

An Assessment of the Effects of Social Media on Disaster Management in Kenya, Case of Nairobi City County

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Abstract

Communities have incorporated Social Media in different aspects of life. Experiences gathered from disasters worldwide in the last couple of years, seem to show that Facebook may function as an essential constituent in disaster management. However, few studies have explored the effects of social media on disaster management. The overall intention of this research project was to assess the effect of Facebook social medium on disaster management in Kenya- Nairobi City County. Specifically, the research examined the effects of Facebook instant messaging on disaster management, the effects of Facebook live video coverage on disaster management and the effects of Facebook discussion forum on disaster management. This study was carried out through Survey research design and guided by the Situational Crisis Communication Theory, Agenda Setting Theory and Media Dependency Theory. The target population was 77 personnel from Red Cross Kenya Nairobi, 61 personnel from the National Disaster Management Unit (NDMU) and 39 personnel from the County Disaster Management Unit (CDMU). Purposive sampling technique was used and a sample size of 18 respondents was selected. Interview guide was used for data collection. Data was organized thematically and presented in frequency tables, charts, and percentages. The analysis pointed that Facebook on instant messaging service, discussion platforms and live video coverage allows instantaneous interaction, with a wide scope of audiences, and express contact amongst disaster managing authorities and the victims. It contributed significantly in educating the public on disasters, performing cautionary forewarning on impending dangers, collecting and communicating news around disturbed regions and notifying authorities. It also fundamentally helped in identifying relief establishments and linking them to the public and even in facilitating real-time discussions about disaster alertness and response. The discussions enhance communication on how citizens seek shelter, evacuate the area, or take other protective measures including managing post traumatic disorders. It was also instrumental in locating disaster hit regions and understanding the intensity of the disaster while optimizing recovery activities and coordinating immediate relief efforts. Through the platform, communities are able to see, take photographs, record and watch videos, and convey speedily to others information about disaster happening at their locations or source for relief. Facebook was found to convey both factual and non-factual elements of information and propaganda but with strategic absorption of information, adverse effects would be controlled. The study recommended that social media platform should be adopted in communication strategies by stakeholders in disaster management. The study also recommends that in future, scholars undertake comparative studies on the effects of social media to specific forms of disaster.

Key Words: Social Media, Disaster Management, Social Media and Disaster Management, Nairobi County, Kenya

1. BACKGROUND OF THE STUDY

Social media platforms like Facebook, Twitter, Google+, WhatsApp and LinkedIn are continuously affecting different tenets of life. Experience worldwide has revealed that social media can fundamentally support stakeholders during disaster (Zook, M., Graham, M., Shelton, T., & Gorman, S., 2010). Communication is one of the essential elements of disaster management and aided by the Social Media platforms, it becomes critical particularly when there are lots of interventions and establishments responding to a disaster within wide spread scopes (Simon, Goldberg & Adini, 2015). Facebook is a form of web grounded social media that permits operators to create and share content and information online. It is 'social' in the sense that it operates in a manner that allows users to share and interconnect with one another (Bohler-Muller & Merwe, 2011). Facebook, which was one of the first social media outfits of its nature, was launched in 2004 and today has over 600 million users globally (Bohler-Muller & Merwe, 2011). As a free socializing website, it permits users to add networks, send posts; post updates, share photos, links and videos, and contribute in clusters. The total number of Facebook users in the world is estimated to be between one and a half and two billion users as at March 2017. Kenya is position sixty-four worldwide in Facebook use by country, and position seven in Africa (Socialbakers, 2013).

Earlier studies on social media and management of disaster have frequently concentrated on the usage of the microblog Twitter in spite of the fact that Facebook has considerably more active user base globally (Gauthier, & Spence, 2015). Facebook allows interacting where users create a "profile" and become "friends" with other users. They can generate "posts" with written "statuses", upload videos, photographs or links etc. on their own and other peoples' Facebook "walls". Moreover, they can join "groups" or "like" the Facebook page of an establishment. Once they have "liked" a Facebook page, posts on that page become perceptible in the user's "newsfeed". If the page possessor has permitted 'edit', they can also remark on the posts or even type posts of their own on the page. Facebook has established its way into the lives of many to a degree that people log in to the site routinely every time they open a web browser (Denti, Barbopulos, Nilsson, Holmberg, Thulin, Wendblad & Davidson, 2012). Also many local government organizations are implementing it as a significant social media instrument. Facebook offers new openings for fast broadcasting of information and discourse with the community and thus has the potential of contributing to traditional e-government goals such as better transparency, involvement, partnership, and improved e-democracy (Mergel, 2013).

Recently, Facebook has also developed as a complementary passage for disaster communication (Coombs, 2012). Thus far, comparatively few studies have studied the content of citizen-government communication on Facebook during a disaster. For governments to be successful in their disaster communication it is imperative to distinguish what information, and in what layout, the citizens consume, generate and post to others. Studies have revealed that charitable establishments use social media typically for the purposes of public communication, activism, fundraising, and community commitment (Chih-Hui, 2015). In disaster management, social media are used for congregation of information from charitable establishments and disaster allied government agencies. Governments also use social media for distribution of facts about early warning erstwhile to disaster and placing situational updates during disaster. Primarily, disaster communication includes the general public and benevolent societies inside and outside the country (Chih-Hui, 2015). With the assumption of new Information and Communication Technologies (ICTs), the role of regular populations in disaster management becomes more visible and important

as they are active not only in being informed about a disaster, but also being tangled in information sharing that is required at pre-disaster and aftershock stages (Chih-Hui, 2015).

