

# The Effects of Social Media on Music-induced Tourism: A Case of Korean Pop Music and Inbound Tourism to Korea\*

Sehwan Oh\*\*, JoongHo Ahn\*\*\*, Hyunmi Baek\*\*\*\*

With the rapid spread of social media, video-sharing social media like YouTube has emerged as a consumption and distribution channel for entertainment goods such as music videos and movie trailers. In tourism research, there has been a lot of research of how the visual media such as movies and soap operas induced tourism. However, no studies have attempted to examine the role of social media as a music consumption channel and its impact on tourism. Expanding a body of media-induced tourism, we analysed the impact of video-sharing social media on music-induced tourism with a case of Korean pop music and inbound tourism to Korea. Developing a Web-crawler, we collected YouTube users' comments data on 166 Korean pop music video clips which were released from 2009 to 2012 with over 1 million view counts. Controlling many of the determinants of tourism and analysing country-by-country impact of YouTube comments with the panel data, we found that engagement of Korean pop music video clips on YouTube is a significant predictor for the flow of inbound tourists to Korea.

**Keywords :** Video-sharing social media, Engagement, Music-induced Tourism, Korean Pop Music

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\*\* Senior Researcher, Korea International Trade Association (KITA), Korea

\*\*\* Corresponding Author, Professor, Graduate School of Business, Seoul National University, Korea

\*\*\*\* Assistant Professor, Department of Information Sociology, Hanyang University, Korea

## I . Introduction

As social media emerged as a travel information source and a cost-effective marketing tool, tourism researchers came to pay attention to social media in diverse research contexts such as traveller's behaviour and usage [Bosangit *et al.*, 2012; Chung *et al.*, 2015; Parra-López *et al.*, 2011; Tussyadiah *et al.*, 2009; Xiang *et al.*, 2010; Ye *et al.*, 2011; Yoo *et al.*, 2011; Yoo *et al.*, 2012], marketing and strategic management [Akehurst, 2009; Carson, 2008; Chalip *et al.*, 2003; Hays *et al.*, 2013; Hvass *et al.*, 2012; Koo *et al.*, 2013b; O'Connor, 2010; Pan *et al.*, 2007; Sigala *et al.*, 2015], education and research [Isacsson *et al.*, 2011; Xiang *et al.*, 2015].

However, previous tourism research on social media ignored the potential of social media from a perspective of media-induced tourism. In prior tourism research, it was argued that the popular media such as movies and TV dramas make significant influence on attracting tourists, because people form affective feelings to places which are portrayed in the media. While conventional media-induced tourism research focused on films and TV programs, anecdotal evidence suggested that consumption of music is positively related with tourism. According to a survey by the Korea Tourism Organization with 3,775 Korean pop music (K-pop) fans in France, around 90% of respondents answered that they hoped to visit Korea, while over 75% of those surveyed were planning travel to Korea [Cha, 2012].

To fill the research gap, some researchers attempted to expand research area with music consumption and tourism. Rajaguru [2014] ar-

gued that vocal effects from K-pop music videos influence tourism intention and actual visitation to Korea as well. In the context of social media, examining potential travellers' perception of the media cultural experience on intention to visit, Koo *et al.* [2013a] revealed that K-pop exposed through social media has a positive impact on a cultural destination contents satisfaction, thereby influencing intention to visit Korea.

In the late 1990s and 2000s, Korean pop culture such as TV dramas, movies, and music was very popular among some neighbouring Asian countries such as China, Japan, and Taiwan and made a positive impact on Korea's tourism [Han *et al.*, 2008; Kim *et al.*, 2008; Kim *et al.*, 2007]. However, overcoming geographical and cultural barriers, recent K-pop gains unprecedented global popularity from not only Asian countries but European, American, and Middle East countries through social media [JoongAng Daily, 2012].

In this research, expanding current research horizon in social media and media-induced tourism, we attempt to analyse the impact of video-sharing social media like YouTube on the music-induced tourism with a case of K-pop and inbound tourism to Korea. The rest of the paper is structured as follows. Section 2 is a literature review on tourism research on social media, tourism induced by media, and music consumption on social media. Section 3 addresses the hypothesis development, while Section 4 describes the research methodology with data collection and analysis model. Section 5 presents the empirical analysis results. Section 6 discusses the implication of the study and gives conclusions.

## II. Literature Review

### 2.1 Tourism Research on Social Media

Though the concept of social media is still evolving, it can be defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allows the creation and exchange of User Generated Content” [Kaplan *et al.*, 2010]. Mangold *et al.* [2009] argued that the social media serves as an effective communication channel between marketers and consumers and also enables customers to share opinions from one another in numerous social media platforms. With the development of Internet environment, social media sites have developed in various forms such as review sites (e.g. TripAdvisor), social networking services (e.g. Facebook), microblogging services (e.g. Twitter), media-sharing sites (e.g. YouTube, Flickr), and blogs (e.g. Travelblog).

As social media emerged as a travel information source and a cost-effective marketing tool, tourism researchers came to pay attention to social media in diverse research contexts such as traveller’s behaviour and usage, marketing and strategic management, education and research. Regarding travellers’ intention to use social media, Parra-López *et al.* [2011] argued that it is affected by benefits and incentives from social media usages in the stage of planning vacation trips. Based on the mental accounting theory, Chung *et al.* [2015] argued that the travellers’ perceived value of social media from a trade-off between benefit and sacrifice is a primary factor in travel information searches (i.e., social media usage). Examining travel-related consumer-gene-

rated media (CGM), Yoo *et al.* [2011] proposed that travellers’ personality traits affect perceived barriers to CGM creation, motivations to engage in CGM creations, and creation behaviours. Also, in the postconsumption stage, Bosangit *et al.* [2012] argued that travel blogging has become part of tourist practices, which is associated with common actions such as representing places, acts of self-presentation, and identity construction.

Meanwhile, it has been acknowledged that social media plays an important role as a travel information source. Xiang *et al.* [2010] revealed that search engines directly and indirectly guide travel information searchers to social media, while it serves as an information source for travellers [Xiang *et al.*, 2010; Yoo *et al.*, 2012]. Highlighting the importance of online user-generated reviews as a travel information source, Ye *et al.* [2011] showed that travellers’ reviews have a significant impact on hotel online bookings. Beyond text-based social media, Tussyadiah *et al.* [2009] examined video-sharing social media and argued that online travel videos by real travellers play as mediators of tourist experience.

