行動傳播研究發展之初探
A Preliminary Exploration of the Development of Mobile Communication Research

Guest Editor Hui-Fei Lin

Due to rapid changes in communication technology, mobile communication technology continues to thrive, leading to the current prevalence of mobile devices such as smartphones and tablets. According to the latest survey done by eMarket (2016) in September 2016, the Asia-Pacific region has the highest proportion of smartphone users among the entire global population, with the proportion of smartphone users among the national population in Taiwan (73.4%) being the highest in the world, followed by Singapore (71.8%) and South Korea (70.4%), all of which have significantly greater proportions than those of the United States (63.9%) and mainland China (43.8%). Moreover, the Groupe Speciale Mobile Association (GSMA) (2017) estimates that the number of global mobile subscribers will exceed 5 billion in 2017. In addition, the "Digital in 2017 Global Overview" report from "We Are Social" (wearesocial.com) and "Hootsuite" (hootsuite.com) reveal a substantial growth in the number of Internet users. Furthermore, more than 90% of the Internet users in the world are found to use smartphones to surf the Internet (Tech in Asia, 2017). It is interesting to note that, due to the popularity of smartphones, more than half of web traffic is generated through smartphones (Tech in Asia, 2017).

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It can be seen that the proliferation of mobile broadband has provided a significant opportunity for individuals to access the Internet directly through their mobile devices (Kourouthanassis & Georgiadis, 2014). With the rapid universalization of smartphones and built-in applications, individuals' attitudes towards mobile phones and mobile phone usage behavior has gradually affected people's lifestyles (Qiu, 2010). The rise of mobile technology, including smartphones, has led to the arrival of "mobile media life" (Snickars & Vonderau, 2012). The younger generations that regularly use mobile communications have been referred to as the "Thumb Generation" (Bell, 2005) and "Generation Txt" (Rafael, 2003). The aforementioned surveys and findings indicate that smartphones have penetrated people's lives without their realizing it. Therefore, research on mobile communication-related issues is worthy of attention.

Studies on mobile communication can be traced back to the 1990s. Taipale and Fortunati (2014) found that the majority of the mobile communication studies conducted between 1999 and 2012 tended to apply a quantitative approach. Zheng, Wei, and Nekmat (2016) reviewed 120 Asian mobile communication studies published in the top 18 journals from 1995 to 2015 and systematically analyzed the development of mobile communication research over the 20-year period. These researchers discovered that, studies related to Asian mobile communication were mainly published in journals that focus on communication technology. The main reason for this is that mobile media is still considered a new type of media; hence, research on mobile communication is usually first published in journals that specifically publicize new media technology, followed by journals related to general communication. With the growing number of studies on mobile communication, the first mobile communication journal with a peer review mechanism, "Mobile Media and Communication," was published in 2013 (Zheng, Wei, & Nekmat, 2016).

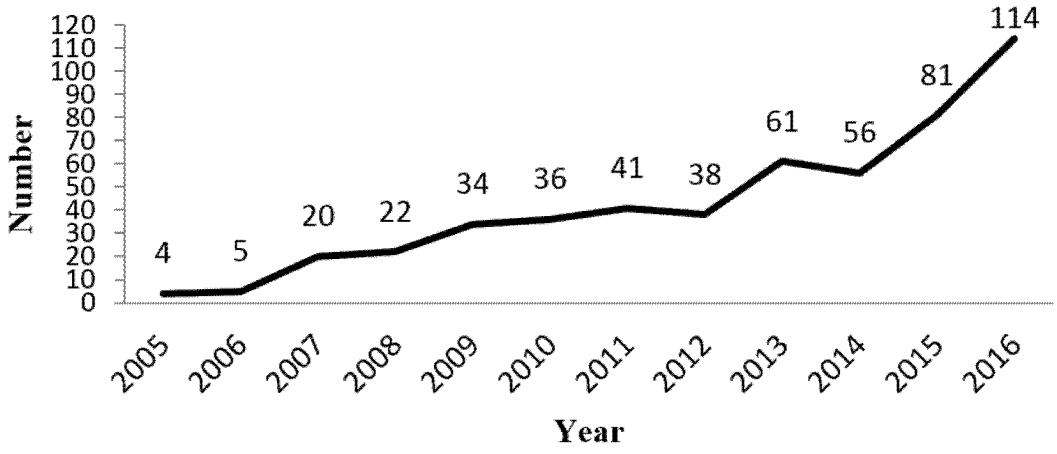
In order to arrive at a preliminary understanding of the publication of domestic and foreign mobile communication, the present article summarized the number of corresponding papers published between 2005 and 2016, which were collected by the Social Sciences Citation Index (SSCI) citation database and the index to the Taiwan Periodical Literature

System (TPLS) respectively. The keywords "mobile communication," "mobile," and "smartphones" were used to search for papers within the two databases, and the results are presented in Table 1 and 2 respectively.