Also essential to successful disaster administration, is effective communication infrastructure which is more about handling the result, effect, and public discernment of a crisis (Gray, 2003). Actually, disaster communication is allied to using data to recognize hazard and in stimulating modifying actions that can lessen the danger, organize sustenance and retrieval in case a crisis happens (Ulmer, Sellnow & Seeger, 2007). Facebook is taking a continually developing portion in disaster response (Cohen, 2013). Social media innovations during disasters and emergencies was at first used by the general public to communicate, and is now being implemented by emergency organizations, governments bureaucracies and non-governmental administrations as an essential instrument for disaster management (DM).

2. STATEMENT OF THE PROBLEM

The significance of efficient communication during disaster cannot be downplayed as it can help to tackle some of the major human crises (Fearn Banks, 2007). However, the impacts of social media in solving community problems are just beginning to be understood in many parts across the globe. In disaster management, the influence of social media is not fully known rendering to the constant innovations within it. To understand Social media; one of the communication platforms in life, the researcher conducted a study on assessment of the effects of Facebook on disaster management in Kenya, case of Nairobi City County.

3. OBJECTIVES OF THE STUDY

- i. To examine the effects of Facebook instant messaging on disaster management in Kenya, case of Nairobi City County.
- ii. To examine the effects of Facebook live video coverage on disaster management in Kenya, case of Nairobi City County.
- iii. To examine the effects of Facebook group discussion forums on disaster management in Kenya, case of Nairobi City County.

4. THEORETICAL LITERATURE

4.1 The Situational Crisis Communication Theory

The Situational Crisis Communication Theory (SCCT) was hypothesized by Coombs (1998) and is hinged on crisis situation, crisis response strategies and matching of crisis situation to crisis response strategies. The crisis situation is based on the victim cluster, accidental cluster and preventable cluster; crisis response strategies focus on the words and actions the organization uses in relation to the crisis which impact on organization's reputation, while matching the crisis situation and the crisis response strategies, ensures that crisis response strategies are selected according to the perceived nature, responsibility and damage of the crisis.

Horsley and Barker (2002) synthesis model for crisis communication focuses on the various phases of crisis and observes that for each phase of crisis, specific nature of information is required to be created and delivered to the organization stakeholders. Hence the pre-crisis phase involves planning for the likely crisis; initial phase communication involves rapid communication to the stakeholders with the aim of conveying empathy and reassurance. During the crisis maintenance phase, communication is aimed at updating stakeholders on ongoing crisis and on how the crisis is being controlled. Crisis resolution phase involve continued communication to the stakeholders

and victims of the crisis, while the crisis evaluation phase focuses on the evaluation of the effectiveness of crisis response by the organization and other stakeholders to determine if it was effective. The researcher observes that for an understanding of the support accorded by this theory to the study, it was imperative to appreciate the disaster management cycle, herein referred to as the crisis.

4.2 The Agenda setting theory

Rendering to this model, individuals get signals to the comparative significance of numerous themes grounded on the weight accorded to them in mass media (McCombs & Shaw, 1993). Transferring this to the innovations platforms on social media, it can be observed that social media particularly strengthens conventional media (Asur, Huberman, Szabo and Wang 2011), over and above regulating its power by stimulating citizen reporting (Meraz, 2009). In disseminating disaster crises messages, social media has the power to amplify the effects of traditional media thus making the issue salient for many. On the other hand, the effect of extensive blogging and tweeting of conspiracy theories can give undue prominence to harmful ideas. For example, during the 2009 H1N1 pandemic, links to both quality news websites and poor quality blogs were frequently posted on Twitter (Szomszor, Kostkova & St Louis, 2011). This theory supports the study in the aspect that social media can stimulate particular areas of discussion on available platforms during disaster.

4.3 Media dependency theory

This theory conceptualizes the influence of media on addressees and of the communications amid media, spectators, and societal arrangements. It was brought to the fore in framework by the American communications researchers; Sandra Ball Rokeach and Melvin DeFleur in 1976 (Ball Rokeach & DeFleur, 1976). The concept is based in conventional sociological works postulating that broadcasters and their viewer sought to be considered in the setting of superior social arrangements. Media dependence philosophy bonds together the interconnectedness of comprehensive social structures, media, and the entity into a broad explanation of media consequences. Essentially, the elementary dependence premise posits that the more an individual hinge on media to solve needs, the more central it will be in their life, hence the more effects media impact on a person (Ognyanova & Ball Rokeach, 2015).

This model perceives of dependency as an association wherein the satisfaction of one entity's requirements and objectives is dependent on the properties of another. A central emphasis of the model is the connection amid media and viewers. In developed and information based civilizations, folks incline towards a reliance on the media on the way to fulfill a diversity of their desires, which can escalate from a need for information on a politician's strategy loci, to a need for recreation and showbiz.

At large, the degree of the media's power is connected to the amount of dependency of folks and social arrangements on the media. Two of the simple suggestions put forward by Ball-Rokeach and DeFleur comprise indicate that the greater the array of social purposes accomplished for an audience by a medium, the greater the audience's reliance on that medium, and the greater the unsteadiness of a civilization and the greater the audience's dependency on the media, the greater the potential effects of the media on the audience.

