Nature of mobile phone usage among college student

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Abstract
Mobile phones have become an intrinsic part of the lives of a very large number of people, with ownership and usage ever increasing. Through a select review of literature, and with the help of findings of a field study involving randomly chosen college students in Goa (India), this paper brings forth insights related to mobile phone usage among students. Chi-square analysis has been done wherever appropriate. In spite of its limited scope, the field-study brings some interesting findings such as: (a) boys spend significantly more on mobile phones (usage bills) than girls; (b) students from self-financed programmes spend significantly more on mobile phone usage bills as well as on internet every month than students from government–aided programmes; and (c) Muslim respondents play significantly fewer games on mobile phones as compared to Hindus and Christians.

Keywords: mobile phones, smartphones, college students and mobile phones.

Introduction

Not so long ago, owning a mobile phone was considered a luxury, with the privilege of ownership resting in the hands of a select few. Presently mobile phones are virtually considered the world over as a necessary item. Not surprisingly, one finds mobile phones with cobblers on pavements across Indian cities, small fish-sellers on road-sides, and even vendors selling trinkets, toys and fruits on carts and in small fairs.

With the pre-mobile phone experiment of 'pagers' virtually going extinct in a relatively short span of time ever since it was showcased, mobile phones have taken the place of being the most commonly used tool of communication today. Wireless communication has emerged as one of the fastest diffusing mediums in the world, fueling, as put in by Castells *et al* (2007) [3], an emergent 'mobile youth culture' that speaks as much with thumbs as it does with tongues (in Lenhart *et al*, 2010) [10]. Making mobile phones 'smart' and thus capable of making access to social media, internet and emails available anywhere/anytime, besides providing at the fingertips the convenience of various functions like Bluetooth and 'Apps' (in addition to the regular functions of a feature phone) have contributed multi-fold to the growing use of mobile phones among the hoi polloi. Mobile phones are presently not just about calling or texting; but are virtually pocket-sized internet connected computers (ibid). The advent of new mobile phone hardware providers as well as service providers, and the fierce intra-level competition among them (often assisted through collaborative initiatives with banks; with phones often being sold on credit, minimum down payment, zero interest and/or easy installments) has only contributed to the availability of a wide range of instruments and services, besides the lowering of prices – all contributing to easy access to mobile phones among the general population.

The popularity of mobile phones has brought in an era of communication revolution such that, leaving aside the working class and the general adult population, large numbers of students have personal mobile phones, with lives often getting firmly revolved around the same. With reference to students, mobile phones have their advantages and disadvantages; with the same being in the context of the students themselves, besides the parents, peers and/or teachers/Principal.[1] Among others, advantages include: making immediate contact with the student/child; helping parents identify location of their child; making class management including attendance and administration easier and effective; providing more access to course and supplementary educational resources (including calculator and dictionary); etc. Disadvantages, or one may call misuses in some instances, include: break in traditional arrangements of hierarchy and control in institutions; addiction; disruption of class, delinquency and erosion of teacher autonomy; blackmailing and extortion; pornography; lethargy; less involvement in activities like sports; cheating during exams; disregard to authority; etc, with one increasing misuse being 'sexting', with sexually suggested nude images (of self-included) being passed through mobile phones (see also Lenhart, 2009b; Lenhart *et al*, 2010; Morgan undated) [10, 11].

The present study is an attempt to see patterns in the use of mobile phones among college students in Goa (India). While only select parameters have been chosen for the purpose of the study, the paper shares further insights on the mobile phone culture among students through a broad review of select literature.

Review of Literature

Various studies have been conducted the world over on various aspects of mobile phones. Leaving aside studies related to issues like accidents, crime, radiation etc, there are numerous studies related to different aspects of mobile phones in the context of students themselves, including those related to the use/misuse of mobile phones at home/school; misuse in the context of blackmail and pornography; addiction; usefulness for study and administration; extent of time spent; usage in terms of features used, etc.

Notwithstanding their positive contribution in terms of study, entertainment, and as an instant mode of communication, with administrators in institutions even being able to delegate time-consuming repetitive tasks to mobile phones, with students at Koreas Suk Myoung University using mobile phones to confirm attendance, enter libraries, buy food and prove identity

[2] mobile phones have their limitations as well. In addition to those listed earlier, mobile phones are said to result in the decrease in the cognitive thinking ability of students; with attention span being shortened so much that many college students could struggle to read anything longer than a social network posting (see Morgan *undated*).

