Cultivation effects of mass and social media on perceptions and behavioural intentions in post-disaster recovery – The case of the 2011 Great East Japan Earthquake

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ABSTRACT

Prior research has found that both mass and social media can play an influential role in post-disaster recovery. In particular, media information has been found to encourage people to support the recovery efforts. However, the mechanisms underlying this process have not been thoroughly investigated. Such knowledge is essential for both governments and non-governmental organisations so that they may apply these findings in post-disaster recovery. Thus, the purpose of this paper is to conduct an in-depth investigation on how mass and social media can influence people's perceptions of a disaster and their behavioural intentions with respect to post-disaster recovery activities.

This study uses the 2011 Great East Japan Earthquake as a case study, and employs structural equation modelling with a data set of 2047 samples collected from an original Internet survey. Through the lens of cultivation theory, we find that mass and social media can play different roles and exert different influences on people's perceptions of the disaster. Mass media, specifically television is found to be the most influential, especially on those not directly affected by the disaster. Social media, on the other hand, although with a much weaker effect, can resonate more with those who were directly affected. Further, a positive perception of strong bonds in families and society as a result of media exposure is found to be the most effective in increasing the intention to participate in activities related to recovery such as boosting civic communications, taking altruistic actions and preparing for future disasters. The findings have implications for post-disaster recovery, in that they can provide a roadmap on how information via mass and social media can be used to motivate and connect the general public and the disaster victims.

1. Introduction

On March 11th 2011, the north-east coast of Japan was struck by one of the strongest earthquakes in history – the Great East Japan Earthquake[1]. The magnitude 9.0 undersea earthquake, subsequent massive tsunami and Fukushima nuclear power

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plant accident had a substantial economic and social impact on the country. According to the Japanese government, this disaster claimed more than 15,800 lives and cost more than 177.7 billion US dollars in direct economic damages. The recovery will take more than a decade and will cost at least 262.9 billion US dollars (Reconstruction Agency, 2013).

On top of the unprecedented scale of the damage, another very remarkable aspect of this disaster is the role social media[2] played. When the telephony network was paralysed in the aftermath of the disaster, social media provided an alternative communication platform for many people in Japan and across the world (Appleby, 2013; Endo, 2013). As a result, information about the disaster, including photos and live videos, rapidly spread across the globe. As Slater et al. (2012) put it 'If Vietnam was the first war fully experienced through television, 3/11 [the Great East Japan Earthquake] was the first natural disaster fully experienced through social media' (p. 94). In the rescue and relief phase, social media further became a major information platform for both the government and non-governmental organisations (NGOs) (Slater et al., 2012; Peary et al., 2012). That said, although social media caught the public imagination, reports, for example MIC (2012) and Kimura (2011), found that television was still the most trusted and commonly used medium. These observations raise the question of what the potential roles of social media in disaster management realistically are. In particular, is there a replacement or complementary relationship with mass media – the traditional main information source in disasters?

Mitomo et al. (2015) found that after the disaster, information from both Internet and mass media allowed people to experience the disaster indirectly. Media information further motivated some people to carry out post-disaster actions even though they were not in the disaster area. However, another study by Tanaka et al. (2012) found that although the influence of media information was significant, it was also short lasting. They found that the number of volunteers and donations sent to the disaster area reduced sharply as the media's attention on the disaster faded away.

Acknowledging that both Internet-enabled social media and mass media played an influential role after the disaster, Cheng et al. (2015) investigated whether the two types of media also can contribute to longer term post-disaster recovery and in what ways. They employed a two-model approach to investigate the effects of mass and social media from two different perspectives – the active and passive audience perspectives. Based on the results from the two models that represent these two perspectives, they found that both types of media can work in parallel to motivate people to support the recovery. Their work provides a broad perspective for the contribution of mass and social media in post-disaster recovery; it, however, has not explored the underlying mechanisms of media influence in depth. Such knowledge is essential to apply the findings in practice.

Realising this shortcoming, in another study, Cheng et al. (2014) extended the active audience model to demonstrate the process by which mass and social media interact with each other in the process of influencing civic participation. However, that study did not incorporate the passive audience perspective. Thus, the aim of this paper is to fill this gap by further investigating the underlying mechanism of media influence on long-term post-disaster recovery activity from the passive audience perspective. Specifically, we aim to compare the difference in effect between mass and social media. Understanding how different media can affect people in different ways will have practical implications for governments and NGOs working on engaging communities in long-term post-disaster recovery.

The rest of this paper is arranged as follows. Section 2 reviews the literature on the key concepts used. Section 3 establishes the theoretical framework, followed by Section 4, which describes the methods used. Section 5 presents the data and results analysis. Section 6 discusses the key findings and implications, followed by the concluding remarks in Section 7.

2. Literature review

2.1. Mass and social media in a highly mediated society

Media information has always played a critical role in times of crisis, such as during and after natural disasters. In these situations, because of the unusually high level of uncertainty, people tend to rely on media information to understand their environment. Therefore, the influence of media is often intensified (Ball-Rokeach, 1985).

At the same time, in today's highly mediated societies, we can experience almost all aspects of society and everyday life through media information. In this way, media information has become part of our regular experience set, which in turn constructs our understanding of society (Jackson et al., 2011). Indeed, from one perspective it could be said that we are constantly being told how to behave, feel and think by mass media – in a one-way, top-down communication flow.

That being said, this does not imply that everyone is gullible and defenceless against the media. As Jackson et al. (idem, 2011) also point out, 'we, too, identify, feel, think, and act in creative ways as we take from, give to, and alter received meanings' (p. ix). In particular, the rise of the Internet and social media – a horizontal, interactive communication platform – has substantially changed the media environment and the level of agency exercised by individuals.

The Internet, for one, has provided countless alternative information sources, allowing people to no longer rely solely on mass media for information. Furthermore, social media empowered audiences to participate in the media themselves and even create and share their own content online. These changes have shifted the power balance between media providers and audiences (Castells, 2007).