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Article:	Mobile Phone Usage Pattern and its Impact on Society: A quantitative Analysis
Author(s):	Dr. Muhammad Naseem Anwar Lecturer, Department of Computer Arts, Hamdard University, Islamabad Campus
	Muhammad Kaqbad Alam Ph.D Scholar, Department of Journalism & Mass Communication, University of Peshawar
	Dr. Saniya Moazzam Visiting Faculty, COMSATS Islamabad
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Author(s) Note:	Dr. Muhammad Naseem Anwar is serving as a Lecturer at Department of Computer Arts, Hamdard University, Islamabad Campus Email: journalistnaseem@gmail.com
	Muhammad Kaqbad Alam is a Ph.D Scholar at Department of Journalism & Mass Communication, University of Peshawar
	Dr. Saniya Moazzam is serving as a Visiting Faculty at COMSATS Islamabad

ABSTRACT

As widely recognized, cell phones have become indispensable in modern life, owned by people of all ages. They facilitate a multitude of tasks and are accessible anytime, anywhere. Our study aimed to explore the societal impact of smartphones and their myriad features on real-life interactions. Understanding the relationship between smartphones and social interactions is crucial. The study involved a 12-question survey assessing cell phone ownership, daily usage patterns, and hours spent on smartphones. One hundred and two students are randomly selected from Islamabad rural and urban areas. Participants, evenly split between genders, were surveyed, and the data were visualized using pie charts. Our findings suggest that individuals aged 16 to 20 are most affected socially by cell phone usage. Younger participants tend to use smartphones more frequently than older ones, with entertainment being the primary use for the former and work/communication for the latter. Despite varied usage patterns, most individuals find that cell phones have simplified their lives. However, the production and model of mobile technology has led to concerns about overreliance, potentially limiting individuals' cognitive abilities by substituting technology for mental challenges.

Keywords: Mobile devices, technological advancements, emerging models, societal dynamics, everyday interactions

Introduction

The cell phone was first invented back in 1973, and was used by a member of Motorola (Goodwin, 2017). Since then, they have developed a lot regards to their features and capabilities and now they are part of a life for all the individuals. Cell phones have this capability of sending emails, sending messages, school and office work and many social platforms like we have Facebook, WhatsApp, Instagram today (Makker, et al., 2009). Cell phones help us in our daily routine plans and they have become an integral part of our life and have been a great use to our daily life and sometimes the sole means of communication at times. The smart phone was invented back in 1992 (Tweedie, 2015). It is a combination of a normal cellular phone plus a computer. Smartphone's are so much convenient that we can send messages as well as an email from the same device and it saves us so much time (Beal, 2008). So many abilities of cell phones make life easy for so many people with little clicks. Although cell phones have been playing a huge role in our daily lives but it is important to know that how this development of communication mode has been influencing our society or what effects has this technology been leaving on our people (Katz, & Aakhus, 2002). How has the presence of cell phones influenced our social interactions? Have they had a positive, negative, or mixed impact on us? For this reason a survey has been done to find out the impact of mobiles on our daily lives, how much people are dependent on it and how they are using it, how cell phones have been affecting the social interaction capability (Gill, at al., 2024).

Because mobile phones make it harder to distinguish between mass media and personal communicators, the definition and use of mobile phones are changing. In the last ten years, the mobile phone has grown to be among the most commonplace communication tools. Cell phones were once considered a mysterious gadget (Castells, et al., 2009). Currently, people's most common form of communication is undoubtedly their mobile phone. In addition to providing connectivity "anytime, anywhere," and with anybody, a mobile phone also offers mobility and portability. Since the first mobile service was introduced fifteen years ago, mobile phone use has increased dramatically, particularly in Korea. In actuality, mobile phone penetration in Korea has reached and the nation is among the top in the world for both mobile phone use and internet (Ling, 2004). Because of this, using smartphones and tablets in class as well as during free time at colleges and universities is becoming increasingly common. Research (Barkley & Lepp, 2013) has demonstrated that although technology use, particularly with portable devices, may offer a set of tools that potentially leverage learning, these technologies are primarily seen as leisure rather than educational tools. Since students frequently overestimate their capacity for multitasking, it is likely that they will become distracted during lectures or other activities if cellphones are frequently used in class for purposes unrelated to the subject matter (Ophir, Nass, & Wagner, 2009). This could ultimately result in academic underperformance.

