An Empirical Investigation on Factors Influencing SNS Addiction

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SNS 중독에 영향을 미치는 영향 요인에 대한 실증적 연구

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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 to significantly influence SNS addiction and socialization was positively associated with enjoyment.

Key Words : SNS addiction, enjoyment, socialization, loneliness, Internet addiction

요 약 모바일 인터넷 기술의 진보와 함께 소셜네트워크 서비스 사용은 일상생활에서 흔한 일이 되고 있다. 이러한 현상 속에서 기존 연구들은 인터넷 중독이나 모바일 폰 중독을 활용하여 연구가 진행되어 왔으나, SNS 사용맥락에서 중독에 관한 연구는 논의가 되지 못한 실정이다. 이에 본 연구에서는 SNS 사용 중독에 영향을 미치는 변수를 파악하고자 한다. 기존의 인터넷 중독연구의 결과와는 달리, 본 연구에서는 사회화, 즐거움, 고독감과 같은 변수들이 중독에 긍정적인 영향을 미치는 것으로 기대하였다. 한국 대학생들을 대상으로 설문데이터를 확보하였으며, 최소자승 추정법을 활용하여 가설을 검증하였다. 연구결과, 사회화, 즐거움, 고독감 모두 SNS 중독에 영향을 미치는 것으로 나타났으며, 사회화 역시 즐거움에 긍정적인 영향을 미치는 것으로 나타났다.

주제어 : SNS 중독, 즐거움, 사회화, 고독감, 인터넷 중독

1. 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. It was reported that about 88% of Korean college students were using SNSs to interact together in the cyber space[16]. Facebook is known the most popular SNS for young adults in Korea in their 20s. Twitter and Kakao Talk are the next popular ones among them. It was reported that 75% of Korean adolescents use SNS everyday for information exchange, entertainment, and keeping peer relationships[13]. According to a survey in 2013[16], 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 done on Internet addiction or mobile phone addiction, however, there has been little research performed on SNS addiction so far. Scholars investigated somewhat broader and obscure phenomenon of Internet addiction, and thus research on addictive behavior incurred by technology was mostly focused on Internet addiction behavior[15,20]. 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 such as SNS or internet game[4,14]. Because there are a number of diverse applications are available in the Internet and it is not clear 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 may influence SNS addiction behavior. Unlike Internet addiction, there are diverse positive influencing factors such as socialization and enjoyment[7,14] as well as problematic variables like loneliness and depression[12]. A large number of studies have been done on internet addiction in the past[6,10], and they reported a strong association between addictive Internet behavior and a variety of negative emotions. 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 their social relationships outside. Further, interactive nature of the social web seems to bring enjoyment and socialization, thereby SNS users might be addicted to the SNS activities. The primary purpose of the current study is to examine the role of factors which influence SNS addiction from the both perspectives of positive and negative emotions.

2. Research 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 [Fig. 1].
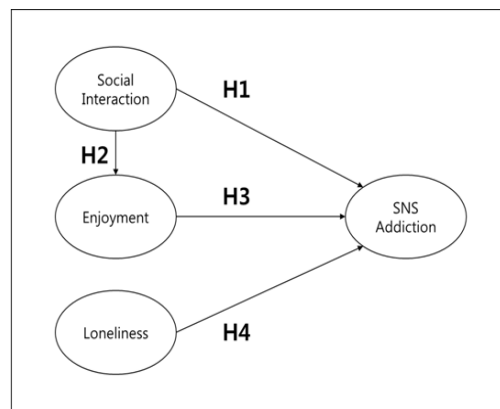
[Fig. 1] Research Model

The basic theoretical background for explaining why people choose media stimuli in order to realize their needs is the uses and gratification approach[8]. 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 reasons why people use SNS and motivating factors to adopt a specific medium[1,11,19]. Based on the U&G approach, there were identified such diverse motives to SNS addiction from the previous studies; social interaction[1,9], self-presentation[1], escapism[1,9].

Kim and Haridakis(2009) found that seeking excitement was an influencing factor for Internet addiction, and thus similarly excitement could be an important motivating factor for SNS use. According to Chen and Kim(2013), socialization and self-presentation were found 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 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[2,10,12,18]. 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 relationships may remain lonely, and thus they may increase the level of SNS use. Because those individuals may feel more comfortable in online than in the offline world, they are more involved in the use of online interaction and, in turn, become addicted to online interaction services[10]. The following hypothesis is developed to test the effest of loneliness on SNS addiction.

H4: Loneliness is positively related to SNS addiction.

3. Data Analysis and Results

The data presented for this study was collected from undergraduate college students through an online survey conducted in May 2015. College students were accepted as appropriate to be a sample of the current research because they were 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.

3.1 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.

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) [3]. An average variance extracted in excess of 0.50 also indicated the acceptability of the convergent validity of the constructs[3].

〈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

As is shown in <Table 2>, all factor loadings for the items in the measurement model exceeded 0.70 except for one of the social interaction measurement items (SOC4), 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.

