Summary:

6.1. Objectives:

For the purpose of this study the researcher had set the following general as well as specific objectives:

i. **General Objective:** To study the impact of the cell phone as a medium of communication on the behavioural patterns of undergraduate students of Pune city.

ii. **Specific Objectives:** were

a. To study the cell phone usage pattern of undergraduate students of Pune city.

b. To analyze the effect of the cell phone as a medium of communication on the communication pattern of the undergraduate students.

c. To examine the nature of cell phone dependency of the undergraduate students.

d. To find the influence of cell phone use on the behavioural pattern of the undergraduate students and its repercussions on the relationships with their family members and friends.

e. To investigate the cell phone usage patterns of undergraduate students when they are alone and when they are in the public places.

f. To study the consequence of various communication facilities like Short Messaging Service, video camera etc. on communication patterns like the use of language and graphic symbols as well as sound and visual clips among undergraduate students.

g. To discover whether the undergraduate students are getting more importance in the family due to their technological knowledge base and the family is experiencing a change in the decision making process.
6.2. Research Questions

This study is based on the following research questions

i. What are the cell phone use patterns of undergraduate students of Pune city?

ii. What impact has the cell phone, as a medium of communication, created on the communication pattern of undergraduate students?

iii. What is the intensity of cell phone addiction of undergraduate students of Pune city?

iv. What is the influence of cell phone use on the relationships with the family members and friends of undergraduate students in Pune?

v. How do the undergraduate students use the cell phone when they are alone and when they are in public places?

vi. Whether Indian society is experiencing the shift in the power centre with reference to cultural values? For example, is the young generation becoming a part of the decision making process of the family? Is their opinion given preference over the opinion of elders?

6.3. Nature of Study:

This study was exploratory, ex-post-facto and descriptive in nature. It was exploratory because the researcher wanted to explore the impact of cell phone on the communication patterns of undergraduate students. More specifically, it was to find the importance of the cell phone in the lives of teenagers, and teenagers’ status in the family and other social groups after cell phone technology was introduced in society.

The ex-post-facto method is appropriate in circumstances when the more powerful experimental method is not possible. It is not possible to select, control, and manipulate the factors necessary to study cause and effect relationships directly (Cohen, Manion, & Morrison, 2007, p. 268).
It was ex-post-facto also because the researcher had no direct control over the independent variables, because their manifestations had already occurred. They were inherently not manipulated. Secondly, inferences about relations among variables are made, without direct intervention. There was absolute zero possibility of controlling the changes in behavioural pattern of independent variables – undergraduate students of Pune city. Thus the researcher had examined the behaviour pattern of undergraduate students of Pune city after personal communication technology like the cell phone was introduced in the society.

It was descriptive because it essentially aimed at finding the facts related largely to the present, and abstracting generalizations by the cross sectional study of the current situation. It tried to explain the impact of cell phone use on behavioural pattern of the young generation and portrayed their characteristics without specific initial hypotheses about the nature of these characteristics.

6.4. Research Approach:

Both quantitative as well as qualitative approach was employed in combination to achieve maximum possible accuracy while arriving at the conclusions. The quantitative method was used to measure the nature of impact of cell phone usage by undergraduate students as perceived and reported by them with greater precision. The qualitative approach was used to provide a broad philosophy as observed by the representative opinions of the people observing and reporting the impact of cell phone usage on the behavioural pattern of undergraduate students.
6.5. Indicators Used in the Study

Since the nature of the present study is exploratory and ex-post facto, the researcher identified a few indicators instead of independent and dependent variables to gauge the impact of cell phone usage on undergraduate students. They are as follows:

1. Emotional dependency – cell phone as companion
2. Challenging the authority – family norms and social Relationships
3. Time spent on cell phone - amount of exposure to the technology
4. Use of cell-phone in privacy and in personal, social and public spaces / zones.

6.6. The Method and The Tool

The method employed for quantitative data collection was survey and the tool used was questionnaire. The qualitative data was collected with the help of interviews and interaction.

6.6.1. Pre-testing

The pre-testing for the questionnaire was conducted between 12.11.2011 to 16.11.2011 on ten undergraduate girls and ten undergraduate boys. They were asked to respond to the questionnaire. After they submitted the questionnaire, the researcher had a personal interaction with each student to understand their opinions and suggestions which were discussed with the guide and a psychologist. The suggestions from the students which were found important and necessary for this research were then incorporated into the questionnaire. A modified questionnaire was then ready for the Pilot Study.
6.6.2. Pilot Study

For Pilot Study, other 10 undergraduate girls and 10 undergraduate boys were asked to fill the modified questionnaire. The researcher once again had a detailed discussion with the students about the content and the format of the questionnaire including the language, syntax, vocabulary, and expressions.

The results of this study were presented as per the schedule declared by the Head of the Department on 22.12.2011, in the presence of the Head of the Department, eminent scholars of media and communication and the fellow students in the Department of Communication and Journalism, University of Pune, Ranade Institute Building, Fergusson College Road, Pune.

After the presentation a detailed discussion was held and some valuable suggestions were made by the panel, which were then incorporated into the questionnaire by the researcher.

The draft of the questionnaire was new and hence the experts suggested that the researcher should conduct the validation and reliability test on the questionnaire.

6.6.3. Validity and Reliability test

The refined questionnaire was then put for Validation Test wherein 50 undergraduate girls and 50 undergraduate boys, that is, a total of 100 undergraduate students were asked to fill the questionnaire.

The data collected for the validation test was sent to the statistician for testing the consistency reliability of Part I and Part II of the questionnaire.

Cronbach’s Alpha value for Part I of the said questionnaire is 0.78 = Acceptable and Part II is 0.85 = Good. Overall Alpha value for the Reliability test is 0.80 which is ‘Good’.
6.6.4. Sampling Method / Scheme

Multi-stage sampling method was employed in 3 stages.

First stage: Assembly constituency for college listing

Second stage: Random selection of colleges

Third stage: Purposive selection of the students meeting sample characteristics

The undergraduate students who were using cell phones for more than one year and who were full-time students from the selected colleges affiliated to University of Pune formed the final sample of the present study.

This type of sampling scheme was deliberately selected because of the characteristics of the sample. These characteristics were:

1. Samples had to be undergraduate students.
2. They should have been using cell phones for more than one year.
3. They should have been students of the colleges which were at least 40 years old in 2010 and affiliated to the University of Pune.
The final list of the colleges was as under:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name and Address of the College</th>
<th>College Identity Number</th>
<th>Established in the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1.</td>
<td>Deccan Education Society’s Fergusson College, (Arts, Science) Deccan, Pune – 411 004.</td>
<td>PU/PN/AS/02/1885</td>
<td>1885</td>
</tr>
<tr>
<td>C-2.</td>
<td>Shikshan Prasarak Mandal’s Sir Parashurambhau College (Arts, Science &amp; Commerce), Tilak Road, Pune -411030.</td>
<td>PU/PN/ASC/003/1916</td>
<td>1916</td>
</tr>
</tbody>
</table>
6.6.5. Final sample:

The study was conducted on the 582 undergraduate students (305 boys and 277 girls) of the five colleges affiliated to the University of Pune and located within the jurisdiction of Pune Municipal Corporation.

6.6.6. Digitization of data

Every questionnaire was given a code consisting of the gender of the respondent, the initials of the research assistant and the serial number to make accession easy, (e.g. FAC-1 or MAZ-24 etc.). The research assistants then digitized the data using the standard format of Excel sheet provided by the researcher. The Excel sheet comprised of four data-sheets: (Annexure 7)

1) Demographic details
2) Multiple choice questions
3) Part –I: Attitude
4) Part – II: Behavioural patterns

The master sheet (Annexure 8) was examined by the researcher to facilitate the data analysis process.

6.6.7. Data Analysis

After digitization of the data frequency distribution the percentile was calculated. Similarly, with the help of a statistician, $t$ Test was carried out for attitude and behavioural Likert Scales using SPSS.
6.7. Findings

6.7.a) Quantitative Analysis

The conclusion of the study is as below:

6.7.a) 1. Demographic Details

Among the undergraduate students who participated in the survey, 3/5th of boys and more than 3/5th of girls fell in the age group of 18 to 20 years. While studying the demographic details, it was observed that nearly 3/5th of boys and nearly 3/4th of girls were members of nuclear family type followed by nearly 1/4th of the boys and less than 1/5th of girls were members of extended family structure. Less than 15% of the total undergraduate students were leading their lives as members of joint families.

The undergraduate students participated in the survey gave an economic cross section of the students studying in Pune city as almost 1/5th boys and more than 1/10th of girls were from lower income class, about 1/5th of undergraduate students were from middle income class, 1/5th of boys and 1/4th of girls were from upper class and more than 1/4th of undergraduate students were falling in rich class. It was also seen that majority of the respondents were staying with their parents and siblings in the nuclear, extended, or joint family structure. Nearly 1/5th of them were staying away from the family.

6.7.a.2. Nature of Cell phone ownership

1. Age of undergraduate students at which they owned their first cell phone:

The main characteristic of the sampling of this research was – undergraduate students using cell phone for more than one year. About three fourth of the late adolescent population got to own the cell phone in their middle teen age to late teen age and they were using the same for about 2 to 4 years.
2. **Type of the cell phone set used by the undergraduate students**

Nearly half of the undergraduate boys and slightly more than half of undergraduate girls who participated in the survey were using multi-media phone, whereas one third undergraduate students were using Smart phones. Less than one fifth of the undergraduate students were using simple phone. It clearly means that more than 80% undergraduate students used either multi-media or smart phone during the survey period.

3. **Number of cell phone handsets change by the undergraduate students**

Majority of the undergraduate students used nearly 4 cell phone handsets since they started using it independently.

4. **Reasons to change the cell-phone sets**

The survey revealed that one fourth of undergraduate students used the same cell phone set till it gets out of order. Nearly one fourth of them used the same cell phone set unless they misplace it. That means about half of the undergraduate student population continued using the same cell phone set till they practically could not use them. There were only 6.5% undergraduate students who changed the cell phone set whenever a new set was introduced in the market. It can be concluded that although the mobile manufacturing companies design their advertising campaigns targeting the youth that too adolescents, the undergraduate students participated in the survey were not lured by the hype in the ads.