There are conceivably three forms of effects that result from an audience's reliance on the media which include; cognitive, affective, and behavioral. Cognitive effects are variations in an

audience’s approaches, dogmas, and ideals, as well as variations carried around by the media in its part in civilizations “agenda setting.” Affective effects comprise of, for example, the growth of emotional state of distress and nervousness about living in given areas as a consequence of overexposure to newscast information on cruel proceedings in such areas. To exemplify a behavioral effect is “deactivation,” which happens when individual associates of an audience desist from taking certain engagements that they would have taken occupation on had they not been exposed to certain messages from the media. Not voting in political elections may be such an effect.

5. CONCEPTUAL FRAMEWORK

Below is conceptual structure set in general viewpoints and principles taken from independent and dependent variables.

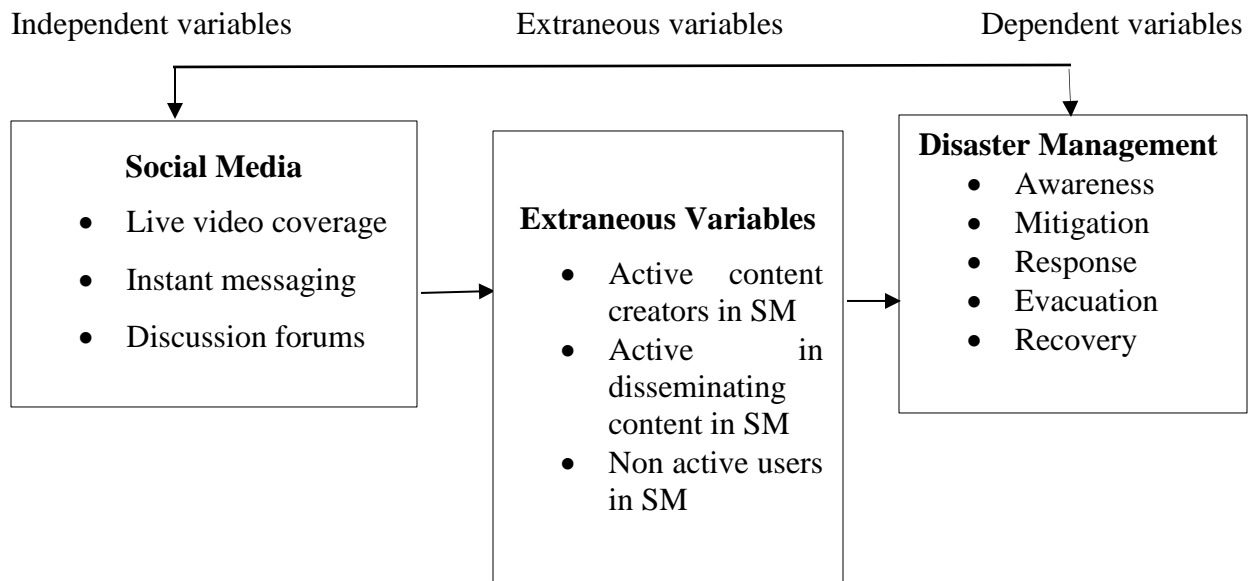


Figure 1: Conceptual Framework

6. RESEARCH METHODOLOGY

This study used a survey research design since it is appropriate for studying people’s opinions and attitudes through qualitative data collection (Bordens & Abott, 2002). This qualitative research design allowed the collection of qualitative data from the respondents. The area of study was Nairobi City County. This is because Nairobi has encountered varied disasters ranging from terrorist attacks, fires and collapse of buildings. The City also has a sizable section of the population using Facebook and a rich data is expected from the location.

The target population of this study was 177 individuals as shown in the table below. The persons targeted were in low, middle and high management positions. The target population was 77 personnel from Kenya Red Cross Kenya Nairobi, 61 personnel from National Disaster Management Unit (NDMU) and 39 personnel from County Disaster Management Unit (CDMU) yielding the total of 177 personnel. Purposive sampling technique was used to select a sample size of 18 personnel from the units of disaster management. Purposive sampling technique was chosen

because it allowed the researcher to collect data from respondents rich in required information and at their convenient time. The respondents were drawn from Emergency operations sections of the entities.

The study used interview guides to collect qualitative data from Kenya Red Cross, NDMU and CDMU personnel. Interview guide was used to collect qualitative data in line with the study objectives and for its appropriateness to collect data in a survey research design (Burns and Grove, 2009). Data was recorded using a tape recorder. The original schedule for the in-depth interview was scheduled for 18 participants for approximately 40 minutes each. After the transcription, the data was planned and analyzed using content analysis in a thematic data analysis process. The researcher identified themes, to present results and make interpretations. Content analysis was conducted and qualitative data presented in textual form. Specifically, the effects of social media on disaster management were analyzed and presented in a narrative form, because it involved qualitative data around people's opinions, feelings and attitudes. Parts of the results were presented in charts, percentages and tables.

7. DATA ANALYSIS RESULTS

7.1 Effects of Facebook instant messaging on disaster management in Kenya

The study conducted the interview to examine the effects of Facebook instant messaging on disaster management in Kenya, the case of Nairobi City County. Figure 4.5 indicates responses of participants when asked how often their organizations use Facebook instant messaging service in disaster management.



Figure 2: Often use of Facebook instant messaging in DM

The result shows that a significant number of the organizations in which participant work for use Facebook instant messaging service in disaster management most of the time. This finding is

significant in this research study because there is a substantial level of evidence that organizations do use social networking in managing disasters or crisis.

