

A Study on Perception of University Students in Kashmir valley towards the Use of Smartphone's for Higher Learning

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ABSTRACT

The current study was motivated by smartphones as learning media among students and the positive and negative impacts of using smartphones in learning process. The main aim of writing this paper was to assess the perception of University Students in Kashmir valley towards the use of Smartphones for Higher Learning. In this descriptive study, a well developed validated questionnaire was used to collect the information from 400 randomly selected students studying in various higher educational institutions of Kashmir valley. The data collected and properly analysed by using statistical software SPSS (Version 16) revealed that students in majority see smart phone as a strong medium for higher learning. Students in majority use smartphones wisely and focused mainly on learning and avoid other applications that cause harm to their learning. The survey revealed that there was non significant difference between male and female students in perception towards Smartphone usage in general. The researchers finally highlight the positive and negative impact of smart phones and report the major mobile security threats.

Keywords: Kashmir, Smartphone, Student, Phone addiction, Online Learning, and Impact

INTRODUCTION

A Smartphone used by consumers as part of a person's business or work is a cellular telephone with an integrated computer and other features not originally associated with telephones, such as an operating system (OS), web browsing and the ability to run software applications, provide access to many mobile applications and computing functions. It has become integral part of everyday modern life with its popular uses, Email and messaging, Social media, Health and wellness, Connecting with other devices, Mobile payment etc. IBM's Simon was the first Smartphone, presented at the 1992 COMDEX computer trade show as a concept device rather than a consumer

device which as opposed to simply making calls and sending messages could send faxes, emails and keep a calendar of events. Palm Pilot began to include wireless connectivity around 2000 which resulted in Consumer Smartphone's evolved from (PDAs) personal digital assistants. Hewlett Packard, Nokia and many other manufacturers released devices in 1996 called cell phones, combinations of PDAs and mobile phones. In 2002 first Smartphone was released by BlackBerry, many featured physical keyboards became popular with consumers and in the enterprise. We know BlackBerry devices with history of strong security which many organizations offered to their employees for business use were the first popular Smartphone. The employees were supported by many organizations that want to use their Smartphone's for their work. LG in 2007, released the Prada and Apple released the iPhone, the first Smartphone's to feature a touch screen. A year later HTC released its Dream Smartphone which was the first to include Google's Android OS. The other noteworthy advanced Smartphone's include Sony's 2015 release of the Xperia Z5 Premium phone with a 4K resolution screen. The networking advancements improved Smartphone connectivity for quicker use and in 2019, we witnessed folding Smartphone's in the market like Samsung's Galaxy Fold. In The September 2022, iPhone 14, 14 plus, 14 Pro, 14 Pro Max were released and Apple is the only vendor that builds the iPhone and its iOS operating system with models support memory ranging from 128 GB to 1 TB. The most important elements of a Smartphone is its connection to an app store which offers thousands of mobile apps for productivity, word processing, gaming, note-taking, social media, organization and many more. Smartphone's possess some of the features as Internet access, A web browser, The ability to sync more than one email account to a device, Embedded memory, A hardware or software-based QWERTY keyboard, Wireless synchronization with other devices, such as laptop or desktop computers, The ability to download applications and run them independently, Support for third-party applications, The ability to run multiple applications concurrently, Touch screen, Wi-Fi access, A digital camera, typically with video capability, Gaming, Unified messaging, Global positioning systems. It also support accessories, including Bluetooth headphones, power charging cables and extra speakers. The users often buy screen protectors and cases for extra protection as the outer casing of most Smartphone's is fragile. And, since Smartphone's run an OS and applications, vendors usually provide software updates. The individual mobile apps in an app store also provide updates that users can choose to install. The most important benefit of Smartphone's is portability as its users can perform many works together e.g., send and receive emails, set up meetings, work on reports, and other functions they might otherwise perform at their workplace. Smartphone's are handy and can be used anywhere provided cellular signal is available at that place and 5G cell phone technology increases the its data handling capabilities. There are many challenges linked with Smartphone's such as Overuse, Social etiquette, Battery life, Health issues, Security, Model selection, Price etc. The Smartphone security has always been a matter of concern, and vendors have worked to protect their devices. The Smartphone users with an increase in cyber attacks must make sure that their devices have strong security. Apple and Google have enhanced the enterprise capabilities of their mobile operating systems, enabling IT to better support iPhones and Android phones in work. Smartphone's are generally used for quick tasks, Tablets and 2-in-1 devices are other mobile devices used for conducting business are used as alternatives to Smartphone's and PCs. Multiple OEMs produce Smartphone's that run the Android OS, typically referred to as *Android devices*. The Google offers the Google Pixel series, which includes the Pixel 6a, 7 and 7 Pro. The Samsung offers several like Galaxy S, A and Z series. The other Smartphone vendors include Asus, Huawei, Lenovo, One Plus, Oppo, Vivo, with its X, V, Y and T Series, Xiaomi, with the Xiaomi and K20 Pro lines. The latest Smartphone design is changing continuously with the advancement in technology. It is very important that every mobile must have idea about mobile threats and security. Mobile Security Threats i.e., cyber attack that targets mobile devices like Smartphone's and tablets that

