



Smartphone Addiction in Relation to Academic Performance of Students in Thailand

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Abstract

Smartphone Addiction or Smartphone Dependency is ubiquitous and can be described as a constant need to use a phone in spite of outcomes that can impact one's health and well-being. Several studies conducted in the global arena on Smartphone addiction indicate positive and negative outcomes but few studies on Smartphone addiction and academic performance have been researched in the Thai cultural context.

The present quantitative research attempted to make comparisons between Thai and international students in relation to Smartphone addiction and academic achievement. The simple random sampling technique was used to collect data from 202 Thai and 195 International students from two different educational institutions in Bangkok, Thailand. To measure Smartphone addiction, the Japanese version of the Smartphone dependency scale (J-SDS) constructed by Ezoe, Iida, Inoue, & Toda (2016), was used consisting of 29 items with the Cronbach Alpha of, $\alpha = 0.920$ for the total scale, To measure academic achievement students Grade Point Average was calculated using a range from 2.00–3.00 and 3.01–4.0.

All three formulated hypotheses were not supported by the data since the independent sample t-test shows negligible differences that are not statistically significant at the 0.05 level. This study will paint a clearer picture of how, if any addiction to Smartphones affects the aggregated academic achievement of a student at a university.

Keywords: Smartphone Addiction, Academic Performance, Thai and International Students

Introduction

“It takes discipline not to let social media steal your time” (Ohanian, n.d.)

The issue of whether Smartphone should be allowed as a device to access academic material while learning in a classroom is debatable. Many academic institutions and educators are using and will continue to use social media to deliver content to students (Paul, Baker, & Cochran, 2012), since not only does social media facilitate communication, but it encourages students to collaborate to complete classroom projects and assignments. However, the downsides of using Smartphones could be distraction and often lower levels of performance since it allows access to internet, texting, games, and other social media like Facebook, Google Twitter, Instagram, virtual worlds, etc. (Bryer & Zavattaro, 2011).

There is no doubt that social media does provide the data needed by students within a fraction of seconds or minutes and stay in charge of their own learning activities compared to the traditional methods of learning in which learners may not have much control. However, social media may also create a classroom in which students get distracted from what teachers are communicating if their attention spans are low. Smartphone usage encourages students to multitask and provides access to social media sites which could reduce concentration to the present task and have a negative impact on students' engagement. In the long run this can have an adverse impact on physical and mental health since students become addicted and have a tendency to avoid outdoor activities and ignore face-to-face communication in a real situation which can therefore ameliorate the problem. Smartphone addiction can be considered a **“Technological Addiction”** which is similar to substance related disorders (Lin et al., 2014).



Smartphone addiction can be described as a constant need to use a phone in spite of outcomes that can impact one's health and well-being. It could be that students feel a lack of self-control and hence comply with the behaviour although it could be damaging for wellbeing and academic achievement. Academic achievement is concerned with the acquisition of knowledge that can help a person to strive towards long or short term goals. Often cumulative Grade Point Average or grades in specific subjects which are measured by examinations or other assessments can determine an individual's academic achievement/ performance. The question that needs to be addressed, *"Is Smartphone addiction detrimental to academic performance of students in Thailand"?*

Review of Related Literature

The population of Thailand is close to 65 million but the number of cellphone subscribers is approximately 90 million (Office of the National Broadcasting and Telecommunication Commission (NBTC), 2015). There is no ban on the usage of Smartphones in classrooms and students use more than one Smartphone. The research from the National Statistics Office (2013) indicates that the usage of computers, the internet and mobile phones are on the rise each year. The popularity of social media for Thai persons was the highest between ages of 19–24 so compared to adults; adolescents are more prone to manifest problems related Smartphone usage (Kwon, Kim, Cho, & Yang, 2013; Kim et al., 2012). In addition, 58.6 percent of the total population engaged in social networking. Moreover 46.7 percent of Thai persons made use of the internet at academic institutions.