5. **Type of the cell phone connection used by the undergraduate students**

Less than three fourth (70%) undergraduate students used pre-paid connections and more than one fourth (30%) used post-paid one.
6.7.a.3. Nature of Cell Phone Usage

A) Nature of saving contact details.

1. Undergraduate students’ practice of saving contact details with same/different names

More than half of the undergraduate students had a tendency not to save the contact details with the original names. They preferred to save the contact details either with pet name, code name or favourite names. It can also be made out that more than three fifth of boys follow this practice as compared to half of the undergraduate girls. Secondly, the percentage of boys staying away from home and saving contact details differently is 18% more than the percentage of the undergraduate girls falling in the same group (boys - 65%; girls – 47%). Thirdly, percentage of undergraduate girls living away from home and saving contact details with the original names was more (53.06%) as compared to the boys from both the categories saving the contact details with original names (37.85% and 35.48%) and the girls staying with the family and saving contact details with the original names (45.18%).

2. Reasons to save contact details with different names

To justify the practice of saving contact details with different one third of boys and less than one third of girls found it easy to remember if the contact details were saved with nick names or pet names where as one fifth of undergraduate students actually liked to save their contact details with nick names. Nearly one tenth of undergraduate students wanted it that way to avoid confusion. It means that less than two third of boys and more than half of the girls who saved contact details with different names did so not to conceal the information of the contacts but for the sake of convenience. Whereas 7 % boys and girls were found using different names while saving contact details to avoid parent-policing. Slightly more than one tenth of boys and only one twentieth of girls did not want their friends to know true information about their contacts.
It was also important to see that out of 191 boys and 148 girls who definitely admitted saving the contact details with different names what percentage values of the reasons to do so could be obtained.

‘Easy to remember’ was topping the list with more than half undergraduate students. It was followed by ‘I call them by nick names only’ with one third of undergraduate girls and one fourth of undergraduate boys.

Less than one fifth of the undergraduate students voted for ‘To distinguish between the friends with same name’.

One tenth of undergraduate students did it to avoid parent policing. Less than one fifth of undergraduate boys and less than one tenth of undergraduate girls opted for ‘To maintain privacy form the inquisitive friends’. It means that nearly 8% more boys than the girls accepted to save the contact details in different names because they did not want their friends to know about the contacts. Does this difference show the masculine trait in all those 17% boys to curb hidden competitor in disguise of friend among their friend circles? There is further scope to research upon this facet of young boys’ cell phone behaviour to save the contact details in different names to conceal them from the inquisitive friends.

In short three fifth (62%) of undergraduate students saved contact details with different names did it for the sake of convenience and did not expressly have any intentions to mask the information of their contacts.
B) Nature of cell phone activity

1. Frequency of cell phone activities of the undergraduate students

The cell phone usage pattern of the boys and girls clearly showed that they used cell phone primarily to talk and secondly to SMS. It is also used for setting the alarm and store the pre-recorded music to listen i.e. MP3. Internet browsing and playing games was on the fifth and sixth position in the list followed by clicking the pictures and listening to radio. Setting the reminder and watching a film were the tail-enders.

Gender-wise percentage of frequency distribution of undergraduate students performing various activities with cell phone everyday stated that almost all of undergraduate boys (90.49%) and more than four fifth (86%) of undergraduate girls used the cell phone mostly for voice calling. On the other hand, majority (82%) of undergraduate girls sent and received SMSs everyday as compared to 79% boys, which clearly meant that girls used SMS facility more than boys. About one third (32.13%) of undergraduate girls and more than one fourth (28%) of undergraduate boys every day listened to radio on their cell phone. Playing games over the phone was more popular in more than one third of undergraduate boys (38%) as compared to more than quarter of undergraduate girls (28%). The same was the case with accessing of Internet on cell phones; nearly half of the undergraduate boys (49%) accessed Internet compared to nearly one third of undergraduate girls (32%). It means that more undergraduate boys, than girls, access internet everyday on their cell phone.

Nearly quarter of the undergraduate students every day used reminder option. About three fourth of undergraduate boys used alarm facility in their cell phone daily as compared to three fifth of the undergraduate girls. Again use of MP3, watching film, and cell phone camera usage boys were found to be using it more than the girls.
Summary

From the above data it is obvious that undergraduate boys used cell phone more than that of undergraduate girls for talking, playing games, accessing internet, putting alarm, listening to pre-recorded music on MP3, watching films on cell phone screens, and clicking pictures using cell phone camera; whereas undergraduate girls used their cell phones more for sending SMSs, listening to radio, and putting reminders as compared to undergraduate boys.

2. Monthly expenditure on cell phone usage by the undergraduate students

Majority of the undergraduate students used pre-paid service and more than one third (38%) of undergraduate students spent less than `250 per month and more than one fourth (29%) of undergraduate students spent between the ranges of `251 to `500 per month. Slightly more than one fifth (20.55%) of undergraduate students had to shell out within the range of `501 to `750 per month and more than one tenth (12.69%) spent more than `751 per month. It was, therefore, inferred that maximum (87%) undergraduate students limited their monthly cell phone expenditure up to `750.

3. Internet browsing preference

Nearly one fourth of undergraduate students while browsing Internet on their cell phones checked emails and social networking sites. About one fifth boys as compared to less than one tenth of girls used their cell phones to check their mailboxes, send e-mails, access social networking sites, browse educational material, visit any other website and download applications. About one fifth of undergraduate students visited any website while accessing internet on their cell phone. Less than one fifth undergraduate students happened to browse educational material while surfing on their cell phones. Slightly more than one tent of undergraduate students had download applications on their cell phone and less than one tenth of undergraduate students accessed only important e-mails.
4. **Cell phone time spent pattern of the undergraduate students**

More than two fifth of undergraduate students had spent majority of their cell phone usage time on texting short messages. More than one third of undergraduate boys and less than one third of undergraduate girls spent their cell phone usage time on voice calling. More than one fifth of undergraduate students had spent majority of their time on adding emoticons in the text message and sending text messages. One fifth of undergraduate boys and less than one fifth of undergraduate girls made use of cell phone to play games, more than any other cell phone activity. More than one tenth of undergraduate students spent majority of their cell phone activity time on Internet browsing. Nearly equal percentage of them spent most of their time on listening to music.

Thus it can be concluded that girls used SMS facility more than boys. Practice of adding emoticons to the text messages was found in girls more than boys. In all other usage options like voice calling, playing games on cell phones, internet browsing, and listening to music boys scored more than the girls by negligible average percentage, that is, just 2%.

5. **Average time spent per day on cell phone activity of the undergraduate students**

Nearly one third of undergraduate students had spent more than 3 hours of their daily routine to use cell phone. Quarter of the undergraduate student spent 1 to 2 hours per day on their cell phones. Equal percentage of undergraduate students spent 2 to 3 hours. Nearly one fifth of them spent less than an hour.
6 Monthly money spent on cell phone activity by the undergraduate students

More than two fifth of boys and more than half of the girls spent their monthly cell phone budget for availing communication facilities. One fourth of boys and nearly one fifth of girls spent on Internet browsing. Less than one fifth undergraduate students had spent on buying cell phone accessories and nearly equal percentage of them spent on value added services.

It means that the girls spent more on communication facilities than that of boys whereas boys spent more on internet browsing, buying mobile accessories and value added services than the girls.

7. Keypad Usage in short messaging service option by the undergraduate students

The percentage of boys and girls used ‘qwerty’ key pad was almost same. It means nearly two fifth of undergraduate students used ‘qwerty’ key pad. More than one fifth of boys used the alphanumeric keypad with the predictive text. More than quarter of undergraduate girls used alphanumeric keypad without predictive text as compared to less than quarter of boys. There were two possibilities that could be inferred from the above data, boys were more scrupulous about the correct spellings of English language as compared to the girls – (a) and boys were better at operating the ‘T-9 technology’ for predictive text – (b).

Nearly one fifth boys and less than one fifth girls used Devanāgari or/and scripts of other Indian languages while texting. It is clear that boys used more of Indian scripts than that of girls.
6.7.a.4. Cell phone behaviour pattern of undergraduate students

1. Habit of Carrying Cell-phone Set

Cell phone sets emit electromagnetic waves which are said to be harmful for the human beings. In the review of literature chapter of this study the research scholar had quoted quite a few studies revealing the hazards of radio waves transmitted by the cell phone sets on the human body.

Nearly one third of the undergraduate students accustomed to carry the cell phone in their front pocket. Less than one fifth of them used to carry it in their hip pocket. Slightly more than one tenth carried cell phone in their waist belt case. Together three fifth of them had a habit of carrying it near their pelvis, which might affect their reproductive system adversely. Similarly, 5% and 9% of undergraduate students carried the cell phone near their heart and lungs respectively, together the percentage was 14, which was again said to be harmful for these vital organs. In short nearly three fourth of the undergraduate population was dangerously exposed to the electromagnetic radiations.

2. Reason to Use Missed Call Option by Undergraduate students

Exactly one fourth of the undergraduate boys and slightly more than one third of the undergraduate girls used missed call to communicate ‘less balance call me back’. Nearly one fourth of undergraduate boys and slightly less than one fifth of undergraduate girls used missed call to tell the receiver ‘reply urgently to the SMS / emails’. Less than one fifth of undergraduate boys and slightly more than one fifth of undergraduate girls used it to convey ‘reached home safely’ type communications. Slightly less than quarter of undergraduate boys and less than one fifth of undergraduate girls used missed call just to tease their friend.
Less than one fifth of the undergraduate students used it to tell the receiver ‘miss you’. Slightly more than one tenth of undergraduate students did not like to use missed call. About one tenth of them used this option to know the convenience of the receiver to attend the call, and equal percentage of undergraduate students used it as group convention.

About one tenth of undergraduate students used it for ‘coming or not coming’ type of communication and nearly equal percentage of them used missed call option to prompt the receiver to call back with a hidden intention to save money of the caller.