In addition to travellers’ intention to use and actual use of social media, research of perspectives from tourism industry has evolved in terms of strategic marketing and management. In a marketing perspective, researchers revealed that use of social media by companies or organizations is highly diverse and exploratory without strategic utilization [Hays *et al.*, 2013; Hvass *et al.*, 2012; O’Connor, 2010]. As social media emerged as a platform for user-generated content, or electronic word-of-mouth, other researchers argued that tourism organizations should pay attention to it and monitor travellers’ attitude [Akehurst, 2009; Carson, 2008; Pan *et al.*, 2007]. Regarding

the framework of strategic use of social media, Koo *et al.* [2013b] examined a case of Korea Tourism Organization (KTO) and suggested ‘Smart Tourism’ which is characterized by a holistic approach in social media utilization for providing comprehensive travel information services. Also, in operational management, Sigala *et al.* [2015] pointed out that the use of social media can enhance employee’s creativity through knowledge management process.

Meanwhile, another research argued the potential of social media from a perspective of tourism education and research methodology. Isacson *et al.* [2011] argued that social media contributes to constructing a useful knowledge base and engaging students in sustainable tourism. Xiang *et al.* [2015] proposed that consumer reviews on online travel agencies inspire the development of big data analytics. Previous tourism research in social media can be summarized in <Table 1>.

<Table 1> Previous research on social media and tourism

Theme	Study	Context	Key Findings
Travellers’ behaviour and usage	Parra-López <i>et al.</i> [2011]	General social media	Travellers’ intention to use social media tools is affected by benefits and incentives from social media usages.
	Chung <i>et al.</i> [2015]	General social media	The travellers’ perceived value of social media from a trade-off between benefit and sacrifice is a primary factor in travel information searches (i.e., social media usage).
	Yoo <i>et al.</i> [2011]	General social media	Travellers’ personality traits affect perceived barriers to consumer-generated media (CGM) creation, motivations to engage in CGM creations, and creation behaviours.
	Bosangit <i>et al.</i> [2012]	Blog	Travel blogging has become part of tourist practices in the postconsumption stage, which is associated with representing places, acts of self-presentation, and identity construction.
	Xiang <i>et al.</i> [2010]	General social media	Social media dominates travel-related search results via search engine and serves as information source for travellers.
	Yoo <i>et al.</i> [2012]	General social media	Social media is an important information source for tourists in their travel planning and decision-marking.
	Ye <i>et al.</i> [2011]	Review site (Ctrip.com)	Travellers’ reviews have a significant impact on hotel online bookings.
	Tussyvadiyah <i>et al.</i> [2009]	Video-sharing social media (YouTube)	Online travel videos by real travellers play as mediators of tourist experience.
Marketing and strategic management	Hvass <i>et al.</i> [2012]	SNS (Facebook, Twitter)	Airliners are still lack of strategy for social media usage and fail to exploit the interactivity and development with customers.
	Hays <i>et al.</i> [2013]	SNS (Facebook, Twitter)	Social media usages by the top destination marketing organizations (DMOs) are still exploratory and diverse.
	O’Connor [2010]	Review site (TripAdvisor)	Few hotels properly manage their reputation on the review site.
	Akehurst [2009]	Blog	Tourism organizations should pay attention to the development of user generated content on the Web.
	Pan <i>et al.</i> [2007]	Blog	Travel blog monitoring provides a method to destination marketers for assessing service quality and improving travellers’ experiences.
	Carson [2008]	Blog	Consumer generated web content may offer a way for destination marketing organizations (DMOs) to monitor visitor attitudes.
	Koo <i>et al.</i> [2013b]	SNS (Facebook, Twitter)	‘Smart Tourism’ is proposed, which is a holistic approach to provide extensive travel information services through social media.
	Sigala <i>et al.</i> [2015]	General social media	The use of social media can enhance employee’s creativity through knowledge management process.
Education and research	Isacson <i>et al.</i> [2011]	SNS (Facebook)	Social media contributes to constructing a useful knowledge base and engaging students in sustainable tourism.
	Xiang <i>et al.</i> [2015]	Review site (Expedia.com)	Consumer reviews on online travel agencies inspire the development of big data analytics.

However, previous tourism research on social media ignores the potential of social media from a perspective of media-induced tourism. In the context of cultural tourism, examining potential travellers' perception of the media cultural experience on intention to visit, Koo *et al.* (2013a) revealed that cultural contents (e.g. K-pop and Korean drama) exposed through social media have a positive impact on a cultural destination contents satisfaction, thereby influencing intention to visit destination (e.g. Korea). To our knowledge, though their research was the rare attempt to investigate social media as a channel of media cultural exposure, there has been limited research how social media plays as a consumption and distribution channel for cultural contents and affects actual visitation.

### 2.3 Media-Induced Tourism

In prior tourism research, it has been argued that the popular media such as movies and television programs make significant influence on attracting tourists, because people form affective feelings to places which are portrayed in the media. Iwashita [2008] conceptualized this as "media-induced tourism," defining it as the new form of tourism which involves "tourist visits to a destination or place which has strong associations or connections with films and television programs." Likewise, Connell [2012] characterized tourism activities related with film and television as "film tourism" and outlined it with a number of forms and activities such as visits to portrayed location, to studio sets and to themed attractions.

In conventional media-induced or film tourism, it was believed that the destination ex-

posure through media can stimulate the interests of tourists and resultantly lead to change of their behavioral intention to visit destination [Kim *et al.*, 2007; Young *et al.*, 2008]. In addition, focusing on destination image, Kim *et al.* [2003] argued that the destination image influences the tourism decision-making, while viewing a specific film can change cognitive and affective images of the destination. Similarly, Chalip *et al.* [2003] contended that enhanced destination image through sport event media is positively related with intention to visit.