Table 1 shows that, in the SSCI citation database, the number of studies related to mobile communication continues to grow every year. The number of papers published in 2016 was the greatest (114), with 33 more papers published than in 2015. The research topics in those years covered the fields of science, business, advertising, and entertainment, and they involved issues such as social media (e.g. Kim, Dwivedi, Zhang, & Jeong, 2016; Kinnunen et al., 2016; Kim, Wang, & Oh, 2016; Lewis et al., 2010), user experiences (e.g. Goh & Liew, 2009; Gustarini, Scipioni, Fanourakis, & Wac, 2016; Phithakkitnukoon et al., 2015; Yang, Yu, Zo, & Choi, 2016), mobile learning (e.g. Dold, 2016; Gallagher, 2017; Hsu, Kuo, Liang, & Lee, 2016; Sánchez, 2009), application of radio-frequency identification (RFID) (e.g. Kim, Chung, Lee & Preis, 2016; Wong et al., 2014), mobile shopping(e.g. Kim, Chung, Lee & Preis, 2016; Wong et al., 2014), mobile libraries(e.g. ChanLin & Hung, 2016; Zhao, Deng, & Zhou, 2015), mobile entertainment(Leong et al., 2016; Shih, 2011), and mobile advertising (e.g. Gao & Zang, 2016; Lin, Hsu, & Lin, 2017; Su, Huang, Chen, & Li, 2016; Okazaki, 2007).

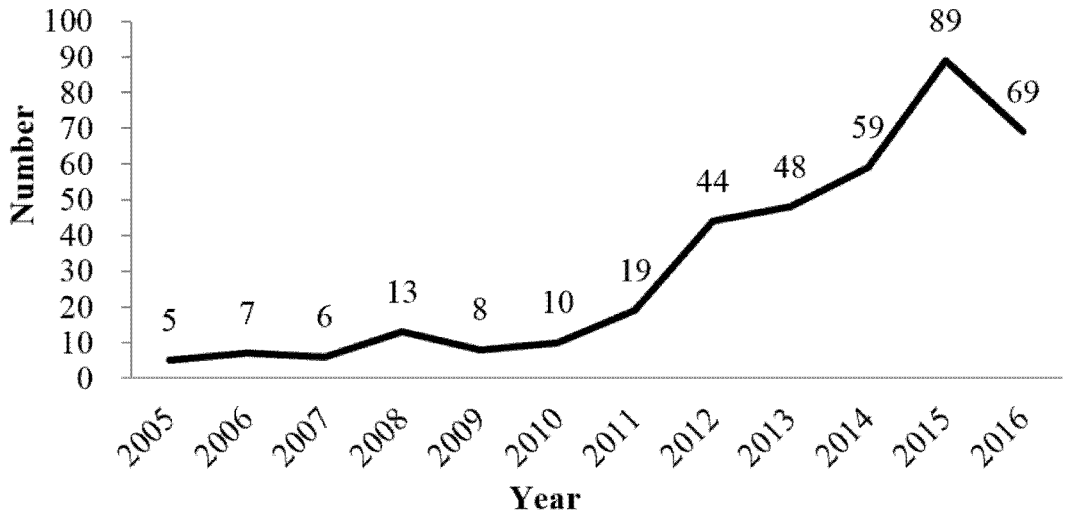
* The number of papers related to mobile communication was obtained as follows: the keyword "mobile communication" was first utilized for the search; however, not many papers were acquired. Therefore, "mobile communication" and "smartphone" were further used as keywords in the search, and papers related to mobile communication were then selected from the search results.

