Social media for disaster awareness and management in Nigeria

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Abstract

Disasters happen unexpectedly and the effects can be severe on victims and communities where it happened. During disasters, communication is vital as it ensures that people are aware of disaster occurrence and how such can be managed. Social media has gained popularity and expanded its function in recent years to become the platform that ensures that there is no information breakdown in any geography where disaster occurs. Armed with mobile devices, smartphones and mini-computers, users are now able to, without restrictions publish information about disasters, hence, creating awareness and boosting efforts channeled at managing such. This study, hinged on the social responsibility and status conferral theory, examines social media for disaster awareness and management in Nigeria. This study reviewed concepts through secondary data sources while primary data was generated through survey and questionnaire administration to 390 respondents through purposive sampling. Findings revealed that social media is highly engaged for disaster awareness and management purposes in Nigeria though there are challenges to the use of the platform; challenges such as low internet penetration, dearth of disaster trainings, weak response by disaster management agencies and circulation of false information during disasters. The study concludes that social media is a viable tool for disaster awareness and management in Nigeria but recommends that disaster management agencies should improve social media presence, engage their followers and be responsive when they are tagged during disasters. The Nigerian government should also anticipate disasters and mitigate them so that disaster impacts can be reduced.

Key Words: Disaster Awareness, Information, Management, Nigeria, Social Media

Introduction

Disasters are events that occur suddenly, and they cause damage such as loss of human life, environmental unsafety, and health services disruption. Disasters often exceed the capacity of the affected persons to contain it, hence, the need for external help to managing the situation. Disasters include events such as flood, storms, earthquake, oil spillage, wildfires, environmental degradation, pollution, terrorism, endemics, pandemics, food insecurity, displacements, and so on. Disasters, though undesired are events that are synonymous with the human society and a common challenge during disaster is that knowledge availability fluctuates tremendously as compared to normal situations (Fekolkin, 2016).

Conversely, information availability and its dissemination greatly help affected persons, communities, and organizations (within and without) in environments where these disasters happen, to adjust and explore ways of managing the unpalatable situation.

Different mediums of communication are explored by humans to primarily communicate, disseminate information, respond to, and manage disasters. Just as Bhattia (2006) notes, the use of all forms of communication arts to transmit essential knowledge to wider community is especially appreciated in the informal settings of assemblies, and special events. In old African times, the modicum for communicating the

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happening of disasters is through codes (smokes and symbols) and inter-personal communication. The advent of the print and broadcast media in Nigeria in the Mid-18th and early 19th century respectively ensured that information about events got to people quite faster. This also covered the sphere of disasters as people through publications and transmission frequencies got wind of disastrous happenings in different parts of Nigeria. The past decade has seen an increase in the use of information technology (IT) including social media platforms to make people aware of, and manage disasters.

Zhang, Fan, Yao, Hu, & Mostafavi, (2019) believe that the advent of a plethora of social media including social network services, community contents, micro-blogs have changed the landscape of disaster management considerably in recent years with possibilities for social action now becoming realities. Social media expansion has covered the sphere of disasters, and when compared to the traditional media such as the newspaper and television, the medium is considered as more advantageous in disaster communication owing to its characteristics. Characteristics such as dependability, interactivity, low-cost nature, ease-of-use, scalability, mobile, reliability, multimedia possibilities, Geographic Information Systems capacity and visualization tools all makes the social media ideal for communication during disaster, help people to respond accordingly and providing disaster warnings to communities about the crisis or hazards.

Social media can be viewed as an umbrella term for the development of online systems that enable instant communication through shared networks and technological systems (Crowe, 2012). Social media are web and/or app-based mediums of mass communication which individuals utilize to share information, ideas, and personal messages. Social media, today, is a widely used medium of communication and an essential component of lives of people across the world, Nigeria inclusive. Social media encompasses platforms such as Facebook, WhatsApp, Instagram, Twitter etc., and it offers possibilities to not only consume information but to create contents. User of social media platforms can share their opinions, experiences, and interests about different phenomenon, including the ones that deal with disasters, its awareness and management.

Social media information is timely, on-the-go, raw, unbridled, and unhindered and can help victims, families of affected persons, nearby communities, and decision makers in making appropriate decisions that are contextually accurate and productive, given the situation. Social media has the potential to organize extensive communication and strengthen the flow of information and at the same time be flexible to the changing needs of responders (Sutton 2012; Yates & Paquette, 2011). User-generated content/information through the social media is useful in emergency situation, especially when lives and properties are at stake considering its no-time wasting nature. This study seeks to examine the use of social media for disaster awareness and management in Nigeria.

