

Cheng, John W.; Mitomo, Hitoshi

**Conference Paper**

## Impact of media form on the perceived image of the television news media in the age of media convergence

14th Asia-Pacific Regional Conference of the International Telecommunications Society (ITS): "Mapping ICT into Transformation for the Next Information Society", Kyoto, Japan, 24th-27th June, 2017

**Provided in Cooperation with:**

International Telecommunications Society (ITS)

*Suggested Citation:* Cheng, John W.; Mitomo, Hitoshi (2017) : Impact of media form on the perceived image of the television news media in the age of media convergence, 14th Asia-Pacific Regional Conference of the International Telecommunications Society (ITS): "Mapping ICT into Transformation for the Next Information Society", Kyoto, Japan, 24th-27th June, 2017, International Telecommunications Society (ITS), Calgary

This Version is available at:

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## **The 14<sup>th</sup> International Telecommunications Society (ITS) Asia-Pacific Conference, Kyoto, Japan, June 24-27, 2017**

### **[Working paper] Impact of media form on the perceived image of the television news media in the age of media convergence**

#### **Authors:**

John W. Cheng

School of Political Science and Economics, Waseda University, Japan.

Bldg. 3, 1-6-1 Nishi-Waseda, Shinjuku-ku, Tokyo, 169-8050, Japan.

cwljwc@aoni.waseda.jp

Hitoshi Mitomo

Graduate School of Asia-Pacific Studies, Waseda University, Japan.

Nishi-Waseda Bldg., 1-21-1 Nishi-Waseda, Shinjuku-ku, Tokyo, 169-0051, Japan.

mitomo@waseda.jp

22<sup>nd</sup> May, 2017

#### **Abstract**

The aim of this study is to investigate the impact of media form on audiences' perceived image of the television news media. Specifically, it compares the perceived sense of presence between two different media forms –television and smartphone, and examines their effects on the perceived brand personality of a news medium. This study uses NHK –the national public broadcasters– news coverage during the 2016 Kumamoto Earthquake over the air and the Internet as a case study. Using a quantitative approach with data collected from an original survey, it is found that television as a media form provides a stronger sense of presence than smartphone, and also has a stronger influence on the perceived brand personality of a news medium, especially on its perceived competence. That being said, it is also found that smartphone can also exert some influence, in particular on the perceived dynamism and sociability of the medium.

## 1 Introduction

Referred as simulcast television, the convergence of ICT has enabled terrestrial television broadcasters now to simultaneously broadcast their on-air programmes over the Internet to PCs and smartphones. In Japan, the public's positive feedback to the simulcast television news by both the public and commercial television broadcasters during the 2016 Kumamoto Earthquake has prompted the government to further promote simulcast television. The Internal Affairs and Communications Ministry is now revising the relevant policies aiming to motivate the broadcasters to provide full-scale simulcast television by 2019, one year before the 2020 Tokyo Olympics (The Asahi Shimbun, 2016).

This initiative, however, has been met with mixed receptions and triggered many debates in the industry. Some broadcasters see this as a welcoming opportunity to counter problems that have been plaguing them for years such as shrinking audiences and competitions from new media. For example, NHK –the public national broadcaster– has been conducting trials on providing simulcast service since 2016 (Murakami, 2016). On the other hand, some commercial broadcasters are still struggling to see a valid business case for simulcast television. Especially on commercial issues such as cross-platform advertising and licensing agreements, and competitions between regional broadcasters (Nippon Television Network Corporation, 2016). Currently, most debates are being carried out from the industry view and few discussions have been conducted from the audience perspective. After all, one of the main functions of broadcast television is to serve the mass public, and therefore the success of simulcast television is also depending on how it is perceived by the public.

With this background in mind, the purpose of this study is to examine the impact of simulcast television from the audience perspective. In particular, we focus on its impact on the television news media because of their strong influence on how people interpret social and political issues, especially in times of crises. For instance, Cheng et al. (2015) find that despite the popularity of the Internet, in large scale disasters, television news is still the most trusted and used information source of the general public.

