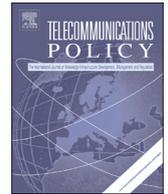




ELSEVIER

Contents lists available at [ScienceDirect](#)

## Telecommunications Policy

URL: [www.elsevier.com/locate/telpol](http://www.elsevier.com/locate/telpol)

# The effects of ICT and mass media in post-disaster recovery – A two model case study of the Great East Japan Earthquake



John W. Cheng<sup>c,\*</sup>, Hitoshi Mitomo<sup>a</sup>, Tokio Otsuka<sup>b</sup>, Stefan Y. Jeon<sup>c</sup>

<sup>a</sup> Graduate School of Asia-Pacific Studies, Waseda University, Nishi-Waseda Bldg. 7F, 1-21-1 Nishi-Waseda, Shinjuku-ku, Tokyo 169-0051, Japan

<sup>b</sup> Faculty of English and IT Management, Shumei University, 1-1 Daigaku-cho, Yachiyo City, Chiba 276-0003, Japan

<sup>c</sup> Institute of Asia-Pacific Studies, Waseda University, Nishi-Waseda Bldg. 7F, 1-21-1 Nishi-Waseda, Shinjuku-ku, Tokyo 169-0051, Japan

## ARTICLE INFO

Available online 8 May 2015

## Keywords:

Great East Japan Earthquake

Post-disaster recovery

Mass media

Social media

ICT media

Social capital

## ABSTRACT

Acknowledging that both ICT and mass media had played an influential role after the Great East Japan Earthquake, this study explores if they can also contribute to longer term post-disaster recovery. From the literature review, it is anticipated that the use of both media can positively effect social capital and civic participation, which are essential for an efficient recovery. However, as this can be questioned it is important to understand and demonstrate how media can affect people's perception and behaviour in post-disaster recovery, especially considering the current complex media environment. The two media in consideration are very different, but at the same time are highly intertwined. Currently, few previous studies on this question can be found because suitable case studies limited as nature disaster of such a scale rarely occur and the media environment is rapidly changing.

This study proposes a two-model approach to examine the effects of ICT and mass media in post-disaster recovery from two different perspectives in media studies: the active and passive audience perspectives. Using data collected from the three prefectures that were directly hit by the disaster, the results of the two models demonstrate a consistent pattern that the use of both ICT and mass media can create positive effects in post-disaster recovery. They increase the level of social capital through building bonding trust, network bridging and civic participation, as well as increase a person's intention to participate in post-disaster related activities. Thus, it can now be argued that both ICT and mass media can have positively contributed to the recovery. These findings have important implications for NGOs as well as policy makers that are working on the recovery. The two models also serve as the foundation for future studies that would further explore the underlying mechanisms of the media's effect and role in post-disaster recovery.

© 2015 Elsevier Ltd. All rights reserved.

\* Corresponding author.

E-mail addresses: [cwljwc@aoni.waseda.jp](mailto:cwljwc@aoni.waseda.jp), [cwljwc@gmail.com](mailto:cwljwc@gmail.com) (J.W. Cheng), [mitomo@waseda.jp](mailto:mitomo@waseda.jp) (H. Mitomo), [tokio.otsuka@gmail.com](mailto:tokio.otsuka@gmail.com) (T. Otsuka), [garomin21@gmail.com](mailto:garomin21@gmail.com) (S.Y. Jeon).

<http://dx.doi.org/10.1016/j.telpol.2015.03.006>

0308-5961/© 2015 Elsevier Ltd. All rights reserved.

## 1. Introduction

On the 11th of March 2011, the north-east coast of Japan was hit by one of the strongest earthquakes in history – the Great East Japan Earthquake.<sup>1</sup> The magnitude 9.0 undersea earthquake and the subsequent tsunami and Fukushima nuclear power plant accident have claimed more than 15,000 lives and caused more than 16.9 trillion yen in damages (Reconstruction Agency, 2013). On top of the unprecedented scale of the damage, another very remarkable aspect of this disaster is the role information communications technology (ICT) in particular social media (e.g., Facebook, Twitter) has played. After the disaster, when the traditional telephony network was paralysed because of infrastructure damage and network congestion, social media provided the critical communication platform for many people across Japan, and also mediated the experience of the disaster across the world in an unprecedented fashion. As Slater, Nishimura, and Kinstrand (2012) vividly depict *‘the generation of information and images occurred at such a fast pace, that social media not only represented, but also directly mediated our experience of the quake more than any other natural disaster to date’* (Slater et al., 2012, p. 94). One of the main reasons that social media could have played such a prominent role is the high level of ICT diffusion in Japan. For example, at the time of the disaster in 2011, 79% of the Japanese population had access to the Internet, and their mobile phone penetration rate had reached 94% with one third of them using smartphones (MIC, 2012). In addition, there were more than 36 million social media users, with the numbers growing rapidly<sup>2</sup> (Impress Japan, 2012).