Research Objectives
The objectives of this study are to:
1. Identify the social media platforms engaged in disaster awareness and management in Nigeria
2. Examine the level of engagement of social media for disaster awareness and management in Nigeria.
3. Assess the challenges associated with social media for disaster awareness and management in Nigeria
4. Identify how social media platforms can be utilized for disaster awareness and management in Nigeria

Theoretical Framework
This study adopts the Social Responsibility and Status Conferral Theories. Social responsibility theory stems from for ethics of civic accountability – one wherein individuals are accountable for fulfilling their civic duty, and their actions benefits the society (Panchama Alliance, 2022). Social Responsibility Theory (SRT) was postulated by Fred Siebert, Theodore Peterson, and Wilbur Schramm in 1956. The principle of the social responsibility theory stipulates that the press should be free to perform the functions which the libertarian theory granted it freedom to perform, although this freedom ought to be exercised with responsibility (Okunna & Omenugha, 2012). The social responsibility theory emphasizes the responsibilities of the media to the society by adequately reporting about balanced ~~about~~ issues of public affairs. The theory aligns with this study from the perspective that disasters are issues of importance to the society and as part of the responsibility of the media, these disasters can be managed by making pre and post disaster information available to the human societies.

The status conferral theory was postulated by Paul Lazarsfield and Robert Merton, and it explains that the mass media has the power to confer status (or significance) to a person, group of

people, or events (Smith, 2016). The argument here is that mass media creates a prominence for issues and people in society by making mention of such through its channels. This theory is applicable to this study as social media (a mass medium) brings information about disasters, pre or post, to its users by making such salient in the discussion of the public. Through the Hashtags, Shares and reshares, disasters trend on social media platforms and the effect is that the public, government, and responsible agencies get to pay attention to and respond accordingly.

The Concept of Social Media
Social media is simply a medium of mass communication that is social/flexible and can be owned by the users, be they individuals, groups, or formal organizations. Maya (2021) states that social media are computer-based technology that aid the sharing of thoughts, ideas and data through virtual organizations and networks. Social media internet-based gives users' speedy electronic correspondence of content, such as individual information, videos, documents, and photographs. McCay-Peet and Quan-Haase (2017) also gave an overview of social media, they defined social media as web-based services that allow individuals, communities, and organizations to collaborate, connect, interact, and build community by enabling them to create, co-create, modifies, share, and engage with user-generated content that is easily accessible. Suman & Bobby (2014) posits that the social media is Internet-based software and interfaces that allow individuals to interact with one another, exchanging details about their lives such as biographical data, professional information, personal photos, and up-to-date ideas. They simply are web-based platforms and application that turn communication into user-generated interactive dialogue between people who share a common field of experience. Social media platforms that are popular, and at the same time very relevant to this discourse, are Instagram, Facebook, Twitter, YouTube, and WhatsApp. Kakka (2018) and Biteable Blog (n.d) identified the types of social media that we have. They are listed below with examples.

- Social Networks: Facebook, Twitter, LinkedIn.
- Instant Messaging platform: WhatsApp, Telegram, Skype
- Image Sharing Networks: Instagram, Snapchat
- Video Hosting Sites: YouTube and Vimeo

- Discussion Forums: Reddit, Quora, Digg.
- Bookmarking & Content Curation Networks: Pinterest, Flipboard.
- Consumer Review Networks: Yelp, Zomato, TripAdvisor.
- Blogging & Publishing Networks: WordPress, Blogger Tumblr, Medium

Social media combines rich contents, active intelligence, and collaborative communications to create a compelling experience for users. It allows for the communicator and users on the platforms to respond to each other's communication needs. Social media has the ability to provide both interpersonal and informational interactions among members even if they are not in the same location. It helps to create an abstract environment for togetherness and engaging discussions. Social media equally facilitates knowledge transfer between people and is usually able to augment the value of knowledge through speeding up and expanding knowledge distribution (Chieh-Min, 2014). The platform helps to create knowledge flow for exchanging concepts between and among people concepts and understandings (Tsai, 2000). It links its users together and facilitates member communication and information/knowledge exchange.

Additionally, social media avails valuable data and information in a timely manner, in the shape of content updates. Audiences do not have to wait until scheduled news broadcasts on the mainstream media to receive information because reporters, citizen journalists, people within one's network, and media outlets can bring the news directly to social media platforms as social media makes its users content creators. People via their social media channels can write posts and blogs to express their thoughts on an issue (even disasters). Adventures can also be recorded and posted as a "vlog" on video hosting platforms such as YouTube and Vimeo. This capacity enables users to be active participants in the communication process as feedback can be given instantly, hence, creating a two-way conversation. Worthy of mention is 'Interconnectedness' as a character of the social media. Social media fosters a sense of interconnectedness and community by bringing people across the globe together online, without the constraint of time and geographical boundaries. This study focuses on the social networks, and the instant messaging platform called 'WhatsApp' as they are the most common in Nigeria and rightly applicable to the discourse.

Disasters: Meaning & Type

The term disaster can be used for personal or public tragedies - a catastrophic event resulting in heavy losses. Disasters are also seen as a result of inappropriately managed risk. The World Health Organization (2002) describes disaster as a sudden ecological phenomenon of sufficient magnitude to require external assistance. It is also defined as any event that occurs suddenly, which causes damage such as ecological disruption, loss of human life and deterioration of health services which exceed the capacity of the affected persons on a scale adequate to require outside help. (Landesman, 2001). The United Nation sees the phenomenon as a serious disruption of the functioning of a community or society, which involves widespread human, material, economic or environmental impacts that exceed the ability of the affected community or society to cope using its own resources. The implication of disasters is that it leaves the affected persons/communities stranded and in need of help from external entities. Disasters can either be natural or man-made, however, the four major categories of disaster that we have are:

Natural Disasters: As the name implies, are naturally occurring. The International Red Cross explains natural disasters as physical phenomena caused either by rapid or slow onset events that have immediate impacts on human health and secondary impacts causing further death and suffering. Natural disasters are measured in relation to its magnitude, intensity, speed of onset, duration, and area of extent. Examples of natural disasters are flood, storms, earthquake, and wildfires.