With simulcast, television news media can extend their reach to other media forms such as PC and smartphone. However, whether simulcast television can exert the same influence as broadcast television may depend on how their perceived image is affected by the new media forms. This is because perceived image is known to be one of the main factors that affects the persuasive power of the news media (McCroskey & Jenson, 1975). Therefore, it is important for media practitioners and policy makers to understand the impact of simulcast television on the perceived image of the television news media. In this study, we attempt to answer this question using the 2016 Kumamoto Earthquake as a case study because it is the first large-scale earthquake in Japan in which simulcast television news was available<sup>1</sup>.

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<sup>1</sup> Although simulcast television news was also available in other disasters such as typhoons and rain storms before the 2016 Kumamoto Earthquake, the scales were smaller and the durations were also shorter.

## 1.1 2016 Kumamoto Earthquake

The 2016 Kumamoto Earthquake is a series of strong earthquakes that struck Kumamoto, Oita, and Fukuoka prefectures in south-west Japan in April 2016. It was the strongest earthquake that hit Japan since the deadly 2011 Great East Japan Earthquake. It consisted of two main quakes occurred at April 14<sup>th</sup> (Magnitude 6.5) and April 16<sup>th</sup> (Magnitude 7.0) near the town Mashiki in Kumamoto prefecture. According to the Government (Cabinet Office Japan, 2017) more than 8,000 and 33,000 houses were totally and partially destroyed, respectively. 228 people were killed and 2,753 were injured. At the peak, more than 180 thousands people had to evacuate from their homes.

Learned from the experience from the 2011 Great East Japan Earthquake, digital media played an ever more active role in this disaster. For example, soon after the first main quake struck, all television news media were able to simulcast over the Internet to provide the latest disaster and evacuation information to people who could not access broadcast television news (Ministry of Internal Affairs and Communications, 2016). Today, although the emergency simulcast of television news is over, people can still watch streaming television news (same day news but with delay) over the Internet 24-7.

## 1.2 Simulcast and streaming television in Japan

In this study, simulcast television refers to the simultaneous broadcast of television programmes over the air and the Internet, while streaming television refers to the on-demand streaming of aired television programmes over the Internet.

Terrestrial television broadcasters in Japan have been under fierce competition from new media sources (e.g., over-the-top (OTT) video providers such as Hulu and Netflix) as well as media forms (e.g., smartphone and PC). While their viewership and revenue growth have remained flat for almost a decade, the Internet advertising market is growing rapidly (Media Innovation Lab, Dentsu Innovation Institute, 2016). Thus, the television broadcasters are eager capture the digital generation viewers who rely on the Internet as their main media channel.

In 2008, NHK –the public national broadcasters– as well as the five main commercial broadcasters began to provide paid on-demand streaming services to viewers to watch aired television programmes over the Internet. In 2014, the services became free, today, viewers can watch same day news and other selected aired programmes online free-of-charge but with un-skippable advertisements (Murakami, 2016). In 2015, the Internal Affairs and Communications Ministry relaxed the regulation to allow the broadcasters to provide temporary simulcast television over the Internet during emergencies (Ministry of Internal Affairs and Communications, 2015). Currently, it is considering to further relax the regulation to allow the broadcasters to provide full-scale simulcast television (The Asahi Shimbun, 2016).

## 2 Literature review

### 2.1 Perceived brand personality of the news media

Perceived image is one of the most important factors determining the influence of the news media (McCroskey & Jenson, 1975). Kim et al. (2010) point out that in today's digital society, in which news sources are abundant, it is critical for the survival of the television news media to establish their own distinct images. From a marketing perspective, they suggest that brand personality –'the set of human characteristics associated with a brand' (Kim, et al., 2010, p. 118), is an effective means for a news medium to differentiate itself from the competition. The reason is that audiences tend to resonate with media that show human characteristics, especially with those that are consistent with their self-image and personalities. Indeed, Chan-Olmsted & Cha (2008) find that the brand personality of a news medium has positive effects on its audience attitude, usage, and loyalty.