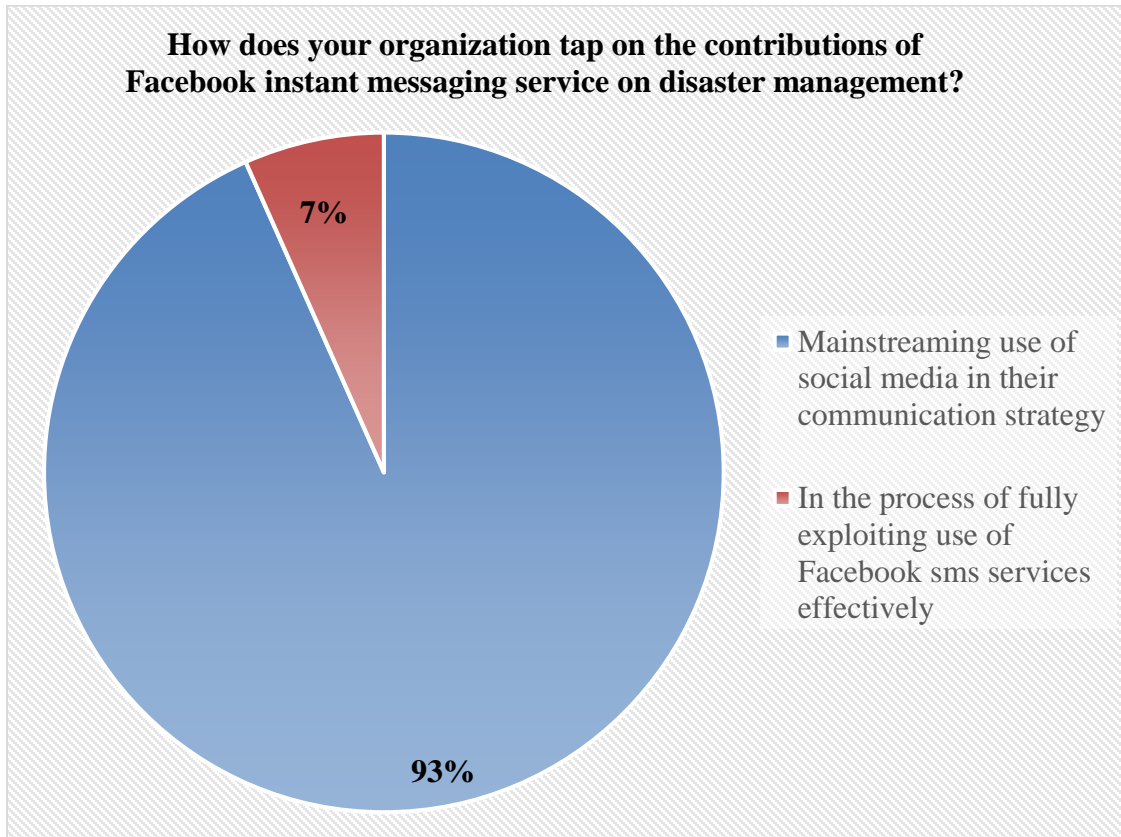


Figure 3: Organizations tap on contributions of Facebook

This research finding indicates that few organizations are in the process of fully exploiting the use of Facebook SMS services. Most of the organizations are mainstreaming use of social media in their communication strategy. The idea is powerful because a critical mass of aid agencies and people affected by disasters are already using Facebook. Groups like the Red Cross already coordinate donations and relief efforts as best they can on the social network; at the same time, when disaster victims can grab just a few minutes on the internet, they often spend them on Facebook for guidance or the latest on the situation. The ‘crisis hub’ will help channel them all into the same space and eventually help in coordination and recovery.

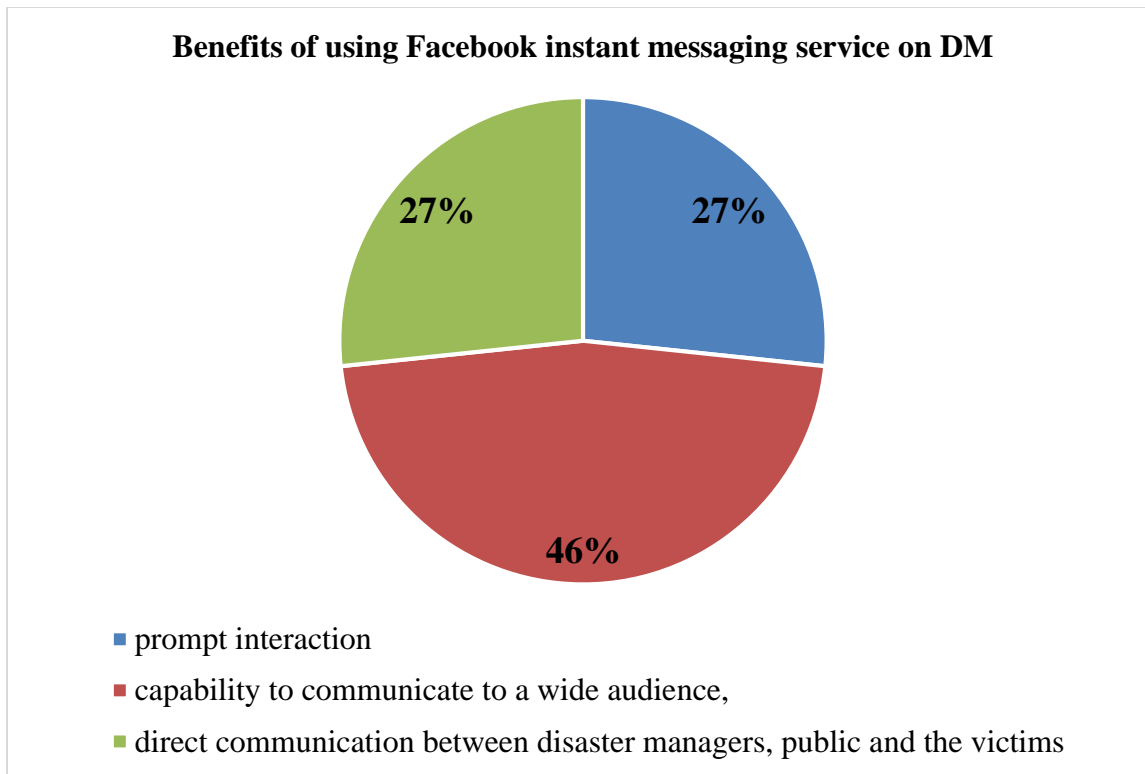
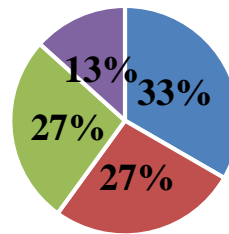