More than one third of undergraduate girls used missed call option to communicate ‘less balance call me back’ whereas one fifth of undergraduate girls used it to communicate ‘reached home safely’ type message as compared to the boys as there were only quarter and less than one fifth of the undergraduate boys who used missed call option for these two reasons respectively.

The content of both the messages were used more by girls than boys probably because the first content impliedly showed the dependency which was not acceptable to the majority of boys whereas the second content expressly displayed the submission which was not being liked by majority of the boys.

Quarter of undergraduate boys would like to use missed call option to prompt the receiver to reply their SMSes or e-mails vis-à-vis less than one fifth of undergraduate girls. The percentage of undergraduate boys and girls using missed call to know the convenience of the receiver was almost the same. This again can be interpreted as in the first case to be the anxiety and/or dominance of the masculine attitude to expect the prompt reply and in second case it was slightly more in boys to adhere to the formality and professionalism of the same.
Nearly quarter of undergraduate boys used missed calls just to tease the receiver friend as compared to less than one fifth of undergraduate girls. It once again underlined the gender-based difference in intentions behind the behaviour.

Less than one fifth of undergraduate students used missed call to convey the receiver that s/he was missing / remembering the receiver. Less than one tenth of them used it to convey whether they would be joining the group or not; depending upon the groups’ convention. On the other hand slightly more than one tenth of undergraduate girls used missed call as group convention being more conformist (a person who uncritically or habitually conforms to the customs, rules, or styles of a group) than that of boys.

Less than one tenth of the undergraduate students had a hidden intention to save cost of the call by instigating the receiver to call back and bear the expenses. More than one tenth of the undergraduate students did not like to use missed call option at all.

In other words maximum of the undergraduate students used missed call to communicate variety of messages without verbal or text message which could be taken as an electronic improvisation of the beating the drums in ancient times. The only difference is that this improvisation is a strictly one to one i.e. interpersonal communication and not a group communication.

### 3. Reason to use short messaging service option by undergraduate students

More than one third undergraduate boys and more than quarter of undergraduate girls sent decent jokes through SMS. More than quarter of undergraduate boys and about one third of undergraduate girls used SMS to greet their family members, relatives, and friends on special occasions. Slightly less than quarter of undergraduate boys and slightly less than one fifth of undergraduate girls avoided unwanted conversation by sending SMSs.
Summary

Less than quarter of undergraduate students used it to save money on voice calling and one fifth of undergraduate students sent contact details saved in their phone book through business card SMSes to their acquaintances.

Slightly more than one fifth of undergraduate boys and less than one fifth undergraduate girls sent jokes – otherwise indecent to share through SMSes. Slightly more than one fifth of undergraduate boys and quarter of undergraduate girls sent ‘thought of the day’ every day to their contacts.

Only one tenth of undergraduate boys as compared to quarter of undergraduate girls used SMSes to confirm the convenience of the receiver to attend the call through SMS. Similarly, less than one tenth of undergraduate boys and more than one tenth of undergraduate girls used SMSes to convey their inability to attend the call by SMS.

Similarly, nearly one tenth of undergraduate students used SMS communication to maintain secrecy. Less than one twentieth of undergraduate boys and nearly one tenth of undergraduate girls sent SMS out of habit and only about 4% of undergraduate boys and 1% of undergraduate girls emphatically mentioned that they did not like to send SMSs.

From the above details, it as obvious that girls were more into using SMSs as a medium of communication than that of voice calls as compared to boys. The SMS usage pattern was different for boys and girls. The primary purpose of sending SMSes by the boys was to share decent jokes and by girls was to greet on special occasions and vis-à-vis.

It is also to be noted that more boys than the girls intended to use SMS to avoid unwanted conversation whereas girls were more into sharing thought of the day than boys. The girls sent less business cards though SMS than boys but they found to be more concerned about the convenience of the receiver to talk as well as conveying inability to respond to voice call and hence using SMSs. Similarly, habit of sending SMSes was found more in girls than boys. Also more girls used SMSs to maintain secrecy.
Both boys and girls were into sending jokes through SMS otherwise indecent to share. The said percentage of boys was more by just 2.25%.

4. Undergraduate students’ intentions to call and talk on cell phone

Staying connected was a felt necessity by one third of undergraduate students as they called people to remain in touch. About one third of undergraduate students called and talked to people to kill their time and nothing more. Discussion on phone was another reason to call and talk on cell phone less than one third of undergraduate students used voice calling to discuss a topic on which they had to take some decision. More than one fifth of undergraduate girls called their friends to discuss study vis-à-vis less than one fifth of undergraduate boys. Nearly quarter of undergraduate students called and shared the news. Only quarter of undergraduate students used voice call to attend emergency. When it comes to mood elevation one fifth of girls (21%) were found to call and talk on cell phone. This percentage was more than boys (12.46%). Nearly 8% of undergraduate girls admitted that they kept calling out of habit as compared to about 3% boys. It can be said that girls are emotionally dependent on cell phone than boys and the percentage of habitual callers was more in girls than boys.

6.7.a.5. Perceived and reported impact of cell phone usage on the behavioural pattern undergraduate students

1. Undergraduate students’ perceived and reported impact of cell phone on their life, emotional dependency on cell phone as companion

Half of the undergraduate boys and less than half of the undergraduate girls had a strong feeling that the quality of their life has improved because of cell phone. Nearly one third of the undergraduate students accepted that they would feel unwanted or ignored if they would not receive a call for an hour or a day. Similarly more than one third of them had the realization of their anxiety caused out of thoughts of probable missed calls when their cell phone is out of coverage area. Nearly half of the undergraduate boys felt helpless
without a cell phone and they frequently kept checking their cell phone for a missed call or SMS.

Similarly, nearly three fifth of the undergraduate girls felt helpless without a cell phone and half of the undergraduate girls habitually kept checking their cell phones with the apprehension of an unattended missed call. Only 7% boys and girls did something else when they happened to be alone but for fiddling with the cell phone.

One third of undergraduate students just whiled away their time with their cell phone than engaging themselves in some recreational work. Nearly half of them tinkered with their phone when they were alone. On an average two fifth of them invariably spent their time playing with their cell phone when they were alone.

One third of undergraduate boys and more than quarter of the undergraduate girls were found to be dependent of cell phone because, firstly, they used it even if they could communicate with their friends face-to-face. Secondly, cell phone conversation was the frequent method they used to counter loneliness and elevate the mood. Thirdly, they regularly cut down their expenses on canteen, petrol and other minor vices like cigarette and other tobacco products, hard drinks etc.

2. Undergraduate students’ perceived and reported impact of cell phone on their relationship with their parents and friends

Slightly more than two fifth of undergraduate boys and less than half of the undergraduate girls did not appreciate their parents assessing their cell phone for whatever reason. Nearly two fifth of undergraduate students did not like their parents and friends preventing them from excessive talking on the cell phone. Slightly more than quarter of undergraduate students’ population was more comfortable talking to their parents on cell phone than face-to-face conversation.
Summary

One third of undergraduate boys and more than two fifth of undergraduate girls would hate if their parents use GPS tracking system to monitor their movements. One third undergraduate students used to get annoyed when their parents call them to know their locations.

It can be inferred that more boys were interested in protecting their privacy and hence they did not appreciate their parents accessing their cell phone. Only quarter of undergraduate population was not comfortable talking to their parents face-to-face. Therefore, they found cell phone as a better medium to communicate with their parents.

One third of undergraduate boys’ population and more than two fifth of undergraduate girls’ population hated the very concept of using GPS system to track their movement by their parents. The statement is about the act of the parents and not about the parents per se. Hence it can be deduced that the one third of the UG boys and more than two fifth of UG girls would not like their parents tracking their movements using GPS system.

It is important to note that more girls than boys disliked their parents accessing their phone and their parents using GPS tracking system to track their movements. It can be inferred that the difference was that parents worry and care more for their daughters as compared to their sons resulting into being possessive towards them. Parents’ anxiety to know the whereabouts of their daughters found a way out through calling them on cell phone to know the locations which irritates the girls.

There was no difference in the percentage of boys and girls getting irritated when their parents and / or friends prevented them from excessive talking on cell phone. Similarly, the percentage of undergraduate boys and girls getting irritated when their parents call them to know their location was almost the same. The percentage of boys was slightly more than the girls in agreeing that they were more comfortable talking to their parents on cell phone than face-to-face communication.
Secondly it can also be observed that the concept of privacy in Indian society got expanded with the usage of cell phone. This personal communication technology (Campbell & Park) is responsible not only for the extension of the communication facilities to connect the people with never before ease; but also for the expansion of circumference of personal space and privacy. It can be inferred that the parent-child relationship is very fragile where on an average one third of late adolescent population expects the parents to observe some constraints while interfering in their lives especially when it comes to the usage of cell phone.

Nearly three fourth of undergraduate population was regularly getting opportunity to enjoy upper hand among their parents and elderly family members due to their technological knowhow. This privilege then got extended in the family’s decision-making process of daily issues. Slightly less than three fourth of undergraduate boys and more than three fifth of undergraduate girls were frequently asked for their opinion by the parents, which was then valued for. Slightly more than three fifth of undergraduate boys and more than three fifth of undergraduate girls frequently superseded the elderly members of the family in the decision-making process, as their parents gave importance to their opinion over the opinion of the elderly members.

It means that out of 78% of boys who got the opportunities to explain their elders 71.4% boys’ opinions were sought and valued by their parents and 61.3% boys’ opinions surpassed the elders’ opinions. Similarly out of 71% of girls who got the opportunities to explain their elders 67.4% girls’ opinions were sought and valued by their parents and 66% girls' opinions surpassed the elders' opinions. This showed the position of the teenage boys and girls in the family.
Secondly, less than half of undergraduate boys and nearly half of undergraduate girls regularly played with their cell phone while interacting with parents or elderly members of the family. This behaviour is against the prevalent social behavioural norms and communication pattern to be attentive during the interactions with the elders. It is because it is taken to be undermining the elders; that is to restrain from any other activity which distracts the attention while interacting with elders.

