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## **AN EMPIRICAL INVESTIGATION ON FACTORS INFLUENCING SNS ADDICTION**

### **Abstract:**

Along with the recent advances of mobile internet technology, use of social network service(SNS) is very common among adolescents or college students in their daily lives. Although there have been a lot of studies on Internet addiction or mobile phone addiction, however, there were little research on SNS addiction so far. Scholars investigated somewhat broader and obscure phenomenon of Internet addiction. In this regard, the current study tried to examine factors which influence SNS addiction behavior. Unlike Internet addiction, there are positive influencing factors such socialization, enjoyment as well as problematic ones like loneliness. Data were collected from college students in Korea to examine how those factors influence addiction behavior and hypotheses were tested using the partial least square method. All three factors, socialization, enjoyment, and loneliness, were found significantly influenced SNS addiction and socialization was positively associated with enjoyment.

### **Keywords:**

SNS addiction, enjoyment, socialization, loneliness, Internet

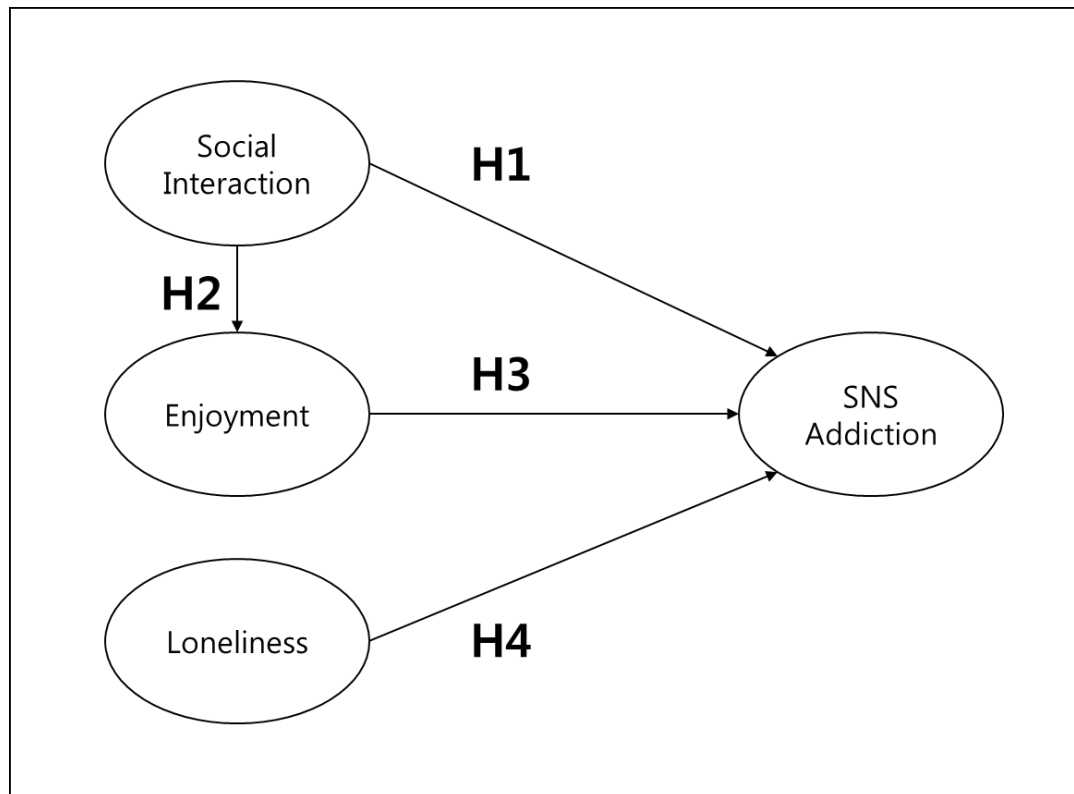
**JEL Classification:** M15, L82

## Introduction

Along with the recent advances of mobile internet technology, use of social network service(SNS) is very common among Korean college students in their daily lives. About 88% of Korean college students are reported to use SNS or Internet cafes where they interact online together(National Information Society Agency, 2013). Facebook is the most popular SNS for young adults in Korea in their 20s. Twitter and Kakao Story are the next popular ones. It was reported that 75% of Korean adolescents use SNS everyday for information exchange, entertainment, and keeping peer relationships(Lee, Sung, Jeong, 2012). According to a survey in 2013(National Information Society Agency, 2014), 11.8% of Korean adolescents were involved in smartphone addiction and they experienced difficulty in controlling their smartphone use. Since SNS is one of the main applications for smartphones, SNS may be a key factor which causes addictive behavior in smartphone use.

