Information Seeking and Sharing while Media Multitasking
Demographic, Psychological, and Cultural Predictors

Yoori Hwang[*]

Associate Professor, Department of Digital Media, Myongji University

Se-Hoon Jeong[**]

Associate Professor, School of Media and Communication, Korea University

This study examined the demographic, psychological, and cultural predictors of (a) media multitasking in general, (b) information seeking while media multitasking, and (c) information sharing while media multitasking. A survey of 698 adults showed that females, and individuals high in sensation seeking, neuroticism, openness, and polychronicity tend to multitask more. For information seeking while multitasking, younger adults, females, and individuals high in neuroticism, extraversion, and polychronicity tend to seek information while multitasking. For information sharing while multitasking, younger adults, females, and individuals high in neuroticism, openness, extraversion, and polychronicity tend to share information while multitasking.

Key words media multitasking, information seeking, information sharing, demographic, psychological, cultural, predictors

* yhwang@mju.ac.kr
** Corresponding author: sjeong@korea.ac.kr

1. Introduction

Media multitasking (or dual-tasking) is often defined as "performing two or more tasks simultaneously, one of which involves media use" (Lang & Chrzan, 2015, p.100). Due to its prevalence among media users, media multitasking has received much attention in recent research. A recent report suggests that almost all media users multitask (92%), and the proportion of media users who use only one medium has decreased from 19% in 2012 to 8% in 2015 (Deloitte, 2016). Deloitte report (2016) also shows that the two most common multitasking activities while watching television are (a) browsing the web and (b) using social networking services. Media users often browse the web to seek additional information online, and use social networking services to share information with their social network. Previous research has examined information seeking (e.g., Zigmond & Stipp, 2010) and information sharing (e.g., Petrescu & Korgaonkar, 2011; Tuten, 2008) as important behaviors related to media use.

There has been much research on the antecedents of media multitasking. Previous research has examined the demographic, psychological, and cultural predictors. For demographic factors, much research tested the role of age (e.g., Brasel & Gips, 2011; Carrier, Cheever, Rosen, Benitz, & Chang, 2009; Hwang, Kim, & Jeong, 2014; Voorveld & van der Goot, 2013) and gender (e.g., Cotten, Shank, & Anderson, 2014; Hwang et al., 2014; Jeong & Fishbein, 2007). Second, for psychological factors, previous research has examined various characteristics including neuroticism (Wang & Tchernev, 2012) as well as sensation seeking (Duff, Yoon, Wang, & Anghelcev, 2014; Jeong & Fishbein, 2007; Sanbonmatsu, Strayer,

Medeiros–Ward, & Watson, 2013; Yang & Zhu, 2016). Finally, for cultural factors, previous research has examined polychronicity (e.g., Circella, Mokhtarian, & Poff, 2012; Goonetilleke & Luximon, 2010).

Although much research has examined various demographic, psychological, and cultural factors that predict media multitasking, no previous research has examined all of these factors together. In addition, little research examined how demographic, psychological, and cultural antecedents affect information seeking and sharing while multitasking. Thus, the present study examines how demographic factors (e.g., age and gender), psychological factors (e.g., Big Five personality and sensation seeking), and cultural factors (e.g., polychronicity) predict (a) media multitasking, (b) information seeking while multitasking and (c) information sharing while multitasking.

From an academic perspective, understanding the predictors of information seeking and sharing while multitasking is important because information seeking and sharing while multitasking can influence or change the nature of media multitasking effects. For example, information seeking and sharing while multitasking could reduce the negative effects of media multitasking. Thus, it is important to examine who are more likely to engage in information seeking and sharing while multitasking, and accordingly are less likely to suffer from the negative effects of media multitasking. In addition, information seeking while multitasking may reduce knowledge gap (Tiechnor, Donohue, and Olien, 1970) and information sharing while multitasking can facilitate diffusion (Rogers, 1964). Thus, understanding who are more likely to engage in information seeking and sharing while multitasking can help us reexamine knowledge gap and diffusion in the age of media multitasking.

Also, from a practical perspective, understanding the type of audiences who are more or less likely to seek and share information while multitasking could help media practitioners to develop effective strategies in response to audience's media multitasking behaviors. Specifically, for general media multitasking, media practitioners could design more effective messages (e.g., messages with high sensation value) to reach users who are likely to multitask while using a media (e.g., high sensation seekers). Also, for information seeking and sharing while media multitasking, media practitioners could design messages that can facilitate seeking and sharing information in a way that is better tailored to those who are likely to seek or share information while using a media.

