

AN EMPIRICAL STUDY ON THE IMPACT OF SELF-REGULATION AND COMPULSIVITY TOWARDS SMARTPHONE ADDICTION OF UNIVERSITY STUDENTS

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ABSTRACT

Apart from Internet addiction, smartphone addiction has played important roles in students' lives as observed in recent studies. There are positive and negative aspects in using smartphones especially in higher education. University administrators or instructors should take into account what factors are affecting students' smartphone addiction in order to limit its negative effect and introduce more innovative measures such as developing ways of teaching and learning in digital age using smartphones. The aim of this study is to investigate the impact of self-regulation and compulsivity towards smartphone addiction of university students in two private universities in Thailand. 157 survey questionnaires were collected during April to May 2016 and analyzed with multiple regression analysis. Although the conceptual model explains 60.40% of the variance in smartphone addiction, only compulsivity is found to have significant determinant of smartphone addiction. Self-regulation has no significant effect on smartphone addiction.

KEYWORDS

Smartphone, Addiction, Self-Regulation, Compulsivity, Thailand

1. INTRODUCTION

A smart phone refers to a cellular telephone with built-in applications and an Internet connection. The terms "smart phone" and "smartphone" have been used interchangeably (Hsiao and Chen, 2015; Hawi and Samaha, 2016). The device has transformed into a tool in which individuals cannot live without. People seek friends, relatives, enjoyment, shopping, or finances through the device. By the end of 2017, approximately 2.6 billion people, over a third of the world population, in the world are expected to own and use smartphones (statista.com, 2016).

On the positive side, smartphone users tend to have more friends online and more "online-only" friends than non-users (Eun and Sangwon, 2015). In difficult times, smartphones can also be helpful as demonstrated by the finding that mobile technologies improved mental health before, during, and after disasters in Asia (Sobowale and Torous, 2016).

On the negative side, smartphones may sometimes distract, rather than complement, social interactions. The term "phubbing" refers to the act of snubbing someone in a social setting by concentrating on one's phone instead of talking to the person directly. Several researchers found the Internet addiction, fear of missing out, and self-control predicted smartphone addiction (Chotpitayasunondh and Douglas, 2016). Moreover, taking a break with a smartphone such as browsing the Internet or using social network services would increase the average level of emotional exhaustion than conventional breaks such as walking or chatting face to face with friends (Rhee and Kim, 2016).

Smartphones have emerged to the extent where they have become an integral part of university students' lives. The smart options of the phones allow thousands of photos, songs, apps, games, and videos to be shared, communicated, produced, entertained, and utilized (Hawi and Samaha, 2016). However, with virtually all of the students owning mobile phones, with 85% smartphone ownership (64% iPhone and 21%

Android); it is rather strange to learn that the majority of students considered themselves “digital natives”. Their mobile social media activity mainly limited to Facebook (100%), text messaging (93%), Web browsing (93%), Calendar (86%), YouTube viewing (86%), Google Maps (72%), and Instagram (64%) usage; with limited use of mobile social media within educational contexts. Many researchers around the world have shown concern about smartphone addiction among university students (Aljomaa et al., 2016; Hawi and Samaha, 2016; Gökçearslan et al., 2016). Therefore, to help address the issue, the objective of this study is to find the impact of self-regulation and compulsivity towards smartphone addiction of university students in two private universities in Thailand.

2. RELATED WORK

Concept of smartphone addiction means excessive use of smartphones in a way that is difficult to control and its influence extends to other areas of life in a negative way (Park and Lee, 2011). Apart from providing access to the Internet, smartphones open the opportunities to share media files, produce new materials, connect social interaction, play games, or use various applications. Even though they are beneficial devices which facilitate countless social and individual activities, the use of smartphones also bring numerous problems in the domestic, academic, occupational, and social aspects (Gökçearslan et al., 2016). Smartphone addiction differs from drug-based physiological addictions (e.g., addictions to alcohol or heroin) and it is behavior-based (van Deursen et al., 2015). Overuse of smartphones may cause sleeping problems, stress, as well as various health disorders (Thomé et al., 2011). Smartphone addiction can be considered a disorder. Individuals with disorder have difficulty controlling their smartphone use and are likely to encounter social, psychological, and health problems (Aljomaa et al., 2016). Smartphone overuse by students may have negative effects on their academic performance as well. For example, they are likely to have shorter periods of studying or suffer from mental health (Aljomaa et al., 2016). In the US, 480 students who spent more time engaged in technology would spend less time studying; as a result, they tended to have lower grade point averages (GPAs) (Hawi and Samaha, 2016).

Social cognitive learning theory (Bandura, 1993) suggests that individual’s self-regulatory mechanism influence individual’s level of self-control. Self-regulation is also defined as the one’s ability to focus on predetermined goals without distraction (Gökçearslan et al., 2016). People’s failure to self-regulate might cause their media usage to increase. Consequently, this situation is likely to turn into an addiction to media. Students having higher self-regulation skills would show lower addictive smartphone behaviors (Gökçearslan et al., 2016).