Although there have been a lot of studies on Internet addiction or mobile phone addiction, however, there has been little research on SNS addiction so far. Scholars investigated somewhat broader and obscure phenomenon of Internet addiction, so that research on addictive behavior incurred by technology was mostly focused on Internet addiction behavior(Masure, Reinecke, Ziegele, Quiring, 2014; Young, 2009). As the concept of Internet addiction involves diverse objects of the addiction, however, it remains unclear whether an internet addict is addicted to the communication medium or a specific application(Griffiths, 2012; Masure, Reinecke, Ziegele, Quiring, 2014). Because there are a number of diverse applications available in the Internet and it is not clear that which applications or activities an individual addict is addicted to, there is a call for specifically investigating variables causing SNS addiction.

In this regard, the current study aims to examine factors which influence SNS addiction behavior. Unlike Internet addiction, there are positive influencing factors such as socialization, enjoyment(Kamal, Fels, Fergusson, 2014; Lee, 2015) as well as problematic variables like loneliness and depression(Kuss, Griffiths, 2011). Interactive nature of the social web seems to result in enjoyment and socialization, thereby SNS users might be addicted to the SNS activities. There were also reported an association between a variety of negative emotions and addictive Internet behavior(Jun, Choi, 2015; Kim, LaRose, Peng, 2009). In particular, among the various negative emotions, loneliness is expected mostly to be associated with SNS addiction because SNS may be an effective tool which complements insufficient social relationships outside. The primary purpose of the current study is to examine the role of factors which influence SNS addiction among Korean adolescents from the both perspectives of positive and negative emotions.

**Figure 1: Research model**

## Theoretical Background and Hypotheses

This study developed a research model which includes four hypotheses in order to test the effects of motivating factors on SNS addiction. The research model is presented in Figure 1.

The basic theoretical background for explaining why people choose media stimuli in order to realize their needs is the uses and gratification approach (U&G; Katz, Gurevitch, Hass, 1973). The U&G approach explains the goals of a user when adopting a certain media and also allows to describe the selection process of the media. Therefore, many researchers have used the U&G framework as the theoretical basis in discovering why people use SNS and motivating factors to adopt a specific medium (Chen and Kim, 2013; Ku, Chen, Zhang, 2013; Smock, Ellison, Lampe, Wohn, 2011). Based on the U&G approach, there were identified diverse motives to SNS addiction by previous studies; social interaction (Chen and Kim, 2013), entertainment/enjoyment (Kim and Haridakis, 2009), self-presentation (Chen and Kim, 2013), escapism (Chen and Kim, 2013; Kim and Haridakis, 2009). Kim and Haridakis (2009) found that seeking excitement was an influencing factor for Internet addiction. Similarly excitement could be an important variable for SNS use. According to Chen and Kim (2013), self-presentation and socialization were positively associated with problematic SNS use. In this regard, this study postulates the following hypothesis on the relationships among social interaction, enjoyment, and SNS addiction behavior.

H1: Social interaction positively affects SNS addiction.

H2: Social interaction is also positively associated with enjoyment.

H3: Enjoyment positively affects SNS addiction.

On the contrary, there were some researchers who emphasized the negative motivating causes of SNS addiction such as loneliness(Davis, 2001; Kim, LaRose, Peng, 2009; Kuss and Griffiths, 2011; Özemir, Kuzuch, Ak, 2014). According to Davis(2001), loneliness plays a central role as a cause of problematic use of Internet. Similarly, people who are not successful with their offline interactions may remain lonely, and thus they may increase the level of SNS use. Because those individuals feel better in online than offline, they are more involved in the use of online interaction and, in turn, become addicted to online interaction services(Kim, LaRose, Peng, 2009). Therefore, a hypothesis is developed to test the influence of loneliness on SNS addiction.

H4: Loneliness will be positively related to SNS addiction.

## Data Analysis and Results

The data presented for this study was collected from undergraduate college students in Korea through an online survey conducted in May 2015. College students were accepted as appropriate to be a sample of the current research because they are a significant segment of SNS users. There were 186 samples used for data analysis in this research after removing inappropriate data samples and non-SNS users from the total of 201 samples collected from the whole respondents participated in the survey. The profiles of the samples are shown in Table 1.