exploits vulnerabilities in mobile software, hardware, and network connections to enable malicious and unauthorized activities on the device. The hijacker can access, theft login identity, personal accounts and financial information. Infact, Mobile devices may be attacked on several levels including the possibility of malicious applications, network-level assaults, and the exploitation of device and mobile OS vulnerabilities. The Cybercriminals have enlarged their focus on mobile devices as their significance has grown so cyber threats have broadened worldwide. The most common mobile security threats are Web-based mobile threats i.e., Mobile websites can download malware onto our mobile devices without our permission or awareness to capture our login credentials. App-based threats, i.e., malicious apps that we download freely or even buy can steal our data from our devices. Network threats i.e., cellular connection, Wi-Fi, Bluetooth, and GPS can be used by hijacker steal our data. It is important that one switch off antennas that are not in use and make sure security settings are configured to prevent unauthorized WiFi access. Physical threats i.e., mobiles are small so easy to steal. One must use a strong password and must be aware of Anti-theft tracking software. It is important that one must make his/her mobile more secure by following appropriate mobile protection steps e.g., Set up fingerprint or face recognition, Use a VPN, Enable data encryption and Set up remote wipe capabilities. The Mobile Protection for Android Users are Only buy Smartphone's from vendors who issue patches for Android, Do not save all passwords, Use two-factor authentication, Take advantage of built-in Android security features, Make sure your WiFi network is secure (and be careful with public WiFi), Use the Android security app, Back up your Android phone's data, Buy apps only from Google Play, Encrypt your device, Use a VPN.

Many sources believe that the average lifespan of Smartphone's is currently 2.5 years. However, other sources claim that it could be closer to 15-18 months for newer generation devices. However, a much clearer picture becomes apparent when we break up the life expectancy based on the brand.





World at the end 2019 was bustling with the emergence of deadly disease COVID-19 originated from Wuhan, China causing lakhs of deaths worldwide. The COVID-19 virus spread worldwide stopped almost all physical activities including closure of business activities, education system and others. It is noticed that the mobile learning has motivated students for years since its appearance in late 1997, when internet came out and caused simultaneously positive and negative impacts in general on human life. It was found that Burston (2013) reviewed 345 research studies in between 1994 to 2012 which showed tremendous usage of mobile learning. The COVID-19 virus prevents conventional class room teaching worldwide resulting in last choice of learning i.e., distance learning. We know online learning is distance learning carried out via internet with smart phone as a medium of learning growing worldwide rapidly.

During COVID-19 pandemic online learning was promoted to break the chain of COVID-19 virus, students and teachers work together via online without coming in physical contact to each other. It has been reported (Tran and Nguyen, 2021; Tran, 2021; Pham and Tran, 2021) that online learning did not slow study process but support in tough times like COVID-19 pandemic. In the literature, a number of studies (e.g., Chen and Hsieh, 2008; Wang et al, 2009; Valk, Rashid and Elder, 2010; Alemi et al., 2012; Li and Hegelheimer, 2013; Fattah, 2015; Al-Emran et al, 2016; Noriega 2016; Siew et al., 2016; Siew et al., 2017; Cahyono and Astuti, 2019; Yan, 2019) discussed the mobile learning and its benefits as it improves the students skills in general. In another study conducted by Dr. K.Sumathi et al., (2018), it was found that there was no significant affiliation affecting student's scholastic performance and usage of Smartphone. The study conducted by Hagal and Rafha, (2018), it has was found that Smartphone usage have been a very good tool for supervising projects standard and knowledge sharing. Fuxin (2012) in his study provided literature review of the usage of Smartphone in higher education. It was concluded that usage of smartphone for learning process is a powerful learning tool and lays foundation to examine the digital gap between students and teachers in the present digital world. In the light of the above discussed literature and study conducted by Bilal et al (2016) related attitude of scholars towards internet use, we planed our present study with an aim to assess the attitude and perception of University students towards the usage of Smartphone in Kashmir valley.