In earlier years ownership of mobile phones was basically in the hands of the adults with teenagers lagging behind. Several years of data collected by the Pew Internet & American Life Project showed that those aged 12–17 years were closing the gap in terms of ownership. While 45 percent of the teens were found to have mobile phones in the year 2004, the figures were found to have gone up to 63 percent in 2006, and to 71 percent in early 2008 (Lenhart, 2009a) [10]. In the context of Goa, Falleiro (2006-07) [7] in a study conducted in 2006 involving college students highlighted that 45 percent already had mobile phones, with two thirds of those not having indicating they were going for one 'shortly'. Incidentally, the same study also showed that while many users were not aware of the tariffs, in case of the majority it was the parents who eventually paid the bills every month.

According to CampusQuad (2014) [2], college students spend 3.6 hours a day with their cell/smart phones, while spending less time with computers, television, handheld gaming devices, and e-readers. A study based on an online survey of college students from researchers at Baylor University found that women students spent an average of 10 hours per day on their mobile phones, with their male counterparts spending about 8 hours (Wood 2014) [14]. The study also found approximately 60 percent students admitting they may be addicted to their mobile phones, with some indicating that they get agitated when their phones are not in sight. The students reported spending most time texting (average of 94.6 minutes per day), followed by sending emails (48.5 minutes), checking *Facebook* (38.6 minutes), surfing the Internet (34.4 minutes), and listening to music (26.9 minutes) (ibid).

Among features which teenagers use their smartphones for has also been brought out by Lenhart *et al* (2010) [11]. While the most popular features made use of were taking/sharing pictures (83/64 percent) and playing music (60 percent), the others were to play games (46 percent), exchange videos (32 percent), access social network sites (23 percent), for email (21 percent) and to purchase things (11 percent). It was also found that one-third of the teens send more than 100 text messages a day, with girls being more involved than boys (ibid).

A study of adolescents (Hyun Young Koo and Park 2010) [8], regarding their mobile phone use, showed that just under 89 percent believed they were average users, with 8.4 percent believing they were heavy users and 2.9 percent believing they were addicted. The study found that gender, texting, monthly charges, impulsiveness, recreational reasons and cultural reasons were all influential to cell phone addiction. According to Saltzburg Academy on Media and Global Change four out of five college students experienced panic isolation and stress when attempting to unplug their phone for one day (Morgan undated). Be it addiction or not, Payne (undated) shows 77 percent college students using their smartphones first thing when they wake up in the morning, with 47 percent using the same while in the bathroom, and 92 percent using during idle time at school or work.

A study to evaluate classroom use of mobile phone by students at a University and to investigate the relationship between cell phone use and current course syllabi cell phone policies, found that 55 percent were sending an average of one text message per class period. Incidentally, though 85 percent were aware of policies that prohibit mobile phone use in the classroom, over half did not adhere to the same. Results were also indicative that though many found mobile phone usage distracting to self or others, classroom cell phone policies did not deter the mobile phone use (Ellis *et al*, 2010) [5]. In a similar context, Falleiro (2006) [6] in his study involving college students in Goa had also shown that though mobile phones were strictly prohibited/discouraged in colleges, close to three-quarters of the mobile phone owning respondents were bringing the same to class, with over one-third not even switching off their phones during class.

In another study involving college students it was found that 95 percent brought their phones to class daily, with 92 percent using the same to text messages during class, with 10 percent admitting texting during an exam on at least one occasion. Majority believed that instructors were largely unaware of the extent to which texting and other mobile phone activities engaged students in the classroom, with the activities including sending pictures, browsing the Internet, or accessing social networking sites (Tindell and Bohlander, 2012) [16].

Among other studies involving mobile phones and students were the following. In the context of technology, distraction and student performance, Beland and Murphy (2015) [1] highlight the impact of schools banning mobile phones on the test scores of students. While Seo and Torabi (2004) [4] show the impact of in-vehicle cell phone use on accidents or near-accidents among college students, Sarmiento and Glauber (undated) highlight the middle school students' use of mobile technology, with Nielsen (2013) [13] bringing out proof in the context of mobile phone use by students for learning

About the Study and Sample

The focus of the study was to find the nature of mobile phone usage among undergraduate (UG) college students in Goa in terms of ownership, amount spent on usage bills and internet, and features used (studied in the context of programme enrolled in, and gender and religion of the respondents). UG students were considered on account of their age and in-between position in society.[3] wherever appropriate chi-square analysis has been used.