Problem Statement:

The issue has been that because of so much use of the smart phones and development of technology people have been getting away from each other (Dey, et al., 2011). The level of communication has been going down in case of face-to-face conversations, the reason is that people have been looking for more time to their mobiles and not to the person they are communicating. This issue has been more prevalent in case of teenagers and young ones because they are more dependent on their mobile phones for the solutions by taking the help

of applications and internet services. There is no doubt that mobile phones have huge number of uses but at the same time its one the source for social anxiety, stress and loneliness (Gao, 2016).

Objectives of Research Study:

Our primary aim was to investigate the societal impact of smartphones and their diverse array of features on real-life interactions. It is crucial to discern the correlation between smartphones and social interactions. Grouping system will be used in which people of different age groups will be distributed in two groups with groups from ages below 20 and above 20.

Research Questions:

By the conclusion of this paper, we will understand:

- How individuals across various age groups perceive the use of smartphones?
- What applications or for what purpose most of them using their smart phones?
- How much time they are spending on social media using their cellphones?
- How cell phones are effecting their face-to-face interactions?

Significance of this Study:

The primary advantage of this study will be to provide insight into the extent of people's dependence on their cell phones and the purposes for which they use them, categorized by age groups. The results would be beneficial because most of the times we don't even recognize how much cell phones have been to our help in most uncertain times, how much we have been dependent on our phones for our daily routine work (Sapacz et al. 2015). Apart from uses, we will also get to know how our phones have been affecting our social abilities, even in minor ways, like in case of social anxiety, which happens because of overuse of cell phones. We can describe social anxiety as social situation fear, as a result of which people avoid social situations or gatherings because they get stressed out or feel anxiety when they come across any social gathering etc. according to studies this sort of situation is more prevalent in people who have excessive use of their mobile phones (Pettegrew, 2015). Therefore, It would be valuable to ascertain the percentage of individuals exhibiting signs of social anxiety. If cell phones contribute to social distancing, they also serve as tools for establishing connections and facilitating socialization. (Wei and Lo, 2006). Back in time, before the development of telephone people used to send letters and it would take time and cost was more. With making of telephones and now smart phones, things have eased out as people can interact with each other rather more quickly. Cell phones have facilitated the communication transformation (Thulin, 2018).

Literature Review:

Although we know that smart phones have made impact on lives of many people and has influenced their behavior as well in many ways, here we will purely focus on how the smart phones have made an impact on the social life of an individual's life (Ong, et al. 2023). Smart phones have most of the functions same as the computer. They have touch screens, internet connectivity, an operating system that has the ability to download different applications like from play store etc. smart phones have changed lives in how people used to interact with one another (Drago, 2015). In most of the scenarios, these smart phones have been keeping people connected more than the computers. Today with availability of so many

social apps and connecting apps, it has been easy to keep people connected especially people from young age or teens as they are most of them online and these apps are being used to connect through either email, or social apps like WhatsApp, Instagram, and Facebook etc. These social sites have been playing a positive role connecting people from all around, we can take the example of Google, which has been the most famous search engine now for years, and people have been using it to get information about anything (Nurullah, 2009). You want to know anything, you can just go for Google search and you will get hundreds of suggestions. Similarly, if we look at LinkedIn, it has been used by many people for job search and has been one of the best platforms. Instead of carrying a tablet or a laptop or a PC, we can have all these apps on our smart phones and can use them whenever it is convenient to us. Although there are many uses of these smart phones but at the same time, they have been playing a negative role as well (Sun. et al 2023).

Today people have been more dependent on their smart phones than before and it is because of the factors as if they have social needs. As well as social influence, plus the convenience, which smart phones, bring along them. Today people from every age use smart phones because it has been so much convenient and they can use to access any sort of information they require. Stats show that there exists a distinct correlation between social needs and dependency on smartphones. (Sapacz et al., 2015). People have been most dependent on their phones because of this social needs force which compels them to be all along the day on their phones. But sometimes being totally dependent on the facts and figures on the social sites and social media can be misleading because sometimes these figures are not complete and it can cause issues later on. With so much information available on the same subject on different platforms and everyone giving their own data for same thing it can become difficult to find out what is real and what is not. Smart phones can also be a source of distraction for many people as well as it can result in decreased productivity from students who are using it all along the day (Al-Badi et. al., 2014). Smart phones have been one of the greatest discoveries and they have become one of the most important members of our lives because of their ability of making communications, which are although quite similar to computers, but they get the edge on having more convenience or probability of communication. A lot of research in past has been performed by different people who have tried to find out how the usage of smart phones have affected a person's ability, personality or emotions. According to those research, social anxiety and being lonely or loneliness have been two most prominent negative factors that have existed because of maximum smart phone usage (Yoon, & Yun, 2023).