The most popular social media is Facebook followed by Twitter and Instagram (Raphiphan, Zaslavsky, & Indrawan-Santiago, 2014). For undergraduate Thai students, Facebook is used primarily as an escape from loneliness, for socializing in groups, becoming popular by exposure of oneself, getting an idea about others lifestyles and for being a part of the in-group that helps one to follow trends (Naowarangsee, 2012). Studies show that Facebook and other media can be beneficial for creating groups that share information and promote online discussions (Saengsawang, 2013), as well as facilitate academic interest, competency and motivation of students (Al-Shehri, 2011; Lateh, 2012). However, cellphone addiction can reduce the ability to follow directions and completion of assignments which could lead to stress and eventually poor academic performance (Archer, 2013) Research conducted by Roberts, Pullig, & Manolis (2015), showed a negative relationship between cellphone addiction and academic performance. Lepp, Barkley, & Karpinski (2014), also agreed with the negative relationship of cellphone addiction and Grade Point Average. Smartphone use can be detrimental on academic performance (Hawi & Samaha, 2016) University students in South Korea showed a strong relationship of Smartphone dependence and psychological health like life stress, self-control and personal relationships (Choi, Lee, & Ha, 2012; Kim & Lee, 2012). These conditions could indirectly affect academic performance (Yi et al., 2016)

A recent study in Thailand on cellphone addiction and academic stress conducted on university students (Thomas, 2016), revealed a positive and moderate correlation in cellphone addiction and academic stress but no significant differences in gender and the class studied although, there were significant differences on the basis of major selected. The study conducted by Chen et al. (2016) indicated no differences in Smartphone addiction between males and females. Twenty-two studies agree that the gender differences in addiction are negligible but rather females use Smartphones for social contact and relationships (Long et al., 2016; De-Sola Gutiérrez et al., 2016), compared to males who use the phone for calling and applications (Park & Lee, 2014). A recent study in Turkey included 490 students from 9 different departments found no statistically significant differences



between males and females, except that females scored a little higher addiction points (Bavli, Katra, & Günar, 2018).

The present study focused on Smartphone usage in the Thai context but cultural context can affect patterns of Smartphone use. Differences do exist in Eastern and Western countries with Asian countries scoring higher in comparison to non-Asian samples for Smartphone addiction (Lee, 2015; Kee et al., 2016; Lopez-Fernandez et al., 2017; Lachmann et al., 2018). Thailand ranked eight for time spent of social media per day at 3.11 hours compared to the global average at 2.16 hours (Leesa-Nguansuk, 2019).

There are few studies conducted on the direct impact of Smartphone usage and its impact on academic performance of students in classrooms in Thailand, therefore the researcher intended to fill this gap. Hence three hypotheses were constructed.

1. Thai and International students have different degrees of Smartphone addiction.
2. Thai and International students have different degrees of Smartphone addiction in relation to academic achievement.
3. Thai and International, male and female students have different degrees of Smartphone addiction in relation to academic achievement.

Methodology

To measure Smartphone addiction, the Japanese version of the Smartphone dependency scale (J-SDS) constructed by Ezoe et al. (2016), was used consisting of 29 items on a four point Likert scale from 4, strongly agree to 1, strongly disagree and contains five dimensions namely, craving and withdrawal, overuse and tolerance, virtual life orientation, disturbance of concentration in class and physical symptoms. The Cronbach Alpha is, $\alpha = 0.920$ for the total scale, which confirms the reliability of this scale. To measure academic achievement students Grade Point Average was calculated using a range from 2.00–3.00 and 3.01–4.0.

The simple random sampling technique was used to collect data from 202 Thai and 195 International students from two different educational institutions in Bangkok, Thailand. The formula used is the following set at a 95% confidence level. Resultant in a sample size of approximately 384 respondents. The sample size is determined by formula of (Zikmund & Babin, 1997) as follows:

$$n = \frac{Z^2 p q}{E^2}$$

Where: n = the number of sample size

Z^2 = square of the confidence level in standard error units. Z score is based on researcher's desired level of confidence which is set at 95%. Then, the number of standard score of associated with confidence level is equal to 1.96.

p = estimated proportion of success. The entire of proportion is assumed to be 0.5

q = (1-q) or estimated proportion of failures, which is 0.5

E^2 = square of the maximum allowance of error between the true proportion and the same sample proportion. (0.05 or 5%, the acceptable sampling error in estimation the population proportion.)