Man-Made Disasters: These are unfortunate events that are caused by humans which occur in or close to human settlements often caused as a result of environmental or technological emergencies. The Emergency Management of Monroe County, Florida (2022) suggests that man-made disasters have an element of human intent, negligence, or error involving a failure of a human systems. Examples of man-made disasters are accidents, oil spillage, environmental degradation & pollution.

Health Disaster: The medical dictionary describes health disasters as occurrences in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy. It is an outbreak of a contagious disease or diseases that spreads rapidly and widely. Health disasters could be epidemic - affecting a large number of people within a community, population, or region (e.g., tuberculosis, rabies, Lassa fever and yellow fever) or a pandemic - an epidemic that's spread over multiple countries or continents (e.g., covid-19, Cholera, Ebola, SARS)

Complex Disasters or Complex Humanitarian Emergencies (CHE): According to Encyclopedia Britannica, this category of disaster is caused by and results in a complicated set of social, medical, and often political circumstances. It leads to great human suffering and death and requires external assistance and aid for survival. Examples are food Insecurity, displacements, wars, and terrorism.

Disasters impact negatively on sustainable national development, and it tend to occur more frequently worldwide due to increase vulnerability of societies to hazards. One dimension to discussion around disasters in Nigeria, is that they are usually man-made, and they manifest in the form of ethno-religious crises or the quest for resource control which unfortunately results in massive loss of human lives and properties in large proportions.

Disaster Management and Stakeholders in Nigeria

Disaster management is simply the process of preparing for and responding to disasters. Disaster management is systematic in nature; it entails series of actions targeted at reducing the effect that disasters cause. Disaster management is carried out by government, government agencies, faith-based institutions, corporate organisations, individuals, humanitarian/non-profit organisations, and volunteers. Sometimes, these entities work together to manage losses that occur as a result of disasters, these are either natural, man-made or complex. The United Nations International Strategy for Disaster Management (2009) sees disaster management (also called emergency management) and defines it as the organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps. The International Federation of Red Cross (2020) notes that disaster management is about organizing and managing resources and responsibilities for dealing with all the humanitarian aspects of emergencies. A review of literatures on the subject matter shows that there are basically two stages of disaster management, the pre disaster and post disaster.

Pre-disaster stage is where potential hazards are identified, and safeguards are devised to reduce impact. This stage involves putting measures in place to minimize disaster risks and critically

creating awareness about these measures. At the pre-disaster stage, prevention/mitigation measures could be structural and nonstructural. Structural measure involves adjusting the environment and characteristics of physical buildings to curb the effects of a disaster. An example of structural preventive disaster measure includes clearing trees around a building or an environment to ensure that dangerous storms don't knock down the trees and send them crashing into homes and public buildings while nonstructural disaster mitigation measures involve amending building codes to optimize safety for all future building construction (University of Central Florida, n.d.). Also, during pre-disasters, individuals, communities, and organizations meticulously plan, evaluate actions and train to ensure readiness in the event of a disaster. Actions under this stage are fire drills and evacuation rehearsals. It must be emphasized that disasters cannot always be prevented, measures can only be put in place to mitigate the challenge. The International Red Cross submits that disaster preparedness activities embedded with risk reduction measures can prevent disaster situations and also result in saving maximum lives and livelihoods during any disaster situation, enabling the affected population to get back to normalcy within a short time period. Some other the preventive measures that can be adopted at pre-disaster stage includes (Topno, 2016).

- Forecasting weather and disaster and publicizing such through platforms like Twitter (using hashtags), Facebook and Instagram.
- Mapping crowd intensity and evaluation plans at public place.
- City mapping and construction of drainages to reduce the risk of disasters such as flood.
- Making information about precautionary measures (steps to follow) about disasters available to the public.
- Early warning systems and mapping hazard prone zones using the old and the new media.

Disaster response happens after the disaster occurs. It involves the coordination of resources (personnel, supplies and equipment) to help restore personal and environmental safety, as well as to minimize the risk of any additional damage. (United Nations Office for Disaster Risk Reduction, 2009) see disaster response as the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety, and meet the basic subsistence needs of the people affected. The Int'l Red Cross adduces that during disaster response, there is need for coordinated multi-agency response so that impact of a disaster is reduced. Activities during disaster response include rescue, evacuation, relocation, provision of food and water, first aid/emergency health care provision, disease outbreak reduction, shelter provision (temporary), decluttering of water ways to reduce flooding, reparation of essential services such telecommunications and transportation.

