigeria.

METHODOLOGY

Survey method is adopted to enable the researchers to have a broad spectrum of information from inhabitants of Osun State. Simple Random Sampling was used to pick respondents of the questionnaires. The respondents were chosen across board from the age of 18 and 70 without any bias to sex, education or religion. 100 copies of the questionnaire were used. The second methodology used was oral interview. Media practitioners from both print and electronic media were also contacted for oral chats on why prominence is not given to environmental education and campaign in the discharge of their duties like any other beats of the media like sports, crime, business, entertainments, etc. Also, Tape recorders and Midgets were used as instruments for the chats. The study used stratified sampling method in its selection after which Osun State was divided into local government areas and the capital towns were visited. This research is designed in line with a descriptive survey as it systematically examines the characteristics of environmental reporting by the media, in relevance to flooding (1) the stakeholders in media (2) selected stakeholders (publics) of affected areas. Data was summarized using simple statistics

of frequency table, percentage and bar chart. Inferential statistics of Optimal scaling regression analysis for categorical data was also employed in which Standard error, R-square, ANOVA and level of importance were used in the analysis and testing of hypotheses.

Optimal Scaling Regression Analysis for Categorical Data

Conceivably, the drawbacks of nominal and ordinal variables could be circumvented by converting nominal and ordinal variables to interval variables. To some degree, optimal scaling can fulfill this purpose. That is, optimal scaling derives interval measures from nominal and ordinal measures. Optimal Scaling Regression (OSR), otherwise known as Categorical Regression (Catreg), quantifies categorical data by assigning numerical values to the categories, resulting in an optimal linear regression equation for the transformed variables. Standard linear regression analysis involves minimizing the sum of squared differences between a response (dependent) variable and a weighted combination of predictors (independent) variables. Variables are typically quantitative, with (nominal) categorical data recoded to binary or contrast variables. As a result, categorical variables serve to separate groups of cases, and the technique estimates separate sets of parameters for each group. The estimated coefficients reflect how changes in the predictors affect the response. Prediction of the response is possible for any combination of predictor values.



Model Specification

Considering the functional notation, the models are specified as follows:

$$Y = f(X_1, X_2) \dots\dots\dots \text{eq (i)}$$

However, the linear function of the above notation is stated as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + U_t \dots\dots\dots \text{eq (ii)}$$

$$U_t \sim \text{idd}(0, \sigma^2)$$

Variables

- X₁ Media campaign
- X₂ Environmental education
- Y Sustainable development
- U Error term

With the OSR, R-square and ANOVA were used to affirm the reliability and fitness of the model used. The values of coefficients (β s) and p-values are used to test the level of impact and the significance respectively. However, the tolerance and level of importance were also shown.

ANALYSIS

Table 1: Socio-demographic Information and Opinion

S/N	State	Characteristics	Frequency (F)	Percentage (%)
1	Sex	Male	51	51.0
		Female	49	49.0
	Total		100	100
2	Age	18-24	6	6.0
		25-39	26	26.0
		40-59	55	55.0
		60 and above	13	13.0
	Total		100	100



3	Ethnicity	Yoruba	57	57.0
		Ibo	17	17.0
		Hausa/Fulani	14	14.0
		Others	12	12.0
	Total		100	100
4	Highest education attainment	O' level	9	9.0
		NCE/ND	8	8.0
		HND/First degree	57	57.0
		Postgraduate	19	19.0
		Quranic/Informal education	7	7.0
		Others	0	0.0
	Total		100	100
5	Occupation	Trading	33	33.0
		Public/Civil services	36	36.0
		Entrepreneur	28	28.0
		Student	3	3.0
	Total		100	100
6	To what extent is any sustainable development as regard to flooding in Osun State?	Very poor	2	2.0
		Poor	7	7.0
		Fair	64	64.0
		Good	25	25.0
		Very good	2	2.0
	Total		100	100
7	To what extent does media campaign have a significant effect on sustainable development in flood control in Osun State?	Very poor	4	4.0
		Poor	6	6.0
		Fair	7	7.0
		Good	75	75.0
		Very good	8	8.0
	Total		100	100
8	To what extent does environmental education have an effect on sustainable development in flood control in Osun State?	Very poor	5	5.0
		Poor	9	9.0
		Fair	6	6.0
		Good	71	71.0
		Very good	9	9.0
	Total		100	100

Source: Author's compilation (2021)



Comments: As indicated in Table 1, 51 out of the 100 respondents were males while females were for 49. The data needed was chiefly based on flooding as well as environmental development. The distribution of the questionnaires followed normal distribution of purposive stratified sampling technique in which 9 (9.0%) were school certificate holders, 8 (8.0%) were NCE/ND holders, while majority were graduates (57; 57.0%). Postgraduate respondents were 19 (19.0%) and others had informal and Quranic education (7; 7.0%). The modal age group of the respondents was 40-59 years accounting for 55% of the sampled respondents, followed by age group 25-39 (26; 26.0%); the senior citizens accounted for 13% of the total respondents consulted while the young ones aged between 18 and 24 were 6 out of 100 respondents across the South West Nigeria. The respondents were majorly Yoruba (57) and Ibo (17) while Hausa/Fulani were 14% and other ethnic groups represented 12 (12.0%). In terms of their occupation, 36% were public servants while trading and entrepreneur accounted for 33% and 28% out of the sampled respondents respectively.