According to Blumenthal et al., (2011), social anxiety happens because of the nervousness and fear of being negatively evaluated or behaving in a manner, which is considered bad or embarrassing while in the presence of others. One of the recent, studies have shown that five major personality traits, which include openness, agreeableness, conscientiousness, extraversion and neuroticism, can be see through the usage of smart phone. In another study by a certain group, Participants were grouped according to the levels of anxiety, loneliness, and social stress they exhibited (Cherry, 2017). Gao (2016) conducted research utilizing the Wilcoxon-Mann-Whitney test to determine the extent of social anxiety and loneliness factors associated with smartphone usage or dependency. The factor of social anxiety was found out to be highest among those people who made either outgoing calls

during evening time or those who received calls during this time. Whereas, loneliness factor was among those people who barely received a call through any form or time. Apart from anxiety, many people can develop social stress as well because of the smart phone usage. Because there are so many, people whom their phones so frequently, so they rather develop different habits or attitude, which can be unhealthy at, times (Herath, & Wanasinghe, 2024). Based on a study by Sapacz et al. (2015) on computers and human behavior, individuals may develop maladaptive habits that lead to an involuntary compulsion to regularly check their phones or computers without a specific purpose, most of them randomly or at wrong times. Since, people can get addicted to their smart phones because they have been using it regularly, so as a result they can get or develop emotions related to it. Therefore, it is possible for them to get irritated or feel stressed or social anxiety when they cannot reach or see their phone. Therefore, it is clear that it is sometimes harder for people to interact with other socially without having their mobiles or smart phones in hand (Manikandan. R 2023). However, there have been good as well as bad effects of these smart phones on an individual's life, these aspects have been changing slowly with time and it has become more difficult from before to interact socially as our reliance on the smart phones has been increasing day to day. The effects of smartphones on individuals' lives are increasing day by day and will continue to do so as their capabilities expand.

Method/Approach:

For our research, we used the quantitative method approach. In quantitative method approach, we used the system of survey research. Survey research system is nowadays used commonly for research purpose. We can see in our daily lives the polling or survey system being used to know how much population is in favor of a certain thing or the people opinion over a certain thing. Like during elections different channels make polling system or run survey along different constituencies to know the people view regarding different parties or running members of the election. Here in our research the basic purpose of the survey was to find out how many people use smart phones, for what purpose they use their phones for most time and how these phones have been affecting them socially. Keeping in view the requirements of our research, we approached with the survey method for our research. Every participant was required to complete the survey fully. The results from surveys then used to develop tables and figures for the findings and result section. Here in this research we used the questionnaire method. The research comprised 18 questions. In these questions, firstly the age, gender, and education of audience asked. After that, they asked different questions like the time they spend using it, its effects on them and other questions leading us to our objective. The results from the survey collected and analyzed with each result representing the participating individual. The study done to find out the usage of smart phones with respect to age and gender and how it affected them on personal level. After the results from survey compiled, they were used to find out the effects on social behavior by use of smart phones.

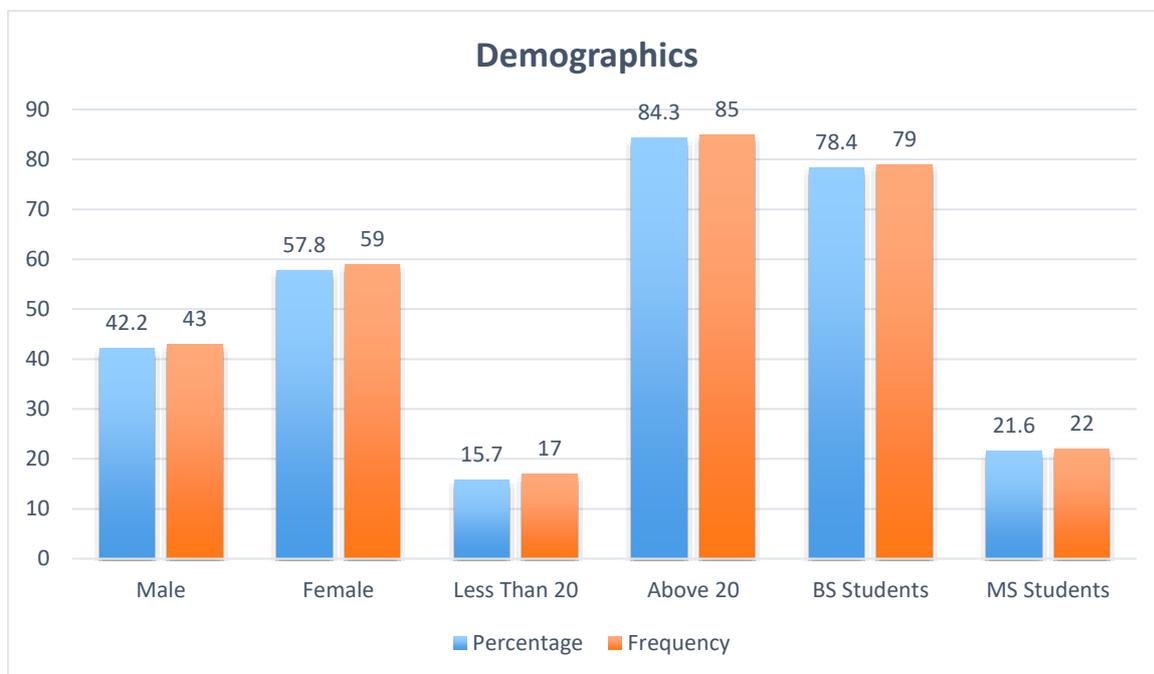
Data analysis:

