

AN EXPLORATORY STUDY ON THE USE OF SOCIAL MEDIA AS A DISASTER MANAGEMENT TOOL IN INDIA

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ABSTRACT

Owing to the increasing popularity of these social media platforms, their usage is also expanding significantly. Since the rise of social media, various academicians and practitioners have advocated the importance and use of social media in many areas, particularly disaster resilience. This case firstly provides detail about how help poured in through social media to the flood victims in Kerala from India and even across the world. It further focuses on the role that media can played during the time of Kerala Floods in India and how thousands of Indian citizens used mobile phone technology and social media platforms to mobilize the relief efforts. At last it discusses an insight from experts about the role played by social media in rescue operations and its positive impact. Overall, this study provides a better understanding about the role social media can play in natural disaster resilience in Indian context.

Keywords: Communication, Disaster Management, Google forms, Kerala Floods, , National media, Newspaper,, Resilience, Rescue and Relief, Social Media, Websites,

1. INTRODUCTION

1.1 Natural Disasters

A natural disaster is the effect of a natural hazard (e.g., flood, tornado, hurricane, volcanic eruption, earthquake, heat wave or landslide). It leads to financial, environmental or human losses. Natural disasters come without warning and they take lives of tens, hundreds and thousands of people. The resulting loss depends on the vulnerability of the affected population to resist the hazard, also called their resilience. If these disasters continue it would be a great danger for the earth. This understanding is concentrated in the formulation that disasters occur when hazards meet vulnerability. Thus a natural hazard will not result in a natural disaster in areas without vulnerability, e.g. strong earthquakes in uninhabited areas (Kimberly 2003; Tuscaloosa, 2003).

The term natural has consequently been disputed because the events simply are not hazards or disasters without human involvement. Due to natural disasters there is an increased communication since people seek to contact family and friends in the disasters zone, and seek information regarding food, shelter and transportation (Lee and Bui 2000). Social media has played a significant role in disseminating information about these disasters by allowing people to share information and ask for help (Kelly 1999; Shaluf et al. 2003).

India's southern state of Kerala suffered its worst monsoon flooding in a century, with more than one million people displaced, and more than 400 reported deaths in the past two weeks. Aid agencies and government groups had set up more than 4,000 relief camps, while rescue personnel are made their way to submerged villages in helicopters and boats, bringing supplies, and evacuating those they can find. Weeks of heavy rainfall had caused dams to open their floodgates, triggered landslides in the mountains, and swamped the coastal regions of Kerala. Only in recent days floodwaters begun to recede, allowing more access for aid workers and rescuers.

1.2 Digital Space

Digital space is no more just a platform to browse for research or exchanging emails or chatting on social media. It has become a source of information. In recent years, it has become a medium of rapid communication, especially during disasters, be it natural or human created. With the increased rate of disasters around the world, we are witnessing the imperative role of Digital platforms (Alexander, 200 Coppola, 2011). It just doesn't spread awareness among people; it is a vital tool aiding government and rescue teams to get into action with a much exact location, know ground reality, fetching information and so on (Kaplan and Haenlein 2010).

It has come to aid at every stage of disaster management:

- 1.2.1 Rescue Stage: During Uttarakhand disaster, widely used messaging application, WhatsApp was used by stranded people to locate a spot.
- 1.2.2 Rehabilitation: During Chennai floods 2015, social media played a significant role by coming up with 'Chennai Flooding safety check' and disseminating information such as boat vehicle availability.
- 1.2.3 Relief: Facebook allows mapping for lack of medicines, food and other things required for relief purpose. This helps NGO and public-spirited individual to supply the materials needed at the relief site.

1.3 Social Media and Natural Disaster

Social media are also becoming vital to recovery efforts after crises, when infrastructure must be rebuilt and stress management is critical (Boyd and Ellison 2008). The extensive reach of social networks allows people who are recovering from disasters to rapidly connect with needed resources. There are alot of groups in the most popular social networking sites, allowing individuals involved in various aspects of emergency awareness and preparedness to connect, discuss, and share knowledge in specific fields (Bowman et al. 2007).