In this research, compulsivity means the negative consequences such as discomfort, emotional distress (e.g., anxiety, irritation and tension) and live psychological feelings of not being able to use the smartphones by individuals (Lin et al. 2014; Park, 2005). Compulsivity is a factor showing good convergent validity with smartphone overuse of young European people. Compulsive behavior can negatively affect interpersonal relationships and the amount of time spent on the smartphone (Pavia et al., 2016). In parallel with the above studies, the hypothesis is suggested that self-regulation and compulsivity affect smartphone addiction of university students.

3. RESEARCH METHODOLOGY AND FINDINGS

A total of 157 questionnaires were collected from students studying in different schools at two private universities in Thailand during April to May of 2016, and they are analyzed with multiple regression analysis. The research was conducted using convenience sampling method. All measurement items for this study were adapted and modified from previous research. All items were measured using 5-point Likert scales (1-strongly disagree and 5-strongly disagree). The questionnaire was approved from experts in research method and ICT. The alpha coefficients of the reliability analysis of were 0.793 for smartphone addiction, 0.780 for self-regulation, and 0.842 for compulsivity. These alpha coefficients were acceptable because all the values were greater than 0.7 (Nunnally, 1978).

The results showed that the respondents mostly were males (57.3%) at the age of 19-year-old (31.2%) and undergraduate students studying in two private universities in Thailand. The majority of students had the grade point averages of 2-2.99 (51%) and mostly studying in School of Business Administration (58.6%). The hypothesis testing results revealed that only compulsivity with standardized beta coefficient of 0.778 showed the positive effect on smartphone addiction at .01 level of significance. All results and multiple regression analysis are reported in the Table 1.

Table 1. Multiple Regression Analysis' Results

Dependent Variable: Smartphone addiction (mean = 3.2930, S.D. = 0.8368, "moderate level", C.A. = 0.793, $r = 0.777$, $R^2 = 0.604$)			
Independent Variables	β	Sig.	VIF
Self-regulation	-0.002	0.966	1.120
Compulsivity	0.778**	0.000	1.120

**Significance Level .01, N = 157

Referring to Table 1 in analyzing the multicollinearity problem, Variance Inflation Factor (VIF) was examined. It was seen in the data set that VIF values were lower than 10; therefore, there was no problem of multicollinearity (Hair et al., 1984). Hence, the hypothesis was supported, but only compulsivity was found to be significant determinant of smartphone addiction, explaining 60.40% of the total variance.

4. DISCUSSION

The objective of this study is to investigate the impact of self-regulation and compulsivity towards smartphone addiction of university students in two private universities in Thailand. The hypothesis was supported, but only compulsivity was found to be significant and positive determinant of smartphone addiction. The result shows that smartphone addiction is significantly determined by individual's compulsivity because compulsivity is the only independent variable with the strongest effect on smartphone addiction ($\beta = 0.778$). This is supported by previous studies that also examined similar relationships within the smartphone context (Pavia et al., 2016, Lin et al., 2014, Park, 2005). However, self-regulation of the respondents, though showing negative impact, does not have significant effect on smartphone addiction as supported by previous studies that also examined the relationships between self-regulation and smartphone addiction (Gökçearsan et al., 2016, van Deursen et al., 2015). This finding may be explained that self-regulation may not be determinant of smartphone addictions for Thai students.

5. IMPLICATIONS, LIMITATIONS, AND FURTHER STUDIES

This study presents several implications from the theoretical perspective. First, it analyzes the effect of self-regulation and compulsivity towards smartphone addiction. Apart from Internet addiction, smartphone addiction has also gained interest in recent researches (Pavia et al., 2016, Aljomaa et al., 2016, Gökçearsan et al., 2016). Second, the result of this research is inconsistent with previous studies (Gökçearsan et al., 2016, van Deursen et al., 2015) since self-regulation has no effect on smartphone addiction among university students in Thailand. Thus, this study has made contribution to enhance theoretical foundations of smartphone addiction, self-regulation, and compulsivity in the context of smartphones in particular. Third, university administrators or instructors should know what factors are affecting students' smartphone addiction. University administrators or instructors may utilize the findings of this study to introduce innovative ways of teaching in the digital age.

This study has several limitations which provide opportunities for future researches. First, it focuses on the Thai students' smartphone market and uses survey sample from the Thai population. In order to generalize the findings, comparative studies in different context should be accomplished. The determinants of smartphone addiction may differ by universities, provinces, or countries. More results from future comparative studies could be generalized to strengthen research theories. Cultural differences can be independent factors for future studies. Comparative researches between USA, European, Asia countries, between developed and developing countries, or between smartphones and tablets would be example for future researches.

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