Additionally, researchers acknowledged the role of celebrities in tourists' decision making on destination selection. Celebrities are famous figures whose performances in specific fields are recognized by the public. They arise in various fields such as entertainment, athletics, politics, and entrepreneurial business. Tourists' involvement with celebrities such as actors and pop-stars is believed to make a positive perception to tourist destination and behavioral intentions [Kim *et al.*, 2007; Lee *et al.*, 2008; Yen *et al.*, 2013]. Yen *et al.* [2013] argued that higher celebrity involvement is positively related with behavioral intentions. With the sample of Taiwanese residents who became tourists after watching Korean films and TV dramas, they showed that a celebrity can foster affection to the destination where she or he represents and influence behavioral intentions to visit.

While the media-induced tourism research originally focused on films and TV programs, anecdotal evidence suggested that consumption of music is positively related with tourism. A survey by the Korea Tourism Organization with K-pop fans in France showed that around 90% of respondents hoped to visit Korea, while over

75% of those surveyed planned travel to Korea [Cha, 2012]. A leading K-pop entertainment agency, SM Entertainment, acquired a travel agency and reopened their own travel agency, named SM-Town Travel ([www.smtowntravel.com](http://www.smtowntravel.com)), to organize various travel packages for international K-pop fans [Cha, 2012].

Some researchers attempted to expand research areas with another cultural form of popular media, or music. Leaver *et al.* [2009] investigated music-based tourism to a meaningful location, for example, where music was produced and musicians were rooted. With a case of UK youth tourism market, Sellars [1998] studied that dance music influences youth culture and their tourism. On examining the impact of Korean pop culture including K-pop, TV drama series/movies, and food on Hong Kong residents, Kim *et al.* [2008] found out that K-pop positively influences Hong Kong residents' perceptions on Korea as a tourist destination. In their analysis, responders' image change of Korea after experiencing K-pop was the significant predictor for their intention to visit Korea.

## 2.3 Music Consumption on Social Media

With the development of technology, social media is popularized as a music distribution and consumption channel. While people in entertainment industry realize the business potential of social media, managers in music industry actively embrace social media in their marketing activities, for example, by promoting newly released music albums and keeping in touch with the fan base.

According to Twitter Counter, a website for Twitter statistics, contemporary pop music icons

such as Justin Bieber, Katy Perry, Lady Gaga, Taylor Swift, Rihanna, and Britney Spears are ranked as top 10 in terms of Twitter followers [Twitter Counter, 2013]. On examining the social media usage by an American pop star, Britney Spears, Kaplan *et al.* [2012] argued that one of success factors of Britney Spears and her team of employees was their effort in integrating various social media applications such as YouTube, Twitter, Facebook and blogs.

Among many social media channels, YouTube is getting great influence in the music industry, because consumers easily find music videos and audio clips on YouTube. Established in 2005, YouTube becomes the world largest video-sharing website with more than 1 billion unique users every month [YouTube, 2013]. According to an Internet analytics company, comScore, in terms of online video content property, YouTube ranked top with 153.9 million unique viewers, followed by Facebook (63.8 million) and VEVO (52 million) [Flosi, 2013].

Especially, YouTube attracts attention from consumers as a music discovery and listening channel. The Nielsen Company reported that YouTube emerged as one of music discovery channels and more teenagers came to enjoy music through YouTube than through any other traditional sources such as radio and music CDs [The Nielsen Company, 2012]. Considering YouTube's influence and popularity among music consumers, Billboard started to include YouTube streaming data, ranking the Billboard Hot 100 [Billboard, 2013].

The rapid spread of YouTube creates a lot of opportunities for non-mainstream music, for example, K-pop. Originally, K-pop had limited influence on some of Asian countries such as

China, Hong Kong, Japan, and Taiwan, which were assumed to share many cultural elements. However, social media like YouTube and Twitter helped K-pop expand its fandom to the west. K-pop entertainment agencies make their own channels on YouTube and promote music of their artists.

As a result, YouTube becomes widely recognized by international K-pop consumers as a representative distribution channel for K-pop music videos [Park, 2012]. Based on data from major K-pop record labels, JoongAng Daily [2012] reported that K-pop music videos on YouTube attracted 2.9 billion views from Asia, 1.1 billion views from America and 0.7 billion views from Europe. In December 2011, to meet the soaring demand of worldwide K-pop consumers, YouTube launched a dedicated K-pop channel and listed K-pop genre in its music page along with R&B, Rock, and Rap [Lee, 2011].

As social media creates diverse opportunities and challenges as a marketing and communication channel, it gets a lot of attention from business practitioners and academic researchers. However, no studies have attempted to examine how social media can be used as a marketing and consumption channel for music, thereby influencing tourism. Considering the rapid growth of video-sharing social media as a consumption

channel of entertainment goods, it is required for academicians and practitioners to investigate the impact of video consumption through social media in the context of tourism.

### III. Hypothesis Development

Recently, producers of entertainment goods such as movie, drama and music make use of social media as a marketing tool. However, there are variations in usage of social media by the type of content as <Table 2>. Typically, TV dramas and films are distributed via networks by commercial distributors. Though some producers release teaser videos on video-sharing social media, viewers rarely enjoy the full version of movies or TV dramas without payment. However, in case of music, music labels actively take advantage of video-sharing social media as a tool for marketing. With the growth of social media, consumers easily find, enjoy and share music videos in full version without payment. Hence, focusing on social media as a channel for music consumption and distribution, this research attempts to examine music-induced tourism via video-sharing social media. Specifically, with a case of K-pop music videos on YouTube, we investigate whether viewers' engagement on K-pop music videos is positively

<Table 2> Use of Social Media by the Type of Entertainment Goods

Usage	TV Drama	Movie	Music
Promotion	Yes	Yes	Yes
Distribution	Yes (with limitations)	Yes (with limitations)	Yes (with almost no limitations)
Consumption	Yes (with limitations)	Yes (with limitations)	Yes (with almost no limitations)
Payment on consumption (in full version)	Yes	Yes	No

related with actual visitation to Korea.

Suggesting anecdotal evidences of “Korean Wave”-induced tourism and analysing questionnaires from Thai travellers to Korea, Rajaguru [2014] argued that Korean motion pictures including Korea films, K-pop music videos, and Korean dramas influence Thai consumers to experience Korean entertainment, buy Korean goods and visit Korea. In his research, Rajaguru [2014] applied the Stimulus-Organism-Response (S-O-R) framework and revealed that both visual and vocal effects from Korean motion pictures influence tourism intention and actual visitation to Korea as well.