2. METHODOLOGY

In this paper, we chose 400 respondents randomly from different universities of Kashmir valley. A well developed validated questionnaire was used to collect the information in view of the literature available on the topic and on the characteristics of the respondents viz., gender, residence, education status, type of family, economic status of family etc. The students who participated in this study on their choice were given a verbal explanation regarding the purpose of this study and were assured that confidentiality would be carried out throughout this study. The sample size for our study was computed using (Cochran, 1977)

$$n = \frac{Z_{\alpha}^2 P(1-P)}{d^2}.$$

Here, we take $p=0.5$, $Z_{\alpha}=1.96$ and $d=0.05$. That gives the approximate sample size for our study $n \sim 384$ and we decided to choose $n = 400$. The data collected from our survey was tabulated, analyzed and interpreted statistically using appropriate statistical tools. The statistical software SPSS (version 20) was used for analysis of collected data.

Research Hypothesis

Hypothesis 1: There is no significant difference in the opinion of male and female students in perception towards Smartphone usage.

Hypothesis 2: There is no correlation between number of mobile changed and daily time spend on usage of mobile.

Hypothesis 3: There is no significant difference between male and female respondents in number of mobile changed and daily time spend on usage of mobile.

In order to test the research hypothesis 1, we use Chi-square test (with usual notations) given as

$$X^2 = \sum_{i=1}^2 \frac{(o_i - e_i)^2}{e_i}$$

where $X^2 \sim \chi_1^2$, o_i and e_i are observed and expected frequencies. We reject H_0 if p-value is less than specified level of significance.

In order to test the research hypothesis 2, we use Karl Pearson correlation coefficient for “n” pair of observations denoted by “r” between two variables as x & y calculated as:

$$r_{xy} = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{(n \sum x^2 - (\sum x)^2)(n \sum y^2 - (\sum y)^2)}}$$

In order to test the research hypothesis 3, we can use Mann-Whitney U-test in case of non-parametric data and two sample t-test for parametric data.

The Mann-Whitney U test (with usual notations) is given by i.e.,

$$W = N_1 N_2 + \frac{N_x(N_x + 1)}{2} - T_x$$

where N_1 is the number of subjects in group 1; N_2 is the number of subjects in group 2. T_x .

The two sample x and y of size n_1 and n_2 drawn from the normal population with means μ_x and μ_y and under the assumption that the population variances $\sigma_x^2 = \sigma_y^2 = \sigma^2$ (say), the statistic

$$t = \frac{(\bar{x} - \bar{y}) - (\mu_x - \mu_y)}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where $\bar{x} = \frac{1}{n_1} \sum_{i=1}^{n_1} x_i$, $\bar{y} = \frac{1}{n_2} \sum_{j=1}^{n_2} y_j$ and $S^2 = \frac{1}{n_1 + n_2 - 2} \left[\sum_i (x_i - \bar{x})^2 + \sum_j (y_j - \bar{y})^2 \right]$

3. RESULTS AND DISCUSSION

The data presented in Table 1, shows the distribution of studied population as per the characteristics Gender, Residence, Class studying, Profession of father/guardian, Family economic status and Type of Family. The study involving 50.0% male, 50.0% female respondents studying in various Universities of Kashmir valley. Majority of respondents understudy were from urban areas (58.5%), studying in PG classes (59.5%), 67.25% respondents parents were involved in Business, 91.5% respondents were from middle class families, 72.25% respondents were from nuclear families, 59.0% respondents were from science stream, 83.75% respondents were using only one Smartphone and; majority of respondents (29.25%) were using Redmi phone brand.

Table 1: Characteristics of the students understudy living in hostels

S.No.	Variable	Type	Frequency	Percentage
1.	Gender	Male	200	50.0
		Female	200	50.0
2.	Residence	Urban	235	58.75
		Rural	165	41.25
3.	Class studying	UG	130	32.5
		PG	238	59.5
		Phd	32	8.0
4.	Profession of father/guardian	Business	269	67.25
		Govt. Employee	83	20.75
		Private Employee	48	12.0
5.	Family economic status	Lower class	31	7.75
		Middle class	366	91.5
		Upper class	03	0.75
6.	Type of Family	Joint	111	27.75%
		Nuclear	289	72.25%
7.	Stream	Science	236	59.0
		Arts	164	41.0
8.	Number of Smartphone's owned by respondent	One	335	83.75
		Two	61	15.25
		Three	14	3.5
9.	Brand of Smartphone under use	iPhone	14	3.5
		Redmi	117	29.25
		Samsung	108	27.0
		OPPO	57	14.25
		MI Note	43	10.75
		Real me	61	15.25