About three fifth of undergraduate boys and girls reported of often talking and texting the people keeping their parents in dark. It means about three fifth of undergraduate students regularly hid its contacts from their parents. Almost equal percentage of undergraduate students regularly deceived parents / relatives and / or friends on cell phone calls about their location. It means they habitually lied on cell phone specifically about their location with their parents, relatives, and friends.

This state of affairs was never there before the cell phones were introduced in the Indian society. Thus it can be deduced that cell phone is responsible for the change in the attitude.

3. Undergraduate students’ perceived and reported impact of cell phone on their social behaviour

Nearly two fifth of undergraduate boys and more than two fifth of undergraduate girls did not hesitate to respond to the call in the social functions. Nearly one third of undergraduate students usually did not put their cell phones on ‘silent’ Mode in any formal function, which means overall more than one third of undergraduate population used cell phone without any embarrassment in the social function.

More than two fifth of undergraduate students felt proud when their classmates admire the look and/or facilities of their cell phone and nearly equal percentage of them liked to be friends with the person using latest and trendy cell phone set.
It means that slightly more than two fifth of undergraduate students took into account cell phone set as one of the qualities of personality. However, to confirm this statement more research is required.

Slightly less than three fifth of undergraduate students regularly called and talked with the caller when they happened to attend get-together in a group of close friends or with their family members and also made or attended the calls while they were in formal communication with elders. It means nearly three fifth of undergraduate students gave preference to the cell phone caller than their close friends and / or family members and also the elders. More than three fifth of undergraduate boys and three fifth of undergraduate girls used their cell phone during classroom sessions. This data is firmly supported by the qualitative analysis.

4. Undergraduate students’ perceived and reported impact of cell phone on their public behaviour.

Nearly half of undergraduate boys and more than half of undergraduate girls used cell phone in public places. One third of undergraduate boys and more than quarter of undergraduate girls did not bother about the ‘use of mobile phone in prohibited’ type notices displayed in the public places. More than two fifth of undergraduate students enjoyed to be plugged in while driving means either they listen to music or they talk on phone.

Nearly 5% more girls used cell phone in public places; however more than half of the undergraduate students used cell phone in public places. Similarly, 5% less girls than boys ignored the public notice of not to use cell phone in a particular place; the average of the percentage of undergraduate students ignoring the public notice of prohibition of use of cell phone was slightly less than one third of the undergraduate population. About two fifth of undergraduate students unnecessarily risked their lives and others too by using cell phone to listen music and / or talking on cell phone while driving.
Less than three fourth of undergraduate students regularly talked on cell phone while walking on the streets and equal percentage of boys and girls respectively, frequently made or attended a call and continued to talk on cell phone for a long while travelling in public transport or standing in a queue.

5. **Undergraduate students’ perceived and reported impact of cell phone on their routine communication behaviour.**

Slightly more than two fifth of the undergraduate students agreed that voice calling is more intense. Hence it can be said that they cherished it more than the texting. It means that more than two fifth of the undergraduate students preferred voice calling to text for intimate communication.

Three fifth of undergraduate boys and less than three fifth of undergraduate girls generally had heated SMS communication and then very often they had sent an additional SMS containing LOL (Lough Out Loud) or a smiley like 😈, 😒, ;) to reduce the tension between the two.

Less than two third of undergraduate boys admitted to have sent and received SMSs containing bad language/sexually explicit text to and from the opposite gender of same age as regular activity. Also half of undergraduate girls admitted to have done the same. Similarly, equal percentage of undergraduate boys and girls admitted had sent and received ‘not so decent content’ and/or ‘indecent jokes’ often, from elderly people.

Majority of undergraduate students regularly used abbreviations or ‘short forms’ of spellings in their text messages.

More than two third of undergraduate boys and nearly three fifth of undergraduate girls habitually clicked or shot the pictures of important documents displayed on the notice boards, or power point presentation slides displayed in the classrooms instead of going through them where ever they were displayed. More than half of the undergraduate
population preserved photos of PPTs/ notices for future reference and also sharing them with the co-students.

In SMS, majority of undergraduate students used short forms of the spellings which were phonetically correct but grammatically incorrect. For example: c u means See you, gr8 means great, tq means thank you. Thus in a way they considered SMS text not as a written communication but oral/verbal communication/ spoken word communication. It is implied that they actually wanted to manage with the 160 character limit of SMS to express themselves.

Finally, cell phone camera was used to click the pictures of important documents to store the information contained in them for further reference and to share it with relevant contacts. The percentage of boys clicking pictures using cell phone camera was more than the girls but the percentage of saving and sharing these pictures was almost the same.

6.7.b) Qualitative Analysis:

1. The cell phone became during the period of the study an extended social interface for undergraduates. Texting, posting on social media sites, forwards, etc., were the norm, thereby, connecting people faster and on different levels. The privacy which this afforded was also changing the traditional, cultural and behavioural set, as also homogenizing the nation into one. That it also caused lack of concentration and at times, a reduction in educational discipline, while affording greater exposure was a fact. The effect would be that this trend would only grow, necessitating educationists, teachers, parents and social scientists to revisit teaching pedagogies, content and evaluation systems and look at their students more holistically – not just as domain learners at the tender undergraduate stage.
2. Undergraduate students talked on phone regardless of the space. They even talked on some such subject which, otherwise, they would not discuss in the presence of others.

3. Every medium had its impact on language so did cell phone had. The size of the screen and the limitation of the characters to be texted could not afford the luxury of grammatical, syntactical and other linguistic precisions like spellings. Therefore, it was obvious that this generation which was brought up with the cell phone as a medium of communication used the abridged, condensed and so-called distorted text language. Since, these days, most of the linguists are in favour of the descriptive grammar and not of prescriptive one, this form of language should be looked at as one of the phases in the voyage of development of language.

4. Teenage population was very techno-savvy and they were very fast in operating these communication gadgets. They were very good at researching about communication technology. But the unfortunate part was when it came to their academic studies in general this enthusiasm faded away. The teenage girls were more into SMS and teenage boys were more into voice calling. This difference was because boys had less patience to type the message hence they resorted to talking. When it came to the content of the interaction it was irrelevant, they could talk without any topic, gossiping was prime activity. They used cell phone to pass the time when they were travelling or walking. Secondly, teenagers were engrossed all the time on the cell phone. They hardly acknowledged the presence of the visitors visiting after some interval to their home. They did not realize the importance of ‘present tense’. The person who was physically present became insignificant once they received a call or SMS. This behaviour actually detached them from the process of developing personal relationship.
This gadget created a disturbance in the communication with the person present on the spot. They were found saying things which were not true, like their location was different and they mentioned some other place, or they were away from the location they said they would be reaching within some minutes. Use of Information Technology, may it be computer or mobile phone, made them impatient and this technology would teach them some patience when it took time to download or process.

5. The effect of mobile telephony on the youth, it was painfully palpable that cellular phones were more indispensable than the blood for some. It was a classic case of bliss turned into curse and nobody wanted to put a handle on it.

6. For youngsters of today (17-20 yrs) the cell phone had almost always existed and therefore was an integral part of their lives. Rather, an extension of their physical existence. With the use of cell phones came the issue of private space. They enclosed themselves within their (mental) private space even when they were supposed to be interacting with individuals physically present around them. This conflict disabled them to be aware of the physical world or surrounding environment and hence reduced the level of receptivity in their consciousness. In addition to that, if human interaction got entirely dependent on technology then there lurked a danger of breakdown of civil society. Civil society entailed on not only collective communication but also collective action. Technology such as phones could give access to communication on a larger scale but dependence on it would cut off ties of communication with action because no technology would be available to make something happen. Although it is possible that communications technology facilitates the spreading of thought faster than before, nevertheless, people have to act collectively and with a physical presence.
7. In this, technology has no role to play. It was also to be noted that the cell phone communication vis-à-vis face to face communication had a diamond-water paradox in it. Diamond glitters, is rare to find and it is useless for life for all practical purpose; on the other side water does not glitter, is available in abundance, hence easy to find and necessary for life. But people value more for diamond and waste water very often. The same paradox could be applied to cell phone communication vis-à-vis face to face communication.

8. There was a dramatic shift in student perception and concentration levels with the advent of increased mobile phone usage. Students from a very young age (16+) had access to such features as 24 hours internet access, social networking sites and a host of other on-line features. From an awareness point of view, this had been an unprecedented boon, with a new generation being extremely tech-savvy; it had also made a lasting impact during these formative years.

Late teenage was termed as crucial age responsible to make the place for the person in a society. This present generation did not fully understand that they were confronted by two seemingly obvious choices. Either form a Social Circle or join a Social Network. From the outside it appeared that a social circle with its limited membership aimed to curb their appetite for establishing social contacts and to develop a popular personality, whereas a social network with its global reach would most certainly expand their appetites for getting a trendy personality. This gradually went from an initial fascination with social networking sites (easily accessible via mobile phones), to a complete and total dependence on these features for every aspect of their lives. The student initially felt that since he was in contact with so many likeminded people, his problems could be shared and lessened by a group which truly seemed to understand him. However, since each member of their group joined these forums with the same perception, this created a surrogate online personality that all of them kept tapping into.
This had led to extremely detrimental effect on the new generation. The coming
generation grew up looking forward to upgrade their technology instead to
upgrading their lives.

9. Cell phone had become as essential as food, clothing and shelter to this
generation. The young generation would be paralysed without cell phone. It
certainly affected their behaviour in many ways - a) it minimized the physical
activity as most of their time was spent doing some or the other cell phone
activity, b) They had no practice of writing letters now; either it is a voice call or
an SMS, c) The person who was present got no preference over the person on
call, d) Considerable increase in tendency to lie, e) Two-wheeler and mobile is a
deadly combination.

10. The traffic police observed that out of 100 youngsters on the road 99 used cell
phone either for communication or for texting or for listening to music. More
than 40% of the road accidents were because of use of mobile phones while
driving. When the policeman on duty expressly raised objection on use of
mobile phone on road by the youngsters, nearly half of them got annoyed and
back answered Police.