The next and final stage under the post-disaster management is disaster recovery. This can take a long time, sometimes years or decades (University of Central Florida, n.d.). It involves stabilizing the area and restoring all essential community functions. A good example here are North-East states of Nigeria that are primarily affected by terrorist activities in Nigeria. These areas (and communities) are yet to fully recover despite concerted efforts by the government and international humanitarian agencies. Disaster recovery goes beyond the provision of immediate relief to assist those who have suffered the full impact of a disaster and include the following activities. Disaster recovery activities involves the rebuilding of social infrastructure (homes, schools, hospitals, and roads), restoration of security and setting-up development policies and practices to avoid or mitigate similar situations in future.

Disaster management in Nigeria is managed by government agencies such as National and State-based Emergency Management Agencies, Nigerian Centre for Disease Control, Federal and State Fire Services, Federal Road Safety Corps and Nigerian Security Agencies. This asides from humanitarian agencies and faith-based organizations.

Social Media and Disaster Management: The Two-Sided Coin

Even before disaster is pronounced as such by the approved authority, the media is regarded as the first to define an event as an official disaster. This describes the power of the mass media. The social media being the go-to media today, combined with its disaster-management aligned characteristics which includes collectivity, connectivity, completeness, clarity, and collaboration (Topno, 2016) makes it a viable platform to help in the making of decisions and spreading of instantaneous information about disasters. The use of social media to aid emergency management includes steps to broadcast relevant safety information, building situational awareness and correcting misinformation. The more tractions issues get in the social media space, the more likely it is to get global attention (the #EndSARS protest as an example). Disasters that are

unattended to have tendencies of painting the government and its agencies as incompetent to the Nigerians and the world at large. The social media influences the government to prioritize disaster and risk issues. The social media gives real time information about both survivors and casualties and assists in the coordination of efforts to locate the family and friend of victims (Dave 2020).

Emergency management agencies and communities across the world have adapted social platforms to broadcast information during disasters. Every disaster is unique in its own right, but fast-paced information exchange facilitates quick help response and allows the affected population to get more prepared to face the adverse situation (Maron, 2013). Social media equally helps disaster experts to create early warning systems by giving information on risks and existing methodologies that can be adopted to design mitigation frameworks for potential disasters. Social media is a surveillance mechanism, early warning system instrument and channel for emergency management through the sending of instruction and warning alerts among people within networks. Provision of information and guidelines with social media like blogs can be used to give advice by posting information; for example, emergency telephone numbers, location of hospitals requiring blood donations, evacuation routes, among others (Lindsay, 2011).

The social media also mobilizes volunteers both during and after disasters. Through the social media, people are able to express willingness to help in times of a crisis and disasters. It further improves the disaster response by mobilizing people far away from the epicenter of the emergency to relay information given by emergency services (Wendling, Radisch, Jacobzone, 2013). Social media improve the coordination of risk assessment activities: Data from the social media assists policymakers and donor communities on how better such disasters can be managed or avoided totally.

Conversely**,** bringing social media into disasters response situations disrupt the landscape of communication. In times of disasters, different types of information find their way into the public domain; truths, half-truths, and complete falsehoods as it were. The emergency situation of disasters tends to hamper the possibility of fact-checking some of these information, hence, the possibility of acting in error is high. Emergencies require compressed information collection and processing for decision making and dissemination efforts (Kapucu, Bernan & Wang, 2008) but social media does not support this framework due to high levels of uncertainty and disruption of existing communication structures. Social media can be used to spread fraud messages of disaster aids which motivate fraudulent money transfers for relief, online cash stealing, misleading information which may create panic and chaotic situation among public during crisis (Topno, 2016).

Social media also raises issues around responsibility (Lindsay, 2011). In the midst of emergency, emergency management activities or inaction might cause injury, death, or property harm, possibly prompting litigation. Owing to the unstructured nature of public information on the social media, it is challenging to determine what data is correct and meets standard (Low, Burdon, Christensen, Duncan, Barnes, & Foo (2010). Another liability concern arises with developing public expectation that when demands for help are made through a social media channel, there may be a proper response (American Red Cross, 2011). It is almost impossible to monitor the vast amount of information made available to the public via the social platforms during disasters. For example, during the Hurricane Sandy in 2012, in the United States, Project EPIC collected more than 26 million tweets trying to exhaustively gather the overall tweet correspondences about the warning, onset, and fourteen days post hurricane. This shows that it is difficult to figure out the enormous measure of socially produced information without sufficient instruments to channel, dissect, and envision such information. Accuracy of a disaster response can equally be challenging to achieve, because in case of disasters, usefulness of such response depends on actual understanding of dynamically changing contextual conditions of the affected environment (Yates & Paquette, 2011; Ehnis & Bunker, 2012).

Information reliability is another major concern during times of disasters. Though the desire to help others is obvious, sources of information during disasters (especially at the high points) are not usually cited by social media posters. Some just simply share what was forwarded to them without knowing how the information was generated or considering potential damages such could cause. Anonymous social media profiles similarly cause information verification issues, as witnessed during the Fukushima nuclear disaster in 2011 where anonymous profiles on Twitter caused untraceable information to spread (Thomson, Ito, Suda, Isochi, Lin, Wang, Lin, Wang, Liu & Hayasaka, 2012). Another significant limitation associated with social media is their reliance upon network infrastructure. Depending on the crisis circumstances, physical harm to or overloading of the network may prevent the utilization of social

media services. Palen and Liu (2007) predicted that individuals outside the affected region would "stage" information for when the affected region came back online again.