According to Chan-Olmsted & Cha (2007) and Kim et al. (2010), the brand personality of the news media can be measured in several dimensions such as their perceived competence and trustworthiness, dynamism and timeliness, and sociability and sincerity. Competence and trustworthiness represent the media's capability to create news product. Dynamism and timeliness, on the other hand, represent the way the news is delivered to audiences. Sociability and sincerity, which often associate with the news casters and reporters, reflect the affective dimension of the news media. Chan-Olmsted & Cha (2008) find that how audiences perceive these brand personality trails of a news medium are affected by their attitude towards the affiliated television network, perceived importance of anchors, use of television as a new source, and social-demographic background.

### 2.2 Perceived sense of presence of media forms

Another factor that can affect how audiences perceive the image of a news medium is the form of the media that the news is delivered on. For instance, Bracken (2005, 2006) finds that the perceived credibility of television news is affected by the size and image quality of the television screens. She shows that viewers find a television newscast watched on a high definition television is more creditable and has a stronger sense of presence than the same newscast watched on a standard television.

In Bracken's model, from a psychological perspective, the sense of presence is defined as a 'perceptual illusion of nonmediation,' which can be measured from several dimensions such as the sense of immersion and the sense of social presence. Immersion refers to audiences' 'sense of involvement or connection when they watch television programs' (Bracken, 2005, p. 198). Social presence is divided into passive and active. Passive social presence refers to audiences' awareness of the 'nonverbal cues in a mediated environment' (Bracken, 2006, p. 731), and active social presence refers to their 'sense of involvement with or connection to characters or television personalities' (Bracken, 2006, p. 731). She finds that the sense of presence is directly affected by the media form, and is also affecting audiences' perceived image of the newscast.

### 3. Methodology

Based on the literature review, we hypothesised that audiences' perceived sense of presence of the media form that a newscast is delivered on will affect how they perceive the brand personality of that news medium. Furthermore, the perceived sense of presence is different between different media forms.

We examined these hypotheses using a quantitative and exploratory approach, which consisted of three main steps. First, we employed exploratory factor analysis (EFA) to identify variables that can represent the three main dimensions (competence, dynamism, and sociability) of the perceived brand personality of the news media based on McCroskey & Jenson (1975), Kim et al. (2010), and Chan-Olmsted & Cha (2007). Second, also using EFA, we identified variables that can represent the three main dimensions of the perceived sense of presence of media form (perceived immersion, social presence-passive, and social presence-active) according to Bracken (2005, 2006). Finally, we examined the effects of the perceived sense of presence of different media forms on the perceived brand personality of a news medium using linear regression analysis.

In this study, we used the 2016 Kumamoto Earthquake as a case study, and we selected NHK – the national public television channel– as the news media. This is because NHK is considered the most representative television news medium in Japan, and is also the most aggressive in providing simulcast and streaming television services. The data were collected using an Internet based questionnaire survey, which consisted of a series of questions regarding the respondents' usage of broadcast television news and simulcast/streaming television news, and their perceptions of different media forms and news media.

The three dimensions of the perceived brand personality of the news media (competence, dynamism, and sociability) were represented by 16 variables derived from McCroskey & Jenson (1975), Kim et al. (2010), and Chan-Olmsted & Cha (2007). These variables were operationalised by asking the respondents 16 questions about their perceptions of NHK news regarding its reports on the 2016 Kumamoto Earthquake in a 7-level Linkert scale (1=lowest, 7=highest).

