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Smartphone Addiction: A Boon or Bane for Pakistani University Students

Abstract   The use of smartphones has enormously increased among students around the world. Few studies have focused on this critical issue in Pakistan. This study examined the influence of Smartphone addiction in Pakistan. A survey questionnaire was utilized to collect data consisting of three dimensions: (a) Smartphone usage, (b) textbook use, and (c) self-study. A total of 401 university students responded to the survey. The data were analyzed by calculating descriptive statistics, independent sample t-test, and ANOVA. The results showed significant differences in students' perceptions of all three dimensions of the questionnaire regarding gender, age, Grade Point Average (GPA), and year (academic session). Male students were found to have a higher tendency towards Smartphone use than female students compared to textbook use and self-study. The results of this study have broader policy implications for researchers and teachers of higher education.

Key Words: Smartphone Usage, Textbook Use, Self-Study, Gender, Academic Session

Introduction

Smartphones are becoming increasingly popular day by day among students worldwide (Gokcearslan, Mumcu, Ha≈ülaman, and √áevik, 2016). It offers ample opportunities to students for creating connections through social media and other internet apps(Bian & Leung, 2015; Boumosleh & Jaalouk, 2017). The most commonly accessed networks are WhatsApp, Facebook, Twitter and Skype. Smartphone provided facilities regarding SMSs and fax through internet navigation. It includes Cam, video, Bluetooth, multimedia, radio, YouTube, movies, GPS and many more applications(Pearson & Hussain, 2017). Smartphone provides easier access to online mails, fast messages as well as usage of office applications which can be downloaded from different sites online. It is also used for sending emails(Samaha & Hawi, 2016). Hence, all age groups take much interest in the Smartphone due to its multiple benefits. It has literally replaced computers due to which people are increasingly using it worldwide for different purposes and services (Lam, Peng, Mai, and Jing, 2009). It is also accepted to be the most popular source of entertainment, amusement and pastimes. Consequently, Smartphone has become the sign of economic and social status and its possession is seen to be associated with having larger acceptance in the society (Choi, Kim, Choi, Ahn, Choi, Song and Youn, 2015). Despite the above mentioned, researchers opine that Smartphone possesses some demerits as well. One of the alarming disadvantages of its use and addiction is among the teenagers and students (Aljomaa, Qudah, Albursan, Bakhiet, and Abduljabbar, 2016). There is an increasing trend of smart phone usage among Pakistani youth. However, little is known about the effects of this alarming problem on students' academic life. This study aimed to measure the impact of smart phone addiction on university students in Pakistan.

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Research has revealed that majority of the Smartphone addicts are teenagers or students. They rely on Smartphone for the satisfaction of many personal and collective needs. They use it for the purpose of communication and face to face meetings (Koo, 2009). In a recent research (Lopez-Fernandez, 2017) has found that use of Smartphone is increasing among students. They spend handsome amount of money on purchasing these devices, in the up-gradation and for changing new apps. It also consumes much of their precious time which they can use for studies (Hawi & Samaha, 2016). Some users have become so much attracted towards its use that they feel incomplete without its use. Their preoccupation with the Smartphone has attracted the attention of researchers and educators, because, it has been found that too much of pre-occupation with Smartphone has resulted in negligence of study, assignments and assigned academic tasks (Lin, Chiang and Jiang, 2014).

Students who are addicted to Smartphone use have low academic grades. This situation also exists in Asian context. For example, in Malaysia students addicted to Smartphone show poor results and performance in the examination (Ching, Yee, Ramachandran, Lim, Sulaiman, Foo, and kee Hoo, 2015). This phenomenon has raised concerns among parents and community regarding the use of Smartphone among students (Hew, Badaruddin, and Moorthy, 2017).

Researchers argue that Smartphone addiction leads to dependency on it on the part of users and they face problems connected to it(Hawi & Samaha, 2017; Lin et al., 2015). Thus, the number of Smartphone users is increasing all over the world. In US, Canada, Britain and Germany, more than 103 million people use Smartphone. Among these users, the percentage of university students having Smartphone has reached more than 87% which is an alarming situation. More than 69% of the students in Belorussia have been reported to be suffering from negative effect of Smartphone addiction (Szpakow, Stryzhak, and Prokopowicz, 2011).

Many theorists explain technological equipment and the use of smartphone. According to behaviorist learning is a behavior that could be shaped based on reaction to the stimulus in the environment and hence the behavior is reinforced. However, like any acquired behaviour, the Smartphone addiction may be changed. In view of psychoanalytic theory addicting to Smartphone is a response used for avoiding frustration and for achieving pleasure and forgetfulness.