Method of Study
This study adopts the mixed research methods. Data was generated using primary and secondary sources of data. Concepts were reviewed through consultations of academic journals, periodicals, magazines, published news articles, and other relevant literatures. The study also adopted the survey approach to gather firsthand information through the administration of the online questionnaire. Given that the scope of the study is country-wide, a sample size of 390 were drawn from the population of Nigeria to have a precision where confidence level is 95% and P=.5. The purposive sampling technique was adopted to achieve the intended sample size. The research instrument, an online questionnaire had two sections: section A dealt with the demographic distribution of the respondents while section B dealt with respondents' response measurement, using the four-point Forced Likert Scale (FLS), rating question and drop-down option questions. Distribution and responses of the respondents were manually tabulated in a frequency distribution table and presented in charts. Link to the online questionnaire was shared in designated Nigerian WhatsApp groups for acceptance of responses between May 10th and June 15th, 2022.

Results and Analysis

Table 1: Demographic Characteristics of Respondents

Variable	Variable Classification	Frequency	Percentage %
Gender	Male	182	46.6
	Female	208	53.4
Age Bracket	18-25	44	11.3
	26-30	118	30.2
	31-35	137	35.1
	36-40	48	12.3
	40 and Above	43	11.1
Occupation	Education/Academics	134	34.4
	Business/Entrepreneur	131	33.6
	Civil Servant	49	12.6
	Others	76	19.4
Academic Qualification	O' Level/WASSCE	30	8
	OND/NCE	77	19.7
	Bachelors	200	51
	MBA/Masters	74	19
	PhD	9	2.3
Location of Residence	South-South	48	12.3
	South-West	101	25.9
	North-Central	89	22.8
	North-West	51	13.1
	North-East	32	8.2
	South-East	69	17.7

According to the analysis in the table above, it is evident that the dominant gender among the respondents were female, with 53.4% (208) while 46.6% were male. Respondents also indicated their age bracket, findings revealed that 44 (11.3%) of the respondents were between 16-25 years of age, 118 (30.2%) were between ages 26-30, 137 (35.1%) were between 31-35 years of age, 48 respondents were between ages 36-40 while 43 respondents representing 11.1% were between 40years and above. The findings therefore implied that respondents were old enough to provide valuable responses on the subject matter.

Occupational statistics of respondents from the table revealed that 34.4% were into academic (students and lecturers), 33.6% (131 respondents) are entrepreneurs/businesspeople and 12.6% were civil servants.

Table 1 also presents the academic qualification of respondents in the field studies, majority were BSc/BA degree holders at 51% percentage distribution, 30 (8%) had Secondary School Leaving certificate, 77 (19.7%) respondents are Ordinary National Diploma and National Certificate of Education Holders. Masters Holders were 74 (19%) and PhD holders were 9 (2.3%). With respect to location of residence, the respondents spread across all the six geo-political zones in Nigeria; 101 respondents were domiciled in South-Western Nigeria (Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo States). This was followed by 89 respondents from North-Central Nigeria (Benue, FCT, Nasarawa, Plateau, Kwara, Kaduna Kogi and Niger States). Respondents representing South-East Nigeria was 69 (17.7%) - namely Abia, Ebonyi, Anambra, Enugu, and Imo States. Respondents from North-West Nigeria (Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara) at the time of study were 51, equaling 13.1%. Respondents from South-South (Delta, Rivers, Akwa-Ibom, Cross Rivers and Bayelsa) Nigeria were 12.3% (48 respondents). The remaining 32 respondents, equaling 8.2% were of North-East Nigeria origins.

Table 2: Summary of Responses Based on Forced Likert Scale (FLS)

S/N	Question Item	SA	A	SD	D
		Frequency (Percentage)			
1	Disaster Management Authorities in Nigeria Actively Engage Social Media to Provide Warnings About Disasters Before They Happen	42 (10.7%)	163 (41.8%)	137 (35.2%)	48 (12.3%)
2	Information About Disasters in Nigeria Enjoy Sustained Traction in the Social Media Space than Social Interest News (e.g. Scandals, Divorce, Entertainment & Sports	74 (18.9%)	185 (47.5%)	54 (13.9%)	77 (19.7%)
3	Authorities Responsible for Disaster Management in Nigeria are Very Responsive to Disaster-Related Information in the Social Media	19 (4.9%)	61 (15.6%)	195 (50%)	115 (29.5%)
4	Areas that Most Affected by Disasters in Nigeria Have Inhabitants Who are Literate and Active Social Media Users	45 (11.5%)	96 (24.6%)	64 (16.4%)	185 (47.5%)
5	Internet Penetration/Literacy, Publicity and Disaster Management Trainings by the Government Can Help to Manage Disasters in Nigeria	195 (50%)	179 (45.9%)	6 (1.6%)	10 (2.5%)
6	All Social Media Pages and Groups Cannot be Relied on for Verified Disaster Awareness & Management Information	86 (22.1%)	147 (37.7%)	39 (9.9%)	118 (30.3%)
7	Corporate Organizations Can Use their Social Media Platforms to Aid Recovery/Rebuilding Processes After National Disasters	182 (46.7%)	198 (50.8%)	3 (0.8%)	7 (1.6%)