2. Literature Review

1) Multitasking, Information Seeking, and Information Sharing

Multitasking is a prevalent behavior among media users. Media users' multitasking behavior is important because it could decrease or increase media effects (for a review, see Jeong & Hwang, 2016; Lang & Chrzan, 2015). Jeong and Hwang's (2016) recent meta-analysis of multitasking effects found that multitasking could reduce cognitive effects (e.g., recall and comprehension), whereas it could enhance attitudinal effects (e.g., persuasion and attitude change).

Previous research on multitasking has suggested that information seeking and sharing can increase when multitasking with new media

(e.g., Internet and mobile media). For example, based on Google search queries data, Zigmond and Stipp (2010) found that search queries for a particular product increased when an advertisement for the product was shown on television. In addition, past research has shown that television viewers frequently interact with others while watching television (Jeong & Fishbein, 2007; Lee & Lee, 1995; Mora, Ho, & Krider, 2011). Recently, television viewers frequently interact with others through social media, such as Twitter and Facebook. For example, consumers exchange opinions about products during or after exposure to advertising (Petrescu & Korgaonkar, 2011; Tuten, 2008). In addition, Park, Park, Lim, and Park (2016) showed that tweets regarding the presidential election television debate were actively generated during the 2012 Korean presidential election television debate.

Examining the predictors of information seeking and sharing while multitasking is important because information seeking and sharing while multitasking can change the nature of media multitasking effects. Specifically, information seeking and sharing could reduce the negative effects of media multitasking. For example, relevant information seeking while watching television can enhance the effects of a television message (Hwang & Jeong, 2014).

In addition, examining the predictors of information seeking and sharing while multitasking is important due to the social consequences of information seeking and sharing. Research on information seeking and sharing while multitasking has implications for theory and research on the knowledge gap (Tiechnor, Donohue, and Olien, 1970) and diffusion (Rogers, 1964). With regard to information seeking, previous research found that information seeking could increase knowledge gain

(Hwang & Jeong, 2014; Kahlor & Rosenthal, 2009; Kitchens, Powell, & Williams, 2003; Shim, 2008; Shim, Kelly, & Hornik, 2006). Hwang and Jeong (2014) found that TV-Internet multitasking increase knowledge gain, mediated by online information seeking. Thus, by examining who are more likely to seek information while multitasking, we can understand and predict who are likely to gain more knowledge from media multitasking. Related to information sharing, diffusion could be facilitated by information sharing. Individuals share content or news not only produced by traditional media organizations but also produced by media users, and influencers (e.g., influential bloggers) in particular play an important role in information sharing and diffusion (Chang & Park, 2012). Thus, by identifying the type of individuals who are more likely to share information while multitasking, we could better understand the process of diffusion.

2) Demographic Predictors

(1) Age

Previous research has found that media multitasking is predicted by demographic characteristics, such as age, gender, education, and race. With regard to age, previous research has consistently found that younger audiences tend to multitask more than older audiences (Brasel & Gips, 2011; Carrier, Cheever, Rosen, Benitez, & Chang, 2009; Duff, Yoon, Wang, & Anghelcev, 2014; Hwang, Kim, & Jeong, 2014), which might be explained based on cognitive differences in age (Brasel & Gips, 2011). Also, previous research has shown that age was a negative predictor of information seeking (e.g., Bogg & Vo, 2014; Chisolm, 2010;

Miller & Bell, 2012; Tan & Tang, 2013) and information sharing (Acquisti & Gross, 2006; Nosko, Wood, & Molema, 2010). In sum, older audiences tend to multitask less and also seek and share less information.

(2) Gender

In terms of gender, research has found that females tend to multitask more than males (Cotten et al., 2014; Duff et al., 2014; Foehr, 2006; Hwang et al., 2014; Jeong & Fishbein, 2007; Pilotta, Schultz, Drenik, & Rist, 2004), which has been explained based on gender differences in cognitive processing (Christensen, Bickham, Ross, & Rich, 2015).

For information seeking and sharing, some gender differences has been observed as well (Lu & Hsiao, 2009; Teo & Lim, 2000; Walton & Rice, 2013; Weiser, 2000). For example, men often seek more information than women (Teo & Lim, 2000), whereas women tend to engage in more interpersonal communication than men (Weiser, 2000).