11. The youngsters when talk on phone while driving they got carried away with the
talks and could not concentrate on driving. Hence their chances of meeting with
the accident increased.

12. Approximately half of the teenager population i.e. undergraduate students
entered the places like daily needs and grocery shop talking on cell phone or
they received call in the shops. They kept the shopkeepers and their assistants
waiting to attend them as customer. Thus the teenage population not only
misused the space of the shop but also wasted shopkeepers’ valuable time.

13. Excessive use of mobile technology was widely seen lately in teenagers. Their
parents were at fault as they gave their child the hand-set and the connection to
use when the child was not psychologically mature to use it.
Using ear plugs continuously to hear either music or talk on phone is dangerous to the ear drums. This fact is ignored by the youngsters. Their parents proudly confessed that their children did not listen to them. These youngsters were lost in the virtual world far away from the real world which is certainly not a very pleasing fact. But it is all beyond one’s control now.

14. There was certain oral and textual degradation of language, considerable increase in impatience and decrease in tolerance. Their behaviour was absolutely irrational, irresponsible and utter disregard to social etiquettes.

15. The young generation was all the time online with the social media networks like ‘What’s up’, ‘Face book’, ‘Twitter’ et cetera. Undergraduate students did not hesitate to seek permission form the teacher to attend a call during classroom session pretending that the parents called them. The young generation was very fast in typing the text with their thumbs. Irrespective of the content they type their typing speed was commendable. They could really type speedily without looking at the keypad. Of course this skill was used just to pass the time but at the cost of their concentration. The calls and the SMSes prompted them not to concentrate on the work they were doing.

16. The craze of to stay connected at times prove to be unsafe. There were some examples where economically backward young people compromise on the quality of the battery of their cell phone set and met with uncalled for incidences like explosion of the cell phone battery. The young people on phone were cocooned and hence were cut off from the surrounding. They took all the safety instructions very lightly. They happened to use cell phone rampantly as if it is an extension of their body and personality. They were under the impression that they were multi-tasking while talking on cell phone and simultaneously doing some work. But they happened to compromise on their ability to concentrate.

17. In human relations mobile communication was found to be misused. The cases of youngsters involved in multiple relationships /and using mobile phones to deal with their multiple girl/boyfriends were reported.
Some recent examples of deceiving the lover resulting into serious crimes like murder might increase in future. Although mobile phone saved lot of time but at the same time it consumed most of it. With the advancement of technology they would resort to any means to play their hands on the latest technology.

18. Young generation was really good at all the aspects of the Information Technology and how to use latest gadgets. But unfortunately one could not limit the world to technology only and the reality was entirely different. Listening to music on cell phone could be interpreted as more of running away from the reality than actually to listen. Karl Marx’s statement ‘religion is the opium of the people’ should be rephrased as ‘Cell phone is the opium of the people.’ Some incidences in the recent past proved that Personal Communication Technology could be effectively used to terrify the common people.

19. The young generation was found busy chatting with friend on cell phone in the late night hours and habitually getting up late in the mornings. The parents could only guide them from time to time as to stay in limits and help them see the pros and con of cell phone use.

20. Undergraduate students excessively using cell phone must be repeatedly counselled for the over use of cell phone.

21. Youngsters did not want any interruption in their cell phone conversation. Their first priority was cell phone recharge and then they asked for other things in the shop especially notebooks and other stationery. Majority of the young population on an average spent nearly `500 per month. They were invariably found using cell phone everywhere in the public space, converting it into private one.

22. Teenagers were found wasting too much of their time on cell phone. They had no patience to wait. They got upset if they were not attended. They immediately wanted to recharge their talk time, or top up for their Internet account.
23. These customers hardly paid attention to the written instruction ‘use of mobile phone is prohibited’ and reported to pick up the call when the petrol tank was filled by the petrol pump attendant. Nearly two fifth to half of the young population did not even bother for the pump attendant’s request not to use the mobile phone. Usually, their expression would be full of arrogance. They seemed to forget that they risked not only their lives but also the lives of several other people.

24. It was also observed by the auto rickshaw driver that sometimes teenage couples watched objectionable clips on their mobile screen. Else their earphones were plugged in they were lost, the auto rickshaw drivers had to speak a loud and repeat the query for sure.

25. Cell phones had transitioned into personal assistants and they were the closest friend that anybody possesses. The shock and gloom that showed on one’s face when his/her phone was confiscated was reminiscent of that. Also the frantic search for a charger or a power outlet was suggestive of how inseparable people had become from their phones. Phones have made people more and more reclusive and isolated. The virtual world had become more active than the real one. Physically talk was no longer the norm. But this addiction and the resultant behaviour was not one that was permanent and could easily be corrected. Undergraduate students on field trip/study tour where there was no cell phone connection, experienced manifold increase in the amount of interaction amongst them and everybody momentarily forgot the electronic companion and enjoyed each other’s company.

26. Undergraduate students with smart-phones had a tendency to use the smart phone to escape from the social situation they were in that might be a threat to their current mood. In the past, to end the unpleasant conversation people used to look at their watches. It was a suggestive non-verbal communication gesture for easy escape. It was replaced by cell phone activity, to escape those seconds of being uncomfortable.
Undergraduate students with smart-phones were also found craving for their cell phones. The cell phone became an integral part of their life and a tool for their manifested identity.

Statistically it was inferred that there was no significant gender difference found in the attitude of undergraduate students towards cell phone usage. Similarly, no significant gender difference was found in overall impact of their cell phone use on their family relations, social relations, and their behaviour in public places barring boys showed more inclination towards using cell phone in the friend circle and social functions than girls. It means that the undergraduate boys and girls had somewhat similar attitude towards the cell phone usage and impact on their attitude on factors related to day-today life, like their cell phone dependency, friends and family, when they are alone, in social functions, public places, and communication. However, overall undergraduate boys had more impact and their attitude and behaviour was more under the influence of cell phone as compared to girls.

To sum up, the result of the quantitative as well as qualitative analysis is that the cell phone usage by the undergraduate students created impact on their personality, their relationships, their social as well as public lives.
6.8 Conclusion

Following is the brief summary of the findings of the study:

1. Majority of the undergraduate students changed nearly four cell phone handsets since they started using it independently. About half of the undergraduate student population continued using the same cell phone set till they practically could not use it. There are only 7% undergraduate students, who kept on changing the cell phone set whenever new set was introduced in the market. Thus, even though the mobile manufacturing companies design their advertising campaigns targeting the youth that too adolescents, their efforts seem futile.

2. More than half of the undergraduate students had a tendency not to save the contact details with the original names. They preferred to save them either with pet name, code name or favourite names. More than three fifth of undergraduate students were found saving contact details with different names. But they were doing it for the sake of convenience and had not any explicit intentions to mask the information of their contacts.

Thus, it can be inferred that no lying behaviour regarding hiding the information of the contact details is found in three fifth of the undergraduate population.

3. More than two fifth of undergraduate boys and nearly half of undergraduate girls were unaware of the emergency numbers. Unfortunately awareness level of the undergraduate students about the emergency helpline numbers was very low and the parents’ concern about the child to provide her/him a gadget to alleviate emergency was ignored by the respondents.

4. Large number of students used multimedia phones, and not simple basic handsets.
5. Most students used phones every day, for voice calls and texting. Most of the undergraduate boys talked on their cell phone and girls sent SMSs. The percentage of boys talking on cell phone every day was 5% more than girls. On the other hand 3% more undergraduate girls sent SMS everyday than undergraduate boys.

Another most-used option available in the cell phone by undergraduate boys was alarm, nearly three fourth of them used cell phone alarm every day instead of traditional alarm clock. On the other hand more than three fifth of undergraduate girls used alarm option, that is one tenth more boys used alarm than girls.

Two third of undergraduate boys listened to pre-recorded music in the cell phone. Similarly more number of boys accessed internet as compared to the girls. Nearly half of the UG boys and 1/3rd of UG girls accessed internet.

More than one third of undergraduate boys and more than quarter of undergraduate girls played games everyday on their cell phone.

Habit of putting every day the reminder notes in the cell phone was found only in one fifth of undergraduate boys and quarter of undergraduate girls.

One third of the undergraduate students every day used cell phone camera. They used it to click the photographs of important information like notices displayed on notice boards and even the power-point presentations in the classroom rather than going through them and jotting down or keeping them in memory.
Viewing a film on cell phone screen was not a preferred option by them. Less than one fifth of undergraduate boys and slightly more than one tenth of undergraduate girls viewed films on the personal screen, probably because they could afford to use the latest high resolution comparatively large screen cell phones. Less than three fifth of undergraduate boys and three fourth of undergraduate girls opted for ‘rarely’ and ‘never’ options in the questionnaire.

6. Maximum (80%) of the undergraduate students had multimedia cell phone sets and Internet browsing facility on their cell phones. Quarter of the undergraduate students checked emails and social networking. About one fifth of undergraduate boys as compared to about one tenth of undergraduate girls used their cell phones to check their mailboxes, send e-mails, access social networking sites, browse educational material, to hit any other website and to download applications too.

Nearly one fifth of undergraduate students visited any website while accessing internet on their cell phone. Less than one fifth of them browsed educational material while surfing on their cell phones. Slightly more than one tenth of the undergraduate students download applications and less than one tenth of them checked only important e-mails.

7. Nearly three fourth of undergraduate students used pre-paid connections and nearly one third of them used post-paid ones. More than four fifth of undergraduate students limited their monthly cell phone expenditure up to `750.

Girls spent more on communication facilities than boys. On the other hand, boys spent on internet browsing, buying mobile accessories, and value added services more than the girls spent.

8. Nearly one third of undergraduate students spent more than three hours of their daily routine to use cell phone. More than quarter of undergraduate boys and less than quarter of undergraduate girls spent one to two hours per day on their cell phones.
Nearly quarter of undergraduate students spent two to three hours. Nearly one fifth of them spent less than an hour.

