



**THE EFFECT OF SOCIAL MEDIA INFORMATION
DISSEMINATION AND PARTICIPATION ON FLOOD
MANAGEMENT IN NIGERIA**

by

**Aluko Folasade Abimbola
(1443111435)**

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LIST OF ABBREVIATIONS

ICT	Information and communication technology
PLS	Partial least square - structural equation modeling
SMID	Social media information dissemination
LGAs	Local government Areas
SRP	Seasonal Rainfall Prediction
SMCPS	Social media collaborative problem solving
SMDPT	Social media disaster planning and training
DPRE	Disaster preparedness
DREC	Disaster recovery
DRES	Disaster response
DREC	Disaster recovery
NEMA	National emergency management agency
OYSEMA	Oyo state emergency management agency
LASEMA	Lagos state emergency management agency
ODSEMA	Ondo state emergency management agency
EKSEMA	Ekiti state emergency management agency
OGSEMA	Ogun state emergency management agency
OSEMA	Osun state emergency management agency
NSCDC	Nigeria security and civil defense corps
FEPA	Federal environment protection agency
NiMET	Nigerian meteorological agency
TOE	Technology organization and environment
ANT	Actor network theory

NDMF	National disaster management frameworks
SRP	Seasonal rainfall prediction
ERP	Emergency response plan
SIMEX	Simulation exercises
SEMAS	State emergency management agencies
CDC	Centers for disease control
ICS	Incident command system
SMS	Short message service
CFA	Confirmatory factor analysis
PCA	Principal component analysis
AVE	Average variance extracted

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DECLARATION ASSOCIATED WITH THIS THESIS

1. **Aluko Folasade Abimbola, Dr. Hanif Suhairi Abu Bakar, Dr. Mohd Zukime Bin Mat (Dec 2020):** Evaluating The Influence Of Resident Agencies' Participation In Flood Management Via Social Media , In Nigeria. Journal of Social Sciences and Humanities: Scopus indexed Journal, Pertanika Journal of Social Sciences & Humanities (JSSH)...JSSH Vol.28(4) Dec, 2020 .
<https://doi.org/10.47836/pjssh.28.4.15>
2. **Aluko Folasade Abimbola, Dr. Hanif Suhairi Abu Bakar, Dr. Mohd Zukime Bin Mat (July 2020):** Evaluating Netizens' social media collaborative problem solving efficacy on disaster response phase of disaster management, in Nigeria. International Journal of Scientific and Research Publications, Volume 10, Issue 7, July 2020 167 , ISSN 2250-3153. **ONLINE VERSION** <http://www.ijsrp.org/e-journal.php> , **PRINT VERSION (E-book)** <http://www.ijsrp.org/print-journal.php>
3. **Aluko Folasade A, Hanif suhairi, & Sodolamu Abiodun (2015):** *Information & Communication Technology: A Better Tool For Disaster Management in Nigeria: Citizen Awareness and Participation, International Conference on Computer and Management ICCM 2015 Jaipur, India* <http://iccm2015.iaasse.org/>
4. **Aluko Folasade A, Hanif suhairi, & Sodolamu Abiodun (2015):** *Citizen's Engagement Habit and Use of ICT tools in Disaster Emergency Management: an account of flooding in Nigeria. International Journal of Advanced Studies in Computer Sciences and Engineering (IJASCSE Vol. 4,issue 12, 2015)* (<http://www.ijascse.org/>)

MEMERIKSA AGENSI PEMASTAUTIN PENYEBARAN MAKLUMAT MEDIA SOSIAL DAN PENYERTAAN DALAM PENGURUSAN BANJIR, NIGERIA.