The data presented in Table 2, revealed that in response to statement 1, i.e., Smartphones are a useful medium of imparting knowledge, majority of respondents (male= 48.5 % , female=53.0 %) agree. In response to statement 2, i.e., Effect of smartphones on paper work in the learning process, majority of respondents (male= 73.5 % , female=78.5%) agree. In response to statement 3, i.e., It is indeed a fantastic idea to approach students via smartphones for academic reasons, majority of respondents (male= 63.5%, female=57.5%) agree. response to statement 4, i.e., Mode of learning preferred by PG students, majority of respondents (male=52.5 % , female=49.5 %) disagree. In response to statement 5, i.e., Smartphones can improve communication between students and Faculty fraternity, majority of respondents (male=76.5%, female=81.0%) agree. In response to statement 6, i.e., There is relationship between usage of smartphone and gender (male=61.5%, female=57.5%) agree. In response to statement 7, i.e., Information sharing with smartphones is a quicker solicits feedback when

learning, majority of respondents (male=68.5 %, female= 67.0 %) agree. Statistically, significant difference in the opinion of male and female students was observed in statements 2 and 5. The survey revealed that there was non significant difference between male and female students in perception towards Smartphone usage in general.

Table 2: Perception of University Students in Kashmir valley Towards the Use of Smartphones for Higher Learning

S.No.	Statement	Gender	Response			Chisquare	P-value
			Agree (%)	Neutral (%)	Disagree (%)		
1.	Smartphones are a useful medium of imparting knowledge	Male	194 (48.5)	174 (43.5)	32 (8.0)	5.048	>0.05
		Female	212 (53.0)	145 (36.25)	43 (10.75)		
2.	Effect of smartphones on paper work in the learning process	Male	294 (73.5)	80 (20.0)	26 (6.5)	10.908	<0.01
		Female	314 (78.5)	48 (12.0)	38 (9.5)		
3.	It is indeed a fantastic idea to approach students via smartphones for academic reasons.	Male	254 (63.5)	122 (30.5)	24 (6.0)	3.318	>0.05
		Female	230 (57.5)	138 (34.5)	32 (8.0)		
4.	Mode of learning preferred by PG students	Male	54 (13.5)	136 (34.0)	210 (52.5)	3.608	>0.05
		Female	74 (18.5)	130 (32.5)	198 (49.5)		
5.	Smartphones can improve communication between students and Faculty fraternity	Male	306 (76.5)	64 (16.0)	30 (7.5)	6.598	<0.05
		Female	324 (81.0)	40 (10.0)	36 (9.0)		
6.	There is relationship	Male	246 (61.5)	76 (19.0)	78 (19.5)	4.182	>0.05

	between usage of smartphone and gender	Female	230 (57.5)	68 (17.0)	102 (25.5)		
7.	Information sharing with smartphones is a quicker solicits feedback when learning	Male	274(6 8.5)	43 (10.75)	83 (20.75)	2.082	>0.05
		Female	268 (67.0)	56 (14.0)	76 (19.0)		

The results shown in Table 3, revealed that there was a significant positive correlation between Daily time spend on mobile and number of mobiles changed by the respondent ($r=0.150$, $P<0.01$). It is a general observation that electronic equipments do not have much age especially if used continuously.