Related to information sharing, Walton and Rice (2013) found that women tend to share more information than men online due to gender differences in self-disclosure. In addition, Lu and Hsiao (2009) suggested that women share information due to self-expression motives, men tend to share due to personal outcome expectations (e.g., achievement needs and self-focused goals).

(3) Other Demographics

Besides age and gender, there is little evidence regarding the relationship between other demographic characteristics and multitasking. Although some studies found a relationship between education and multitasking (Hwang et al., 2014), and race and multitasking in the U.S. (Jeong & Fishbein, 2007), most studies do not suggest a clear pattern

regarding demographic characteristics and multitasking other than age and gender.

On the basis of the above literature, we question the following:

RQ1: Is age related to multitasking and information seeking/sharing while multitasking?

RQ2: Is gender related to multitasking and information seeking/sharing while multitasking?

3) Psychological Predictors

(1) Sensation Seeking

In addition to demographic characteristics, previous research has found that media multitasking is predicted by psychological characteristics, such as personality. Related to personality, much previous research has examined sensation seeking. Sensation seeking is defined as a personal trait seeking "varied, novel, and complex sensations and experiences and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (Zuckerman, 1994). Previous research consistently found that high sensation seekers tend to multitask more than low sensation seekers (Duff et al., 2014; Jeong & Fishbein, 2007; Sanbonmatsu et al., 2013; Yang & Zhu, 2016).

For information seeking/sharing, Lu, Palmgreen, Zimmerman, Lane, and Alexander (2006) found a positive relationship between sensation seeking and online information seeking about health topics such as sexually transmitted diseases. Also, Haridakis and Hanson (2009) found positive associations between aspects of sensation seeking (experience seeking and boredom susceptibility) and sharing YouTube videos with

others. This may be because information seeking and sharing can satisfy high sensation seekers' need for novel experience by seeking and sharing new information. According to the activation model for information exposure (Stephenson & Southwell, 2006), high sensation seekers have a higher need for stimulation, thus, they may seek or share content to gratify their needs.

(2) Big Five Personality

Although not examined much in the multitasking literature, the Big Five model of personality is the most popular classification of personality (Goldberg, 1993; John, Naumann, & Soto, 2008). The Big Five model characterizes human personality along five dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. First, people high in extraversion are sociable and energetic. Second, people high in agreeableness are kind, good-natured, and easygoing. Third, people high in conscientiousness are well-organized and goal-oriented. Fourth, people high in openness enjoy new experiences and are imaginative. Finally, people high in neuroticism are easily distressed, anxious, and lack emotional stability.

Of the Big Five personality characteristics, previous research has found a positive relationship between neuroticism and media multitasking, such that high neuroticism is related to media multitasking involving various types of media (e.g., computer, radio, print, television, and phone) (Wang & Tchernev, 2012). Although not examined in previous research, openness could be related to multitasking. Because people high in openness enjoy new experiences, these individuals might be more likely to multitask.

Previous research on information seeking/sharing also suggests that neuroticism and openness as important predictors. With regard to information seeking, Bogg and Vo (2014) found that neuroticism and openness were positively related to health information seeking. Also, for online shopping, Tsao and Chang (2010) found that neuroticism and openness were indirectly related to information seeking by increasing utilitarian motivation (e.g., purchase a functional product effectively).

For information sharing, Hughes, Rowe, Batey, and Lee (2012) found that neuroticism and openness were related to SNS use, such that neuroticism was positively related to social use of facebook and openness was positively related to social use of Twitter. Also, Picazo-Vela, Sergio, Chou, Melcher, and Pearson (2010) found that neuroticism and conscientiousness were positively related to writing online reviews. There are some studies that examined the relationship between Big Five personality and knowledge sharing. For example, Matzler, Renzl, Müller, Herting, and Mooradian (2008) found that openness, agreeableness, and conscientiousness were positive predictors of knowledge sharing behavior. In addition, Hau (2014) found that openness and conscientiousness were positively related to knowledge self-efficacy and extraversion and agreeableness were positively related to social relations, which were positively linked to knowledge sharing.

On the basis of the above literature, we question the following:

RQ3: Is sensation seeking related to multitasking and information seeking/sharing while multitasking?

RQ4: Is Big Five personality related to multitasking and information seeking/sharing while multitasking?