More than two fifth of undergraduate students spent majority of the cell phone activity time on texting. Less than quarter of undergraduate students added emoticons like 😊, 😒 etc. to their text messages; it means nearly two third of undergraduate students spent most of their cell phone usage time on texting.

Slightly more than one third of undergraduate students spent their cell phone activity time on voice calling. Less than one fifth of undergraduate students spent their time on playing games. Less than one fifth of them spent their time on Internet browsing. Equal percentage of them spent their time on listening to music on their cell phone.

It was also seen that girls used SMS facility more than boys. Practice of adding emoticons (😊, 😒) to the text messages was found more in girls than boys.

9. More than one third of undergraduate population was accustomed to carry the cell phone in its front pocket. Less than one fifth of undergraduate students carried it in their hip pockets. More than one tenth of them were reported carrying it in their waist belt case, together it is about three fifth of them regularly carried it near their pelvis, which might affect their reproductive system adversely in long run?. On the other hand, 5% and 9% carry the cell phone near their heart and lungs which is again harmful for these vital organs.? (please tell me how to put it)

10. Nearly two fifth of undergraduate students used ‘qwerty’ keypad. Nearly one fifth of undergraduate students used alphanumeric keypad with the predictive text as against more than quarter of undergraduate students used alphanumeric keypad without predictive text.
Less than one fifth of undergraduate students used Devanāgari or/and Indian script fonts while texting. Boys were found using more of Indian scripts than that of girls.

11. Quarter of undergraduate boys and more than one third of undergraduate girls used ‘missed call’ to communicate ‘less balance call me back’. Slightly less than quarter of undergraduate boys and slightly less than one fifth of undergraduate girls used it to tell the receiver ‘reply urgently to the SMS / emails’. Less than one fifth of undergraduate boys and more than one fifth of undergraduate girls used it for ‘reached home safely’ type communications. Nearly quarter of undergraduate boys and less than one fifth of undergraduate girls used ‘missed call’ just to tease their friends. Less than one fifth of undergraduate students used it to tell the receiver ‘miss you’. More than one tenth undergraduate students did not like to use missed call. Exactly one tenth of undergraduate students used this option to know the convenience of the receiver to attend the call. Equal percentage of them used it as a group convention. Nearly one tenth of undergraduate students used it for ‘coming or not coming’ type of communication. Similarly, equal percentage of undergraduate students even used missed call option to prompt the receiver to call back with a hidden intention to save money on the call.

Slightly less than quarter boys liked to use missed call option to prompt the receiver to reply their SMS or e-mails vis-à-vis slightly less than one fifth girls might be because of the anxiety and dominance of the masculine attitude to expect a prompt reply. Nearly quarter of undergraduate boys used missed calls just to tease the receiver friend as compared to less than one fifth of undergraduate girls.
More than one tenth of undergraduate boys used it to know the convenience of the receiver as compared to one tenth of undergraduate girls. Only one tenth of undergraduate students adhered to the etiquettes, manners, formality of professionalism. But percentage of boys following the norms was slightly more than girls.

Less than one fifth undergraduate students used missed call to convey the receiver that s/he missed / remembered the receiver. Less than one tenth of them used it to convey whether they would be joining the group or not, depending upon the groups’ convention. On the other hand slightly more than one tenth of undergraduate girls followed a group convention to give missed call to the group members being more conformist (A person who uncritically or habitually conforms to the customs, rules, or styles of a group) than that of boys. Less than one tenth of them also used missed call with a hidden intention to save cost of the call by instigating the receiver to call back and bear the expenses. More than one tenth of undergraduates did not like to use missed call option at all.

In other words, maximum (88%) undergraduate students used missed call to communicate variety of messages without verbal or text message which can be taken as an electronic improvisation of the beating the drums in ancient times. The only difference is that this improvisation is a strictly one to one, that is, interpersonal communication and not a group communication.

The study revealed that slightly more than one third of undergraduate boys and slightly more than quarter of undergraduate girls sent decent jokes through SMS. Similarly quarter of undergraduate boys and one third of undergraduate girls sent SMS to greet their family members, relatives and friends on special occasions.
Slightly less than quarter of undergraduate boys and one fifth of undergraduate girls avoided unwanted conversation by sending SMSes. About quarter of the undergraduate students used SMS to save money on voice calling. Slightly more than one fifth of them sent contact details saved in their phone book through business card SMSs to their acquaintances.

One fifth of undergraduate boys and quarter of undergraduate girls’ population sent ‘thought of the day’ every day to their contacts. Exactly one tenth of undergraduate boys as compared to quarter of undergraduate girls confirmed the convenience of the receiver to attend the call through SMS. Similarly, less than one tenth of undergraduate boys and more than one tenth of undergraduate girls conveyed their inability to attend the call by SMS. Nearly one tenth of undergraduate students used SMS communication to maintain secrecy; 4% boys and 9% girls habitually sent SMSes and only 4% boys and 2% girls did not like to send SMSs.

It is also to be noted that the multiple choice segment of the questionnaire revealed that more than one fifth of boys and slightly less than one fifth of girls sent jokes – otherwise indecent to share, through SMSes whereas Part II of the questionnaire analyzing cell phone behaviour of the undergraduate students revealed that more than three fifth of undergraduate boys regularly sent and received SMSes containing bad (indecent) language/ sexually explicit text to and from the girls of same age. Also, equal percentage of undergraduate boys sent and received ‘not so decent content’ and / or ‘indecent jokes’ from elderly people. Half of undergraduate girls did the same. It means that two third of the undergraduate boys’ and half of the girls’ population used cell phone to communicate indecent content with the population of same age and also to the elder generation.
This behavioural pattern could be interpreted in the following ways:

a) Cell phone as personal communication technology provides opportunity to manage the personal space with the personal screen in reasonably small size with the facility to delete the received content, immediately after reading it. This facility provides conducive environment to communicate, reducing psychological barrier of hesitation to share the indecent content which is otherwise not possible due to the contemporary social and cultural restraints.

b) Secondly, most of the time such content is received and forwarded as it is. This facility relieves the SMS sender from typing the content, that is, any kind of physical and psychological involvement in the process of message creation and also to leave any physical evidence like handwriting on paper. Hence the onus of the communicator is reduced to a great extent. This leads the communicator to a casual approach towards content of the message to be communicated by pressing a button without bothering for its consequences. This casual approach is resulting into openness and freedom in the communication pattern or it should be looked at as irresponsible and irreversible communication changing the existing socio-cultural norms? Or whether it can be said that the technology has provided this young generation opportunity to explore the forbidden areas?

c) Use of cell phone has blurred the gender distinction as well as the generation gap to some extent. Before the inception of cell phone as a communication medium, the situation was exactly the opposite. There used to be a clear distinction between men’s world and women’s world wherein the interactions were strictly abided by the socio-cultural norms of decency. Sharing indecent content especially in terms of jokes with opposite sex used to be taboo. Similar used to be the state of affairs while interacting with elderly people formally or informally and these restrictions were followed religiously.
This blurring of the socio-cultural boundaries of behaviour and casual approach towards communication due to cell phone interaction is further carried out in actual day- to- day behavioural patterns of undergraduate students especially with opposite sex and elderly people. To confirm these inferences more research is needed.

13. More girls used SMSes as a medium of communication than that of voice calls as compared to boys. The SMS usage pattern was different for boys and girls. The primary purpose of sending SMSes by the boys was to share decent jokes and by girls was to greet on special occasions and vis-à-vis.

More boys than the girls had intentions to use SMS to avoid unwanted conversation whereas girls were more into sharing thought of the day than boys. The girls sent business cards though SMS than boys but were more concerned about the convenience of the receiver to talk as well as conveying inability to respond to voice call and hence used SMSes. Similarly, habit of sending SMSes was found more in girls than boys and more girls used SMSs to maintain secrecy.

14. One third of undergraduate students’ population found it important to stay connected hence they called, talked and remained in touch. One third of undergraduate students found it easy to kill time in calling and talking on cell. Slightly less than one third of them called to discuss some topic and take some decision. More than one fifth girls and less than one fifth boys called to discuss study with their friends. Quarter of undergraduate students called to share the news and one fifth of them called to attend emergency. One fifth of undergraduate girls and more than one tenth of undergraduate boys called and talked to elevate their mood. Nearly one tenth of undergraduate girls and 3% of undergraduate boys were habitual callers.
Summary

It can be seen that both boys and girls had the similar reasons with a few exceptions. 7% more girls than boys discussed study and 8% more girls called to elevate their mood. Similarly 5% more girls were habitual caller and hence called out of habit.

15. Cell phone conversation gave four types of gratifications to the undergraduate students, out of which relaxation prevailed over other types. Quarter of undergraduate students felt satisfied after a cell phone talk. Quarter of boys felt relaxed after talking on cell phone as compared to slightly less than one third of girls. One Fifth of them did not feel any special or noticeable change in their mood, hence felt neutral. More than one tenth of undergraduate students felt cell phone talking boosts self confidence. Equal percentage of undergraduate students found it as exhaustive. More than one tenth of them felt stimulated after talking on cell phone. More than one tenth undergraduate students had no reaction.

16. Nearly half of undergraduate boys and less than half of undergraduate girls had a strong feeling that the quality of their life had improved because of cell phone. Nearly one third of undergraduate students would feel unwanted or ignored if they would not receive a call for an hour or even a day. Similarly more than one third of them had the realization of their anxiousness caused out of thoughts of probable missed calls when their cell phone is out of coverage area. Nearly half of undergraduate boys would feel helpless without a cell phone and they frequently kept checking their cell phone for miss call or SMS vis-à-vis about three fifth of undergraduate girls would feel helpless without a cell phone and half of them kept checking their phones for probable missed call or SMS. Does carrying information containing contact details of the people to be contacted and a device to contact at any given point of time give a kind of strength and feel of safety? The question needs further investigation.
Less than one tenth of undergraduate students would do something else when they were alone but for fiddling with cell phone. Nearly one third of them would not engage themselves in some recreational work than to just while away the time with their cell phone. Slightly less than half of them would tinker with their phone when they were alone. On average two fifth of them would, invariably spend their time playing with their cell phone when they were alone.