The sample consisted of 175 students: 66 males and 109 females. The sample size is comparable to those of other similar studies. The sample size constituted about 10 percent of the student population of a representative college chosen for the study. The college was selected since it was ideal in all respects as it was representative of students from different socio-economic backgrounds (including students from reserved backgrounds like schedule tribes, schedule castes and other backward classes), and for having a good mix of students in terms of gender, religion, nature of programmes (i.e. government aided and self-financed), and urban-rural background of households. To get representative results, the sample was chosen randomly. The data was collected through interview in the latter part of 2015 with the help of a specially designed schedule.

Details of the sample are provided in Table 1. While close to two-thirds of the respondents were Christians, 70 percent were enrolled in government-aided programmes, with most having parents employed in private service (31.43 percent) followed by those who were self-employment/own business (28

percent). The mean age of the sample respondents was 18.91 years (SD: 1.139).

Table 1: Profile of the Sample

	GENDER		TOTAL
	Male	Female	
Religion			
Hindu	18	14	32
Christian	35	79	114
Muslim	13	16	29
Nature of programme enrolled in			
Government Aided	39	84	123
Self-Financed	27	25	52
Class in which studying			
First Year	23	42	65
Second Year	22	33	55
Third Year	21	34	55
Occupation of household head/parent			
Government Service	10	19	29
Private Service	20	35	55
Professional	12	10	22
Self-Employed/Business	18	31	49
Daily Wage Worker	3	7	10
Retired	2	5	7
Unemployed	1	2	3
Total	66	109	175

Source: Field work

Study Findings
1. Ownership of mobile phones
Unlike the figures obtained in the earlier study conducted a decade ago involving a relatively similar sample from the same region (Falleiro 2006; 2006-2007) [6, 7] wherein about 45 percent of the respondents owned mobile phones, the present study found close to 97 percent of the total sample respondents owning a mobile phone.[4] It is apparent that the passage of time has totally transformed the ownership patters of mobile phones among students, with the ownership figures in percentage figures having more than doubled in just 10 years. Ownership was irrespective of gender, with the study finding no significant association at the 0.05 level (p=0.608). Incidentally, of those who owned mobile-phones almost 86 percent owned smartphones. Here also, statistical analysis showed no significant association between smartphone ownership and gender of the respondents at the 0.05 level (p=0.994).

With respect to ownership of smartphones and religion, the study found a significant association at the 0.05 level (p=0.03), wherein it was the Christian students who owned significantly more smartphones (90 percent), than Muslims (85 percent) and Hindus (72 percent). On the same issue of smartphone ownership, but in terms of nature of programme the respondents were enrolled in, while a little over 84 percent of those in government-aided programmes used smartphones, the figure was over 90 percent in case of those enrolled in self-financed programmes. Notwithstanding the relative difference though, there was no significant association found at the 0.05 level between ownership of smartphones and nature of programme enrolled in (p=0.27).

2. Amount spent per month on mobile phone (excluding amount spent on internet)
In terms of amount spent per month on mobile phones the study found that by and large the females spent comparatively less than males. While most females (about 72 percent) spent

an amount between Rs. 101–500, the corresponding figure for males was only 51 percent, with the rest spending amounts over Rs. 500 (see Table 2). Statistical analysis found a significant association between gender and amount spent on mobile phone per month at the 0.01 level (p= 0.002), with the males spending significantly more than the females.

Table 2: Amount spent per month on the basis of gender

Amount spent (Rs.)	Gender		Total
	Male	Female	
Up to 100	7	5	12
101-300	5	34	39
301-500	16	27	43
501-1000	18	21	39
1001 - 2000	8	5	13
Above 2000	1	0	1
Total	55	92	147

Source: Field work

On the same issue but in the context of religion of the respondents (see Table 3), it was found that Christians spent relatively lesser on mobile phone bills as compared to the Hindu and Muslim respondents. There was however no significant association found at the 0.05 level between religion and amount spent per month (p=0.288).