4) Cultural Predictors

(1) Polychronicity

Previous research has found that multitasking could be predicted by cultural characteristics, specifically polychronicity (e.g., Circella et al., 2012; Goonetilleke & Luximon, 2010). The concept of polychronicity originated from E. T. Hall in his book *The Silent Language* (1959). According to Hall, "a polychronic culture is a culture in which people value, and hence practice, engaging in several activities and events at the same time" (Bluedorn, 1998). At first, polychronicity was a macro-level construct focusing on a cross-cultural differences. However, recent studies suggested that the concept could be applied to micro-level individual differences while maintaining the original cultural definition (Poposki & Oswald, 2010).

Previous research found a relationship between polychronicity and media multitasking (Kononova & Chiang, 2015; Magen, 2017; Voorveld, Segijn, Ketelaar, & Smit, 2014). Based on a sample of 5,973 individuals, Voorveld and colleagues (2014) found cross-cultural differences in media multitasking. Although Hall (1959) viewed that North Americans and North Europeans tend to be monochrons and South Americans and South Europeans are polychrons, Voorveld et al.'s (2014) data suggest that multitasking was most prevalent in the U.S. and least prevalent in Netherlands. Instead of surveying differences across countries, some studies examined the relationship between polychronicity and media multitasking within a culture. For example, based on a sample of 1,040 American and 932 Taiwanese respondents, Kononova and Chiang (2015) found a positive relationship between polychronicity and multitasking,

both in the U.S. as well as in Taiwan. Thus, we examine whether there is a positive relationship between polychronicity and multitasking. However, to the best of our knowledge, no past research has examined the role of polychronicity in predicting information seeking/sharing. Thus, we question the following.

RQ5: Is polychronicity related to multitasking and information seeking/sharing while multitasking?

3. Methods

1) Study Participants

A total of 698 adults participated in an online survey recruited by Macromill Embrain (http://www.embrain.com), which is a large research firm in South Korea. From a pool of more than 1 million members, Macromill Embrain randomly selected 2,324 individuals based on their demographic characteristics (i.e., gender and age). Specifically, both male and female respondents were recruited equally, and the respondents' age ranged from 20 to 60. The selected individuals were sent an invitation email to participate in a survey about "media use". Of the 2,324 email recipients, 756 individuals (33%) agreed to participate in the study; and of the 756 individuals who agreed to participate, 698 individuals completed the survey (92%).

The mean age of the sample was 39.7 (SD = 11.07, Min = 20, Max = 60), and 49.6% were female. In terms of education, 14.3% of the participants were high school graduates and 15.2% were two-year

college graduates, 57.9% of the participants were four-year college graduates, and 12.3% had a graduate degree. The median monthly household income was approximately 4,400,000 KRW (equivalent to 4,000 US dollars).

2) Measures

Measures included demographic characteristics (age, gender, education, and income), psychological characteristics (sensation seeking and Big Five personality), and cultural characteristics (polychronicity).

Sensation seeking was assessed based on BSSS-4 (Hoyle, Stephenson, Palmgreen, Lorc, & Donohew, 2002). Respondents were asked to indicate the extent to which they agree to the following items: "I would like to explore strange places," "I like to do frightening things," "I like new and exciting experiences even if I have to break the rules," and "I prefer friends who are exciting and unpredictable". Response options ranged from strongly disagree (1) to strongly agree (5) ($M = 2.75$, $SD = 1.03$, $a = .81$).

Big Five personality was measured using Lang, John, Lüdtke, Schupp, and Wagner's (2011) short assessment items. Respondents were asked to indicate the extent to which they see themselves as: "talkative", "outgoing", "reserved" (reverse coded) (*extraversion*: $M = 2.98$, $SD = 0.88$, $a = .85$); "considerate", "forgiving", "rude to others" (reverse coded) (*agreeableness*: $M = 3.68$, $SD = 0.74$, $a = .73$); "get nervous easily", "worry a lot", "remain calm in tense situations" (reverse coded) (*neuroticism*: $M = 3.34$, $SD = 0.85$, $a = .73$); "value artistic and aesthetic experiences", "come up with new ideas", "have an active imagination"(*openness*: $M = 3.18$, $SD = 0.88$, $a = .86$); "do things

efficiently", "do a thorough job", "tend to be lazy" (reverse coded) (*conscientiousness*: $M = 3.40$, $SD = 0.78$, $a = .74$). 5-point Likert scales ranging from strongly disagree (1) to strongly agree (5) were provided as response options.