Figure 4: Benefits of using Facebook instant messaging on DM

The findings demonstrate that there are three benefits of using Facebook instant messaging service: prompt interaction, capability to communicate to wide audience, and direct communication between disaster managers, public and the victims. However, direct communication was perceived as most important benefit of using instant messaging service since giving and getting instant feedback would essentially provide ease to any disaster management. Facebook's official instant messaging app has recently been made over to deliver a faster, cleaner service and interface. It's much like WhatsApp (as are most of the apps on this list), but Messenger instantly connects to all of your Facebook contacts, making it one of the most convenient messaging apps.

Challenges the organizations face at using Facebook instant messaging service in DM



- Propaganda misleading people on the ongoing activities
- Loss of confidential information
- Lack of constant flow of communication resulting to chaos and confusion
- obtaining dependable, precise, and apt geospatial statistics is always an uphill task

Figure 5: Challenges in using Facebook instant messaging service in DM

The results above show how the participants perceived the challenges facing the organizations using Facebook instant messaging service. Most participants perceived access to dependable geospatial statistics from the Facebook as the most challenging. With any complex platform in social media platforms, though, there is always a catch. Displaying chronological information only requires a server to grab the last few dozen pieces of a user's activity, displaying geospatial information requires grabbing all the activity associated with any given user. Facebook also has problem of generating constant flow of information and this often results in confusion and chaos, as it has no push notification capabilities. Facebook is often associated with the challenge of keeping information private and confidential. Facebook has internal control mechanism of what can be shown to the members of public. Those controls, however, are not capable of limiting how those who have received information may use it, particularly outside the Facebook Service.” Therefore, Facebook users are given the freedom to access all information that is available on the social networking website. Beside breach of privacy, Facebook is full of propaganda information and it is difficult to establish the truth about disaster reporting.

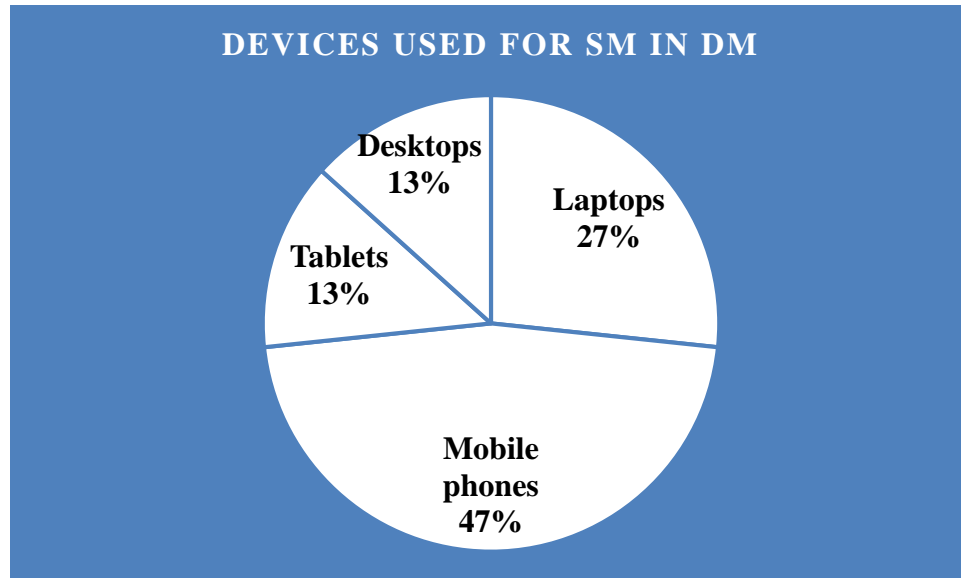


Figure 6: Media devices used

The findings above indicate that social media is mostly accessed through mobile phones due to its unique features – portability, affordability, and navigability. The availability of mobile phone devices makes it more efficient to use Facebook as a disaster management technique because many people can report and get response with the urgency it deserves.

7.2 Effects of Live Facebook video coverage and disaster management in Kenya

The study conducted an interview to examine the effect of Facebook live video coverage on disaster management in Kenya, the case of Nairobi City County and the findings reported in the presentation below.