Therefore, the total sample size is as follows:

$$= \frac{z^2 p(1-q)}{E^2}$$

$$n = \frac{1.96^2 0.5(1-0.5)}{(0.05)^2}$$

$$n = 384.16$$

The result of calculation is 384 samples; the researchers designed the research to have a sample size of 397 samples.

The t-test was utilized to find out the differences in means of the total sample of Thai and International students for Smartphone addiction. Independent samples t-tests were used to find out the differences in the means of the total sample of Thai and International students for Smartphone addiction and academic achievement as well as to find differences between the means of Thai, male and female students and International, male and female students for Smartphone addiction and academic achievement.

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	174	43.9	43.9	43.9
	Female	222	56.1	56.1	100.0
	Total	396	100.0	100.0	
Nationality		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Thai	201	50.8	50.8	50.8
	Non-Thai	195	49.2	49.2	100.0
	Total	396	100.0	100.0	

Figure 1 Descriptive Analysis

Data Analysis, Findings and Conclusions

Table 1 Smartphone Addiction of Thai and International Students

	Mean (S.D.)		Mean Differences Test	
	Thai Students (202)	International Students (195)	t-score	Sig
Smartphone Addiction	2.83 (.660)	3.00 (.478)	-1.478	.141

Remarks: Mean rating from 1 = strongly disagree to 4 = strongly agree is shown
S.D. is shown as italic in the brackets; independent sample t-test is performed;
Significant difference of the mean at $p < 0.05$

Table 1 indicates that the obtained value of 't' between the Smartphone addiction of Thai and International students is -1.478. Therefore, hypothesis 1 is not supported by the data since the independent sample t-test is negative and not statistically significant at the 0.05 level.

Although the literature review indicates that Smartphone use is related to cultural context (Lee, 2015; Kee et al., 2016; Lopez-Fernandez et al., 2017; Lachmann et al., 2018) and that Thais use social media higher than the average rate, the present study does not reveal these findings. (Leesa-Nguansuk, 2019). Data was collected from Thai and International students who are exposed to similar urban environments at the university. More than 90% of the internet users in Thailand go on line using Smartphones according to the Kressmann (2017) and



approximately 70% use their Smartphones in urban areas like Bangkok since usage of Smartphones is determined by geographical and income factors. It is also plausible that factors like learning to adapt culturally, studies, finance, jobs, and extracurricular activities are aetiology of stress for students (Coughlan, 2015; Divaris et al., 2014; Wei, Liao, Heppner, Chao, & Ku, 2012), hence Smartphone usage for international students does not differ from Thai students since they are all exposed to the similar environment at the university.

Table 2 Smartphone Addiction of Thai and International Students with Different Academic Achievement

GPA	Mean (S.D.)		F-Score	t-test Sig
	2.00–3.00	3.01–4.00		
Thai Students (202)*	2.66 (.275)	3.62 (.277)	.380	.233
International Students (195)*	2.67 (.275)	3.41 (.324)	.324	.940

Remarks: Mean rating from 1 = strongly disagree to 4 = strongly agree is shown

S.D. id shown as italic in the brackets; independent samples t-test is performed;

*Significant difference of the mean at $p < 0.05$

Table 2 indicates that the obtained value of 't' between the Smartphone addiction of Thai and International students with different academic achievement are .233 and .940 respectively. Therefore, hypothesis 2 is not supported by the data since the independent sample t-test shows negligible differences that are not statistically significant at the 0.05 level.

The literature review demonstrates conflicting ideas about Smartphone usage and academic performance. The moderating variables like life stress, self-control and personal relationships are not taken into consideration but these conditions could indirectly affect academic performance (Yi et al., 2016) Some studies have revealed a negative relationship between phone usage and Grade Point Average (Lepp, Barkley, & Karpinski, 2014). Irrespective of the grade point average (GPA) being high or low, both Thai and international students show negligible differences in Smartphone usage. Studies indicate that although students utilise their cellphones for seven to ten hours of the day (Roberts et al., 2015), it does not mean that neither students concentration decreases nor does it mean that students cannot complete work assigned to them. Another explanation could be that students are unaware that they are addicted, since denial is a basis of addiction (Dare & Derigne, 2010; Wright, 2011). 60% of students at university agreed to cellphone addiction irrespective of nationality (McAllister, 2011).