In view of socio-cultural trend this is a direct offshoot of new technological culture. Cognitivists attribute the Smartphone addiction to the distorting idea and schemas. This shows that the use of Smartphone among people is the result of different social, cultural and emotional factors (Cao, Masood, Luqman and Ali, 2018; Lepp, Barkley, & Karpinski,2014). Researchers have recorded negative effect of Smartphone addictions on student educational performances (Alijomaa, Qudah, Albursan, Bakhiet, and Abduljabbar, 2016; Salehan, and Negahban, 2013). Educators may design critically engineered learning activities to promote creativity among students' activities for assisting students towards selection of better decisions in the face of information and technology onslaught. In view of researchers (Puspitasari & Ishii, 2016)the overuse of Smartphone may put negative effects on their study. It may also affect the mental health of students, wellbeing or happiness (Javid, Malik and Gujjar, 2011). It has been reported that university students even use Smartphone inside classrooms which is more harmful in terms of wastage of classroom time (Salehan & Negahban, 2013). Gezgin, Cakir, and Yildirim, (2018) have also indicated that students take Smartphone as a source of entertainment and this later becomes a permanent habit.

Problem Statement

Many studies have indicated that students are the most frequently reported addicts of Smartphone and communication technology. They also possess Smartphone more than other groups in the society. The low-priced smartphones in the markets have further attracted larger number of students towards its purchase and applications (Aljomaa et al., 2016). Among its positive effects are facilitation and enhancement of communication and necessary information sharing which are important students of research and development. Through its use they get valuable information and knowledge. However, recent studies

have cautioned about its negative effects on students' study and development. This phenomenon has received less attention among education researchers in Pakistan especially in the domain of higher education. Some research studies have reported a strong correlation between Smartphone and academic performance. This motivated the researchers to conduct research on the use of Smartphone and its effects on student studies in the context of Pakistani higher education. This study aimed to explore the effect of Smartphone usage on students' studies. The study addressed this situation through the following research questions:

Research Objectives

Following were the objectives of this Study:
- To examine the perceptions of students about the influence of Smartphone usage on their studies?
- To assess the perceptions of students about the influence of Smartphone usage on their studies based on gender.
- To evaluate the perceptions of students about the influence of Smartphone usage on their study based on year (academic session).
- To assess the perceptions of students about the influence of Smartphone usage on their study based on CGPA.
- To explore the perceptions of students about the influence of Smartphone usage on their study based on age.

Research Questions

- Is there any significant difference in the perceptions of students about the influence of Smartphone usage on their studies?
- Is there any significant difference in the perceptions of students about the influence of Smartphone usage on their studies based on gender?
- Is there any significant difference in the perceptions of students about the influence of Smartphone usage on their studies based on year?
- Is there any significant difference in the perceptions of students about the influence of Smartphone usage on their studies based on CPA?
- Is there any significant difference in the perceptions of students about the influence of Smartphone usage on their studies based on age?

Method

The researchers used comparative descriptive and correlation as methods for investigating the relationship among the variables of this current study. Students using Smartphones in University of Malakand participated in the study. A total of 401 students both male (=215) and female (n=186) were approached based on convenient sampling technique. The researchers collected data from students on the spot. This method was easier to collected data students randomly from students from different faculties to ensure variability in the data.

Measures

A close-ended questionnaire on five-point Likert scale was developed based on literature review and similar other questionnaires. Before data collection, the newly constructed questionnaire was pilot tested in the context to check reliability. Three dimensions were identified in the questionnaire based on the items, 1) Smartphone usage, 2) textbook use and 3) self-study. Items were written for each of the dimension in the questionnaire.

Validation of Instrument

The survey questionnaire was shown to experts in the relevant field in order to establish validity. Based on their feedback, statements were clarified and simplified, wording was improved and the statements restructured. Finally, 74 items were left in the survey tool. The main dimensions consisted of Smartphone use (14 items), textbook use (32 items) and self-study (28 items). The internal consistency of the questionnaire by Cronbach's alpha. The alpha correlation coefficient for all dimensions ranged from .63 to .79. The reliability coefficient of the overall questionnaire was .82.It was found that all the coefficients were significant showing sufficient reliability for the questionnaire(Hinkin, 1995). Table 1 indicates the reliability coefficients for all dimensions of the questionnaire.