Table 3: Correlation between Mobile changed and Daily time spend on Mobile

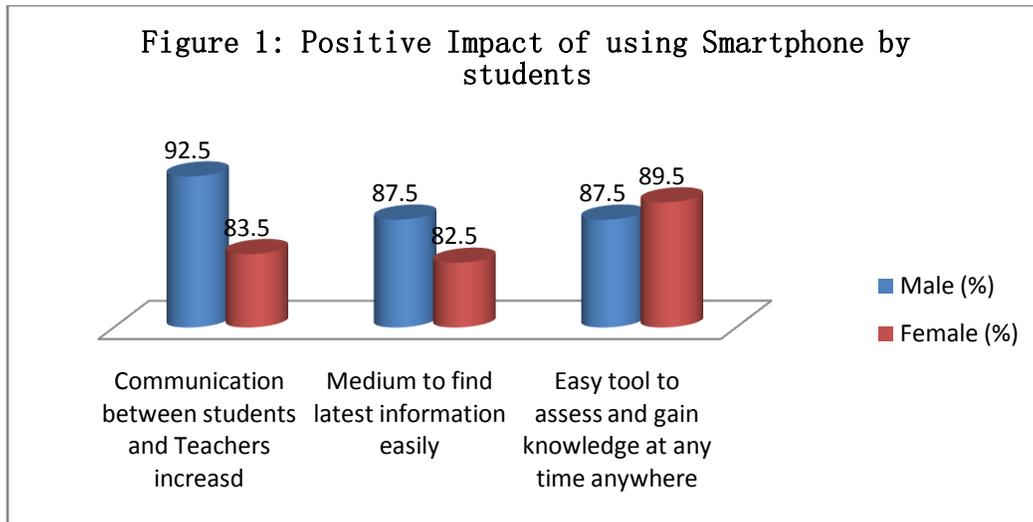
Variable	Mobile changed	P-value
Daily time spend on Mobile	0.150	<0.01

The data presented in Table 3 showed Mean±S.E. in case of Number of Mobile Changed by male respondents as 2.38 ± 0.11 whereas in case of female respondents it was 2.27 ± 0.10 . Further, Mean±S.E. in case of Daily usage of mobile (hrs) by male as 5.07 ± 0.13 whereas in case of female respondents it was 4.86 ± 0.13 . Statistically, there was nonsignificant difference between mal an female respondents in both variables (>0.05).

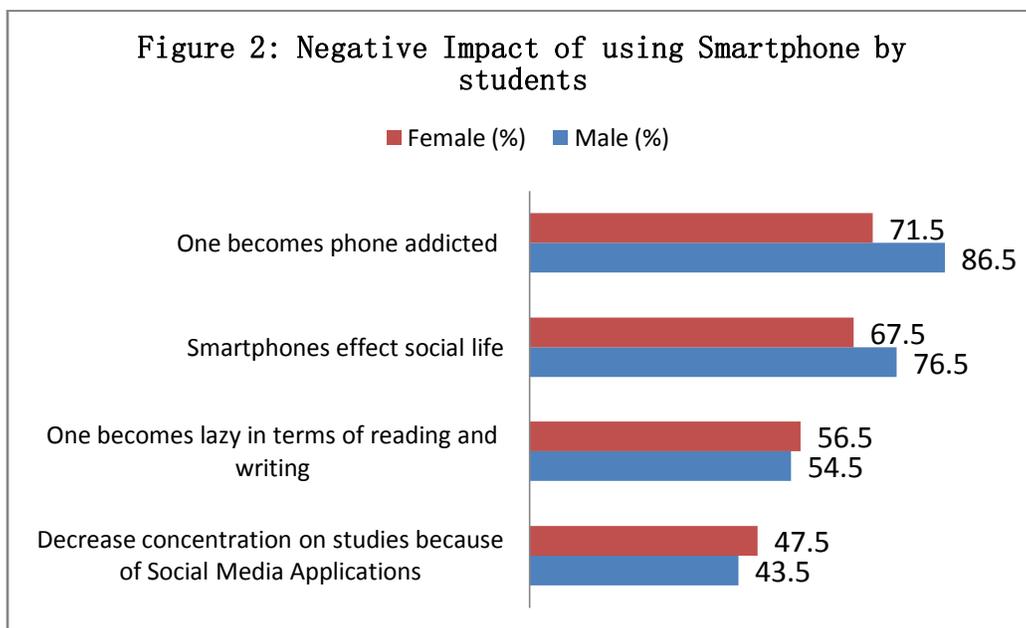
Table 4: Comparison between Male and Female respondents in Number of Mobile Changed and Daily usage of mobile (hrs)

Variable	Male	Female	t-value	P-value
	Mean±S.E.	Mean±S.E.		
Number of Mobile Changed	2.38 ± 0.11	2.27 ± 0.10	0.82	>0.05
Daily usage of mobile (hrs)	5.07 ± 0.13	4.86 ± 0.13	1.17	>0.05

The data shown in Figure 2, revealed that the positive impact of using Smartphone’s by students are Communication between students and Teachers increased (male=92.5%, female=83.5%), Medium to find latest information easily (male=87.5%, female=82.5%) and Easy tool to assess and gain knowledge at any time anywhere (male=87.5 %, female=89.5%).