First, competence was represented by 6 questions such as whether the respondents thought NHK news was 'professional,' 'intelligent,' 'trustworthy' etc. Second, dynamism was represented by 4 questions such as whether they thought NHK news was 'lively,' 'dramatic,' 'daring', etc. Third, sociability was represented by 6 questions such as whether they thought NHK news was 'family orientated,' 'friendly,' 'cheerful' etc.

Next, the three dimensions of the perceived sense of presence of media form (immersion, social presence-passive, and social presence-active) were represented by 12 variables derived from Bracken (2005, 2006). These variables were operationalised by asking the respondents a series of questions also in a 7-level Linkert scale (1=lowest, 7=highest) about their feelings when they watched NHK news reports on the 2016 Kumamoto Earthquake on different media forms such as television, smartphone etc.

First, immersion was represented by 3 questions such as whether the respondents could feel 'the power of the earthquake,' 'the severity of the damages' etc. when they watched the television news. Second, social presence-passive was represented by 4 questions such as whether the respondents could observe the 'body language,' 'facial expression' etc. of people in the news reports when they watched the television news. Third, social presence-active was represented by 5 questions such as whether the respondents felt that they were 'participating in the new reports,' 'directly communicating with the news reporters' etc. when they watched the television news.

Finally, we also asked the respondents whether they watched the news on television and/or on the Internet, as well as the main device (e.g., smartphone, PC, tablet) that they used to watch the news on the Internet.

#### 4. Data and results analysis

The survey was conducted at the end of March 2017<sup>2</sup>. It was carried out by a professional research company in Japan, which has a survey panel with more than a million people across the country<sup>3</sup>. The company selected the respondents from their panel according to the survey requirement. In this case, we requested the respondents to be selected from people who were living in Kumamoto prefecture during the 2016 Kumamoto Earthquake and were affected by the disaster. In total, 1032 samples were collected.

Specifically, as we used NHK to represent the news media in this case study, we selected only the respondents who had watched NHK news reports regarding the Kumamoto Earthquake on both television (i.e., broadcast television) and smartphone (i.e., simulcast/streaming television). We selected these two media forms because they are the most widely used media forms in Japan. Based on these criteria, 277 respondents from the 1032 samples were selected. Among them, 46% were male and 54% were female. Their average age was 41.44 and the standard deviation was 11.82.

All of the respondents were living in Kumamoto prefecture when the earthquake struck and were victims of the disaster at different degrees. For instance, 13.4% of them reported that either they themselves or someone in their families were injured by the earthquake. Moreover, 3.2%, 12.3%, and 53.1% reported that their homes were fully, partially, and slightly damaged by the earthquake, respectively. Furthermore, 82.3% of the respondents reported that they had to evacuate from their homes, with 30% had to evacuate for more than a week. Thus, we believed that this group had a strong motivation to obtain news relating to the disaster. Their average usages of broadcast television news and simulcast/streaming television news on the

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<sup>2</sup> The survey was sponsored by the research project 'The Role of ICT and Media in Post-Disaster Recoveries and the Revitalization of Local Communities' of the Waseda Institute of Asia-Pacific Studies at Waseda University.

<sup>3</sup> Macromill Inc. Policy for quality management. <http://www.macromill.com/qManage/index.html>



Internet were 5.6 (sd = 1.7) and 3.58 (sd = 1.9), respectively, which indicates that television news was relatively much more frequently used than simulcast/streaming television news.

#### 4.1 Perceived brand personality of news media

First, comparing the means of the 16 perceived brand personality variables of NHK news, we found that 'up-to-date' (m=5.02) and 'trustworthy' (m=5.00) had the highest values, followed 'down-to-earth' (m=4.83), and then 'professional' (m=4.75) and 'responsible' (m=4.75). On the other hand, 'cheerful' (m=3.00) had the lowest value, followed 'daring' (m=3.44), and then 'soothing' (m=3.60) and 'lively' (m=3.63). This pattern implies that the respondents perceived that NHK news was more competence than dynamic and sociable, which is in line with the expected image of a national public channel.