Table 2. Reliability Coefficients for all Dimensions in the Questionnaire

S. No	Dimension	Total items	Alpha
1	Smartphone use	14	.63
2	Textbook use	32	.79
3	Self-study	28	.79
	Total	74	.82

Note: All numbers were rounded

Table 2 shows the reliability coefficient for the three dimensions ranged from .63 for 'textbook use',.79 for 'Smartphone use' and .79 for 'self-study' in the questionnaire. This shows that the reliability coefficients for all dimensions were within acceptable range (Hinkin, 1995).

Results

Research Question

What are the perceptions of students about the influence of Smartphone usage on their studies?In order to answer this research question, we computed means and standard deviations of responses of the participants as shown in Table 4.

Table 3. Means and Standard Deviations for all Dimensions in the Questionnaire

Dimensions	N	Minimum	Maximum	Mean	Std. Deviation
Textbook use	401	16.00	51.00	34.89	4.804
Smartphone use	401	57.00	122.00	82.32	9.674
Self-Study	401	50.00	114.00	80.13	8.864

Table 3 shows a mean score .82 for Smartphone followed by .80 for self-study and .34 for textbook in order of perceptions. The higher mean .82 for Smartphone shows that students have strongly agreed with this dimension followed by textbook and yourself and textbook.

Research Question

Are there any significant differences in the perceptions of students about the influence of Smartphone usage? On their studies based on gender. Descriptive statistics were used to answer this question by calculating the mean, standard deviation, and independent sample t-test, as shown in Table 4.

Table 4. Results of T-Test for Differences in Students' Perceptions Based on Sex

Dimension	Gender	N	M	SD	T-Value	Sig

Smartphone use	Female	186	34.69	4.95	-.77	0.59
	Male	215	35.06	4.67	-.76	
Textbook use	Female	186	82.80	9.04	.91	0.70
	Male	215	81.91	10.19	.92	
Self-Study	Female	186	78.33	8.83	-3.84	0.92
	Male	215	81.68	8.60	-3.83	

Note: All Numbers were Rounded

Table 4 indicates that the mean scores were (Male=35.06vsFemale=34.69) for Smartphone use, (Male=78.33vsFemale=81.68) for yourself, and (Male=82.80 vs Female=81.91) for textbook. It shows that no differences were found among student based on sex in all three dimensions of the questionnaire.

Research Question

Are there any significant differences in the perceptions of students about the influence of Smartphone usage on their studies based on age? This question was answered by calculating mean, standard deviation and ANOVA as shown in Table 4.

Table 5. ANOVA for Difference Among Students' Perception by Age

		Sum of Squares	DF	Mean Square	F	Sig.
Textbook use	Between Groups	151.08	8	18.88	.81	.59
	Within Groups	9083.72	392	23.17		
	Total	9234.80	400			
Smartphone use	Between Groups	1881.29	8	235.16	2.5	.00
	Within Groups	35559.25	392	90.71		
	Total	37440.54	400			
Self-Study	Between Groups	1585.30	8	198.16	2.6	.00
	Within Groups	29848.68	392	76.14		
	Total	31433.99	400			

Table 5 shows the F ratio for textbook use (TB)is (151.08) = .815, with a p-value .59which is not significant. It showed that the students have low preference for the dimension 'textbook use'. The F ratio for Smartphone use (SBU) is (1881.29) = 2.59 with a p-value .00which is significant. It shows that students have high preference for the dimension 'Smartphone use'. The F ratio for self-study (SS) is (1585.30) = 2.60, with a p-value .00which is significant. It shows that students have high preference for the dimension 'self-study'.

Research Question

Are there any significant differences in the perceptions of students about the influence of Smartphone usage? on their studies based on Cumulative Point Average (CPA)? This question was answered by computing mean, standard deviation and ANOVA as shown in Table 5.

Table 5. ANOVA for Difference Among Students' Perception by CPA

		Sum of Squares	DF	Mean Square	F	Sig.
TB	Between Groups	2687.08	111	24.20	1.06	.32
	Within Groups	6547.72	289	22.65		
	Total	9234.80	400			
SPU	Between Groups	11718.06	111	105.56	1.18	.13

	Within Groups	25722.48	289	89.00		
	Total	37440.54	400			
	Between Groups	8858.46	111	79.80	1.02	.43
SS	Within Groups	22575.53	289	78.11		
	Total	31433.99	400			

TB (Textbook), SPU (Smartphone use), SS (Self-Study)

Table 5 shows the F ratio for textbook use (TB) is (2687.08) = 1.068, with a p-value .32 which is significant. It shows that students have high preference for the dimension 'textbook use' (TB). The F ratio for Smartphone use (SPU) is (1881.29) = 2.59 with a p-value .00 which is significant. It shows that students have high preference for Smartphone use. The F ratio for yourself (SS) is (1585.30) = 2.60 with a p-value .00which is significant. It shows that students have high preference for 'self-study'.