Online social networking services and social media like Facebook, Twitter, Google+, Etc. can act and try to solve many problems during natural disasters. During disasters all the conventional communications generally stop functioning at this time interval while social media or networking services stay active (Coburn et al, 1994). Online social networks allow the establishment of global relationships that are domain related or can be based on some need shared by the participants. They have investigated whether or not the social network paradigm can be used to enable individuals and organizations to collaborate in mutually beneficial ways, in all stages of emergency management: mitigation, preparedness, response and recovery (Dennis and Valacich, 1999).

II. REVIEW OF LITERATURE:

The use of social media in disaster situations has been investigated in recent years using different examples. Studies are differentiated by a focus on social media usage within organisations, within or by communities, and by individuals (Lichterman, 2000).

Communication technologies make volunteers more visible and increase the space for participation. The provision of information is changing: predominantly flyers and posters in 2001; increased information hubs in the form of websites (online variant) at emergency accommodation (offline variant) in 2005 (Liu and Palen, 2007).

The internet has significantly accelerated the speed with which people and information converge in the event of a disaster. The number of people dealing with a disaster, and the spatial distance between them, are fundamentally limitless. Furthermore, there is little evidence of role-based behaviour in online activities: the emphasis is on interaction (Hughes et al., 2008). Social media allow a local presentation of events, give individuals the opportunity to become aware of their situation, and counterbalance mass news coverage. The use of social media in developing countries can be problematic, as this is frequently the reserve of only a small elite (Murthy and Longwell, 2013).

Though social media is still in innovative stage, yet according to Jeannette Sutton, social media is a crucial part of disaster preparedness planning but the public should know how to use social media effectively to get information from web and also to float relevant information to the society (Maron, 2013).

During emergencies and disasters, social media becomes an important means of communication. The use of social media has been used widely in many disasters like Great East Japan Tsunami (2011), Mount Merapi Eruption in Indonesia (2010), Indian Ocean Tsunami (2004) and Chennai floods (2015). Social media has five characteristics in disaster management which includes collectivity, connectivity, completeness, clarity and collaboration. It is the first-hand reporting of news, a tool for updates and sharing it instantly with the public. It is also known as „backchannel“ communication when the public is engaged in discussion and provides feedback. Social media is active even when the other modes of communication fail (Annamalai, Koay, & Lee, 2014).

Information exchange through social media is pivotal in tracking with accurate hashtags and keywords (Harihar, 2015). Social media enables to take important decision and actions during disaster, accuracy and timeliness of ground information is necessary. There is a shift in the motive of social media from keeping in touch with family, friends and colleagues to sharing information and interaction through internet. During the Chennai flood, J&K floods, Nepal earthquake, Uttarakhand flash flood, social media such as Facebook and Twitter were full of post seeking help by displaying vital information's of affected areas, flashing emergency numbers to get information, spreading awareness, channel of information exchange, seeking support, gather news about disaster (Pradnya, 2015).

Disaster mitigation and rehabilitation of victims became easy through social networking. Locating dear one and their safety became easy through Facebook's special feature –Safety Check. This was activated during

2011 Japan earthquake and was used during Nepal earthquake also, where users located near disaster site can mark themselves safe and notify their friends and relatives. Twitter's Alert feature started two way communications as seen during Nepal earthquake. During Kashmir floods (2014), automated SOS service for rescue operations was used by army. Twitter channelized the SOS information using twitter feed as hashtag information about the place (#kashmirfloods) having separate code that separated SOS tweets. The social media was used creatively to channelize relief material. (Saleem, 2015). Media strategy is required by the government to filter the information regarding damages and relief measures (Insight, 2015).

III. RESEARCH OBJECTIVES:

- 3.1 To understand the role of social media in rescue operations.
- 3.2 To evaluate the effectiveness of social media and its positive impact on rescue and relief operations.