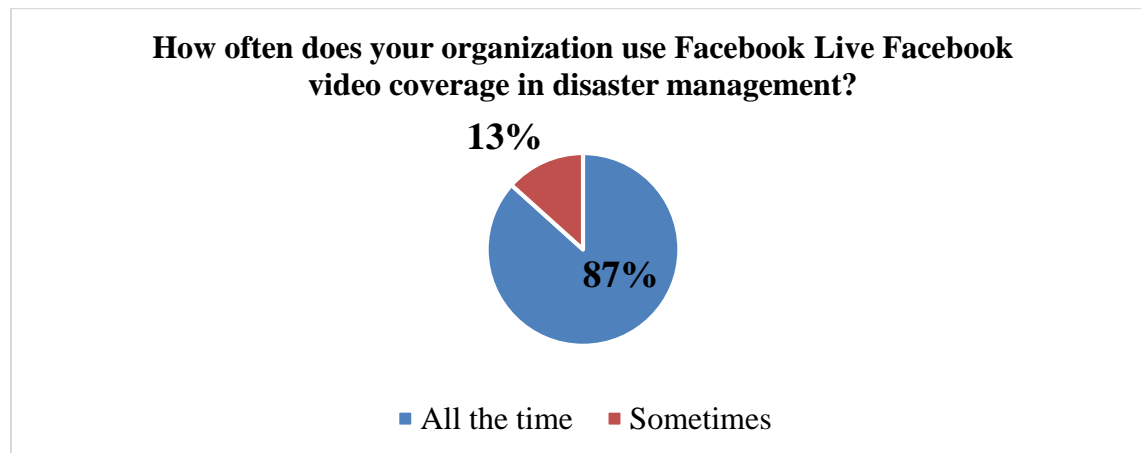


Figure 7: How often is Facebook video coverage used?

Findings were that most organizations are using Facebook Live video coverage in disaster management. This Facebook feature is being used to provide real-time visual information regarding the potential of or the current disaster areas. The visual data can help the responsible organizations to gauge and marshal the required resources sufficient for disaster management.

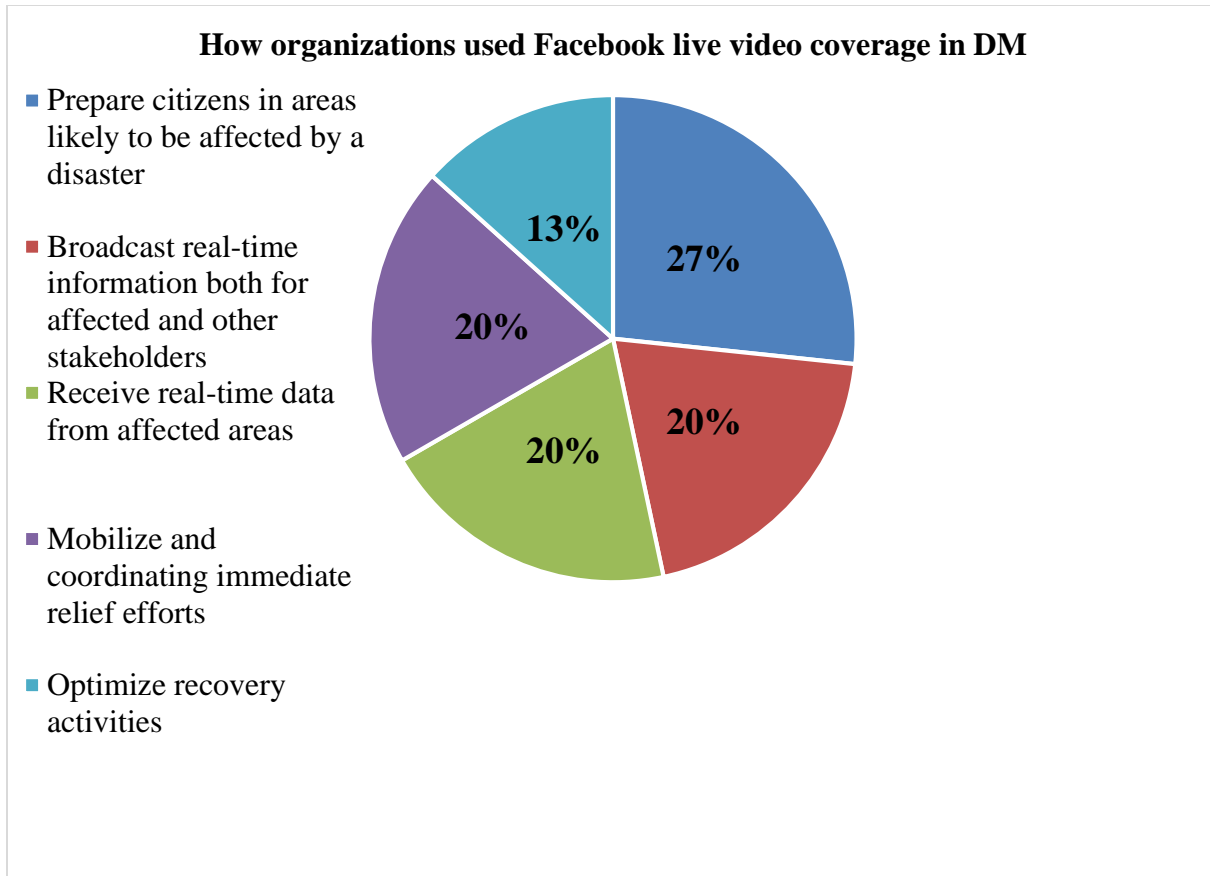


Figure 8: Using Facebook live video coverage

Figure 8 is consistent with this finding as it shows how the organizations are using Facebook live video coverage. Besides receiving and broadcasting real-time information, Facebook live video coverage prepares citizens in areas likely to be affected by disaster and those in the affected areas. It was also found to aid in mobilizing and coordinating immediate relief support while optimizing recovery activities.