One third of undergraduate boys and slightly more than quarter of undergraduate girls would use cell phone to talk to their friends even if they would be at walking distance and face-to-face communication could happen. Equal percentage of undergraduate students was found using cell phone conversation as their frequent method to counter loneliness and elevate the mood. Similarly they regularly cut down their expenses on canteen, petrol and other minor vices like cigarette and other tobacco products, pubs – hard drinks etc.

Statistical tests also confirm that there is hardly any difference in the percentage of undergraduate students dependent on cell phone.

18. Slightly more than two fifth of undergraduate boys and less than half of undergraduate girls did not appreciate their parents assessing their cell phone for whatever reason. Nearly two fifth of undergraduate students did not like their parents and friends preventing them from excessive talking on the cell phone. On an average quarter of undergraduate students was more comfortable talking to their parents on cell phone than face-to-face conversation. One third of undergraduate boys and more than two fifth of undergraduate girls would hate if their parents would use GPS tracking system to monitor their movements. One third of undergraduate students agreed getting annoyed when their parents call them to know their locations.
It is important to note that more girls than boys disliked their parents accessing their phone and their parents using GPS tracking system to track their movements. There was no difference in the percentage of boys and girls getting irritated when their parents and/or friends prevent them from excessive talking on cell phone. Similarly, the percentage of boys and girls getting irritated when their parents call them to know their location was almost the same. The percentage of boys feeling more comfortable talking to their parents on cell phone than face-to-face communication was slightly more than the percentage of girls. The percentage of undergraduate students not comfortable talking to their parents face-to-face was alarming. It needs more remedial investigation to bridge this parent-child gap in time to prevent further disintegration of family as a social institution.

Secondly the percentage of girls expressing their frustration on the parents’ interference was more because parents worry and care more for their daughters as compared to their sons. This results into being possessive towards them. Parents’ anxiety to know the whereabouts of their daughters find a way out through calling them on cell phone to know the locations which irritates the girls.

Thirdly it is observed that the concept of privacy in Indian society got expanded with the usage of cell phone. Before its inclusion in the lives of the Indian especially middle class and lower middle class population, there was only one landline per household if it happened to afford it; which used to be common for all the family members, placed in the drawing room where everyone can have access to it. The households those who could not afford the landline connection used to use public telephone booths or neighbour’s landline that too if there used to be any urgency or emergency.
With the availability of cell phone technology each family member can afford to have at least one cell phone set and connection. This personal communication technology (Campbell & Park) is responsible not only for the extension of the communication facilities to connect the people with never before ease; but also for the expansion of circumference of personal space and privacy. The parent child relationship is very fragile where on an average 1/3rd of late adolescent population expects the parents to observe some constraints while interfering in their lives especially when it comes to the usage of cell phone.

More than three fourth of the population of undergraduate students regularly got opportunity to enjoy upper hand among their parents and elderly family members due to their technological knowhow. This privilege then got extended in the family’s decision making process of daily issues. Nearly three fourth of undergraduate boys and more than three fifth of undergraduate girls were frequently asked for their opinion by the parents, which were then valued for. Slightly more than three fifth of undergraduate boys and two third of undergraduate girls recurrently superseded the elderly members of the family in the decision making process, as their parents gave importance to their opinion over the opinion of the elderly members. It means nearly two third of the late adolescents got opportunity to be a part of decision making process of the day-to-day family activities, which previous generations never ever got before in traditional Indian society. There is certainly a social power shift from elder generation to the younger generation. This finding actually supports the theory proposed by Harold Innis ‘Monopolies of knowledge’ and ‘bias of communication’ along with ‘the vision of ‘technological dependency’ articulated by George Grant—-for whom technology becomes the locus of human domination (Soules, 1996).
Secondly, about half of undergraduate students reported that they regularly fiddled with their cell phone while interacting with parents or elderly members of the family. This behaviour is against the prevalent social behavioural norms and communication pattern; which indicates to insult the elders, that is to restrain from any other activity which distracts the attention while interacting with elders.

About three fifth of undergraduate students regularly hid its contacts from their parents, since they called and/or sent text messages to the people keeping their parents in dark. Less than three fifth of undergraduate students deceived parents / relatives, and / or friends about their location on cell phone call, regularly. Thus on an average, three fifth of undergraduate students’ population had deceitful behaviour with their parents, friends and relatives time to time. This state of affairs was never before the cell phones were introduced in the Indian society, thus it can be deduced that cell phone is responsible for the same.

19. More than one third of undergraduate boys and two fifth of undergraduate girls did not hesitate to respond to the call in the social function. Less than one third of undergraduate students usually did not put their cell phones on ‘Silent’ mode in any formal function. It means overall more than 1/3rd undergraduate population used cell phone without any embarrassment in the social function.

More than two fifth of undergraduate students admitted that they felt proud when their classmates admired the look and/or efficacies of their cell phone and its version. About two fifth of undergraduate students liked to be friends with the person using latest and trendy cell phone set. It means that slightly more than two fifth of undergraduate students took into account cell phone set as one of the qualities of personality.
Nearly three fifth of undergraduate population accepted that they called and talked with the caller when they attended any social gathering of close friends or with their family members. Equal percentage of undergraduate students accepted that they made or attended the calls while they were in formal communication with elders. It means nearly three fifth of undergraduate students frequently gave preference to the cell phone caller than their close friends and/or family members, and also during the formal communication with elders. It can be inferred that the person present in person becomes insignificant, irrelevant and standing apart without any purpose.

The qualitative analysis strongly confirms this conclusion.

More than three fifth (68%) of undergraduate boys and three fifth (60%) of undergraduate girls accepted that they used their cell phone during classroom sessions.

20. Nearly half of the undergraduate boys and more than half of undergraduate girls used cell phone in public places. One third of undergraduate boys and more than quarter of undergraduate girls did not bother about the ‘use of mobile phone in prohibited’ type notices displayed in the public places. More than two fifth of undergraduate students enjoyed to be plugged in while driving means either they listened to music or they attended calls on phone.

More than three fifth of undergraduate students (70% boys and 68% girls) regularly talked on cell phone while walking on the streets and equal percentage of boys and girls respectively, frequently made or attended call and continued to talk on cell phone for a long while travelling in public transport or standing in a queue.
It confirms Green & Haddon (2009)’s (Green & Haddon, 2009) statement that personal technologies used in public space respatializes (that means rearranges or transforms the attributes related to space around) the public space. It is therefore clear that the mobile telephony had extended the personal space of the user, rather the personal space encroached the social and public space.

21. Three fifth of undergraduate boys and less than three fifth of undergraduate girls generally had a heated SMS Communication and then very often they sent additional SMS containing LOL (Lough Out Loud) or a smiley = emoticons (😊, 😃) to reduce the tension.

22. Slightly less than three fourth of the undergraduate students regularly used short forms of spellings in their text messages. These short forms of the spellings were phonetically correct but grammatically incorrect. Thus in a way the undergraduate students considered SMS text as a verbal communication in written form. It was implied that they actually had to manage with maximum 160 character limit of SMS to express themselves. Expressing oneself within the limitation of 160 characters over and over again, appeared to have a palpable impact on formal written communication by the undergraduate students. The researcher working an assistant professor since last one decade had observed that the undergraduate students used similar SMS language in the written examinations’ answers; using short forms and minimal space of answer-sheet. The observation stands confirmed by Mr. Anupam Siddhartha, in his qualitative analysis.

In a way it appeared that cell phone was responsible for expanding the personal space and shrinking the written space. The long term impact of such a practice might result in reducing the ability of in-depth comprehension and analytical approach in thoughts and expression in the formative years of late adolescence.
23. Less than three fourth (68%) of undergraduate boys and nearly three fifth undergraduate girls habitually used cell phone camera to click or shoot the pictures of important documents displayed on the notice boards, or power point presentation slides showed in the classrooms without going through them wherever they were displayed. More than half of undergraduate student (55% boys and 52% girls) preserved such photos for future reference. They also shared them with their co-students. This shows that boys were more into saving information by clicking the photographs instead jotting it down or memorizing it. The data once again underline that boys were more lethargic than the girls as seen in the use of more voice calls than SMSes. On the one hand it is an easy and time saving way to store information as it is in the cell phones; while on the other this obviates any prospect of writing; resulting in a reduced use of motor skills as defined by the coordination of voluntary muscles of fingers and hands which are controlled by the brain.

24. As per statistical tests there was no gender difference in the nature of cell phone dependency. The mean values for girls (61.63) and for boys (61.37) indicated that there was a considerable dependency on cell phone for their daily personal and work schedule. Although the dependency quotient was equal in both boys and girls, it was important to note that undergraduate boys were more under the influence of cell phone than undergraduate girls in terms of their behavioural pattern and their relationships with their parents, other family members and friends. About the perception towards cell phone and the life of undergraduate students no gender difference was found but when it came to assess the reported behavioural pattern undergraduate boys’ behaviour was more influenced by the cell phone than the undergraduate girls’ behaviour.