<Table 3> indicates how discriminant validity is achieved in the measurement model. 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

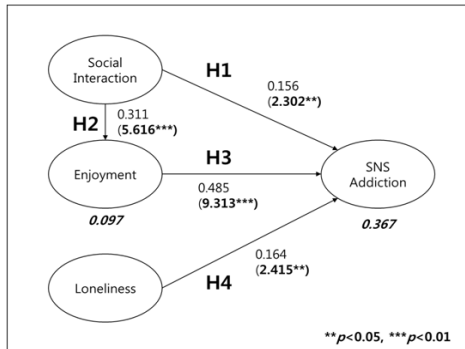|	Mean	Std	SOC	ENJ	LONE	SNS ADD
Social interaction	3.949	0.909	0.754			
Enjoyment	2.676	0.664	0.29	0.850		
Loneliness	3.624	0.943	0.16	0.05	0.942	
SNS addiction	3.671	1.269	0.33	0.58	0.25	0.777

※ 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.

3.2 Structural Model

With the satisfactory results in the measurement model, this study subsequently evaluated the structural model to confirm the relationships among constructs using the PLS 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). This low level of R^2 value indicates that there needs a more number of independent variables to well explain enjoyment although social interaction is significantly related with enjoyment.

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. [Fig. 2] shows the results of the statistical analysis and it is shown that the results supported all of the four hypotheses.

[Fig. 2] PLS results of the structural model

4. 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 have 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 or 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 addicted.

Social interaction was also found significantly associated with SNS addiction. As well indicated by previous research[7,12,15], 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.

REFERENCES

[1] H., T. Chen & Kim, Y. "Problematic Use of Social Network Sites: The interactive relationships between Gratifications Sought and Privacy Concerns. Cyberpsychology, Behavior, and Social Networking", Vol. 16, No. 11, pp. 1-7, 2013.

[2] R. A., Davis, "A Cognitive-Behavioral Model of Pathological Internet Use. Computers in Human Behavior", Vol. 17, pp. 187-195, 2001.

[3] C., Fornell & Larcker, D., "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research", Vol. 18, pp. 39-50, 1981.

[4] M. D., Griffiths, "Facebook Addiction: Concerns, Criticism, and Recommendations-A response to

Andreassen and Colleagues, Psychological Reports", Vol. 110, No. 2, pp. 518-520, 2012.

[5] J. F. Hair, Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate Data Analysis (6th ed.), Pearson Education, 2006.

[6] S. Jun, & Choi, E, "Academic Stress and Internet Addiction from General Strain Theory Framework. Computers in Human Behavior", Vol. 49, pp. 282-287, 2015.

[7] N. Kamal, Fels, S. & Fergusson, M., "Online Social Networks for Health Behavior Change: Designing to increase socialization. Computers in Human Behavior ", Vol. 41, pp. 444-453, 2014.

[8] E. Katz, Gurevitch, M. & Hass H, "On the Use of the Mass Media for Important Things. American Sociological Review", Vol. 28, pp. 164-181, 1973.

[9] J. Kim, & Hardakis, P. M, "The Role of Internet User Characteristics and Motives in Explaining Three Dimensions of Internet Addiction. Journal of Computer-Mediated Communication.", Vol. 14, No. 4, pp. 988-1015, 2009.

[10] J. Kim, Larose, R. & Peng, W., "Loneliness as the Cause and the Effect of Problematic Internet Use: The Relationship between Internet Use and Psychological Well-being. CyberPsychological & Behavior", Vol. 12, No. 4, pp. 451-455, 2009.

[11] Y.-C., Ku, Chen, R. & Zhang, H., "Why Users Continue Using Social Networking Sites? An exploratory study of members in the United States and Taiwan. Information & Management", Vol. 50, pp. 571-581, 2013.

[12] D. J. Kuss, & Griggiths, M. D., "Online Social Networking and Addiction-A review of the psychological literature. International Journal Environmental Research and Public Health", Vol. 8, pp. 3528-3552, 2011.

[13] C. H. Lee, Sung Y. S., & Jeong, N. W, "A Study on the SNS Use of Young People", National Youth Policy Institute, 2012.

[14] S., LEE, "Analyzing Negative SNS Behaviors of Elementary and Middle School Students in Korea. Computers in Human Behavior", Vol. 43, pp. 15-27 2015.

[15] P. K., Masur, Reinecke, L., Ziegele, M. & Quring, O., "The Interplay of Intrinsic Need Satisfaction and Facebook Specific Motives in Explaining Addictive Behavior on Facebook. Computers in Human Behavior", Vol. 39, pp. 376-386, 2014.

[16] National Information Society Agency, National Information White Paper, 2014.

[17] National Information Society Agency, "National Information Culture Survey," 2013.

[18] Y. Ozemir, Y. Kuzuch, & S, AK. "Depression, Loneliness and Internet Addiction: How Important is Low Self-Control? Computers in Human Behavior", Vol. 34, pp. 284-290, 2014.

[19] A. D., Smock, Ellison, N. B. Lampe, C. & Wohn D. Y, "Facebook as a Tool Kit: A Uses and Gratification Approach to Unbounding Feature Use. Computers in Human Behavior", Vol 27, No. 6, pp. 2322-2329, 2011.

[20] K. S, Young, "Internet Addiction: Diagnosis and treatment consideration. Journal of Contemporary Psychotherapy", Vol. 39, pp. 241-246, 2009.

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