The S-O-R framework, originally proposed by Mehrabian *et al.* [1974], assumes that stimuli from the environment (S) directly or indirectly cause approach or avoidance responses (R), while the internal cognitive and affective state of human being (O) mediates the relationship [Mehrabian *et al.*, 1974; Vieira, 2013]. Vieira [2013] suggested that environmental cues can include music, colour, lighting, and fragrance. In the context of consumer response model, Bagozzi [1983] argued that organism is characterized as the internal processes regulating choice, which consists of two processes such as cognitive processes (e.g., expectations, evaluation, perceived risk) and affective processes (e.g., motivation, needs, attraction). Regarding affective processes, Bagozzi [1983] contended that after being exposed to stimulus and processing the factual information, consumers develop feelings and emotions toward stimulus.

It was acknowledged that the S-O-R paradigm has been modified, depending on research objectives [Cui *et al.*, 2013]. Following the S-O-R framework in media-induced tourism literature, this research posits that engagement on

K-pop music videos serves as organism (O), which influences consumer’s response to visit Korea (R). Therefore, hypothesis is set up as follows.

*H1. Engagement on K-pop music videos is positively and significantly related with actual visitation to Korea.*

## IV. Research Methodology

### 4.1 The data

The goal of this research is to analyse the impact of social media like YouTube on music-induced tourism with a case of K-pop and inbound tourism to Korea. At first, to investigate world-wide K-pop consumption through social media, we targeted YouTube, the largest music video channel online. Though YouTube originally started its service for users to share User Generated Content, more and more professional content producers and media corporations like entertainment agencies provide their audiovisual contents such as music videos and movie trailers via their dedicated channels on YouTube [Moyer, 2011]. Next, to estimate viewers’ engagement on K-pop music videos, we focused on YouTube users’ comments, because users’ comments on particular video contents can reflect their overall level of interests and engagement [Ghuneim, 2008]. Also, the number of users’ comments can suit for our research in the following points.

First, for each comment on a specific video clip, YouTube provides users’ IDs, the content of the comment, and his/her location. By identifying a user ID and his/her comments on a



particular video, we can exclude repeated comments by the same users and estimate the unique impact of K-pop consumption on YouTube. Second, focusing on YouTube comments, we can capture country-by-country interest on K-pop contents. To examine the country-by-country impact of K-pop consumption on inbound tourism to Korea, we had to aggregate overall consumption of each K-pop clip by country. Adopting users' comments, we could identify consumers' interests by countries.

Before collecting YouTube users' comments data on K-pop music clips, we had to identify the sample for our analysis. At the first step, we listed up K-pop artists who were under the management of K-pop major record labels such as SM Entertainment, YG Entertainment, and JYP Entertainment. Also, other artists who were under the management of minor labels, but introduced on the Apple iTunes were also included. As a result, we could find totally 179 K-pop artists who debuted between 2002 and 2012.

Among the numerous music videos of those artists, we had to identify the representative videos which could reflect overall engagement of international viewers. Therefore, we searched for the official music videos of those K-pop artists on YouTube by record labels and entertainment agencies with multiple selection criteria. At the first step, the search was conducted using the keywords with both the name of K-pop artist and "music video" (or shortly "m/v"). Videos which had combinations of the keywords in the title were selected for our sample. Second, official music videos by K-pop music labels were sampled. Though there were variations of K-pop music videos on diverse YouTube channels, we

considered the official music videos only for the representative videos. Third, with the same reason above, we focused on music videos which had over one million view counts on YouTube as of December 2012. As a result, we could sample 166 video clips which were released from 2009 to 2012. In general, as most of K-pop music videos showed rapidly decreasing trend in the number of comment counts after 90 days from release, we collected comments for 90 days after video release, thereby controlling the limited increase of comment counts over time.

Targeting 166 video clips, we collected YouTube comments of those video clips for 90 days after the release with a Python-based Web-crawler. Considering cases of multiple comments per video clip by the same user, we chose one comment by one user per video clip and aggregated the comments by country on a monthly basis. As a result, we could build YouTube comments by countries in panel data set which comprised 43 months from April 2009 to October 2012. Based on the data, we devised a variable, YOUTUBE, assigning the share of YouTube comments by a country to the total comments of the world.

For dependent variable, TOURIST, we referred to the tourism database of Korea Culture and Tourism Institute ([www.tour.go.kr](http://www.tour.go.kr)). The database provides statistics of visitor arrivals by purpose of visit such as pleasure, business, official, and others, and by country of residence. For our research, we referred to visitor arrivals for pleasure and considered 25 representative source countries which recorded significant tourists to Korea. Exceptionally, though there have been a lot of Chinese tourists to Korea, it was excluded in our study, because YouTube is

<Table 3> Summary of key variables

Variable	Description
No. of inbound tourists to Korea (TOURIST)	The monthly number of tourists from a country to Korea
Share of YouTube comments (YOUTUBE)	The monthly share of YouTube comments by countries
Trade volume with Korea (TRADE)	The monthly trade amount of a country with Korea
Consumer Price Index (CPI)	Consumer Price Index of Korea which is adjusted in U.S. dollars
No. of population (POPULATION)	A country's number of population per year
Past colonial relationship (COLONY)	Dummy variable for past colonial relationship with Korea (1 if tourist's country had colonial relationship with Korea or 0 otherwise)
Geographical distance (DISTANCE)	The physical distance between the capital cities of source countries and Seoul of Korea in kilometres
VISA waiver (VISA)	Dummy variable for VISA waiver countries to Korea (1 if VISA is waived to enter Korea or 0 otherwise)

blocked in China [Sommerville, 2009]. However, it can be helpful to estimate the overall impact of K-pop consumption on inbound tourism to Korea, because Chinese tourists take too much share of tourists to Korea.