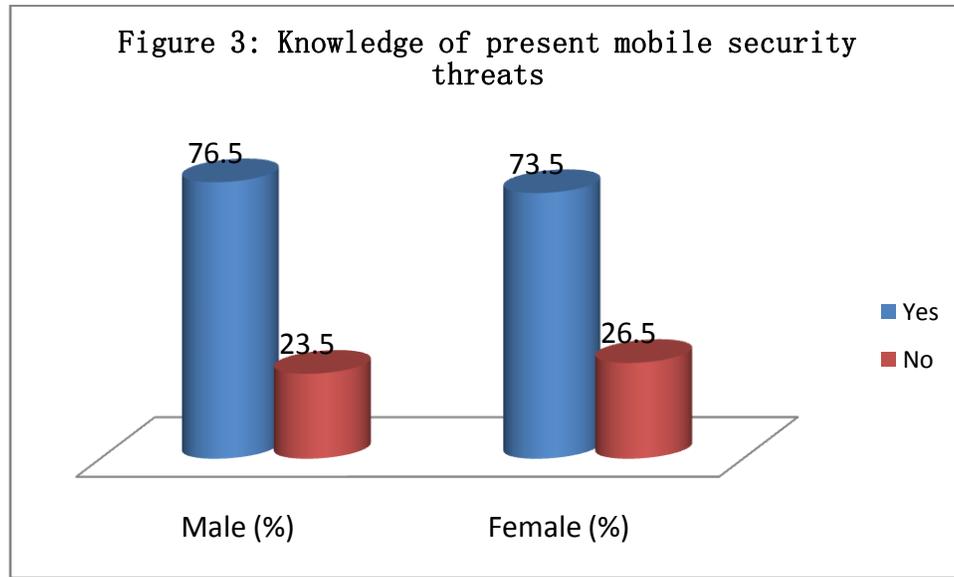


The data shown in Figure 2, revealed that the negative impact of using Smartphone's by students are one becomes phone addicted (male=86.5%, female=71.5%), Smartphone's effect social life (male=76.5%, female=67.5%), One becomes lazy in terms of reading and writing (male=54.5%, female=56.5%), and Decrease concentration on studies because of Social Media Applications (male=43.5 %, female=47.5%).



The data presented in Figure 3, revealed that majority of respondents do possess knowledge about the phone security (male=76.5 %, female=73.5 %). But it is a matter of concern that good percentage of respondents is not aware about the latest technologies available and the latest cybercrimes.

There are number of Mobile Security Threats such as



THE RESEARCHERS GIVE THE FOLLOWING RECOMMENDATIONS

- (a) The researchers suggested that further research by increasing sample size may be undertaken as to the explicit extent to which the use of smartphones can disrupt learning processes and harm studies.
- (b) In order to maximise the use of smartphones as a support to learning processes, teachers be supposed to give guidance on the utilize of smartphones, particularly for data.
- (c) The University Administration can create a hub where 24/7 for a secure campus can be sent text messages and images.
- (d) In general Phone security is one of those things that it's not a problem until it is, and when it is, it's a big problem. We must keep in mind that every bit of practical information and access now fits in the palm of our hands, inside our smartphones. Everyone must learn how to mitigate the risk that cellphones carry as attackers turn to target them.
- (e) To display the accurate results, a mobile app can be generated to track the behaviour of the students on Smartphone use.

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CONCUSION

The study conducted in Kashmir valley revealed that there is no significant relationship affecting gender and Smartphone use. This paper identifies the use of Smartphone's in nowadays university students as an important part of their learning due to its advanced features. It is observed that each technology has its own merits, and

mobile phone is one of the most important tools for students at present which besides reducing paper work helps in higher learning. The results of our study revealed that there was a significant positive correlation between Daily time spend on mobile and number of mobiles changed by the respondent ($r=0.150$, $P<0.01$). The average lifespan of a smartphone is 2.58 years, iPhone last for 4-10 years, whereas Samsung phones last 3-6 years as reported by researchers. The important factors that affect a smartphone's lifespan are the condition of the screen, the hardware, and the battery's health of the phone. In general the electronic equipments have a limited age.

In this study data were collected from students such as phone usage habits, browsing frequency descriptions, positive impacts of using Smartphone, negative impacts of using smartphone etc. The survey revealed that there was non significant difference between male and female students in perception towards Smartphone usage. There was significant correlation between number of mobile changed and daily time spend on usage of mobile ($P<0.01$) and non significant difference between male and female respondents in number of mobile changed and daily time spend on usage of mobile ($P>0.05$). It was concluded that if smartphones are used properly and managed, it would greatly improve the academic performance of students in general.

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