Table 3: Amount spent per month on the basis of religion

Amount spent (Rs.)	Religion			Total
	Hindu	Christian	Muslim	
Up to 100	2	7	3	12
101-300	7	29	3	39
301-500	4	32	7	43
501-1000	7	25	7	39
1001-2000	2	7	4	13
Above 2000	1	0	0	1
Total	23	100	24	147

Source: Field work

With regards to the nature of programme and the average amount spent per month it was found that while majority of the students enrolled in self-financed programmes (53.2 percent) spent over Rs 500 per month on their phones, the corresponding figure for students enrolled in government-aided programmes was only 28 percent, with the bulk of the latter spending Rs. 500 or less. Statistical analysis found a significant association at the 0.05 level (p=0.024) between nature of programme and amount spent per month on mobile phones, where the self-financed students spent significantly more than the government-aided students (see Table 4).

Table 4: Amount spent per month on the basis of programme enrolled in

Amount spent (Rs.)	Nature of Programme		Total
	Government aided	Self-financed	
Up to 100	7	5	12
101-300	32	7	39
301-500	33	10	43
501-1000	22	17	39
1001 – 2000	6	7	13
Above 2000	0	1	1
Total	100	47	147

Source: Field work

3. Analysis on money spent on internet

With reference to the amount spent on internet alone, the study found that about 35 percent respondents spent an amount between Rs. 151–300 per month, with another 2.7 percent spending above Rs. 1000 (see Table 5). Statistical analysis found no significant association at the 0.05 level between amount spent on internet and gender of the respondents (p=0.773).

Table 5: Amount spent on Internet on basis of gender

Amount spent on internet (Rs.)	Gender		Total
	Male	Female	
Up to 10	4	4	8
11-50	4	6	10
51-150	6	30	36
151-300	17	34	51
301-500	14	12	26
501-1000	7	5	12
Above 1000	3	1	4
Total	**55**	**92**	**147**

Source: Field work

With respect to the amount spent on internet by respondents from various communities, it was found that the bulk (73.91 percent Hindus, 76.87 percent Muslims and 79 percent Christians), spent amounts between Rs. 51–500 per month (see Table 6), with there being no significant association found at the 0.05 level between the amounts spent and religion.

Table 6: Amount spent on internet per month on the basis of religion

Amount spent on internet (Rs.)	Religion			Total
	Hindu	Christian	Muslim	
Up to 10	0	5	3	8
11-50	2	8	0	10
51-150	6	23	7	36
151-300	7	40	4	51
301-500	4	16	6	26
501-1000	2	6	4	12
Above 1000	2	2	0	4
Total	**23**	**100**	**24**	**147**

Source: Field work

In context to nature of programme and internet expense per month it was found that those enrolled in self-financed programmes were spending more as compared to those in government-aided programmes. Wwhile a little over 53 percent of the respondents from the self-financed programmes spent above Rs. 300 per month exclusively on internet, the figure was only 17 percent in case of those enrolled in government-aided programmes (see Table 7). Statistical analysis found a very strong association at the 0.01 level between internet usage in terms of amounts spent per month and nature of the programme enrolled in (p=0.01), wherein as indicated self-financed students spent significantly more.

Table 7: Internet usage per month in terms of amount spent on basis of programme enrolled in

Amount spent on internet alone (Rs.)	Nature of Programme		Total
	Government-aided	Self-financed	
Up to 10	5	3	8
11-50	8	2	10
51-150	29	7	36
151-300	41	10	51
301-500	13	13	26
501-1000	3	9	12
Above 1000	1	3	4
Total	**100**	**47**	**147**

Source: Field work

4. Analysis on applications used

Needless to say, particularly in the context of smartphones which the majority of the respondents owned, the phones were used for multi reasons and for different functions. The present study brought a few important insights into light with regards to the usage patterns of mobile phones (see Table 8). For example it was found that the most popular and frequently used app was *WhatsApp* (used by 94.6 percent respondents). Among other popular purposes for which the mobile phones were used were games (81.6percent), online shopping (79 percent), *Facebook* (76.2 percent), online videos (62.6percent) and Video calling (56.46 percent). Unlike these, *Instagram* was not as popular (used by 43.5 percent). Though not common, the other purposes for which the mobile phones have also been made use of were for *Google*, *True Caller*, *Pics Art*, *Hike*, Photo Editor, *Opera Mini*, *Zomato*, *Clean Master*, Dictionary,

Camera 360, *BeautyPlus*, *YouCam Perfect*, *Candy Camera*, *Retrica* etc. Through interactions with the respondents it was found that photo editing and beauty applications were gradually gaining more popularity.