IV.METHODOLOGY:

The aim of the study is to draw conclusions from individual observations, applying them to general contexts, and to generalise from results, following the principle of Social media in disaster management 205 qualitative induction. Any feature discovered will be transferred to existing rules and existing knowledge repositories. This study uses content analysis, semi structured style of interviews with army rescue officers, survivors who were affected by the Kerala floods and used/witnessed the impact of social media in mobilizing relief ventures.

V.FINDINGS:

Kerala witnessed the most disastrous calamities of all times last year. The magnitude of the downpour was such that man was left helpless and wailing for life. Death was glaring at the masses alike and the fear of losing life gripped the minds for several days. People were ready to leave everything hard earned for their life and had to bear the brunt of mismanagement of natural resources through the ages. The flood was too heavy that major dams which reserved water had to be opened to avoid impending destruction of four districts leaving no trace of it behind. It was a life and death situation which brought the masses together by joining hands to reach the needy in distress.

Thanks to the technology that was developed for random purposes which transformed into life saving platforms in that hour. It was a virtual army of people across the globe that helped invaluablely to face the tragedy holding hope in the time of despair. We saw the world coming into being one.

Here, the results of the content analysis and interviews are presented with regard to the mentioned main mediums (Whatsapp, Facebook, Twitter, Google and Donations over Digital Space) and their coherences.

4.1 Whatsapp

Until then, Whatsapp had a role of communication medium for work and casual matters. Its role in public life transformed into a rescue application by all means. A intersection point of information during distress connecting the helping and needy hands.

Hours after Kerala saw massive water running through the street people made several WhatsApp groups helping the rescuers by giving information to locate people stranded in several places several rescuers joint such WhatsApp groups and share the location that can be approached for any kind of help during the crisis people started informing them and this eased the rescuers saving the people help reached at the right spot with the advantage of share location feature of WhatsApp the benefit of the feature is that its locate the mobile phone with precision with the help of GPS navigation a group of young people also created a similar app lifehunterz.com to find people in distress

One such group created in Tamil Nadu stand out in the way it functions for the people of Kerala. Darez Ahmed, state mission director of National Health Mission Tamil Nadu created a WhatsApp group Kerala floods which soon turned out to be the states life line an unprecedented calamity in recent history the young IAS officer himself a doctor and a native of Manjeri Malappuram district of Kerala responded to a distressed message from the Kottayam Government Medical College which had run direly short of medical oxygen flood waters had inundated the interstate roots used by trucks ferrying medical supplies to Kerala Mr Ahmed and his team mobilized oxygen from Tirunelveli, Salem and Kanyakumari district which helped doctors sustain critically ill patients in Thrissur Kottayam and Alapuzha medical colleges.

The WhatsApp groups soon became the Gateway of relief materials from other states too. Officials coordinating relief in Maharashtra, Odisha, Gujarat , Andhra Pradesh, Railway officials and Kerala Civil servants from the rest of India joined the group because it was easier to respond to requirements immediately this way. Kallushappu (toddy shop), a WhatsApp group of techies, initiated the development of another web application, keralafloodrescue.com, to address this concern. The group put verified information about different resources on Google Maps so that people can click on some buttons and get the information.

Johann Binny Kuruvilla, a travel blogger, was one of many volunteers. He put in 14-hour shifts at the District Emergency Operations Center in Ernakulam, Kochi. The first thing he did, was to harness the power of Whatsapp, a critical platform for dispensing information in India. He joined five key Whatsapp groups with hundreds of members who were coordinating rescue and relief efforts. He sent them his number and mentioned that he would be in a position to communicate with a network of police, army and navy personnel. Soon he was receiving an average of 300 distress calls a day from people marooned at home and faced with medical emergencies.

Numerous call centres working relentlessly to provide rescue and relief assistance groups were set up across the country, especially in engineering colleges like IISc Bengaluru, IIT Guwahati and IIT Hyderabad. When the flood wreaked havoc, most of the helpline numbers were always busy. So a cloud

telephony-based solution, which enables a single phone number to handle high concurrent call traffic, was introduced by a group of engineers from Thiruvananthapuram and Bengaluru.

Good Samaritans from all over Kerala and elsewhere in the country used WhatsApp to seek relief supplies giving specifics such as materials needed, pick up and drop points and also addresses and phone numbers of individuals to be contacted. WhatsApp also came in handy to caution flood victims about the steps they ought to take while returning to their homes. For instance, one message doing the rounds advises them not to go home alone at night. Further it tells them to ensure that they do not take children who could be scared by the experience. They are warned to be aware of the presence of reptiles, including poisonous ones. Similarly, they need to watch out for gas leakages, switch off all mains and unplug all electronic gadgets before lighting a match stick. Finally, they are advised to inform the police station if they see a dead body and counselled against touching them.

4.2 Facebook

Facebook, as well know was a platform for random things from all over the world. It connected people from different areas of life making it popular among people irrespective of their status in life. We saw celebrities doing a lot of social work to help the affected people by stepping out of their comfort zones.

The one which captured the minds of the masses across Kerala was the malayalam award-winning actor Tovino Thomas who doesn't seem to believe in arm chair activism or limiting his contribution to signing off cheques for flood relief in Kerala. The 'Maayanadhi' fame is one of the many celebrities who had willingly gotten his hands dirty by working from the grassroot level to rescue those who have been stranded in water-logged homes. He isn't shirking from wading through muck-riddled waters and picking those trapped in water-logged homes in his native district Thrissur in Central Kerala.

A video was uploaded on his Facebook account showing him drenched to the bone, pleading with his neighbours in water-logged homes seeking refuge on their terraces. He explained that shifting to the relief camps, no matter how rich and privileged your existence is, is the most pragmatic solution of the hour as help may not reach them once the volunteers leave.

As soon as the news reports regarding the clogging of water all over Kerala hit the news channels, Tovino and other Kerala celebrities, especially the ones from the younger generation actively got into the flood scenes, drenching themselves in the swampy, marshy flood lands and posting Facebook lives updating public about the current scenario, the quantity of help required as food, clothing and also human volunteers to shift the affected into relief camps. Each live video had an average of 7 lakh views and about one lakh shares , indicating the reach of these celebrities among the public and thereby helping in a better coordination of the relief operations. During the peak hours of rescue operations, these celebrities actively engaged in live videos updating the people about what and where help is required.

Another striking intervention from the celebrity clan was of Poornima Indrajith's who is a malayalam actress and fashion designer and TV anchor, by being active in Kerala flood relief efforts. There other names like Jayaram and family, Asif Ali and celebrities out of Kerala too by doing what they could to help the public. We saw stars coming down to people who made them the stars, stretching out relief.

Facebook's crisis response page updated information ever minute and it had activated the "Safety Check", allowing users to indicate if they were safe.

4.3 Google

Search giant Google's never-ending quest to more effectively track its users is a creepy breach of privacy that would normally not be tolerated. In flood-hit Kerala, however, that data proved to be very useful. Google had launched a 'Person Finder' application in India to help offer information on missing people in flood-affected state of Kerala. The tool is designed to help people find their loved ones. The tool can be used to find people in the aftermath of a natural disaster or a crisis. It can be used if someone is trying to find a missing person, or if you have any information on a missing person.

Google has currently tracked down the whereabouts of more than 22,100 people across the affected areas. Google's SOS Alert page for the disaster is a great resource for acquiring information at a glance. Resources include phone numbers, latest tweets and news stories and more.

Google maps also had made it extremely easy to share anybody's location with anyone by generating a plus code of the exact location through an android or tablets. A plus simply means an address code that looks for the addresses with a short code that includes the street names and number. These codes trace even places without good roads. The person who receives the plus code can locate the sender by putting it in the search bar of Google.

4.4 Donations over Digital space

The southern state of Kerala is currently recuperating from what is being described as the worst floods in 100 years. Social media is inundated with images of the plight of God's own country. Hundreds have died, tens of thousands have been displaced and the damage to property and infrastructure is immeasurable.

Volunteers from the Institute of Electrical and Electronics Engineers (IEEE) and Kerala's IT Cell, jointly created a website, "Keralarescue" to coordinate the relief efforts by channelizing messages even to offline rescue operators in the state. Livemint reported that, the website was started without any funding and relied mainly on Slack for handling the messages. It started trending high in such a manner that Slack couldn't handle the load of messages streaming in. As per the report, 10 million requests were being generated on the Slack channel and nearly 1,585 coders were handling it. That's not all. The CMDRF (Chief Minister's Distress Relief Fund) website kept on crashing due to the overwhelming amount of requests, so top IT companies such

as Oracle, UST Global and others worked with C-DIT (the organisation who ran the CMDRF website) to resolve the issue. By the evening of 19 August, a mirror site had been set up for handling the load. A WhatsApp group with links to Relief Fund websites was also created.

4.5 Instagram

Instagram, the popular media for sharing photos and videos, had been used significantly by the celebrities and common public alike. They uploaded videos explaining the need and also educating people how to deal with the situation and the aftermath. The media was used to circulate images all over the world to convey the gravity of the disaster and how much attention it calls for.

4.6 Qkopy

Qkopy , a social networking app that had been released few months ago in Kozhikode district of Kerala. It is played a crucial role in getting flood relief information to people across its platform. People were advised to save the Kozhikode City Traffic Police phone number, +94-97975656, in their phone and let the app access the contacts. The app provided instant updates from the police.... which enabled free download by the Google Playstore. Amazon

Amazon India had partnered with three NGOs with the message 'Amazon Cares: Contribute to Kerala Flood Relief' in their website for making it easy to donate to the flood-relief efforts. A coordinated effort between the NGOs and Amazon had been conducted to deliver the required items to people in need. We could contribute items by visiting the website.

4.7 Donate via apps

Paytm had announced that its Kerala Relief Fund has secured over Rs 10 crore from all over India. Various other apps and services have popped up during those days. Caller ID app for smartphones, Truecaller, has also made contributions via the Truecaller Pay payments feature on the app itself. Link your UPI account to Truecaller and contribute to help in the relief efforts. Zomato, food deliver app, offered an option for donating food and riding app Ola donated money for every non-corporate ride that's booked via the app.

Free voice and data: Telecom operators in the state offered voice and data packages to people in the flood-affected areas. Prepaid users on Idea, Vodafone, Airtel and others gave credit towards talk time, which was to be paid back later. BSNL offered users 20 minutes of free talk time and free data for 7 days. Even in the midst of a tragedy of this magnitude, it's uplifting to see so many people joining hands and pitching in to help save the affected people.

Soon the MET department announced that the rains would stop which gave a hope of speed rescue operations for bringing back the state to its old status of life. Kerala floods were a rethinking for humankind on various

aspects. People found people in need and it erased all differences among them. The possibilities and reach of social media was realized effectively and used appropriately to rise from the shackles of a natural calamity.

VI. CONCLUSIONS:

Social media has re-defined communication in today's modern world. Text messaging, the internet and social networking sites have made it possible to communicate with a large number of people anywhere on earth. It is an efficient and easy way to keep in touch and impart information, particularly in a time of crisis. The Internet has become an essential communication network during this time. With thousands displaced from their homes and many having fled the disaster zone, people turned to social networking sites to contact friends, post photos and share stories.

Social Media has become a valuable means of communication in many places affected by a natural disaster, which allows people to keep in touch with family and friends and access important information. Social media cannot and should not supersede current approaches to disaster management communication or replace existing infrastructure, but if managed strategically, they can be used to bolster current systems. Now is the time to begin deploying these innovative technologies while developing meaningful metrics of their effectiveness and of the accuracy and usefulness of the information they provide. Social media might well enhance systems of communication, thereby substantially increasing the ability to prepare for, respond to, and recover from events that threaten people and infrastructure.

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