ABSTRAK

Bencana/ pengurusan bencana dilakukan di pelbagai peringkat dan tahap yang berbeza; walau bagaimanapun, perbezaan tahap ini adalah terkait dengan komponen infrastruktur utama Teknologi Maklumat dan Komunikasi (ICT) seperti media sosial yang menjadi tumpuan kepada keberkesanan pengurusan bencana melalui penyertaan rakyat. Walau bagaimanapun, akses kepada teknologi maklumat adalah terhad bagi meningkatkan perkhidmatan pemulihan segera, maklum balas yang tepat pada masanya dan penyebaran maklumat maklum balas yang berkaitan dengan bencana dan pemulihan bencana. Walau bagaimanapun, peranan media sosial telah mencetuskan minat. Di Nigeria, teknologi komunikasi yang sedia ada bagi menyampaikan maklumat kecemasan dan bencana telah ketinggalan zaman dan berhadapan dengan kesulitan dan halangan yang serius dalam menyampaikan isu bencana di kalangan penyelidik, agensi dan mangsa bencana pengurusan banjir (kesiapsiagaan, tindak balas dan pemulihan bencana). Oleh itu, kajian ini mengkaji pengaruh pengalaman dan penyertaan penduduk media sosial (perancangan maklumat, pengumpulan, penyebaran dan penyelesaian masalah kerjasama) mengenai pengurusan bencana banjir di Ibadan, Nigeria. Kajian ini menggunakan soal selidik dan teknik pensampelan rawak berstrata untuk mengumpulkan 384 data primer daripada agensi pengurusan bencana banjir (OYSEMA, NiMET & Red Cross Society) di Ibadan, Nigeria. Data yang dikumpulkan dianalisis dengan menggunakan Pemodelan Persamaan Struktur Kuasa Dua Terkecil Separa (PLS-SEM). Dapatan menunjukkan bahawa lima daripada dua belas (12) hubungan hipotesis adalah disokong. Secara khususnya, kajian mendapati bahawa penyebaran maklumat media sosial (SMID) mempunyai peranan penting dalam pemulihan bencana banjir (DREC); perancangan dan latihan bencana media sosial (SMDPT) mempunyai pengaruh positif terhadap kesiapsiagaan bencana banjir (DPRE), maklum balas bencana (DRES) dan pemulihan bencana (DREC). Selain itu, penemuan ini juga menunjukkan kesan penting penyelesaian masalah kerjasama media sosial (SMCPS) mengenai kesiapsiagaan banjir banjir (DPRE). Oleh itu, kajian ini menyimpulkan bahawa media sosial telah menjadi medium penting terutama sekali dalam keadaan kecemasan dan pengurusan bencana. Oleh itu, kepentingan kajian ini kepada pembuat dasar alam sekitar dan agensi maklum balas kecemasan adalah bagi mewujudkan kesedaran tentang penggunaan dan fungsi organisasi media sosial dalam menyediakan maklumat yang boleh dipercayai mengenai bencana/ pengurusan bencana.

THE EFFECT OF SOCIAL MEDIA INFORMATION DISSEMINATION AND PARTICIPATION ON FLOOD MANAGEMENT IN NIGERIA

ABSTRACT

Disaster management is conducted in multilevel and different stages; however, these different stages are tied together by key infrastructural components of Information and Communication Technology (ICT) such as social media which are central to the effectiveness of disaster management through citizen's participation. In spite of this, there have been limited accesses to information technologies that enhance quick recovery services, timely response and effective dissemination of disaster-related information response and disaster recovery. However, the role of social media has created interest. In Nigeria, the available communication technology for communicating emergency and disaster information are obsolete and face serious pitfalls and setbacks in delivering disaster information among researchers, agencies and victims of flood. Therefore, this study examined the influence of social media information dissemination and participation i.e. planning and training, gathering, dissemination and collaborative problem solving) on flood disaster management in Ibadan, Nigeria. The study used a survey questionnaire and stratified random sampling technique to collect 384 primary data from flood disaster management agencies (OYSEMA, NiMET & Red-Cross Society) in Ibadan, Nigeria. The collected data were analyzed using Statistical Package for Social Sciences (SPSS) version 23 and Partial Least Square - Structural equation modelling (PLS-SEM) Smart PLS 3.2.1 software. Specifically, descriptive statistics including frequency, mean, standard deviation and multiple regression statistics were done for hypotheses testing. The result of the hypotheses testing through the path-coefficient, beta (β), t-value and p-values indicated that five (5) out of the twelve (12) hypothesized relationships were supported. Specifically, the study found that social media information dissemination (SMID) has a significant effect on flood disaster recovery (DREC) and shows a significant effect of social media collaborative problem solving (SMCPS) on flood disaster preparedness (DPRE). The finding also shows that social media disaster planning and training (SMDPT) has significant effect on flood disaster preparedness (DPRE), disaster response (DRES) and disaster recovery (DREC). Thus, the study concludes that social media has become an important tool especially during emergency situation and disaster management. Hence, important implication of this study to the environmental regulatory policy makers and emergency response agencies is to create more awareness on the usability and organizational applicability of social media in providing credible information regarding disaster/ disaster management to the populace at large.

CHAPTER 1: INTRODUCTION

1.1 Introduction

This section of the study introduced the research by presenting the background of the study, followed by the problem statements, the research questions, the research objectives, the significance of the study, definition of terms (IVs and DVs), underpinning theories of the study, scope and limitation of the study, organization and summary of the chapter.

1.2 Background of the Study

In recent times, there has been a very frequent occurrence of disaster in all part of the world and this has generated numerous attentions to the role played by information and communication technology (ICT) which could enhance timely information dissemination among the victims of any disaster and to also notify the general public (Owolabi & Ekechi, 2014; Cimellaro, 2016). As such, researchers have started raising interests in determining the role of social media in disaster management (Fraustino, Liu & Jin, 2012; Owolabi & Ekechi, 2014; Verma, et al., 2017). The importance of social media in disaster is evident in the coordinating emergency services, offering support and disseminating medical related information by the emergency staff, military personnel and the general public (Palen & Hughes, 2018; Reuter et al., 2018; Verma, et al., 2017).