Polychronicity was measured using Bluedron's (1999) scale. Respondents were asked to indicate the extent to which they agree to the following items: "I like to juggle several activities at the same time", "I believe people should try to do many things at once", "I believe people do their best work when they have many tasks to complete", "I like to work on more than a single task or assignment at the same time". Response options ranged from strongly disagree (1) to strongly agree (5) ($M = 2.85$, $SD = 0.87$, $a = .86$).

Media multitasking was assessed based on the Media Multitasking Index (Ophir, Nass, & Wagner, 2009). Respondents were asked to indicate the extent to which they simultaneously use each of the other media while using five primary media: TV, radio, smartphone, PC, and print media. Response options were never (=1), rarely (=2), often (=3), and most of the time (=4).

The formula for calculating the MMI is as follows:

$$MMI = \sum_{i=1}^{4} \frac{m_i \times h_i}{h_{total}}$$

In the formula, m_i stands for the number of media used when using primary medium i and h_i stands for the number of hours per week using primary medium i. Also, h_{total} stands for the total number of hours per week using all primary media (e.g., TV, radio, print media, smartphone, and PC). Thus, MMI indicates the amount of media

multitasking that respondents perform while using media. In this sample, MMI ranged from 0 to 4 (M = 1.71, SD = 0.70).

Information seeking and sharing while multitasking were measured using the items adapted from previous research (Hwang & Jeong, 2014). Specifically the following item was used for information seeking: "When you multitask, how often do you use smartphone or PC in order to *search information* about what you saw in other media (such as television, radio, or print media)?" The following item was used for information sharing: "When you multitask, how often do you use smartphone or PC in order to *share information* about what you saw in other media (such as television, radio, or print media)?" Response options were never (=1), rarely (=2), often (=3), and most of the time (=4).

4. Results

1) Hypotheses Testing

We first examined correlations among the key variables. As shown in Table 1, multitasking was positively related to personality factors (sensation seeking, openness, extraversion), and cultural factors (polychronicity). Age, as a demographic characteristic, was negatively related to multitasking. Information seeking while multitasking was positively related to sensation seeking, neuroticism, openness, conscientiousness, extraversion, and polychronicity. Information sharing while multitasking was positively related to sensation seeking, openness, conscientiousness, extraversion, and polychronicity. Similar to multitasking, age was a negative predictor of information seeking and sharing while multitasking. Also, females were

Table 1. Descriptive Statistics and Correlations among Key Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Age	1													
2. Female	−.02	1												
3. Education	.02	−.23***	1											
4. Income	.06	−.02	.23***	1										
5. Sensation Seeking	−.16***	−.16***	.04	.09*	1									
6. Neuroticism	−.24**	.10**	−.09*	−.13**	−.21***	1								
7. Openness	−.03	−.10**	.12**	.12**	.42***	−.16***	1							
8. Conscientiousness	.13**	.04	.05	.12**	.22***	−.18***	.39***	1						
9. Extraversion	−.09*	−.01	.09*	.15***	.32***	−.25***	.38***	.27***	1					
10. Agreeableness	.16***	.11**	.03	.08*	−.08*	−.08*	.11**	.35***	.06	1				
11. Polychronicity	−.11**	−.05	.01	.08*	.44***	−.06	.30***	.21***	.19***	−.01	1			
12. MMI	−.13**	.07	.01	.04	.25***	.05	.26***	.06	.17***	−.04	.29**	1		
13. Seeking	−.25***	.09*	.03	.05	.13**	.08*	.18***	.14***	.23***	.05	.17***	.47***	1	
14. Sharing	−.17***	.08*	.01	.12**	.20***	.02	.24***	.14***	.26***	.04	.27***	.48***	.56***	1
M	39.71	0.50	5.68	5.43	2.75	2.98	3.68	3.34	3.51	3.18	2.84	1.71	2.88	2.61
SD	11.07	0.50	0.88	2.49	0.81	0.75	0.60	0.64	0.69	0.79	0.78	0.70	0.70	0.86

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

more likely to engage in information seeking and sharing while multitasking. Next, we conducted regression analysis to test the hypotheses.