Key: SA (Strongly Agree), A (Agree), SD (Strongly Disagree), D (Disagree)

The table above presents the frequency and percentage analysis of respondents' answer to seven-question items relating to the study using the Four-point Likert scale. Item 1 in Table Two sampled opinion on the level of engagement of social media platforms by disaster management authorities in Nigeria in the provision of warnings about disaster before they happen. 163 respondents

(equaling 41.8%) agree that disaster management authorities in Nigeria such as Emergency Management Agencies, FFS, actively engage social media to provide warnings about disasters before they happen, another 42 respondents (10.7%) strongly agreed to the statement. On the other hand, 48 respondents (12.3%) and 137 (32.2%) disagreed and strongly disagreed respectively to the statement. The is a relatively small margin of 5% between those who believed that disaster management agencies were engaging the social platforms to provide awareness about disasters or not. Question two sampled opinion to know if information about disasters enjoyed sustained traction in the social media space than social interest news such as scandals, divorce, entertainment, and sports. A combined 66.4% believes this is the case while 33.6% believes this is not the case.

Item 3 examined the opinion of respondents on the responsiveness of disaster management agencies in Nigeria to disaster related information in the social media. From the opinion sampled, respondents demonstrated that agencies in Nigeria which manage disasters are not quite responsive to information about disasters that make the rounds on the social media, with 115 respondents (29.5%) in disagreement and 195 (50%) strongly disagreeing to the statement. Data from question item 4 sought opinion on "Areas Most Affected by Disasters in Nigeria Having Inhabitants Who are Literate and Active Social Media Users." 24.6% of the respondents agreed, 11.5% strongly agreed, 47.5% disagreed and 15.4% disagreed to the statement. Disasters can happen in any location – be it in places where there are literate and active social media users or otherwise. But for the Nigerian case, through the field studies, the perception is that areas which are most affected by disasters have less literate and less active social media users.

From the data presentation of question item 5, through a combined agreement totaling 95.9%. Respondents believed that internet penetration/literacy, publicity and disaster management trainings by the Nigerian government can help to improve the management of disasters in Nigeria. Question item 6 examined if all social media pages can be relied on for disaster awareness and management information. Majority of respondents, with 59.8% are of that not all social media pages and group can be relied on for verified disaster awareness and management information. From the data presentation of question item 7, 198 respondents agree, and 182 respondents strongly agree that corporate organizations can use their social media platforms to aid recovery and rebuilding processes after national disasters. 7 respondents (equaling 1.6%) disagree to the statement, but 3 respondents (equaling 0.8%) strongly disagree.

Figure 1. Social Media in Nigeria is Engaged For What Aspect of Disaster Management
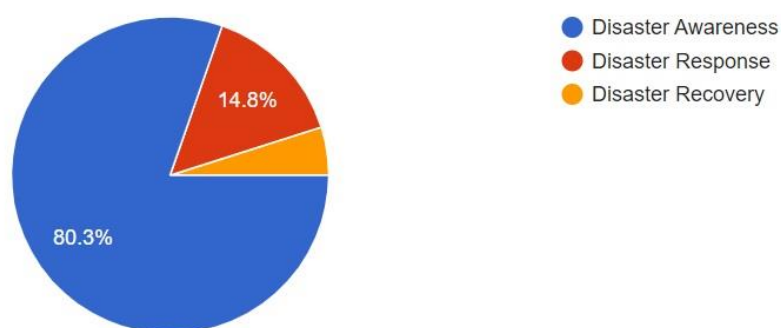

Figure 1 indicates that social media in Nigeria is utilized mostly in the area of disaster awareness, with 80.3% (equaling 313 respondents) of the respondents confirming the statement. The figure also shows that 58 respondents (14.8%) confirm that social media is used for disaster response while 4.9% are of the opinion that social media used for disaster recovery purposes.

Figure 2: What Social Media Channel do Nigerians Engage/Rely on for Timely Information About Disasters
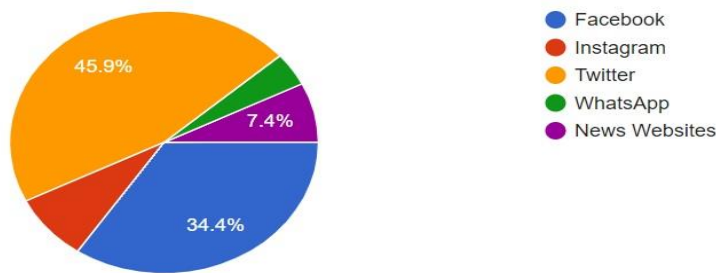

Figure 2 explains the view of respondents on the type of social media platform that Nigerians engage or rely on for time information about disasters and Twitter had the highest percentage with response at 45.9%. This is followed by Facebook with 34.4%, Instagram had 8.2%, News Websites had 7.4%, and WhatsApp had 4.1%.