The active role ICT and social media has played after the disaster has changed the way many people perceived them. For example, many began to embrace social media as an important alternative information source and communication platform. On top of that, social media became one of the main driving forces for the series of anti-nuclear power protests after the disaster (Manabe, 2013; Slater et al., 2012). That being said, while ICT and social media had attracted most of people’s attention, surveys, for example, MIC (2011) has found that traditional mass media, in particular television was still the most used and trusted information source for the majority of the population after the disaster. Furthermore, a study by Tanaka, Shineha, and Maruyama (2012) found that television had exerted a great influence on people after the disaster, and that the number of volunteers and amount of donations went into the disaster area was directly related to the frequency of the disaster reports being shown on television. In crisis situations, it is found that because of the high level of uncertainties, people’s dependency on the media tends to increase and often their influences are intensified (Lowrey, 2004). For instance, after the Great East Japan Earthquake, a study by Mitomo, Otsuka, and Kimura (2012) found that information from both ICT and mass media effectively motivated many people to carry out post-disaster actions even though they were not in the disaster area themselves.

As more than three years have now passed since the disaster, most of the destroyed infrastructures such as roads, schools and hospitals have been restored (Reconstruction Agency, 2014) and life for most people in Japan has returned to normal.<sup>3</sup> However, for the disaster victims who are still living in the disaster area, especially the quarter of a million in temporary housing, recovery is still ongoing. For example, a recent survey (NHK Newsweb, 2014) has shown that more than 70% of the people living in the disaster area felt that there was no progress in the recovery or the progress was much slower than they had expected. Indeed, experience from the Kobe Earthquake in 1995 shows that while the physical infrastructures can be rebuilt within a few years; human and social recovery will take much longer (Shaw & Goda, 2004). Recent studies have revealed many disaster survivors from the Great East Japan Earthquake are suffering from secondary damage such as illnesses caused by stress and depression (Yabe et al., 2014; Yokoyama et al., 2014). Most importantly, in comparison with previous disasters, one of the main challenges this time is the rapidly aging and shrinking population in the disaster area (Deguchi, 2011). Thus, despite both the government and society having dedicated considerable resources to the recovery, it is anticipated that the process will take up to 10 years or even longer (Reconstruction Agency, 2013).

Acknowledging the influential role both ICT and mass media had played after the disaster, one must then wonder, can they also contribute to the long term post-disaster recovery, especially in a highly mediated society such as Japan whereas media are ubiquitous. Currently, little research on this question can be found because suitable case studies are few and far between as nature disaster of such large scale rarely occurs and the media environment is rapidly changing. For example, although social media began to be influential in the 2008 China Sichuan Earthquake (Otani et al., 2012) and they had become one of the main information channels during the 2010 Haiti Earthquake (Yates & Paquette, 2011). The scale and complexity of these disasters, as well as the media environment such as the level of information openness and ICT diffusion were very different when compared with the Great East Japan Earthquake. In fact, the Great East Japan Earthquake can be argued to be the first time in history that such a highly mediated society has been struck by such a large scale natural disaster. For example, the experience of the utilisation of ICT in the response and rescue phase this time has become a reference case study for disaster management internationally (GSMA, 2013). Furthermore, although many studies on the Great East Japan Earthquake are being carried out, until now most of the available literature related to ICT and media has focused on the infrastructural and technological aspects, or on the applications in the immediate rescue and relief period.

<sup>1</sup> Hereafter referred to as ‘the disaster’.

<sup>2</sup> By the end of 2012, the number of social media users had already reached 50 million, approximately a quarter of the total population (Impress Japan, 2012).

<sup>3</sup> For example, a survey in 2013 has found that 76% of the people in the Tokyo metropolitan area felt that their daily life had returned to normal after the disaster (Dentsu Marketing Insight, 2013).

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات