



## The effect of new media on consumer media usage: An empirical study in South Korea



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### ABSTRACT

The advent and proliferation of the Internet (a form of new media) have heavily influenced consumers' media usage behavior and a number of other social, political, cultural, and economic outcomes. The recent introduction of smart mobile media, including smartphones and tablets, is expected to similarly affect these issues. This study empirically analyzes how the advent of the Internet and smart mobile media affects Korean consumers' media usage behavior, seeking to provide a means to anticipate the ripple effect to societal outcomes related to the evolution of new media in Korea. We modeled consumers' media usage behavior and conducted preference and simulation analyses using data gleaned from a survey of consumers' media behavior and a Multiple Discrete-Continuous Extreme Values (MDCEV) model. The results of the analyses illustrate how consumer preferences regarding old and new media differ in terms of socio-demographic variables. Moreover, the analyses revealed that whereas the advent of the Internet has negatively influenced consumers' use of old media, the arrival of smart mobile media has had a synergistic effect on television use. As a result, the advent of mobile media increased the use of television, but decreased use of other forms of old media.

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### 1. Introduction

Media are continuously evolving (Stöber, 2004). Although early forms of media (e.g., mail, telegram, telephone) were used primarily to exchange simple messages, the advent of mass media like newspapers and magazines allowed media to be used to deliver vast amounts of information to a large and unspecified audience. When electronic media like radio and TV became popular during the early 20th century, they were used to deliver a substantial amount of information to recipients in

real time. Most recently, however, digital media (e.g., the Internet, mobile technology) have fundamentally altered the media environment. Specifically, the advent of digital media has facilitated the fast and easy consumption, retention, and sharing of a significant amount of information between multiple users.

To differentiate these from analog media, such as newspapers, magazines, radio, and television, many scholars and professionals have referred to digital media as "new media." Although researchers have defined new media in a wide variety of ways, we define new media as digital media capable of saving, handling, delivering, and exchanging information through digital binary codes (Negroponte, 1996; Flew, 2002; Manovich, 2003; Jenkins, 2006). The emergence of new media has become institutionalized in our society, fundamentally changing our methods of exchanging information and the consumer behaviors of media usage. It has also had a significant

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effect on many social, political, cultural, and economic activities (Stöber, 2004).

Researchers have long-studied the influence of media evolution on societal outcomes, with a particular emphasis on the advent and proliferation of the Internet. Some of the most notable studies in this domain have explored the influence of the Internet on traditional media usage (Bromley and Bowles, 1995; Mokhtari et al., 2009), social relations (Haythornthwaite, 2002; Brignall and Van Valey, 2005; Amichai-Hamburger and Hayat, 2011), the economy (Litan and Rivlin, 2001; Lucas and Sylla, 2003),<sup>4</sup> politics (Farrell, 2012), education (Agarwal and Day, 1998; Arsham, 2002),<sup>5</sup> and corporate marketing (Avlonitis and Karayanni, 2000; Hennig-Thurau et al., 2010).

The arrival and development of new media in the 21st century have put pressure on companies and governments to understand the Internet and use it in accordance with their specific objectives. For example, companies largely sought to leverage the Internet to maximize the effectiveness of their marketing efforts. Similarly, governments sought to use the Internet to efficiently publicize policies. Given the extent to which organizations in both the private and public sectors have used the Internet to achieve specific objectives, many researchers have worked to identify the implications of their Internet usage. For example, Bhatnagar and Ghose (2004) found that Internet retailers could use customers' Internet search patterns according to demographic characteristics and product types to cultivate store loyalty among those customers. Naik and Peters (2009) also illustrated Internet use for marketing purposes, empirically showing that the development of a marketing scheme that is comprised of the appropriate mix of print-, television-, radio-, and Internet-based messages can efficiently build customer loyalty. In a similar vein, Lin et al. (2013) analyzed consumers' simultaneous usage of these four media types and found that media campaigns that leverage both old and new media are most effective.

Similar to the Internet, the recent introduction of personal mobile smart devices has contributed to the evolution of media usage. This is particularly notable, given that smart device usage is spreading at a faster rate than older media (MIT Technology Review, 2012). Researchers estimated that by the end of 2013, 20%, 22%, and 6% of the global population will possess personal computers, smartphones, and tablet PCs, respectively (Fig. 1; BI Intelligence, 2013). This proliferation of new media will allow people to easily access and share massive amounts of digitized information anywhere and at any time.

Despite these developments, most research in this domain has been focused on predicting and measuring the preference and demand for smart media products and services (Chen and Hsieh, 2012; Choi et al., 2013; Park et al., 2013; Lee, 2014). Though useful in its own right, this line of research has failed to consider the ways in which the development of new media has affected a number of salient socioeconomic outcomes. To

address this gap, we analyze the ways in which Internet-based new media, digital media broadcasting (DMB), and older forms of media (e.g., magazines, television) affect certain societal outcomes. Specifically, in this paper, we use a Multiple Discrete-Continuous Extreme Value (MDCEV) model and scenario simulations to investigate Korean consumers' media usage, designed to forecast the socio-economic effects related to the evolution of new media.

In addition, we explore how the emergence of new media affects the use of old media. Jenkins (2006) argued that new media has a tendency to incite drastic changes. For example, when new media emerge, they tend to displace old media, changing consumers' media consumption habits. Therefore, before it is possible to understand the socio-economic effects of new media emergence, it is first necessary to explore and understand changes in consumers' media usage behavior resulting from the advent of the Internet and other digital media.

To explore these issues, we have organized this study into a series of interrelated sections. In the next section, we define new media and briefly describe the extent of new media usage in Korea. In part 3, we propose an MDCEV model. Following this, we describe participants' media usage habits in part 4. In part 5, we report the results of our analyses. Finally, in part 6, we discuss multiple economic- and policy-related implications of our analysis.

## 2. Background

### 2.1. Definition and classification of new media

Researchers have defined new media in a number of different ways, so there is currently no consensus with regard to how to conceptualize new media. For the purposes of the current study, we define new media as digital media capable of saving, handling, delivering, and exchanging information through digital binary codes. This definition suggests that new media facilitate not only the free exchange of digitalized information in compressed form, but also user interaction. Using this definition as a guide, and in accordance with definitions proposed by Jenkins (2006), we can categorize computers, the Internet, and smart mobile devices as new media. Comparatively, we can categorize print, television, and radio as old media. For the purposes of this research, we will analyze consumers' usage behavior for seven forms of media: newspapers, magazines, radio, television, computer-based Internet, mobile Internet, and DMB.<sup>6</sup> Using these definitions, we categorize newspapers, magazines, radio, and television as old media; and the Internet, mobile Internet, and DMB as new media.

### 2.2. New media usage in Korea

According to the International Telecommunication Union (2013), Korea ranks first in the world in information and communication technology readiness, usage, and capability as of 2013. In addition, other organizations reported that Korea also ranked first in terms of Internet penetration (97.2%; Organisation for Economic Co-operation and Development, 2012), and second in terms of smartphone penetration (73.0%;

<sup>4</sup> This line of research includes an examination of the Internet's influence on economic productivity (Litan and Rivlin, 2001) and national economic growth (Lucas and Sylla, 2003).

<sup>5</sup> This line of research includes a consideration of the Internet's effect on student learning and retention, perceptions of instructor effectiveness, and changes in attitudes towards economics (Agarwal and Day, 1998), as well as the influence of course format (online vs. offline) on learning and teaching styles (Arsham, 2002).

<sup>6</sup> Mobile multimedia broadcasts that allow mobile devices, such as mobile phones and MP3s, to receive and display television, radio, and data broadcasts.

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