Table 1. The Number of Mobile Communication Papers in the SSCI Citation Database



The trend seen in Table 2 suggests that the number of studies conducted by Taiwanese scholars in the past 12 years has continued to increase annually. Although compared to 2015, the number of papers published in 2016 decreased by 20, there were still 69 studies conducted. In Taiwan, mobile communication research mainly encompasses science and technology, social communities, business, psychology, and tourism. The issues discussed included mobile services (e.g. 李春美、徐承原，2012；林芙美，2016；陳光華等人，2015；張心馨等人，2005；劉君祺，2017), virtual reality (e.g. 林麗娟、周德嫻，2013; 許于仁、黃一倚，2017; 陳啓雄等人，2012；張菀珍，2015；潘美璟、張睿昇，2016；), cloud technology (e.g. 呂理煉、黃培華，2016；林宇軒等人，2012；陳志華等人，2015；張適宇等人，2011；劉豫鳳、黃耀賢，2015), mobile community (e.g. 王宗松，2013；李一靜等人，2015；楊美雪等人，2016), mobile business (e.g. 何淑君等人，2015；陳光華等人，2013), situational awareness (e.g. 林大正等人，2008；陳榮昌等人，2014), tourist (e.g. 林杏虹等人，2016；朱家偉，2015), mobile games (e.g. 王曉玫等人2015；江憲坤等人，2007；林怡君等人，2012；楊美雪、朱家瑩，2016；蔡子瑋、沈毅珊，2016), and health care (e.g.李孟芬、潘立傑，2012；呂昀霖等人，2016；陳宥霖、湯幸芬，2015；黃仲霖、賴美嬌，2013；陳權豐等人，2015).

Table 2. The Number of Mobile Communication Papers in the TPLS



Zheng, Wei, and Nekmat (2016) investigated the number of Asian mobile communication researches published in leading academic journals between 1995 and 2015 and found that the number of corresponding papers reached its peak in 2006, when the Blackberry 7100 was launched, and in 2014, when smartphones began to proliferate. Therefore, Zheng, Wei, and Nekmat (2016) considered that the development trend of mobile communication research in Asia was consistent with the general progress of the development of mobile technology. In addition, Qiu (2010) conducted a review on mobile communication research in Asia beginning in the mid-1990s and found that a large variety of research methods were applied, such as empirical approaches, policy analysis, action research, and comparative studies conducted on the micro (individual), meso (organization), and macro (society) levels. Specifically, during early stages, mobile communication research in Asia emphasized innovation in the patterns of both communications and usage. Hence, studies at that time tended to approach the subject from a social psychology and behavioral science perspective, focusing on the increasing popularity and use of mobile phones, as well as how they are connected to people's lives (Lee, Leung, Lo, & Xiong, 2008; Qiu, 2016; Wei, 2006). Although these studies lacked basic re-theorization, they laid the foundation for empirical

research on mobile communication (Qiu, 2010).

Qiu (2010) further examined studies of mobile communication conducted on a micro, meso, and macro level. Qiu (2010) concluded that the research conducted on a micro level mainly targeted such dimensions as individuals' behavior and attitudes towards the technology to investigate the design and adoption of mobile phones, such as the user friendliness of the interface and acceptance and usage among different social groups. With the increase of studies conducted on a micro-level perspective, research at the macro-level began to attract the attention of the academic community. The main research areas included public policies, such as telecom policy research. In recent years, meso-level studies that concentrated on the relationship between mobile technology and specific communities began to emerge (such as youth culture). The changes in research themes echo the findings of Zheng, Wei, and Nekmat (2016). Mobile communication research in Asia generally spans across a large variety of areas related to communications. When new technology is introduced, research tends to focus on the motivation of using the new medium; with the continuous development of mobile-hardware and software, the focus of research shifted to analyzing the decision to use the new mobile technology; and thereafter, the focus was gradually cast towards the impact of mobile technology on society, life, the mental health of children and the young population, and political behavior. In summary, with the rapid development of mobile technology, mobile services, and the prevalence of various mobile applications, the coverage of mobile communication research is expanding and research topics are becoming more complex. This, in turn, is leading to the themes in mobile communication studies becoming more diversified.

Nevertheless, Taipale and Fortunati's (2014) review on the mobile communication research published in the top five journals from 1999 to 2012 revealed a lack of studies approaching mobile communication from a theoretical perspective. Similarly, Zheng, Wei, and Nekmat (2016) found that approximately half of Asian mobile communication research between 1995 and 2015 did not utilize any founded theories. Among the remaining studies that introduced a theoretical framework, the majority adopted use and gratification theory,

the concept of "the digital divide," the technology acceptance model (TAM), and the theory of diffusion of innovation. In addition, according to the compilation of domestic and foreign mobile communication studies conducted by the present study, extended versions of TAM were also adopted, such as TAM2 (Yoon, 2016) and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003). The UTAUT incorporates eight theories, including the model of PC Utilization, the theory of planned behavior (TPB), the theory of reasoned action (TRA), a combined model of TAM and TPB (combined TAM-TPB model), the TAM, the motivational model, diffusion of innovation theory, and social cognitive theory (SCT) (e.g., Chen, Rong, Ma, Qu, & Xiong, 2017; Hu & Chiang, 2017). Taipale and Fortunati (2014) argued that the lack of theoretical foundations is likely to hinder the development of mobile communication research. Zheng, Wei, and Nekmat (2016) further pointed out that the mere duplication and extension of theories proposed by Western scholars created obstacles in the development of the field, as well as making it a challenge to develop localized theories related to mobile communication research that was appropriate in an Asian context.