For control variables, following previous empirical research on tourism, we considered various tourism-related data: the amount of exports and imports (TRADE), consumer price index of destination country (CPI), the level of population (POPULATION), waiver of visa (VISA), past colonial relationship (COLONY) and each country's geographical distance from Korea (DISTANCE) [Balli *et al.*, 2013; Eilat *et al.*, 2004; Lee *et al.*, 2010; Naudé *et al.*, 2005]. According to prior research, bilateral trade, size of population in country of residents, waiver for VISA, and past colonial relationship are positively related with the flow of tourists, whereas relative price level of destinations and geographical distance are negatively related [Balli *et al.*, 2013;

Eilat *et al.*, 2004; Lee *et al.*, 2010; Naudé *et al.*, 2005].

For our analysis, the bilateral trade volume between Korea and the country of origin was obtained from the trade database of Korea International Trade Association ([www.kita.net](http://www.kita.net)). The Consumer Price Index of Korea and exchange rate of Korean Won for the adjusted consumer price index in U.S. dollars were collected from the Bank of Korea ([www.bok.or.kr](http://www.bok.or.kr)). Population data by countries were collected from the World Bank and the Global Insight. The binary variables such as past colonial relationship and geographical distance were obtained from CEPII [Mayer *et al.*, 2011]. Requirement for VISA to travel Korea was collected from the Korea's Ministry of Foreign Affairs ([www.mofa.go.kr](http://www.mofa.go.kr)). <Table 3> summarizes key variables for this research.

<Table 4> presents descriptive statistics of key variables. The unit of analysis in present

<Table 4> Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
TOURIST	1075	18,122	51,631	74	353,455
YOUTUBE	1075	0.0344	0.0675	0.0004	0.5167
TRADE (Million USD)	1075	1,759	2,019	116	9,914
CPI	1075	11.33	0.85	10.15	13.77
POPULATION (Million)	1075	70	77	5	314
COLONY	1075	0.04	0.20	0	1
DISTANCE (Kilometre)	1075	7,325	3,834	1,157	18,365
VISA	1075	0.28	0.45	0	1

<Table 5> Pairwise Correlations for Regression Variables

	TOURIST <sub>i,t</sub>	YOUTUBE <sub>i,t-1</sub>	TRADE <sub>i,t</sub>	CP <sub>it</sub>	POPULATION <sub>i,t</sub>	COLONY <sub>i</sub>	DISTANCE <sub>i</sub>	VISA <sub>i,t</sub>
TOURIST <sub>i,t</sub>	1							
YOUTUBE <sub>i,t-1</sub>	0.383**	1						
TRADE <sub>i,t</sub>	0.663**	0.417**	1					
CP <sub>it</sub>	-0.075*	0.011	-0.144**	1				
POPULATION <sub>i,t</sub>	0.260**	0.368**	0.406**	-0.007	1			
COLONY <sub>i</sub>	0.521**	-0.058**	0.405**	0.000*	0.208**	1		
DISTANCE <sub>i</sub>	-0.552**	0.070*	-0.286**	0.000	0.215**	-0.329**	1	
VISA <sub>i,t</sub>	0.494**	0.304**	0.624**	0.000**	0.011**	0.327**	-0.209**	1

\*\* p < 0.01, \* p < 0.05.

Note: To control for size effect and smooth the distribution, we log-transformed some variables such as TOURIST, TRADE, and POPULATION.

study is country and the total observations are 1,075 with 25 countries and 43 months. Average monthly number of tourists from source countries to Korea is 18,222, whereas average monthly share of YouTube comments by source country to the total comments of the world is 0.0344. Average monthly amount of trade between a source country and Korea is 1,759 million dollars and average number of population of source countries is 70 million. In terms of geographical distance, average distance from Korea to source countries is 7,325 kilometers.

## 4.2 Analysis Model

Before estimating the analysis model, we

firstly examined the correlation between key variables. <Table 5> reports the correlation of regression variables. Overall, the correlations are significant. The number of tourists is positively related with the share of YouTube comments (0.383), trade volume (0.663) and population (0.260), but negatively related with the price level of destination (-0.075) and Korea's geographical distance from the tourist's country of origin (-0.552). To check the multicollinearity of explanatory variables, we conducted the variance inflation factor (VIF) analysis and found out that the highest and average VIF values were 2.87 and 1.74 respectively, which are less than the commonly accepted threshold of 10 [Hair *et al.*, 1998].

To analyze the flow of tourists, tourism researchers attempted to apply the gravity model [Anderson, 1979; Tinbergen, 1962] which has an origin in international trade research, because tourism can be considered as a form of trade. Mirroring the physical gravity equation, the original gravity model represents that bilateral trade is proportional to the size of both economies, but inversely proportional to geographical distance. In tourism research, the applied model hypothesizes that the amount of tourist flows between countries is positively related with size of economies in terms of population, trade, or market capitalization and negatively related with their geographical distance [Balli *et al.*, 2013; Eilat *et al.*, 2004; Naudé *et al.*, 2005; Rui *et al.*, 2013].

Adopting the gravity model in international tourism, a lot of researchers tried to identify other key determinants on tourism. In the context of media-induced tourism, with exports data of the Turkish soap operas, Balli *et al.* [2013] conducted panel data analysis to estimate the effects of the Turkish soap operas in foreign countries on inbound tourism to Turkey. In addition, other tourism researchers also found out that VISA requirement for travel, past colonial relationship with destinations, geographical distance, and price level of destination country can be determinant variables [Eilat *et al.*, 2004; Lee *et al.*, 2010; Naudé *et al.*, 2005].

Based on previous tourism research with the gravity model, we incorporated a new variable, YOUTUBE, in the model, which represented the impact of social media on tourism. In our analysis, YOUTUBE captured the effects of K-pop consumption on inbound tourists to Korea. Controlling other determinant variables in interna-

tional tourism and taking advantage of panel data structure, we developed the panel data model as follows.

$$\begin{aligned} \text{TOURIST}_{i,t} = & \alpha + \beta_1 \text{YOUTUBE}_{i,t-1} + \beta_2 \text{TRADE}_{i,t} \quad (1) \\ & + \beta_3 \text{POPULATION}_{i,t} + \beta_4 \text{CPI}_t \\ & + \beta_5 \text{VISA}_{i,t} + \beta_6 \text{DISTANCE}_i + \beta_7 \text{COLONY}_i \\ & + \rho_i + \varepsilon_{i,t} \end{aligned}$$

In the model above, we set up the lagged variable for K-pop consumption on YouTube as  $\text{YOUTUBE}_{i,t-1}$ , because K-pop consumption in previous period can influence inbound tourists to Korea in the following period. We took the logarithm of tourist, trade, and population to control for size effects. In addition, we incorporated a term for fixed effect,  $\rho_i$ , to control unobserved and time-invariant idiosyncratic heterogeneity across countries.