(1) Demographic Predictors

When all predictors were included in the regression model, age (ranging from 20 to 59) was not a significant predictor of multitasking (B = −.003, SE = .003, β = −.04, p = .30), whereas it was a negative predictor of information seeking while multitasking (B = −.01, SE = .002, β = −.22, $p < .001$) and information sharing while multitasking (B = −.01, SE = .003, β = −.11, $p < .01$). In other words, older audiences tend to seek and share information less when they multitask.

Table 2. Regression Results Predicting MMI (Media Multitasking Index), Information Seeking/Sharing while Multitasking

	MMI		Information Seeking while Multitasking		Information Sharing while Multitasking	
	B (SE)	β	B (SE)	β	B (SE)	β
Demographic Predictors						
Age	−.003 (.003)	−.04	−.01 (.002)	−.22[*][**]	−.01 (.003)	−.11[**]
Gender (1=female)	.18 (.05)	.13[**]	.12 (.05)	.08[*]	.15 (.06)	.09[*]
Education	.01 (.03)	.02	.02 (.03)	.03	−.01 (.04)	−.01
Income	.004 (.01)	.01	.004 (.01)	.02	.03 (.01)	.08[*]
Psychological Predictors						
Sensation Seeking	.10 (.04)	.11[*]	−.01 (.04)	−.01	.02 (.05)	.02
Neuroticism	.10 (.04)	.09[*]	.11(.04)	.10[*]	.10(.05)	.09[*]
Openness	.16(.04)	.18[***]	.07(.04)	.07	.13(.05)	.12[**]
Conscientiousness	−.07(.044)	−.07	.08(.04)	.08	.01(.05)	.01
Extraversion	.05(.04)	.05	.15(.04)	.16[***]	.20(.05)	.17[***]
Agreeableness	−.03(.05)	−.03	.05(.05)	.04	.04(.06)	.03
Cultural Predictor						
Polychronicity	.18 (.04)	.20[***]	.08 (.04)	.09[*]	.20 (.04)	.18[***]
Adjusted R2	.14		.14		.15	

Note. [*] $p \langle .05$, [**] $p \langle .01$, [***] $p \langle .001$

Gender was a significant predictor of multitasking (B = .18, SE = .05, β = .13, $p \langle .01$), information seeking while multitasking (B = .12, SE = .05, β = .08, $p \langle .05$), and information sharing while multitasking (B = .15, SE = .06, β = .09, $p \langle .05$). Specifically, females were more likely to engage in multitasking and information seeking/sharing while multitasking.

(2) Psychological Predictors

Sensation seeking was a positive predictor of multitasking (B = .10,

SE = .04, β = .11, $p <$ .05), but was not related to information seeking and sharing while multitasking. High sensation seekers tend to multitask more than low sensation seekers.

With regard to Big Five personality, neuroticism was a positive predictor of multitasking (B = .10, SE = .04, β = .09, $p <$ .05) and information seeking while multitasking (B = .11, SE = .04, β = .10, $p <$ .05), and information sharing while multitasking (B = .10, SE = .05, β = .09, $p <$ .05). Individuals high in neuroticism tend to multitask more as well as seek and share information when they multitask. Openness was a positive predictor of multitasking (B = .16, SE = .04, β = .18, $p <$ .001) and information sharing while multitasking (B = .13, SE = .05, β = .12, $p <$ .01), whereas it was a marginally significant predictor of information seeking while multitasking (B = .07, SE = .04, β = .07, $p =$ .06). Individuals high in openness tend to multitask more as well as share information when they multitask. Extraversion was a positive predictor of information seeking (B = .15, SE = .04, β = .16, $p <$ .001) and sharing (B = .20, SE = .05, β = .17, $p <$ .001) while multitasking. Agreeableness and conscientiousness were not significant predictors for any of the dependent variables.

(3) Cultural Predictor

Polychronicity was a positive predictor of multitasking (B = .18, SE = .04, β = .20, $p <$ .001), information seeking while multitasking (B = .08, SE = .04, β = .09, $p <$ .05), and information sharing while multitasking (B = .20, SE = .04, β = .18, $p <$ .001). High polychrons tend to multitask more as well as seek and share information when they multitask.