Next, we conducted an EFA to test whether these 16 brand personality variables would form a three-factor solution representing the three dimensions of brand personality of competence, dynamism, and sociability that we anticipated. The EFA resulted in a two-factor solution<sup>4</sup> instead of a three-factor one. While the 7 variables representing competence were loaded together into one factor, there was no distinct separation between the variables representing dynamism and sociability. Moreover, we found 3 variables (emphatic, family orientated, and friendly) were strongly cross-loaded between the two factors and hence, were removed. Based on the EFA results, we grouped the variables into two factors instead of three, which were competence (Cronbach Alpha=0.944), and dynamism and sociability (Cronbach Alpha=0.844).

#### 4.2 Sense of presence of different media forms

Next, we conducted another EFA to examine whether the 12 variables representing the three dimensions of the perceived sense of presence of media form (immersion, social presence-passive, social presence-active) would form a three-factor solution for television and smartphone.

The results revealed a similar pattern for both television<sup>5</sup> and smartphone<sup>6</sup> that a two-factor solution was formed instead of a three-factor one. We found that while the variables representing immersion were loaded together into a single factor, there was no clear distinction between the variables for social presence-passive and social presence-active. Furthermore, we found that the variable 'body-language' was strongly cross-loaded between the two factors for television, thus it was removed. To ensure an equal comparison between television and smartphone, we also removed this variable for smartphone as well. Based on

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<sup>4</sup> Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.957. Bartlett's Test of Sphericity - Approx. Chi-Square = 11735, df = 120; Sig. = 0.000. Cumulative % of variance represented =68.4%; All variables' factor loading values were greater than 0.7, except for 'family orientated' at 0.65.

<sup>5</sup> Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.932. Bartlett's Test of Sphericity - Approx. Chi-Square = 2497, df = 66; Sig. = 0.000. Cumulative % of variance represented =71.8%; All variables' factor loading values were greater than 0.7.

<sup>6</sup> Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.937. Bartlett's Test of Sphericity - Approx. Chi-Square = 3119, df = 66; Sig. = 0.000. Cumulative % of variance represented =77.51%; All variables' factor loading values were greater than 0.7.



the results of the EFA, we grouped the variables into two factors instead of three, which were immersion and social presence, for both television and smartphone. The Cronbach alphas of immersion and social presence of television were 0.879 and 0.939, respectively, and of smartphone were 0.857 and 0.962, respectively.

We then combined the variables into their corresponding factors (immersion and social presence) by taking their averages, and then compared the means of immersion and social presence using a paired sample t-test. The results (Table 1) showed that the respondents found that news watched on a television had a significantly stronger sense of presence than on a smartphone in terms of both immersion and social-presence.

**Table 1 - Paired sample t-test**

	Mean	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Immersion – television	5.23	0.48	1.23	0.07	0.34	0.63	6.57	276	***
Immersion – smartphone	4.06								
Social presence – television	4.75	0.28	0.91	0.05	0.17	0.38	5.10	276	***
Social presence – smartphone	3.78								

\*\*\* p<0.01; \*\* p<0.05; NS – Not Significant

### 4.3 Effects of perceived sense of presence of media forms on perceived brand personality of the news media

Finally, we constructed two linear regression models to examine the effects of the perceived sense of presence (immersion and social presence) of different media forms (television and smartphone) on the perceived brand image of a news medium (NHK news).

For the first regression model, we used perceived competence as the dependent variable, which was calculated by taking the average of its corresponding variables. The independent variables were the perceived immersion and perceived social-presence of television and of smartphone. Furthermore, considering that perceived competence and perceived dynamism and sociability were correlated (Pearson correlation=0.399; Sig.=0.000) as they were both traits of perceived brand personality, we added perceived social dynamism and sociability as one of the control variables, together with sex and age.