In addition to the above, the study found two other noteworthy aspects in terms of usage patterns in terms of applications: while all Hindu respondents made use of *WhatsApp* (unlike a few exceptions in case of Muslim and Christian respondents), with reference to gaming, significant association was found at the 0.05 level between the same and religion of the respondents (p=0.028), wherein the Muslims played significantly less than the Christians and Hindus.

Table 8: Usage of mobile applications

	Religion			Total
	Hindu	Christian	Muslim	
Facebook				
Yes	19	75	18	112
No	4	25	6	35
WhatsApp				
Yes	23	94	22	139
No	0	6	2	8
Instagram				
Yes	12	42	10	64
No	11	58	14	83
Video Calling				
Yes	13	57	13	83
No	10	43	11	64
Online Videos				
Yes	16	62	14	92
No	7	38	10	55
Games				
Yes	19	86	15	120
No	4	14	9	27
Shopping				
Yes	18	82	16	116
No	5	18	8	31

Source: Field work

Summary and Conclusion
Mobile phone usage has been increasing over the years; mobile phones are here to stay. Vera Nazarian aptly puts it,

It's easier for a rich man to ride that camel through the eye of a needle directly into the Kingdom of Heaven, than for some of us to give up our cell phone.[5]

As encapsulated earlier under the review of literature, besides the different student related issues of mobile phones like addiction, sexting, concentration, learning and discipline, studies have unequivocally shown the fast increase in mobile phone usage among students. Some of the major findings of the field-study were as follows:
1. Majority of the students own a mobile phone, with the majority owning smartphones;
2. There was a strong association between ownership of smartphones and religion, with Christians owning significantly more than the others particularly the Hindus;
3. There was a very strong association between gender and amount spent on mobile phones per month, with the boys spending significantly more than girls;
4. Students enrolled in self-financed programmes spend significantly more on their mobile phones (usage bills) than government-aided students;

5. There was a very strong association between internet usage per month (as reflected by amounts spent on internet) and nature of programme, wherein respondents from self-financed programmes spent significantly more than their government-aided peers;
6. Significant association was found in terms of religion and gaming facilities on mobile phones, wherein Muslim respondents play significantly less as compared to the Christians and Hindus.

Usage of mobile phones has been increasing not only due to the call/texting facility but due to internet and other applications. This trend is expected to continue if not increase in the coming years as well. Students use mobile phones for fun, leisure, education, to be socially connected, photo editing, video chatting, conference calls, web browsing, shopping etc. While mobile phones can help students in studies (if used wisely), lack of control in terms of games, chatting and/or movies, can only lead to addiction and consequently poor grades. Overuse of mobile phones has incidentally also led to a large number of road accidents and/or other forms of self-accidents involving college students. Considering the various findings of mobile phones, efforts need to be made in all earnest to tap the very best of the same, while at the same time plugging the negatives. Banning phones or jamming mobile signals (other than during examinations) may per se not be appropriate any more (considering the advent of 'mobile learning' techniques and with the overwhelming majority of students owning mobile phones). It needs to be remembered that notwithstanding the expenses, mobile phones can help bridge the digital divide by providing internet access to the less privileged (Lenhart *et al*, 2010) [11].

Notwithstanding its preliminary findings, the field-study was conducted with limited scope and objectives. To get a wider perspective of the usage patterns of mobile phones, future studies need to extend the scope to include PG institutions as well as schools. Likewise, issues not covered under the present study like amount of time spent on mobile phones per day, addiction, and on whether the phones are used for purposes like pornography or sexting need also be taken up.

Notes
1. For advantages / disadvantages see: https://targetstudy.com/articles/mobile-phones-and-students.html and http://www.thephonetown.com/positive-and-negative-effects-of-mobile-phones/
2. See: https://targetstudy.com/articles/mobile-phones-and-students.html
3. They lie between the less matured/comparatively younger school students and the relatively older working population.
4. While 64 out of 66 boys owned mobile phones, in case of girls it was 107 out of 109.
5. Retrieved from: http://www.goodreads.com/quotes/309552-it-s-easier-for-a-rich-man-to-ride-that-camel

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