7.3 Effects of Facebook group discussion forums on disaster management in Kenya

The study conducted the interview to examine the effect of Facebook group discussion forums on disaster management in Kenya, the case of Nairobi City County and the findings shown in the items below.

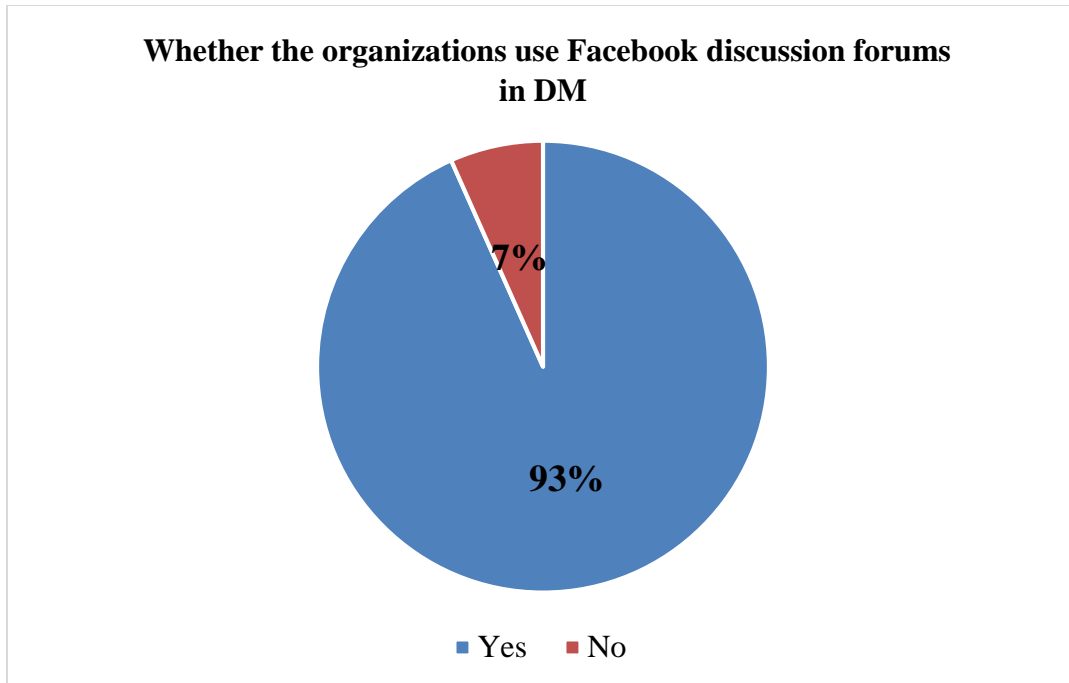


Figure 9: Whether organizations use discussion forums

Findings indicates that many organizations are using discussion forums in managing disasters. The e-Forums are moderated, webinar discussion forums that provide an opportunity for participants and the emergency management community to discuss matters of interest on national preparedness training. These forums are free of charge and available to anyone who wishes to participate.