## V. Empirical Results

After confirming that all variables are stationary by the Leven-Lin-Chu panel unit root test [Levin *et al.*, 2002], we report the estimation results for our analysis model (1) in <Table 6>. At first, in the column (1), the pooled ordinary least squares (OLS) estimation result is reported for comparison. In general, while all variables are found to be significant, the coefficients of  $\text{YOUTUBE}_{i,t-1}$  (6.472),  $\text{TRADE}_{i,t}$  (0.323),  $\text{POPULATION}_{i,t}$  (0.172),  $\text{VISA}_{i,t}$  (0.433) and  $\text{COLONY}_i$  (2.107) are positive but of  $\text{CPI}_t$  (-0.116) and  $\text{DISTANCE}_i$  (-0.000) are negative, as expected.

Next, to capture the panel data structure of our sample, we applied the panel data analysis. Among various estimation methods for panel data, we conducted two representative estima-

tion methods, fixed-effects and random-effects estimation. The second and third columns in <Table 6> report the results of the fixed-effects estimation for the equation (1). While the second column shows the fixed-effects estimation result without  $YOUTUBE_{i,t-1}$ , the third column presents the estimation result with  $YOUTUBE_{i,t-1}$ .

Consistent with the previous literature [Balli *et al.*, 2013; Eilat *et al.*, 2004; Naudé *et al.*, 2005], the coefficients of both  $TRADE_{i,t}$  (0.179) and  $POPULATION_{i,t}$  (7.301) are positive and significant, which means that the size of economies has positive influence on tourists' flow to Korea. Also, the coefficient of  $CPI_t$  (-0.046) is negative but significant, which means that the relative price level of Korea makes negative impact on inbound tourism to Korea as expected [Balli *et al.*, 2013; Eilat *et al.*, 2004; Naudé *et al.*, 2005].

When including the variable for YouTube comments as the third column, we can find out that the coefficient of  $YOUTUBE_{i,t-1}$  (1.756) is significant and positive, which reveals that YouTube comments on K-pop music video clips make a positive impact on inbound tourists to Korea. Other control variables such as  $TRADE_{i,t}$  (0.159) and  $POPULATION_{i,t}$  (6.663) and  $CPI_t$  (-0.073) are consistent with the estimation results in the second column.

One of the disadvantages of fixed-effects model is that it cannot estimate the coefficients of time-invariant variables. In our case, the fixed-effects model cannot provide estimation results for  $VISA_{i,t}$ ,  $DISTANCE_i$  and  $COLONY_i$ . So, we performed random-effects estimation, which shows the estimation results as the fourth and the fifth column in <Table 6>.

In the fourth column, we tested for the ran-

dom-effects estimation without the variable of  $YOUTUBE_{i,t-1}$ . Among the time-invariant variables, the coefficient of  $VISA_{i,t}$  (0.941) is positive and significant, which means that the exemption of VISA has positive impact on inbound tourism to Korea as expected [Balli *et al.*, 2013; Lee *et al.* 2010]. Though the coefficient of  $DISTANCE_i$  (-0.000) is very small, we can find out that the geographical distance has negative impact on Korea's inbound tourism.

Also, other variables such as  $TRADE_{i,t}$  (0.228) and  $POPULATION_{i,t}$  (0.569), and  $CPI_t$  (-0.102) are consistent with the estimation results in fixed effect model, while  $VISA_{i,t}$  (0.941) and  $DISTANCE_i$  (-0.000) is also found to be significant. However, the estimation result for the past colonial relationship ( $COLONY_i$ ) suggests that it is insignificant in our model, though the coefficient is estimated to be positive (1.107). It may be from a problem of sample limitation, because Korea's colonial relationship is confined to Japan.

Finally, in the fifth column, we performed random-effects estimation with the variable of  $YOUTUBE_{i,t-1}$  and also confirmed that the coefficient of  $YOUTUBE_{i,t-1}$  (1.776) is significant and positive. Similarly, other control variables present the similar estimation results in the fourth column, while the coefficients of  $TRADE_{i,t}$  (0.201),  $POPULATION_{i,t}$  (0.489),  $CPI_t$  (-0.130),  $VISA_{i,t}$  (0.869) and  $DISTANCE_i$  (-0.000) are significant. Again, the coefficient of  $COLONY_i$  (1.378) is positive, but insignificant as the fourth column.

Meanwhile, under specific condition where the unique errors are uncorrelated with the regressors in the model, the random-effects model is known to give more efficient estimation results than the fixed-effects model. However,

<Table 6> Regression results

Variable	DV: TOURIST <sub>i,t</sub>				
	Pooled OLS estimation (1)	Fixed-effects estimation without YouTube comments (2)	Fixed-effects estimation with YouTube comments (3)	Random-effects estimation without YouTube Comments (4)	Random-effects estimation with YouTube Comments (5)
YOUTUBE <sub>i,t-1</sub>	6.472 <sup>***</sup> (0.505)	-	1.756 <sup>***</sup> (0.512)	-	1.776 <sup>***</sup> (0.514)
TRADE <sub>i,t</sub>	0.323 <sup>***</sup> (0.047)	0.179 <sup>***</sup> (0.046)	0.159 <sup>***</sup> (0.047)	0.228 <sup>***</sup> (0.046)	0.201 <sup>***</sup> (0.046)
POPULATION <sub>i,t</sub>	0.172 <sup>***</sup> (0.032)	7.301 <sup>***</sup> (1.127)	6.663 <sup>***</sup> (1.159)	0.569 <sup>***</sup> (0.197)	0.489 <sup>***</sup> (0.185)
CPI <sub>t</sub>	-0.116 <sup>***</sup> (0.038)	-0.046 <sup>***</sup> (0.016)	-0.073 <sup>***</sup> (0.018)	-0.102 <sup>***</sup> (0.013)	-0.130 <sup>***</sup> (0.018)
VISA <sub>i,t</sub>	0.433 <sup>***</sup> (0.090)	-	-	0.941 <sup>*</sup> (0.521)	0.869 <sup>*</sup> (0.490)
DISTANCE <sub>i</sub>	-0.000 <sup>***</sup> (0.000)	-	-	-0.000 <sup>***</sup> (0.000)	-0.000 <sup>***</sup> (0.000)
COLONY <sub>i</sub>	2.107 <sup>***</sup> (0.175)	-	-	1.107 (1.285)	1.378 (1.206)
Constant	0.778 (1.035)	-122.457 <sup>***</sup> (19.637)	-110.642 <sup>***</sup> (20.227)	-4.007 (3.394)	-1.803 (3.216)
N	1050	1075	1050	1075	1050
R <sup>2</sup>	0.6969	0.1994	0.2126	0.1722	0.1907