Table 3 Smartphone Addiction of Thai, Male and Female and International, Male and Female Students with Different Academic Achievement

GPA		Mean (S.D.)		F-Score	t-test Sig
		2.00–3.00	3.01–4.00		
Thai Students	Male (86)*	2.39 (.343)	3.64 (.281)	.559	.142
	Female (115)*	2.42 (.335)	3.60 (.277)		
International Students	Male (88)*	2.62 (.288)	3.47 (.329)	.459	.873
	Female (107)*	2.69 (.263)	3.36 (.315)		

Remarks: Mean rating from 1 = strongly disagree to 4 = strongly agree is shown

S.D. id shown as italic in the brackets; Independent sample test is performed;

*Significant difference of the mean at $p < 0.05$

Table 3 indicates that the obtained value of 't' between the Smartphone addiction of Thai, male and female students and International, male and female students with different academic achievement are .142 and .873



respectively. Therefore, hypothesis 3 is not supported by the data since the independent sample t-test shows negligible differences that are not statistically significant at the 0.05 level.

Although some studies indicate that females are more addicted to their Smartphones than males (Chiu, Hong, & Chiu, 2013; Choi et al., 2015; Park & Lee, 2014), other studies do not yield similar results. Pawłowska and Potembska (2011), revealed that there are no gender differences in terms of Smartphone addiction, rather an existence of heterogeneity between males and females in terms of Smartphone addiction in that, females tend to be more addicted to text messages and voice calls and use their phones to maintain intimate social relationships. In contrast, males prefer to play games, click pictures, listen to music, and use the internet for entertainment. A study conducted by Chern, Lan, & Ning (2015) on Smartphone addiction of males and females undergraduate students in Utar indicated no gender differences in Smartphone addiction. The validation of the Smartphone Addiction Survey (Kwon et al., 2013), also showed no gender differences in Smartphone usage. These findings were confirmed by Bhardwaj and Ashok (2015) in a study at Uitm Raub students in Malaysia. Therapeutical Intervention programs and Neuroscientific Approaches discovered no gender differences in internet surfing in Smartphones (Dau, Hoffmann, & Banger, 2015). This study confirmed that irrespective of gender, nationality and academic performance there were no differences in Smartphone addiction. Twenty-two studies in the literature review agree that the gender differences in addiction are negligible but rather females use Smartphone for social contact and relationships (Long et al., 2016; De-Sola Gutiérrez et al., 2016).

Limitations, Significance and Implications for Future Research

This research paper aims at discovering if Smartphone usage can enhance or deter students' academic achievement. The previous literature is debatable and indicates that incorporating a technology-enhanced learning environment may or may not have an impact on students' distraction and academic achievement. A total ban using Smartphones in classes is not possible but if used in classroom to a limited extent could prove a boon for students especially with lower grades and those that cannot refrain from using other Apps. The fact is that Smartphone usage as excellent learning device cannot be discounted if structured properly. Students can avoid common symptoms like Nomophobia (Yildirim & Correia, 2015), which is fear of not having a mobile phone, phubbing which is playing with a phone and ignoring others in the crowd (The Nation, 2013), and phantom vibration syndrome which is checking ones phone thinking that it vibrated (Tanis, Beukeboom, Hartmann, & Vermeulen, 2015).

The present research was conducted in a stipulated time period and the Grade Point Average of the previous semester was taken into consideration presuming that the students Grade Point Average would not increase. Nevertheless, a longitudinal research could be directed at measuring the degree of Smartphone addiction, the number of hours spent using Smartphones, the time during which Smartphones were used most, the university level which uses Smartphones the most, in order to make comparisons to academic achievement over time. This will paint a clearer picture of how, if any addiction to Smartphones affects the aggregated academic achievement of a student throughout their educational tenure at a university. A larger sample size which includes several cultures, educational contexts, faculties and different departments could be studied for a bigger picture.

Further qualitative and quantitative studies could be extended in other cultures and contexts like high schools and general jobs in order to discover which kinds of personalities are more prone to get addicted to Smartphone's.



Other exploratory variables can be taken into consideration as well as experimental studies can make direct observations about reactions of groups with and without Smartphones.

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