25. Undergraduate boys and girls treated Cell phone as part of the personality as well as part of the body.
26. Qualitative analysis confirms the quantitative analysis. The highlights of qualitative analysis were:

a. The cell phone had become an extended social interface for undergraduates.

b. The privacy which PTC offered to the young users had changed the traditional, cultural and behavioural set, as also homogenized the nation into one.

c. That it also caused lack of concentration and at times, a reduction in educational discipline, while affording greater exposure was a fact. It made the educationists, teachers, parents and social scientists to revisit teaching pedagogies, content and evaluation systems and look at their students more holistically – not just as domain learners at the tender undergraduate stage.

d. Undergraduate students talked on phone regardless of the space. They even talked on some such subject which, otherwise, they would not discuss in the presence of others.

e. Every medium had its impact on language so did cell phone had. The size of the screen and the limitation of the characters to be texted could not afford the luxury of grammatical, syntactical and other linguistic precisions like spellings. Therefore, it was obvious that this generation brought up with the cell phone as a medium of communication used the abridged, condensed and so called distorted text language. This form of language should be looked at as one of the phases in the voyage of development of language.

f. The enthusiasm in research of communication technology and gadgets by teenage population resulted in fading out their interest in general studies.

g. The content of their cell phone interaction was irrelevant. They could talk without any topic, gossiping was prime activity.
h. The undergraduates hardly acknowledged the presence of the visitors visiting after some interval to their home. They did not realize the importance of ‘present tense’. The person who was present in person became insignificant once they received a call or SMS.

i. They were found saying things which were untrue

j. Use of Information Technology, may it be computer or mobile phone, made them impatient and this technology would teach them some patience when it took time to download or process.

k. The cell phone was an integral part of youngsters’ lives. Rather, it is an extension of their physical existence. With the use of cell phones arose the conflict between the mental space that is private space and the social space that the physical space around them. This conflict disabled them to be aware of the physical world or surrounding environment and hence reduced the level of receptivity in their consciousness.

l. In addition to that, if human interaction got entirely dependent on technology then there lurked a danger of breakdown of civil society. Civil society entailed on not only collective communication but also collective action. Technology such as phones could give access to communication on a larger scale but dependence on it would cut off ties of communication with action because no technology would be available to make something happen.

m. It was also to be noted that the cell phone communication vis-à-vis face to face communication had a diamond-water paradox in it.

n. The coming generation grew up looking forward to upgrade their technology instead to upgrading their lives.

o. Cell phone had become as essential as food, clothing and shelter to this generation. The young generation would be paralyzed without cell phone.

p. Two-wheeler and mobile phone is a deadly combination.
q. There was certain oral and textual degradation of language, considerable increase in impatience and decrease in tolerance. Their behaviour was absolutely irrational, irresponsible and utter disregard to social etiquettes.

r. The craze of staying connected at times proves to be unsafe. Economically backward young people compromise on the quality of the battery of their cell phone set and met with uncalled for incidences like explosion of the cell phone battery.

s. In human relations mobile communication was found to be misused. The cases of youngsters involved in multiple relationships and using mobile phones to deal with their multiple girl/boyfriends were reported.

t. Although mobile phone saved lot of time but at the same time it consumed most of it. With the advancement of technology they would resort to any means to play their hands on the latest technology.

u. Listening to music on cell phone could be interpreted as more of running away from the reality than to actually listen. Karl Marx’s statement ‘religion is the opium of the people’ should be rephrased as ‘Cell phone is the opium of the people.’ Some incidences in the recent past proved PCT could be effectively used to terrify the common people.

v. Youngsters did not want any interruption in their cell phone conversation. Their first priority was cell phone recharge and then they asked for other things in the shop especially notebooks and other stationery. Majority of the young population on an average spent nearly ₹500 per month. They were invariably found using cell phone everywhere in the public space, converting it into private one.

w. Nearly two fifth to half of the young population did not even bother for the pump attendant’s request not to use the mobile phone. Usually, their expression would be full of arrogance. They seemed to forget that they risked not only their lives but also the lives of several other people.
x. It was also observed by the auto rickshaw driver that sometimes teenage couples watched objectionable clips on their mobile screen. Else their earphones were plugged in they were lost, the auto rickshaw drivers had to speak aloud and repeat the query for sure.

y. Phones have made people more and more reclusive and isolated. The virtual world had become more active than the real one. Physical talk in person was no longer the norm.

z. In the past, to end the unpleasant conversation people used to look at their watches. It was a suggestive non-verbal communication gesture for easy escape. It was replaced by cell phone activity, to escape those seconds of being uncomfortable. Undergraduate students with smart-phones were also found craving for their cell phones. The cell phone became an integral part of their life and a tool for their manifested identity.

6.9 Limitations of the Study:

This research was carried out with in the span of two years and was restricted only to the undergraduate students of University of Pune. The topic was delimited for the sake of making it practically achievable with the given time frame.

The topic was interdisciplinary and hence the researcher was at times dependent of the scholars of other disciplines for example Psychology. Hence, the questionnaire took a long time to be finalized.

By the time the final draft of questionnaire came into existence, it was February and most of the colleges affiliated to University of Pune had announced their preparation leave. Thus the researcher had to consider only 5 colleges to take the samples for data collection instead of 10 colleges previously decided.
The sample design was purposive sampling as the main objective of the study was to assess and analyse the impact of cell phone usage on the behavioural pattern in general and communication pattern in particular of the undergraduate students. Thus it was necessary for the samples to use the cell phone. Hence sampling design was deliberately chosen as purposive.

The results of the study are with the specific reference to the undergraduate students studying in the colleges affiliated to University of Pune. The study gives a broad indication about the impact of cell phone usage on the undergraduate students in Pune. The findings thus cannot be generalised in respect of students in colleges everywhere in the country. A larger sample from urban and rural India may offer better perspective about the behaviour and communication as well as relationships of late adolescents of in the country.

About the questionnaire, although it took a long time for the researcher to finalise the questionnaire to be comprehensive, at the end she felt that there is much more to investigate. One important limitation of the study was that the questionnaire was in English. A similar study using questionnaire in local language and script may yield more insights into the impact of the cell phones on the teenager collegians.

In the qualitative study, the other limitations were

a) Primarily it is limited to some professions those around the researcher.

b) It is restricted to some part of Pune city.

c) Although the researcher tried to include the samples of different age groups, social strata, gender, she could manage to get a few of them.
Summary

d) All the interviews were reactions the interview schedule. And were limited to the general, routine observations of the behavioural patterns of undergraduate students. These observations were neither clinically tested, nor they were under controlled environment. Thus these observations were the reported impact of cell phone on the behavioural patterns of undergraduate students and limited to this study only.

e) The most of the interviews were extempore especially the interviews of blue collared people (A blue-collar worker is a member of the working class who performs manual labour). They could not get the time to think and react. Thus they instantaneously expressed whatever came first in their mind. In a way the reactions were true to their knowledge and perception and hence limited to this study.

f) Secondly, all the interactions with the blue collared people were either in local language or in National language. The researcher tried to take at most care to translate the content in English; still to err is human.

Budgetary and time constraints were other important limiting factors.

6.10. Suggestion for Future Research

The present study focuses on the analysis of impact of cell phone usage on the behavioural pattern of undergraduate students in general and communication pattern in particular. This interdisciplinary research explored the pattern of cell phone usage by the late adolescents and its impact on their attitude and behaviour, which is directly affecting the social, cultural, and psychological aspects of their life. This study was primarily focused on how cell phone communication patterns impacted the family interactions as well as social interactions affecting the relationships of the undergraduate students. Thus this study will provide the foundation to the topics related to impact of cell phone usage on society, culture, language, child parent relationship and human communication pattern.
While analyzing the data received from this research, the researcher realized that there is a lot of scope for further study and investigation. The researcher with her limited sense of understanding of related disciplines suggests the scope for research on cell phone and youth as follows:

a. The present study reveals that percentage of boys saving contact details with different names in the phone book of their cell phone with an intention to hide the information from the inquisitive friends is 8% more than the girls doing so with the same purpose. This study could not find the actual reason behind concealing the information from the inquisitive friends, whether it is just to maintain the privacy or to curb hidden competitor in disguise of friend among their friend circles? This needs to be investigated in details.

b. Habit of putting every day the reminder notes in the cell phone is found only in 22% boys and 25% girls. This can be interpreted in the following possibilities a) more than 75% undergraduate boys and girls believe in their memory and remember things-to-do list; b) only 24% of the teenagers are organized enough to use reminders to be prompted to do the tasks in time or c) More than ¾ of the undergraduate population is not serious about its everyday responsibilities. As this study falls in the discipline of Behavioural Science, the researcher could not figure out the exact reason and hence she feels that more research is required to reach the conclusion.

c. Overall qualitative and quantitative analysis tells us that SMS language is responsible for degradation of overall usage of language. There is a scope to analyse in detail impact of SMS language on the written communication and future of written communication or impact of Information Technology language usage for the faculty of linguistics.

d. The content analysis of cell phone conversation by late adolescent boys talking to boys, girls talking to girls, and boys talking to girls can be researched upon like content generation and usage of media by the young generation.
e. Slightly more than two fifth of undergraduate students take into account cell phone set as one of the qualities of personality. To confirm this statement more research is required under the faculty of psychology.

f. Does carrying information containing contact details of the people to be contacted and a device to contact at any given point of time give a kind of strength and a feel of safety? What are the implications of the availability of information of the person and device to contact on the person’s ability to deal with adverse or unsafe condition? These questions need extensive investigation.

g. There is immense scope of cultural studies while exploring the impact of cell phone on Indian family values as well as cultural values as the researcher could identify that the line of gender distinction and generation gap is eroding. Assessment the effect of cell phone interactions on other socio-cultural boundaries of behaviour and casual approach towards communication is needed. It is also important to study whether this erosion of gender distinction and generation gap is carried forward and can be seen in actual day-to-day behavioural patterns of UG students especially with opposite sex and elderly people.

h. Instead of taking down on paper or keeping the important information in memory, the young generation is more into storing it in the cell phone. In a way one can say that cell phone is responsible for expanding the personal space and shrinking the written space. On one hand it is an easy and time saving way to store the information as it is; on the other, this practice may abolish the need for writing; thereby using the motor skills. This would mean the coordination of voluntary muscles of finger and hand controlled by brain. It includes not only the skill of how to write but also the skill of what to write. The long term impact of such a practice may result in reducing the ability of in-depth comprehension and analytical approach in thoughts and expression in the formative years of late adolescence. Will cell phone usage to store information in the form of typed text and/or photographs create hindrance for ability to memorize? These aspects also need more research.
i. What are the achievable measures the parents must take to save their children to be cell phone addicts? This million dollar question needs to be answered after study focussed on this aspect.

6.11. Utility of the Study

The present study can be useful for communication scholars, socio-cultural scientists, behavioral scientists, parents, teachers and professors constantly interacting with the young generation, cell phone manufacturing companies, cell phone connection service provider companies, and even for general public who is interested in upgrading their general awareness.

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