The results from the survey collected and analyzed with each result representing the participating individual. The research aimed to investigate cell phone usage and its impact on society. Following the outcomes from survey compiled, they used to find out the effects on social behavior by use of smart phones.

Findings:

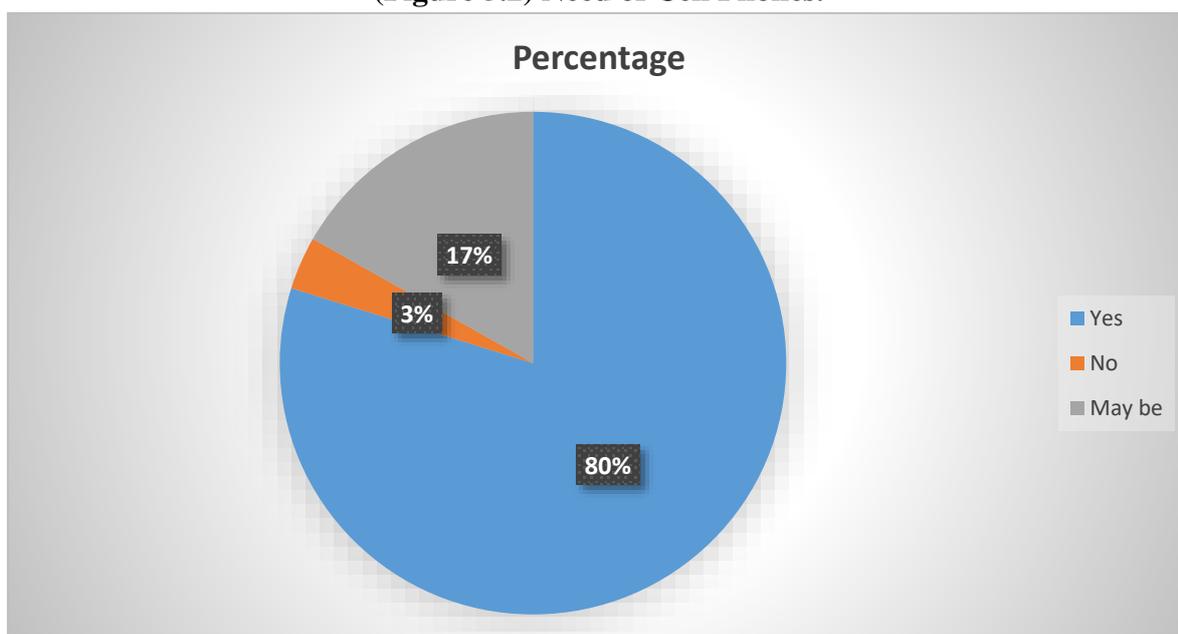
The results from survey collected and analyzed. A series of questions asked from the participants. Total number of participants was 102, which included people from different ages as shown in table 1;