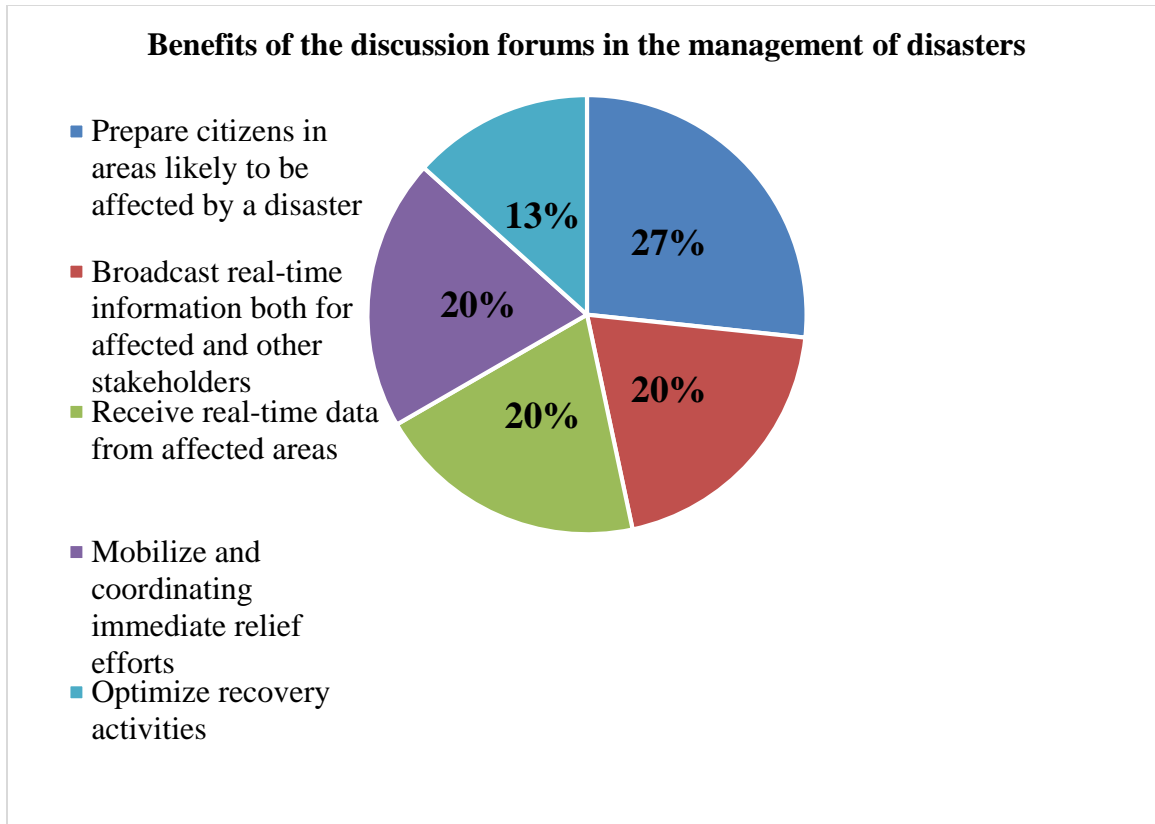


Figure 10: Benefits of discussion forums

This Facebook feature is being used to provide an avenue for engaging the people on disasters. Discussion forums help in preparing citizens in areas prone to disasters and optimize recovery processes. The organizations for managing disasters are using Facebook discussion forums to mobilize and coordinate immediate relief efforts. In disaster management, community forums are increasingly seen as reliable, authoritative sources of information both by community insiders and by outsiders. They show how a loosely connected group of people can work together in Facebook groups on a grave topic to provide accurate results.

8. SUMMARY OF THE FINDINGS

8.1 The effects of Facebook instant messaging service on DM in Kenya

The first objective was to examine the effects of Facebook instant messaging service on disaster management in Kenya, case of Nairobi City County. The interviewees indicated instant messaging service allows prompt interaction, capability to communicate to a wide audience, and direct communication between disaster managers, public and the victims. Regarding the challenges facing usage of instant messaging service in disaster management, the respondents indicated that obtaining dependable, precise, and apt geospatial statistics is always an uphill task, especially in situations where disasters arise precipitously. Further, it was noted that propaganda was sent out hence misleading people on the ongoing activities, loss of confidential information was also reported while lack of continuous flow of communication results to chaos and confusion. Whenever obtained, information is utilized in making knowledgeable choices about the focus of responsiveness. It is also used to allocate limited supplies. The interviewees highlighted cell phones, tablets, laptops and desktops as main social media devices used to access the internet and

to relay and retrieve messages during disaster management. Cell phones were the mostly used. They further outlined strategies to strengthen this instant messaging service during disaster management to include collaborative and coordinated response to the disaster among all the Stakeholders. There should be an integration of social communication into national planning, policies and programs in development and humanitarian assistance.

8.2 The effects of Facebook live video coverage on DM in Kenya

The second objective was to examine the effect of Facebook live video coverage on disaster management in Kenya, case of Nairobi City County. The interviewees stated that live video coverage is important when tracing disaster and understanding its intensity. Further the interviewees acknowledged using cell phones, tablets, laptops and desktops as main social media devices used to access the internet, generate live videos and share during disaster management. They further indicated that live video coverage has both benefits and disadvantages due to the various kinds of information transmitted. Pictures and videos taken are rapidly posted to others on the happenings at various and distant locales. Interviewees were asked to show how they help filter genuine messages from propaganda during crisis management. The interviewees indicated that they put into consideration source of information, authorities relaying the information and confirming the same news from other dependable social media platforms, government sources, and the citizens and visiting the affected areas. Regarding clarity of videos received, majority of the respondents indicated that quality of videos was good and usable.

8.3 The effects of Facebook group discussion forums on DM in Kenya

The third objective was to examine the effect of Facebook group discussion forums on disaster management in Kenya, case of Nairobi City County. Discussion forums seemed to perform a dynamic function in educating the public by receiving and broadcasting real-time information, mobilizing and coordinating immediate relief efforts and optimizing recovery activities. Discussion forums helped to issue warnings that recommend to citizens that they seek shelter, evacuate from potentially troubled environs, or take other protective courses. On the question regarding the challenges facing usage of group discussion forums in disaster management, majority of the respondents indicated that reliability, accuracy, and timely geospatial data impeded disaster response, especially in states where disasters happen fast. Other discussions happen in LinkedIn, chat rooms, YouTube, blogs and Twitter. They further indicated that discussion forums can help in the crowd sourcing and fund raising to help victims during disaster, where netizens are requested to support the victims in terms of shelter, food and medication. Discussion forums linked disaster management authorities, netizens, government authorities and victims.

9. CONCLUSION

Based on research findings Facebook has re-defined communication in the contemporary world. Facebook instant messaging, live video coverage and discussion forums help in social networking and it has made it possible for communities to communicate in large numbers anywhere on earth when and wherever disasters have occurred. It has demonstrated to be an efficient and easy way to keep in touch and convey information in times of disaster.

The Facebook platform has proven an essential communication network capable of reaching millions from their homes, disaster wrecked areas and governments and relief agencies offices. People turn to Facebook to contact friends on text, post photos and videos and share stories in discussion forums and the same is replicated during disaster management.


However, Facebook cannot and should not supersede current approaches to disaster management communication strategies or replace existing infrastructure, but if managed strategically, it can be used to reinforce contemporary systems. There is a tendency to sensationalize information on social media making basic information misconstrued to propaganda, misleading people with regard to ongoing activities. In the process there is loss of information and victims may fail to be informed about revised safety measures. Eventually, lack of constant flow of communication may or leads to chaos and confusion. This study came in times when social media technologies should be deployed while developing meaningful metrics of their effectiveness and of the accurateness and helpfulness of the information relayed. Facebook should well be a part of social media to enhance communication strategies, thereby substantively growing the capacity to prepare for, respond to, and recover from disastrous events. The findings of this study are consistent with earlier studies.

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