**Table 1: Profiles of the respondents**

	Category	n	%
Gender	Male	105	56.5
	Female	81	43.5
Device	Smartphone	179	96.2
	PC	7	3.8
Place	Transportation	96	51.6
	Home	54	29.0
	School	28	15.1
	Outside, others	8	4.3

In order to test the hypotheses, the current study employed a partial least square(PLS) analysis. Assessment of the research model and test of the hypotheses were conducted using SmartPLS version 3.0.

## Measurement Model

The study initially evaluated the quality of each scale to determine whether measurement scales could be accurately explained. Therefore, principle factor analysis was first employed using Varimax rotation, and factor analysis extracted the factors over an eigenvalue of 1. The eigenvalue criterion resulted in four factors and the factor loadings were from 0.545 to 0.900, which adequately exceeded the minimum level of 0.50.

**Table 2: Factor loadings and results of the convergent validity test**

Items	Social interaction	Enjoyment	Loneliness	SNS Addiction
SOC1	0.812			
SOC2	0.792			
SOC3	0.741			
SOC4	0.662			
ENJ1		0.868		
ENJ2		0.865		
ENJ3		0.852		
ENJ4		0.815		
LONE1			0.947	
LONE2			0.937	
ADD1				0.822
ADD2				0.818
ADD3				0.812
ADD4				0.801
ADD5				0.780
ADD6				0.700
ADD7				0.696
Cronbach's alpha	0.764	0.872	0.874	0.891
Composite reliability	0.840	0.913	0.940	0.914
AVE	0.568	0.723	0.888	0.604

The results from factor analysis confirmed the construct validity of all the scales for variables included in the model. Additionally, the values of item reliability also exceeded the acceptable value of 0.7 (social interaction: 0.764, enjoyment: 0.872, loneliness: 0.874, SNS addiction: 0.891) via Cronbach's alpha. Thus, the reliability for each scale was also within the commonly acceptable range (Hair, Anderson, Tatham, Black, 2006). Then, the study evaluated construct validity using the convergent validity and discriminant validity tests. Convergent validity was evaluated by factor loadings and average variance extracted (AVE) (Furnell and Larcker, 1981). An average variance extracted in excess of 0.50 also indicated the acceptability of the convergent validity of the constructs (Furnell and Larcker, 1981). As is shown in Table 2, all factor loadings for the items in the measurement model exceeded 0.70, and all average variances extracted were in excess of 0.50, thereby demonstrating adequate convergent validity. Discriminant validity can be evaluated via comparison of the shared variances between constructs with the average variance extracted from the individual construct. As is shown in Table 3, the square roots of all AVEs are substantially larger than all other

cross-correlations. The results provide support for discriminant validity. Jointly, these findings are reflective of appropriate convergent and discriminant validity for construct validity.

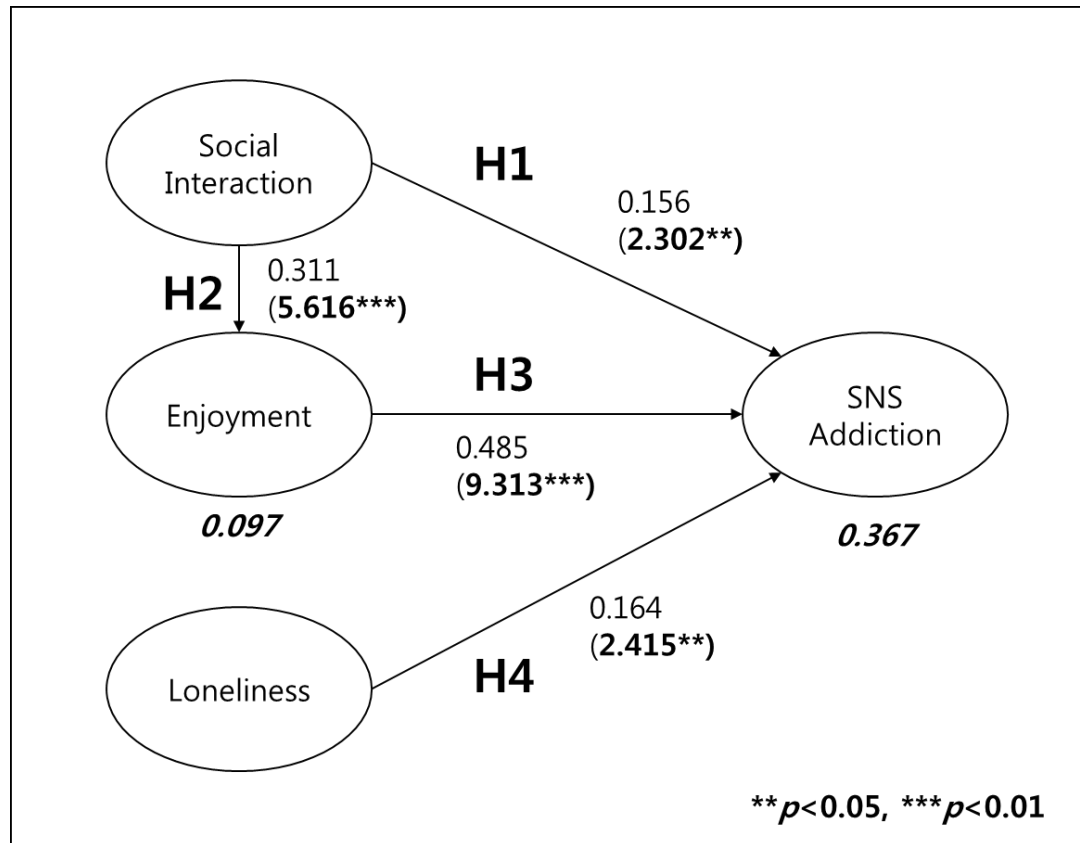
**Table 3: Discriminant validity test using AVE**