Figure 3. Social Media Has Covered and Made What Type of Disaster More Popular In Nigeria
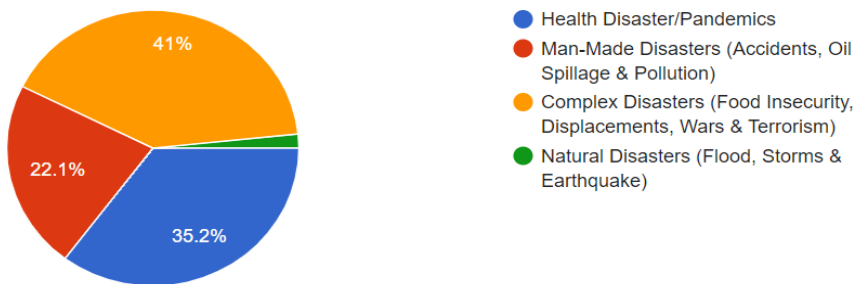
Figure 3 highlights the types of disasters which the social media made people aware of in Nigeria. Complex disasters (e.g., insecurity, terrorism, and food insecurity) ranked first on the list160 (equaling 41%) from the view of respondents as the popular in Nigeria owing to the powers of the social media. Health Disaster/Pandemics came second with 35.2% responses, Man-made Disasters (e.g., accidents, oil spillage and pollution) came third, with 22.1%. The least popular was natural disasters (e.g., flood and earthquakes), with 1.6% of the response.

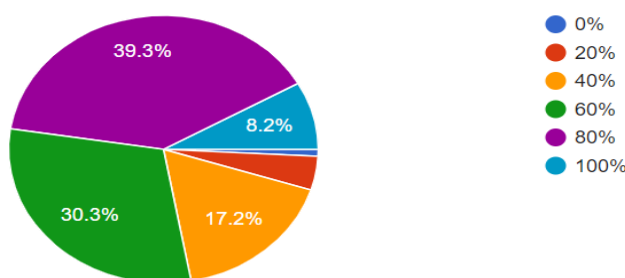**Figure 4. Ratings of Coverage/Posting of Disaster News/Information by Social Media Users in Nigeria**

Figure 4 detailed the ratings of coverage/posting of information about disasters in the social media space by users. 153 respondents, equaling 39.3% were of the opinion that coverage/posting of information about disasters in the social media space by users can be rated at 80/100. Another 118 respondents (30.3%) believed that social media users' activities with respect to the coverage/posting disaster related information can be rated 60/100, 67 respondents believed the coverage rating to be 40/100 and 32 respondents believed the rating is 100/100. Another 16 respondents believed the rating is 20/100 while 3 respondents =0.9% believed the rating is 0/100. This implies that disasters are highly covered in the social media space in Nigeria.
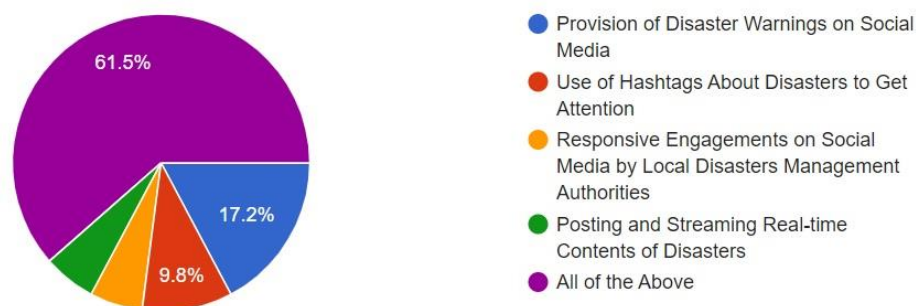
Figure 5. Social Media Can be Engaged to Create Better Awareness About Disasters in Nigeria by

● Provision of Disaster Warnings on Social Media
● Use of Hashtags About Disasters to Get Attention
● Responsive Engagements on Social Media by Local Disasters Management Authorities
● Posting and Streaming Real-time Contents of Disasters
● All of the Above

Figure 5 touched on the how social media can be used to create awareness and manage disasters in Nigeria. Majority were of the opinion that using the social platforms to provide warnings about disasters, using hashtags about disasters, responsive engagements on social media by local disaster management authorities, and posting/streaming real-time contents of disasters are ways through which the social media can be used to create awareness about and manage disasters in Nigeria.

Discussion

The study addresses three objectives centered around social media for disaster management and awareness. Objective one identified the social media platforms engaged in disaster awareness and management in Nigeria. Results showed that Twitter is the most engaged platform for disaster management and awareness in Nigeria. This cannot be far from the truth as Twitter is a hotspot where Internet users turn to seek emergency details when compared to other platforms. Additionally, Twitter's conversational support user interactions (Marwick and Boyd, 2013) and users are able to directly address other users using the symbol '@'. Tweets might even come from users from the epicenter of disasters such as earthquakes (Murthy, 2013) to gain needed attention. Tweets can also be 'retweeted', and users can follow streams of updates using the hashtag (#), e.g., #Covid19. Tweets contain media content or hyperlinks to other materials. Coverage of posting of news on disasters is generally high, based on findings of the study.