In addition, Zheng, Wei, and Nekmat (2016) expressed that the limitations of current studies included an over-emphasis on specific countries in East Asia, a lack of a unified theoretical framework, and over-reliance on "one-shot" research designs. Morley and Robins (2005) believed that culture shapes the way mobile media is used, as well as users' habits; therefore, cultural factors should be included in technology related research. Zheng, Wei, and Nekmat (2016) suggested that, in addition to studying mobile communication in East Asian countries, more attention should be paid to countries that were not in East Asia. Furthermore, multiple research methods should be introduced to explore mobile communication in different cultural contexts.

It can be seen from the aforementioned analysis that the importance of mobile media has attracted increasing attention. In the last 20 years, with the application and development of mobile communication technology, mobile communication studies have also extended to more research areas, such as the relationship between mobile communication and the

promotion of democratic trends; the relationship between smartphones and the transformation of consumer culture; the cultural phenomenon of mobile games from a psychological research perspective; and the combination of mobile communication and tourism. In view of this, the *information society research* decided to launch a special issue that focused solely on the research of mobile communication. The call for papers has received an active response from the academic community. After an anonymous review of the submitted manuscripts, three articles were selected. The first paper is entitled "A study on the use behavior of LINE TV based on the UTAUT2 and digital lifestyle scale," and was written by Chen-Yu Weng and Hui-Ping Huang. The second author is the corresponding author, an associate professor from the Institute of Communication Studies at National Chiao Tung University. This study adopted a marketing perspective, utilizing the newly developed extended UTAUT (UTAUT2) model to explore the influential factors affecting the usage of LINE TV (a free audio and video streaming platform). By applying an online questionnaire survey method, the study discovered that performance expectancy, facilitating conditions, hedonic motivation, and habitualization tend to promote people's intentions to use the platform. Moreover, usage intentions were found to affect users' behavior; and the intention to use LINE TV was found to differ among individuals with different digital lifestyles.

The second article, entitled "Cinemas' on the go: An exploration analysis for viewers' practices of 'personalized mobile cinema' under the trend of digital convergence," was written by Yu, Guo-Chiang, an assistant professor in the Department of Mass Communication at Providence University, and focused on the "mobility" feature of mobile technology. The study expanded the basic concept of personalized mobile cinema and re-assessed changes in the meaning of "movie viewing"-a traditional, mass-cultural, and recreational activity with a long history-in a modern context, under the wave of developing mobile and wireless network technologies. Apart from the practice of mobile movie viewing, the author also examined the influence of the audience and users of mobile movie platforms, the form and content of the movies, and the location and media utilized in movie viewing on mobile devices. Employing a qualitative audience-research design, the author explored the practice of mobile movie

viewing, analyzed the impact of mobile movie-viewing platforms on the content and context of home movie-viewing activities and on the users' daily lives.

The third and final accepted article, entitled "Mobile Instant Messenger (LINE) and parent-teacher communication: Exploring positive and negative influencing factors for teachers' acceptance," was written by Bau-Min Tu and Yueh-Chin Huang. The first author is the corresponding author who are an assistant professor in the Department of Information Communication at University of Kang Ning. This paper proposes a new form of architecture to improve and extend the UTAUT2 model. Apart from discussing the usage features of LINE (a communication application), the author also included factors that have a negative influence on teachers during parent-teacher communication into the model, such as "perceived risk" and "anxiety of message receiving and sending." Applying a questionnaire survey method and recruiting teachers from public primary schools as research subjects, the study summarized the relationships between positive and negative influential factors and teachers' intentions to use and usage behaviors of LINE for parent-teacher communication. This study therefore bridged the gap of past studies that only previously concentrated on positive influential factors and ignored the negative influences.

This issue utilizes the preface to review past mobile communication studies and introduce the corresponding research trends, and the three papers included in this issue serve as examples to inspire future research. In addition to attracting more attention for the relevant areas, these studies are intended to promote the introduction of fresher and more innovative research topics in the field so as to further stimulate the development of corresponding academic research and put together a more comprehensive blueprint for the field of mobile communication.

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