5. Discussion

This study examined the demographic, psychological, and cultural predictors of multitasking. Results showed that age was a negative predictor of information seeking and sharing while multitasking, whereas it was not a significant predictor of multitasking. Although age was negatively correlated with multitasking, it was not a significant predictor when other factors were included in the regression model. Although previous research found that younger audiences tend to multitask more (e.g., Brasel & Gips, 2011; Carrier, Cheever, Rosen, Benitz, & Chang, 2009; Hwang, Kim, & Jeong, 2014; Voorveld & van der Goot, 2013), the present study did not find a significant effect of age on media multitasking in general. This might be because multitasking has become a prevalent audience behavior regardless of age, due to the saturation of smartphones across all age groups. Future research could further examine the relationship between age and multitasking over time. For information seeking and sharing, however, younger adults tend to seek and share more information when they multitask, compared to older adults. The results suggest that younger adults might gain more knowledge and enjoy the media use experience more by seeking and sharing information while multitasking. The results have implications for the relationship between age and knowledge gap. If younger adults seek and share more information while watching television than older adults, then the gap in knowledge between different age groups could increase after television viewing.

With regard to psychological predictors, sensation seeking was a positive predictor of multitasking, but not of information seeking and

sharing while multitasking. The result is consistent with much previous research which suggested a positive relationship between sensation seeking and multitasking (Duff et al., 2014; Jeong & Fishbein, 2007; Sanbonmatsu et al., 2013; Yang & Zhu, 2016).

Neuroticism was a consistent predictor of multitasking as well as information seeking and sharing while multitasking. In other words, those who are high in neuroticism (i.e., easily distressed, anxious, and lack emotional stability) are more likely to multitask and seek and share information while multitasking. The result is consistent with previous research that found a positive relationship between neuroticism and media multitasking (Wang & Tchernev, 2012), neuroticism and information seeking (Bogg & Vo, 2014; Tsao & Chang, 2010), neuroticism and information sharing (Hughes et al., 2012; Picazo-Vela et al., 2010).

Openness was a significant predictor of multitasking and information sharing while multitasking, and a marginally significant predictor of information seeking while multitasking. In other words, those who are high in openness (i.e., enjoy new experiences) tend to multitask more and share information more while multitasking. The results are somewhat consistent with previous research that found a positive relationship between openness and information seeking (Bogg & Vo, 2014; Tsao & Chang, 2010), and a positive relationship between information sharing (Hughes et al., 2012; Hau, 2014; Matzler et al., 2008).

It is interesting to note that extraversion was not a significant predictor of multitasking but it was positively linked to information seeking and sharing while multitasking. Although past research on

information seeking and sharing suggested that neuroticism and openness are positive predictors of information seeking and sharing (e.g., Bogg & Vo, 2014; Hughes et al., 2012), extraversion has typically not been suggested as a predictor of information seeking and sharing. The present study suggests that extroverts are more likely to seeking and share information while multitasking.

Finally, related to cultural characteristics, polychronicity was positively related to multitasking and information seeking and sharing while multitasking. A polychronic culture is a type of culture in which people value, and hence practice, engaging in several activities and events at the same time. Within a society, a polychronic individual is more likely to multitask as well as seek and share information, although polychronicity is a cultural characteristic rather than an individual-level characteristic. Thus, the results should be interpreted with caution. The positive relationship between polychronicity and multitasking found in this study is consistent with previous research (Kononova & Chiang, 2015; Magen, 2017; Voorveld et al., 2014), while the positive relationship between polychronicity and information seeking/sharing while multitasking has not been examined previously.

The results contribute to research on multitasking. There is much research on the effects (or consequences) of multitasking on cognitive outcomes as well as attitudinal outcomes (for a review, see Jeong & Hwang, 2016; Lang & Chrzan, 2015). However, relatively little research examined the predictors (or antecedents) of multitasking behaviors. Most research on the predictors (or antecedents) focused only on some demographic factors, such as age and gender, or some psychological factors, such as neuroticism and sensation seeking, and some cultural

factors, such as polychronicity. Little research examined these factors together. The present study examined how all of these demographic factors (e.g., age and gender), psychological factors (e.g., Big Five personality and sensation seeking), and cultural factors (e.g., polychronicity) predict media multitasking. Given that younger adults, those who are high in sensation seeking, neuroticism, openness, and polychronicity are more likely to multitask, future research could further examine the biological and sociological explanations for how these characteristics contribute to media multitasking. This is because personality traits have a biological basis (e.g., Zuckerman, 1994).