Results under objective two showed that in Nigeria, social media is highly engaged for disaster awareness purposes, when compared to disaster response and recovery. The intention is more about making people know that disaster has happened, and this can be ascribed to social and citizen journalism which social media has made possible. Abimbola (2022) further corroborates this finding by noting that news stories of disasters and emergencies break instantly on the social media. Finally, the study discovered that people are more aware of health disasters/pandemics (e.g.,

Ebola, Covid, and Lassa Fever) as well as complex disasters such as terrorism and banditry in Nigeria today, thanks to the social media. Natural disasters, with particular emphasis on flooding received the lowest percentage response in the study. However, flooding has been one of the major disasters that has plagued a number of Nigerian states in recent years, example is Lagos (July 2022), Jigawa, Bauchi and Adamawa (August 2021) and Abuja (September 2021). These flood disasters left people displaced and some with damaged properties in addition to other losses (Channels TV, 2022 and Richard 2021).

Results on the high engagement of social media platforms and the popularity of disasters in Nigeria validates the assumptions of press freedom with responsibilities, vis-à-vis the social responsibility theory (Okunna & Omenugha, 2012) and capacity of the media to make a person or an event prominent, vis-à-vis the status conferral theory (Smith, 2016). The press is responsible to the society by bringing news about disasters so that people can be aware, and steps can be taken to manage such. More importantly, through heavy engagements sharing (on platforms such as Instagram post/stories, Facebook and WhatsApp posts, and the hashtags on Twitter on social media platforms, status is conferred on disasters that are happening, hence, the government, disaster management bodies and the public see them as important and take relevant actions

The study's third objective was to assess the challenges associated with social media for disaster awareness and management in Nigeria.

Results showed that authorities responsible for disaster management in Nigeria are not so responsive to disaster-related information on the social media. This position is supported by the fact that agencies such as NEMA and Federal Fire Service have limited posts and engagements on their Twitter and Instagram handles (as of July 12th, 2022). Another evidence is the Kuje Prison (Abuja Nigeria) attack on July 5th, 2022, by a terrorist group. Videos and audios of shootings were posted online by blogs and social media users as soon as the attack started, while tagging the relevant security agency but calvary never came for over four hours and dangerous inmates escaped from the prison. Other challenges identified are issues around internet penetration and literacy. This development is in line with Data Portal (2022) reports that internet penetration in Nigeria as of February, 2022, stood at 51%, this means that almost half of the Nigerian population does not have internet access yet.

Another challenge with social media for disaster management and awareness identified in this study is the issue of fake news and disinformation on social media platforms. Indeed, not all social media posts cannot be relied on for verified disaster awareness and management information. Topno (2016) corroborates this finding through his submission that social media can be used to spread fraudulent messages of disaster aids which motivate fraudulent relief donations by giving misleading information which may create panic among public during crisis. The US Homeland Security (2018) also adds that misinformation, and false information on social media proliferate before, during and after disasters and emergencies. There are also challenges of no-publicity of impending disasters and dearth of trainings on disaster management in Nigeria at the moment.

The fourth objective was to identify how social media platforms can be utilized for disaster awareness and management in Nigeria. Results indicate that social media platforms can be heavily engaged to provide warnings about impending disasters and that responsive engagements/actions by local disaster management authorities in Nigeria will help to optimize social media for disaster awareness and management. This finding aligns with the submission of Chan (2013) & Almansoori and Habtoor (2018) that Social media can be leveraged for disaster planning and training to promote personnel training, scenario planning, collaboration, problem solving and decision making. Additionally, corporate organizations in Nigeria, through their social media handles can play big roles in the recovery and rebuilding

process after disasters. Finally, the Nigerian government, communities and corporate businesses can publicize and invest in disaster management trainings.

Conclusion

Social media platforms have changed the landscape of disaster awareness and management in Nigeria. Owing to its unique characteristics, people do not need to wait for new bulletins on the traditional media before knowing what has happened. There are now also better chances at reducing the risk disaster impacts and saving lives as neighboring communities and designated disaster management agencies are made aware of emergency situations. This study concludes that social media in Nigeria is highly engaged for disaster awareness and management purposes. Twitter is the most engaged social platform in Nigeria as it concerns disaster management and the disasters that have been made popular in Nigeria through social media platforms are health disasters (e.g., Covid and Ebola) and complex disasters (e.g., terrorism and banditry). The social responsibility and the status conferral theory are also valid in the discussions around social media for disaster awareness and management because the is responsibly free and they active disaster occurrence popular through mentions, shares and posts (tractions). There are obvious challenges plaguing social media for disaster management in Nigeria, some of which are slow or no response of disaster management agencies to disaster-related information on the social media, proliferation of fake news, dearth of trainings on disasters and weak publicity on impending disasters. More can be done by disaster management stakeholders so that social media can be optimized for disaster awareness and management in Nigeria. Finally, corporate organizations in Nigeria, through their social media handles can play big roles in the recovery and rebuilding process after disasters.

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