	Mean	Std.	SOC	ENJ	LONE	SNS ADD
Social interaction	3.949	0.909	<b>0.754</b>			
Enjoyment	2.676	0.664	0.29	<b>0.850</b>		
Loneliness	3.624	0.943	0.16	0.05	<b>0.942</b>	
SNS addiction	3.671	1.269	0.33	0.58	0.25	<b>0.777</b>

*Note: Diagonal elements in the "correlation of constructs" matrix are the square roots of average variance extracted (AVE). The leftmost column is composite reliability for each construct. For adequate discriminant validity, diagonal elements should be greater than the corresponding off-diagonal elements.*

### Structural model

With the satisfactory results in the measurement model, this study subsequently evaluated the structural model to confirm the relationships among constructs via the PLS (partial least squares) method. In the study, the explanatory power of a structural model could be evaluated by assessing the  $R^2$  value (variance accounted for) in the final dependent construct. The final dependent construct (SNS addiction) had an  $R^2$  value of 0.367. However, enjoyment construct showed a low level of  $R^2$  value(0.097). After computing path estimates in the structural model using the entire sample, PLS employed a bootstrapping technique to acquire the corresponding t-values. Support for each hypothesis could be determined by examining the positive sign and statistical significance of the t-value for its corresponding path. Figure 2 shows the results of the statistical analysis, and it is shown that the results supported all of the four hypotheses.

**Figure 2: PLS results of the structural model**

## Conclusions

The current study examined whether a set of motivating factors affected SNS addiction using the samples of Korean college students. On the basis of the empirical results, several key findings were obtained from the results of the research hypotheses tests. First, enjoyment appeared as the most influencing factor on SNS addiction. Although a number of previous studies on Internet addiction had mostly chosen negative emotions such as loneliness, depression, or stress as key independent variables, factors of positive emotions such as enjoyment were revealed as the mostly influencing variables on SNS addiction. This may indicate that an addiction on the communication medium and that on certain applications may not be equivalent each other, and furthermore addictive behavior may have a different functional mechanism according to the nature of specific applications.

Social interaction was also found significantly associated with SNS addiction. As well indicated by previous research (Kamal, Fels, Fergusson, 2014; Kuss and Griffiths, 2011; Masur, Reinecke, Ziegele, Quiring, 2014), socialization or meeting new people was revealed to strongly influence one's addictive behavior on SNS. However, the effect of social interaction on addiction was found much weaker than that of enjoyment. Because the indirect effect of social interaction is 0.151 and the total effect of social interaction is 0.307, enjoyment seems to mediate the effect of social interaction on SNS addiction. Therefore, SNS will be adopted for socialization only when it gives pleasure or enjoyment to the user.

Finally, the result of PLS showed that loneliness also significantly influenced SNS addiction. Because SNS is a place to meet people online, a person who do not have

enough interactions in offline may intend to use SNS to lessen his or her level of loneliness. From the results of the hypotheses and the comparison of the path coefficients, while enjoyment which is one of positive emotion variables, was shown as the most influencing factor on addiction, loneliness which is a negative emotion variable was found less influencing on SNS addiction. The results of the current study indicate that factors influencing SNS addiction could be different from those motivating factors associated with Internet addiction.

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