In addition, the results could contribute to research on information seeking, which has implications for theory and research on knowledge gap (Tiechnor, Donohue, and Olien, 1970). This study found that education or income was not a significant predictor of information seeking while multitasking, but age was a significant predictor of information seeking while multitasking. Given that information seeking could lead to knowledge gain (Hwang & Jeong, 2014; Kahlor & Rosenthal, 2009; Kitchens et al., 2003; Shim, 2008; Shim et al., 2006), information seeking while multitasking could lead to knowledge gain. This study suggests that knowledge gap between high and low socio-economic status groups is less likely to be influenced by information seeking while multitasking, but knowledge gap between younger and older age groups could increase by information seeking while multitasking.

The findings have important practical implications as well. Given that multitasking could affect message processing, understanding the type of audiences who are more or less likely to multitask could help media practitioners to develop effective strategies in response to audiences who

are more likely to multitask. For example, media practitioners should design more effective messages to attract media users high in sensation seeking, neuroticism, openness, and polychronicity.

Also, given that information sharing could affect brand evaluations (Chiou & Cheng, 2003; Kudeshia & Kumar, 2017; Lee, Rogers, & Kim, 2009; Lim & Chung, 2011) and the success of viral marketing relies on the extent to which viral information or marketing is shared , it is important to understand who are more likely to share information while multitasking. This research found that young media users as well as those with high neuroticism, openness, and extraversion are more likely to share information while multitasking. Thus, marketing practitioners need to distribute viral contents that are likely to be preferred by those who are likely to share information while multitasking, i.e., those who are high in neuroticism, openness, and extraversion. Although it is possible that information sharing while media multitasking could increase media effects, it could also decrease media effects. In this case, it is still important to understand information seeking and sharing behaviors. Future research could further examine the relationship between information sharing and media effects.

This study has some limitations. First, this study has measured media multitasking based on various media such as television, radio, smartphone, PC, and print media. However, media audiences often use television, radio, and print media content using smartphone medium. The measure used in this study could not capture the type of content (e.g., television content) when using a particular medium (e.g., smartphone). Future research could measure media multitasking based on various content as well as various media. Second, each of the

information seeking and sharing variables was measured with a single item, and thus the reliability of the measure is not clear. Future research could use multiple items to measure information seeking and sharing. In addition, related to measurement of information seeking and sharing, we focused on information seeking and sharing behaviors using smartphones or PCs. However, there could be other means of information seeking and sharing (e.g., newspaper, interpersonal communication). Thus, future research could include other ways of information seeking and sharing while media multitasking. Third, study participants of this study are not representative of the general population. Thus, the results should be interpreted with caution. Finally, the MMI used in this study is based on Ophir et al.'s (2009) index, which is not an interval scale but an ordinal scale.

Despite these limitations, this study can contribute to media multitasking literature by examining the demographic, psychological, and cultural predictors of information seeking and sharing while media multitasking, which have not been examined in past research. The present study can provide a basis for media practitioners to develop effective strategies in response to audience's media multitasking behaviors.

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국문초록

미디어 멀티태스킹 상황에서의 정보 추구 및 정보 공유

황유리 명지대학교 디지털미디어학과 부교수

정세훈 고려대학교 미디어학부 부교수

본 연구에서는 (a) 일반적 미디어 멀티태스킹 행위, (b) 미디어 멀티태스킹 상황에서의 정보 추구 행위, 그리고 (c) 미디어 멀티태스킹 상황에서의 정보 공유 행위를 예측하는 인구통계적, 심리적, 그리고 문화적 예측요인을 살펴 보았다. 698명의 성인을 대상으로 한 서베이에서, 여성이고 자극추구성향이 높고, 신경증과 개방성이 높을수록, 그리고 복합시간성이 높을수록 미디어 멀티태스킹을 많이 하는 것으로 나타났다. 정보 추구 행위의 경우, 연령이 젊을수록, 여성일수록, 그리고 신경증과 외향성, 그리고 복합시간성이 높을수록 멀티태스킹 상황에서 정보 추구 행위를 많이 하는 것으로 나타났다. 정보 공유 행위의 경우, 연령이 젊을수록, 여성일수록, 그리고 신경증과 개방성, 외향성, 그리고 복합시간성이 높을수록 멀티태스킹 상황에서 정보 공유 행위를 많이 하는 것으로 나타났다.

주제어 미디어 멀티태스킹, 정보추구, 정보공유, 인구통계학적 요인, 심리적 요인, 문화적 요인, 예측요인