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

when we conducted the Hausman test [Hausman, 1978], we found that the fixed-effects estimation is preferred to the random-effects estimation for our analysis model.

In summary, our estimation results showed that engagement of K-pop music video clips (YOUTUBE) is a significantly related with actual visitation to Korea, which supports the hypothesis. Additionally, consistent with previous international tourism research, we also confirmed that bilateral trade volume (TRADE), size of population (POPULATION), and VISA requirement for travel (VISA) have positive influence on inbound tourists to Korea, whereas

price level of Korea (CPI) and geographical distance (DISTANCE) make negative impact.

## VI. Robustness Check

To check the robustness of our model for serial correlation and heteroskedasticity, we conducted some robustness tests. At first, to control for heteroskedasticity, we estimated our model with White's heteroskedasticity-robust estimator for standard errors. The results are reported in column 1 of <Table 7>. The result again presents that the coefficient of YOUTUBE<sub>i,t-1</sub> (1.756) is significant and positive. When we

<Table 7> Robustness tests

Variable	DV: TOURIST <sub>i,t</sub>		
	White's estimation (1)	Driscoll-Kraay's estimation (2)	Newey-West's estimation (3)
YOUTUBE <sub>i,t-1</sub>	1.756* (0.947)	1.756*** (0.464)	6.472*** (0.758)
TRADE <sub>i,t</sub>	0.159*** (0.053)	0.159** (0.073)	0.323*** (0.054)
POPULATION <sub>i,t</sub>	6.663*** (2.376)	6.663** (2.832)	0.172*** (0.031)
CPI <sub>t</sub>	-0.073** (0.029)	-0.073*** (0.027)	-0.116** (0.049)
VISA <sub>i,t</sub>	-	-	0.433*** (0.142)
DISTANCE <sub>i</sub>	-	-0.015** (0.007)	-0.000*** (0.000)
COLONY <sub>i</sub>	-	-	2.107*** (0.194)
Constant	-110.642*** (41.715)	-	0.778 (1.227)
N	1050	1050	1050
R <sup>2</sup>	0.2126	0.2126	0.2126

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

used another heteroskedasticity-consistent estimator for standard errors, or Driscoll-Kraay's estimator [Driscoll *et al.*, 1998], it also showed that the coefficient of YOUTUBE<sub>i,t-1</sub> (1.756) is significant and positive in column 2 of <Table 7>. Next, to control for autocorrelation, we conducted Newey- West autocorrelation and heteroskedasticity-consistent estimators [Newey *et al.* 1987] which reported the result in column 3 of <Table 7>. The analysis again confirmed the coefficient of YOUTUBE<sub>i,t-1</sub> (6.472) is significant and positive. Additionally, in three types of robustness tests, other control variables remained consistent with previous estimation results in <Table 7>. In summary, we could conclude that our results are robust via three different types

of heteroskedasticity and autocorrelation-consistent estimators.

## VII. Discussion and Conclusions

### 7.1 Conclusions

A recent surge of social media provides a broader range of values to consumers. Especially, in case of entertainment industry, video-sharing social media like YouTube enables consumers to easily search and enjoy video contents such as music videos and movie trailers. Consumers come to YouTube for watching a music video and purchasing the music album. Before going to theaters, consumers watch movie trailers on

YouTube. Furthermore, after watching videos, consumers share their experience with family, friends, and colleagues via other social media channels such as Facebook, Twitter, and blogs. The rapid growth of video-sharing social media suggests business opportunities for entertainment industry, while providing new research area to academia.

In the past, tourism researchers have paid attention to the impact of media on tourism, so-called, media-induced or film-induced tourism. Those studies put more focus on media itself such as films, TV programs, and soap operas, ignoring potential of social media as consumption and distribution channels for media. As social media permeates our daily lives, it is necessary to do more research on the role of social media in entertainment and tourism industry.

In the context of media-induced tourism, there have been a lot of research how the visual media such as movies and soap operas induce tourism. However, while traditional media-induced tourism research focused on films and TV programs, there have been limited studies on the impact of music and music-induced tourism. Anecdotal evidence suggests that music consumption and pop stars can stimulate international tourism, so it would be an important issue to investigate whether current body of knowledge in media-induced tourism can be expanded to music-induced tourism.

In this paper, expanding prior research on media-induced tourism and focusing on the potential of social media for a music consumption and distribution channel, we attempted to analyse the impact of video-sharing social media with a case of K-pop and inbound tourism to

Korea. Controlling many of the determinants of tourism like population, trade, relative price, VISA waiver, and geographical distance, we found out that engagement of K-pop music video clips on YouTube is a significant predictor for the flow of inbound tourists to Korea.

## 7.2 Contributions and Implications

From an academic perspective, this study makes contributions in the following points. First, this research expands tourism research regarding social media. Previous tourism researchers studied social media in the diverse contexts: traveller's behaviour and usage [Bosangit *et al.*, 2012; Chung *et al.*, 2015; Parra-López *et al.*, 2011; Tussyadiah *et al.*, 2009; Xiang *et al.*, 2010; Ye *et al.*, 2011; Yoo *et al.*, 2011; Yoo *et al.*, 2012]; marketing and strategic management [Akehurst, 2009; Carson, 2008; Chalip *et al.*, 2003; Hays *et al.*, 2013; Hvass *et al.*, 2012; Koo *et al.*, 2013b; O'Connor, 2010; Pan *et al.*, 2007; Sigala *et al.*, 2015]; education and research [Isacsson *et al.*, 2011; Xiang *et al.*, 2015]. However, there has been no attempt to examine social media in the context of media-induced tourism. Investigating how social media can contribute to enhancing tourism, this study explores an opportunity of tourism research on social media.