Vice-versa, for the second regression model, we used perceived dynamism and sociability as the dependent variable, which was also calculated by taking the average of its corresponding variables. The independent variables were the perceived immersion and perceived social-presence of television and of smartphone, and the control variables were perceived competence, sex and age.

The results of the first regression (Table 2) showed that only the perceived immersion of television had a significantly effect on the perceived competence of NHK news. On the other hand, the results of the second regression model (Table 3) revealed a different pattern. For perceived dynamism and sociably, the perceived social presence of both television and smartphone were significant.

**Table 2 Regression model 1 - Perceived competence**

Model 1 - Dependent Variable: Perceived competence	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.574	.397		3.963	***
Perceived dynamism and sociability	.425	.070	.350	6.097	***
Immersion – television	.240	.077	.257	3.112	***
Immersion – smartphone	-.005	.075	-.005	-.063	NS
Social presence – television	-.186	.098	-.183	-1.897	NS
Social presence – smartphone	.172	.103	.168	1.671	NS
SEX	.366	.142	.139	2.578	***
AGE	-.001	.006	-.011	-.201	NS
R Square = 0.298; *** p<0.01; ** p<0.05; NS – Not Significant					

**Table 3 Regression model 2 - Perceived dynamism and sociability**

Model 2 - Dependent Variable: Perceived dynamism and sociability	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.168	.328		3.565	***
Perceived competence	.286	.047	.347	6.097	***
Immersion – television	-.125	.064	-.162	-1.955	NS
Immersion – smartphone	-.053	.061	-.068	-.874	NS
Social presence – television	.180	.080	.214	2.233	**
Social presence – smartphone	.207	.084	.246	2.477	**
SEX	.035	.118	.016	.298	NS
AGE	.007	.005	.075	1.435	NS
R Square = 0.305; *** p<0.01; ** p<0.05; NS – Not Significant					

## 5 Discussion and conclusion

In response to the research question of what is the impact of simulcast television on the perceived image of the television news media, we examined the effects of the perceived sense of presence of two different media forms on the perceived brand personality of a news medium. Specifically, using the national public television NHK's news coverage during the 2016 Kumamoto Earthquake as a case study, we compared the perceived sense of presence of television (i.e., broadcasting television) and smartphone (i.e., simulcast and streaming television) and examined their effects on the perceived brand personality of a news medium.

In this study we used perceived competence and dynamism and sociability to represent the perceived brand personality of the news media, and perceived immersion and social presence to represent the perceived sense of presence of media form. First of all, we found that as a media form, television provided a stronger sense of presence than smartphone in terms of both perceived immersion and social presence. Considering the different form factors between televisions and smartphones, this finding is consistent with the literature, which suggests that the perceived sense of presence of media form is related to the screen size and the image quality of the media.

Furthermore, we found that among the different perceived senses of presence of television and smartphone, only the perceived immersion of television had a positive effect on the respondents' perceived competence of a news medium. That being said, this does not imply that smartphone had no effect at all. In fact, we found that the perceived social presence of both smartphone and television had positive effects on the respondents' perceived dynamism and sociability of a news medium, and the effect from smartphone was actually slightly stronger than from television. This could be explained by the fact that smartphones are a personal media and the perception of dynamism and sociability is a personal experience of how one perceives the way the news is delivered and the affective aspect of the news medium.

Therefore, we believe that in the age of simulcast and streaming television, different media forms can have different effects on the perceived image of the news media. That is, referring to the classical saying in media studies that 'the medium is the message' by McLuhan (1964), we recommend that the television broadcasters should take advantages of the new media forms to enhance their brand personality. For instance, in the case of smartphones, they can utilise their mobile and online capability to provide more personalised viewing experiences to the audiences.

In conclusion, this working paper has demonstrated the relationship between media form and the perceived brand personality of the news media. Moving forward, our next steps are to examine the impact to the commercial television broadcasters, to further explore the abovementioned proposition, and to elaborate the policy implications.

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