Analysis of Objectives (Inferential Statistics)

Research Questions and Hypotheses Testing

Below are the descriptive analyses of the variables of the model and hypotheses to be examined regarding flooding, media roles and sustainable development in Osogbo, South-West Nigeria.

Hypotheses Testing

Table 2: Model Coefficients

	Standardized Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
To what extent does media campaign have a significant effect on sustainable development in Osun State, South-West Nigeria?	-.109	.160	2	.465	.629
To what extent does environmental education have a significant effect on sustainable development in Osun State, South-West Nigeria?	-.266	.139	2	3.663	.029
Dependent Variable: Sustainable development as regards flooding in Osun State, South-West Nigeria?					

Hypothesis 1

- H₀₁: Media campaign has a significant effect on sustainable development in Osun State, South-West Nigeria.
- H₁₂: Media campaign has no significant effect on sustainable development in Osun State, South-West Nigeria.



Decision: Since the P-value is 0.629 and greater than 0.05 level of significance (Table 2), null hypothesis is therefore accepted and we conclude that media campaign is statistically insignificant on sustainable development in Osun State, South-West Nigeria.

Comment: It is revealed that media campaigns are used extensively by media organizations as a panacea to sustainable development in Osun State. But conversely, its effect is not felt on general development as this study revealed.

Hypothesis 2

H₀₂: Environmental education has a significant effect on sustainable development in Osun State, South-West Nigeria.

H₁₂: Environmental education has no significant effect on sustainable development in Osun State, South-West Nigeria.

Decision: Since the P-value is 0.029 and less than 0.05 level of significance (Table 2), null hypothesis is therefore rejected and we conclude that environmental education has significant effect on sustainable development in Osun State, South West Nigeria.

Comment: It is revealed that environmental education is used extensively by media organizations as a panacea to sustainable development in Osun State, thereby positively promoting sustainable development.

Table 3: Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Partial		After Transformation	Before Transformation
To what extent does media campaign have a significant effect on sustainable development in Osun State, South-West Nigeria?	.075	.112	.108	.109	.983	1.000
To what extent does environmental education have an effect on sustainable development in Osun State, South-West Nigeria.	.251	.264	.263	.891	.983	1.000
Dependent Variable: Extent of sustainable development as regards flooding in South-West Nigeria?						

Table 3 depicts the level of importance of media campaigns and environmental education for sustainable development in Osun State. The level of importance is arranged in order of their weight to the dependent variable (extent of sustainable development as regards flooding in South-West Nigeria). However, environmental education is placed higher above media campaigns (0.891).

Reliability of the Model

Table 4: Reliability Statistics

Cronbach's Alpha ^a	Cronbach's Alpha Based on Standardized Items ^a	N of Items
.602	.622	2

Since the value is above 0.60, the model is considered good, acceptable and reliable. The model formulated ($Y = -0.109X_1 + 0.266X_2$) is reliable for analysis. However, the constant is zero.

Table 5: Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.418	.175	.187	.829

The value of $R^2 = 0.175$, that is, out of many factors that contribute to the development of the South-West, media campaigns and environmental education account for 17.5%.

Fitness of the Model

Table 6: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.489	4	1.872	1.923	.013
Residual	92.511	95	.974		
Total	100.000	99			

The ANOVA, Table 6 shows that the model is fit for prediction as the ANOVA p-value = 0.013, which is less than 0.05 level of significance.

CONCLUSION

The study was aimed at assessing the impact that media campaigns and environmental education have on flood control and sustainable development in Osun State, South West Nigeria. Evidence from the poll and analysis shows that media campaigns and environmental education have significant impact on flood control and sustainable development in Osun State. The paper has exposed the perspectives of people on the lingering issue of flooding. The findings of the study show that apart from media campaigns, environmental education should be intensified right from elementary school up to higher education level, as well as public awareness activities. It is finally concluded that the effect of media campaigns and



environmental education on flood control and sustainable development in Osun State, South-West Nigeria is positive and impactful.

RECOMMENDATIONS

Based on the critical study of related works of literature and field work analysis, it is therefore recommended that

- 1) Policy should be made and implemented on teaching environmental studies in basic schools to start the sensitization process regarding flooding management and prevention.
- 2) The media industry in Nigeria should step up their surveillance role.
- 3) Efforts should be put in place by the media in coordinating rescue mission during natural disasters.
- 4) Photographs of disaster waiting to happen, editorial features and other formats of reportage need to be employed more in disaster reportage.
- 5) Working out special advert rate, sponsorship of pages and special editions, and other forms of ethical financial assistance would motivate the media to participate more effectively. This will reduce the challenges of funding, manpower and inadequate cooperation.
- 6) In addition, it is important that the government should recognize the recommendations of the in-house media professionals, consultants and fund media, and public relations departments adequately.
- 7) Mass media institutions must play a significant role in managing the aftermath of natural disasters.
- 8) Finally, the media should make calls for action conspicuous and loud to give them the power they need to reach the right quarters.

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