Research Question

Are there any significant differences in the perceptions of students about the influence of Smartphone usage on their studies based on year? This question was answered by computing mean, standard deviation and independent sample t-test as shown in Table 6.

Table 6. ANOVA for Difference Among Students' Perception by Duration (Years)

		Sum of Squares	DF	Mean Square	F	Sig.
	Between Groups	98.17	4	24.544	1.06	.37
TB	Within Groups	9136.63	396	23.072		
	Total	9234.80	400			
	Between Groups	1761.02	4	440.256	4.88	.00
SPU	Within Groups	35679.52	396	90.100		
	Total	37440.54	400			
	Between Groups	1196.95	4	299.238	3.91	.00
SS	Within Groups	30237.04	396	76.356		
	Total	31433.99	400			

TB (textbook), SPU (Smartphone use), SS (Self-Study)

Table 6 shows the F ratio for textbook use (TB) is (98.176) = 1.06, with a p-value .37 which is significant. It shows that students have high preference for the dimension 'textbook use' (TB). The F ratio for Smartphone use (SPU) is (1761.02) = 4.88 with a p-value .00 which is significant. It shows that students have high preference for Smartphone use. The F ratio for yourself (SI) is (1196.95) = 3.91 with a p-value .00 which is significant. It shows that students have high preference for 'self-study'.

Discussion

We explored the perceptions of students about the use of Smartphone and their influence on their studies. We investigated whether there was any significant difference in students' perceptions about on the bases of gender, age, CPA, and year. The results revealed that trend of Smartphone usage (M=82.32%) among students are higher than textbook and self-study. This finding is in line with previous research (Goswami & Singh, 2016; Krajewska-Kulak et al., 2012). This result of this study shows that young generation gets addicted to the new technology because it is fascinating in nature and attractive. Many studies in the Pakistani and other context (Ching et al., 2015) have also indicated that Smartphone are rapidly becoming popular among the younger generation and more so in the academics. This result also supports the finding of previous research that students take more interest in Smartphone applications and get habituated to it soon.

Many students are motivated towards Smartphone usage due to its multidivisional applications and options which they use to meet their academic and social needs (De Pasquale, Sciacca, and Hichy, 2015). This study further found that students attach more importance with Smartphone use in comparison with textbook. On the other hand, there are reports which have shown highly negative effect of Smartphone use on students' academic performance (Al-Barashdi, Bouazza, Jabur, and Al-Zubaidi,2015). Some studies have presented an alarming picture of the young generation's adverse effects encompassing all domains, such as social, psychological, physical, and educational effects (AlBarashdi et al., 2016). This finding also supports the results of previous research about the increased usage of Smartphone among students. This shows that Smartphone addiction is a general phenomenon worldwide, including Pakistan. In this study, it was also found that the trend of using smartphones among males is higher than females. The t-test analysis means, and standard deviations showed a higher percentage of males (M=34.69) for Smartphone use and (81.68) for self-study. However, in the dimension of (textbook use), the percentage was higher for females than males in the present context. This finding also supports the results of previous research findings (Aljomaa et al., 2016). This result is in line with the research earlier findings where male students showed a higher percentage for Smartphone use (Mok, Choi, Kim, Choi, Lee, Ahn, and Song, 2014). This indicates that in the current context, the trend of Smartphone use is higher among male students than female students. This trend could be attributed to the cultural influence where female access to mobile and Smartphone is restricted in many communities, and females are discouraged.

Conclusion

The results of this research study are essential for many reasons. The results provide an insight into Smartphone usage among university students, predominantly male and female. The results also give new information based on age, faculty, and academic year. These variables were not fully addressed in previous studies. Hence, university management and faculty may look into Smartphone's phenomenon using vis-a-vis the classes of students to manage it and minimize its harmful effects upon university students' academic performance. Future researchers are suggested to use this study's results and replicate it in other contexts for more information related to students Smartphone usage and their study performance. There is an additional need to investigate the relationship between smartphone addiction among university students based on race and ethnicity. There is a need to use more robust methods such as mixed method to achieve more reliable and authentic results. This study collected data only from students. It is also suggested that a comparative study of teachers, students, and comm

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