The detriments of an unfolding disaster can undermine a country's ability to operate effectively and may result in serious harm to its people, structures, assets and reputation. Disasters come in various forms namely: the natural form which may be due to climatic change or environmental disorder such as flood disaster and the man-made disaster which are caused by human negligence (Owolabi & Ekechi, 2014). Seeing that the inception of disaster goes back to the start of humankind which clarifies why at whatever point, the issues of disaster and calamity administration are thought; they are generally examined in connection to humanity and its surroundings (Nwigwe & Emberga, 2014; Aluko, 2015). Disaster happens everywhere around the globe. For instance, the 2004 Indian Ocean Tsunamis in Sri Lanka and the Pakistan tremor in 2005; the northern Japan quake which happened in 2014; Tohoku earthquake and torrent in 2011 and Nigerian flood disaster in 2014 (Aluko, 2015). From America to Europe and Africa to Asia, there is no part of the world that has not encountered one type of disaster or the other. In any case, an effective disaster management is capable of undermining the cascading detriments of any kind of disasters (Aluko, 2015).

According to Owolabi & Ekechi (2014) and Odufuwa, et al., (2012), flooding is the most common disaster in Nigeria and it is commonly caused by either climatic or non-climatic factors which affect river floods, flash floods, urban floods, sewage floods, glacial lake outburst floods and coastal floods. In the historical backdrop of flooding in Nigeria, the most exceedingly devastating experience was recorded in the middle of July and October 2012 when 363 individuals lost their lives, 2.1 million individuals across ten states were dislodged and 18,282 were harmed (NEMA, 2013). The annual re-occurrence of floods in Nigeria with severe consequences on residents' lives and properties serves to outline the country's deficiency in the management of disaster especially in terms of ill-

preparedness, lack of efficient disaster management recovery and timely responses to disaster victims (Nwigwe & Emberga, 2014; Obeta, 2014). More so, collaborative measures of problem solving and planning are not implemented in Nigeria to forestall re-occurrence of floods (Aluko, 2015).

According to Zhang et al., (2019), Owolabi & Ekechi, (2014) and Yates & Partridge, (2015), disaster management can be categorized into three namely; disaster preparedness, disaster response and disaster recovery (DPRE, DRES, DREC). During the disaster preparedness phase, the focus is on preventive activities that seek to reduce risks that can lead to disaster. The disaster preparedness also entails planning and training on disaster management skills. In the disaster response stage, the focus is on the timely and swift response to managing disaster. While disaster recovery phase requires longer term planning and support to restore the situation back to normalcy (Owolabi & Ekechi, 2014). Across these three stages, social media tools can be used for different purposes which include information dissemination, disaster planning and training, collaborative problem solving and information gathering (Zhang et al., 2019 ; Owolabi & Ekechi, 2014; Yates & Partridge, 2015).

Additionally, resident's participation is an emerging arena for computer-mediated communications and it has had its implication on both informal and formal disaster management (Wilson & Tewdwr-Jones, 2020; Gordon et al., 2017). The advent of a plethora of social media including social network services, community contents and micro-blogs have changed the landscape of disaster management considerably over recent years with possibilities for social action now becoming realities. With readily available software tools such as online discussion platforms and news aggregator, organizations, government, residents of a particular area can now disseminate, acquire and analyse disaster related

information more efficiently and comprehensively. Hence, social media has the ability to prevent a disaster from spiraling out of control (Palen & Hughes, 2018; Reuter et al., 2018; Verma, et al., 2017).

In view of this, this study aims at examining the effect of social media information dissemination and participation in the management of flood disaster in Nigeria.

1.3 Problem Statement

Improving social media usage among organizations, public or private entities, residents of the country, government and government agencies, before, during and after an advent of a disaster is expected reduce information gap and increase the effectiveness of managing the disaster (Palen & Hughes, 2018; Reuter et al., 2018; Verma, et al., 2017). This is because the more engaged people are, the more they learn about how to prepare, respond and ready to recover from event of a disaster. Hence, the reason why emergency and disaster management organizations involved the general public in disaster management is to ensure that the public gets accurate and complete information (Palen & Hughes, 2018; Reuter et al., 2018; Verma, et al., 2017).

Disaster management is conducted in multilevel and different stages; however, these different stages are tied together by the key infrastructural components of disaster management (Ngamassi, et al., 2016) and information and communication technology (ICT) are central to its effectiveness (Ngamassi, et al., 2016). In spite of aforementioned, there have been limited access to information technologies that enhance quick recovery services, timely response and effective dissemination of disaster-related information in