Second, with a case of music, this study enriches a growing body of media-induced tourism research. Compared with the traditional films and TV programs associated tourism, music-induced tourism is under-researched. However, music is one of the most popular entertainment contents among consumers and also influences tourists' decision-making in destination selection. In addition, the proliferation of the social



media plays an important role to disseminate music among consumers. Examining music-induced tourism in social media settings, this study expands current research in tourism which is induced by media.

Third, this study pursues interdisciplinary research regarding music-consumption via social media and its impact on tourism. As social media attracts attention as a channel to promote sharing and consumption of cultural content, prior researchers have studied social media in various industries, for example, film [Baek *et al.*, 2014; Dellarocas *et al.*, 2007; Duan *et al.*, 2008; Qin, 2011; Rui *et al.*, 2013] and music [Dewan *et al.*, 2012; Dhar *et al.*, 2009]. However, most of previous research put focuses on individual industry only. Considering the integrated impact of social media on music industry and tourism industry as well, this study attempts to examine the interrelationship between industries regarding social media.

In a methodological perspective, this study suggests a new research method for media-induced tourism in terms of data collection. Due to the obtainability of data, most of previous research on media-induced tourism resorted to interviews, surveys or case studies with a few exceptions [Balli *et al.*, 2013]. Also, prior research examined tourists' perception by one country residents to the limited number of destinations, owing to data availability. However, developing a Web-crawler, we collected Web-data from a video-sharing social media, YouTube, and analyzed their impact on international tourists to a destination. Xiang *et al.* [2015] acknowledged that there have been no systematic applications of big data analytics in tourism research, despite the rapid growth of

social media and consumer-generated content on the Internet. As social media continues to proliferate, it now provides new opportunities to researchers in research methodology, especially, in availability and variety of data.

From a practical perspective, this research gives a practical implication for marketers how to attract international tourists. As a cost-effective marketing tool, it has been acknowledged that destination marketing organizations (DMOs) should take advantage of social media and consumer-generated reviews [Akehurst, 2009; Carson, 2008; Pan *et al.*, 2007]. Furthermore, in cultural tourism, Koo *et al.* [2013a] suggested that DMOs should pay attention to cultural contents associated with social media and marketing strategy with the destination media culture. In this research, we empirically showed that consumption of K-pop on social media is positively related with the flow of inbound tourists to Korea. It provides important lessons for marketers and policy makers how to develop promotional tactics and attract international tourists, leveraging potential of social media for tourism marketing.

### 7.3 Limitations and Future Research

Though this study contributes to expanding media-induced tourism research in the context of music and social media, we may consider the following points for future research. First, among popular music in many regions, we only focused on K-pop originating in South Korea and did not consider other countries' cases. If the future research can examine the impact of other cases, for example, J-pop (shortly, Japanese pop music), it may be helpful to generalize the analysis results to the global context.

Second, another type of limitations in generalizability comes from the selection of music consumption channel. In this study, we considered YouTube as a representative social media for consuming music videos. However, though YouTube is a dominant player among video-sharing social media sites, various social media channels like Vimeo, Instagram, and Vine are emerging as platforms for watching and sharing video contents including music videos. Future studies may consider other video-sharing social media channels and their impact on international tourism.

Third, future research may elaborate further on the content of users' comments on videos. In our analysis, we focused on users' comments, because they can represent the overall magnitude of viewers' engagement on videos and can be aggregated by country. However, not all of the comments are affective to the content of video clips and their performers. In this study, we couldn't consider the sentiment of each comment, because a lot of comments were

written in international languages and it was difficult to categorize the sentiment of each comment in many cases. If future research can conduct sentiment analysis on comments, it may efficiently identify viewers' affection on video clips.

Fourth, further research may estimate the impact of music-induced tourism by incorporating more control variables, for example, the impact of promotions put to source countries and the amount of other media such as TV dramas and movies. Though most of Korean entertainment agencies adopt the simultaneous worldwide release of music videos on YouTube, there may be country-specific promotion effect. Also, although TV dramas and movies are generally broadcasted and distributed in restricted networks, there would be the impact of the consumption of other Korean cultural contents in source countries. In future study, researchers may simultaneously consider how overall Korean cultural contents make influences on potential travellers in source countries.

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◆ About the Authors ◆



Sehwan Oh

Sehwan Oh is a Senior Researcher at Korea International Trade Association (KITA). He earned his Ph.D. in Management Information Systems from the College of Business Administration, Seoul National University, M.S. in Information Technologies (MSIT) from the School of Computer Science, Carnegie Mellon University and B.A. in Economics from the College of Social Sciences, Seoul National University. He has over ten years of industry experience in IS and international trade areas. His current research interests include social media, electronic word-of-mouth, and e-commerce.



JoongHo Ahn

JoongHo Ahn is a Professor of Management Information Systems, Graduate School of Business, Seoul National University. He earned his PhD, and M.Phil. both from Stern School of Business, New York University, and MPA, BA from Seoul National University. His areas of interests include business transformation, electronic/mobile business and inter-organizational information systems, strategic use of information technology in government and business, and IT governance. He was a board member of National Information Agency and a member of The Presidential Council for National Information Strategy, Republic of Korea. He is a founding member and was past president of Korea Society of MIS and president and founder of Korean Association of IT Governance.



Hyunmi Baek

Hyunmi Baek is an Assistant Professor at the Department of Information Sociology, HanyangUniversity. She earned her PhD in management information systems from the College of Business Administration, Seoul National University. Her research interests include electronic word-of-mouth, social media, information adoption and electronic commerce. Her prior research has been published in IEEE transactions in vehicular technology, International Journal of Electronic Commerce, ETRI Journal and Asian Case Research Journal.

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