(a) (Table 5.1) Age and gender of respondents



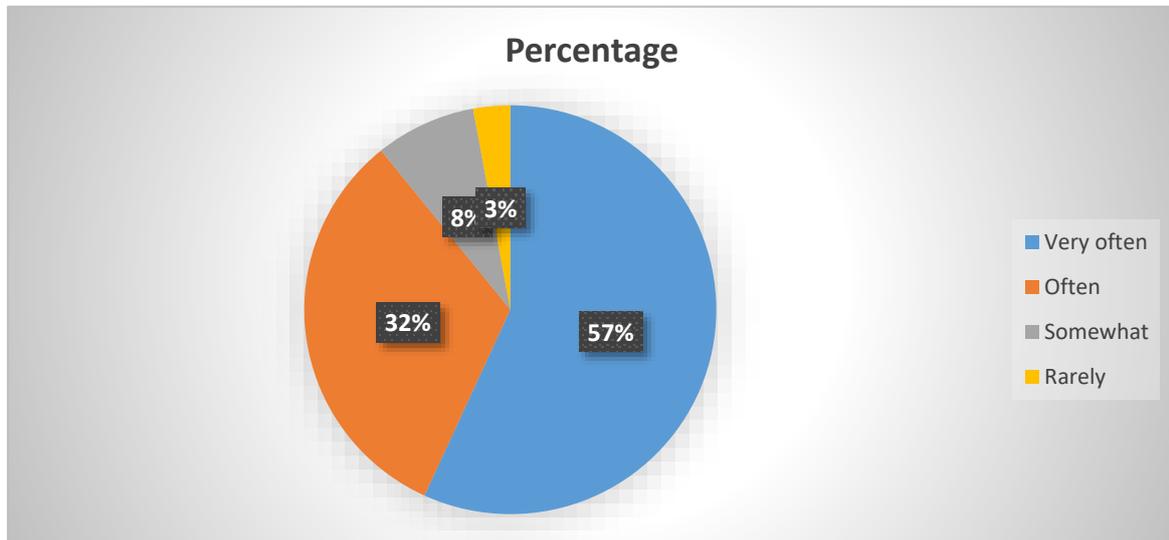
The aforementioned data shows the participants' demographic analysis. We may observe that 42.2% of the participants in this study are men and 57.8% are women. Within the age group, 15.7% of the sample falls below the 20-year mark, while the remaining 84.3% belong to the above-20-year mark. The majority of students (78.4%) are enrolled in BS programmes, with 21.6 % going to MS programmes at other universities.

(Figure 5.2) Need of Cell Phones.



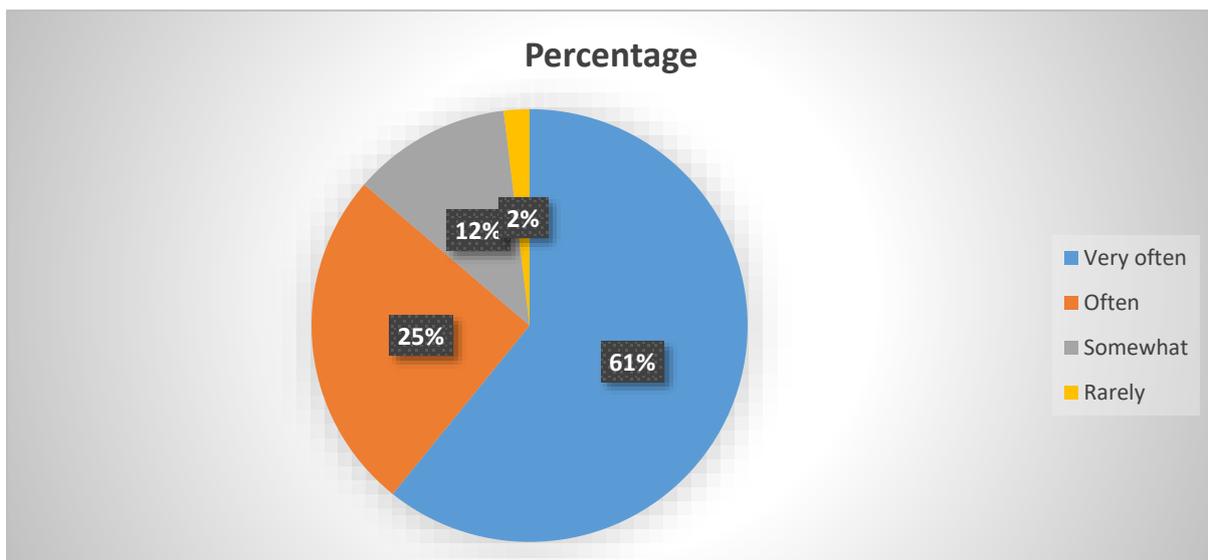
The above table shows the outcomes of students' need for cell phones. The bulk of respondents (80%) said "yes," followed by "may be" (17%). Previously, a small percentage said that cell phones were not necessary on campuses.

(i) (Figure 5.3) Cost of cell phone

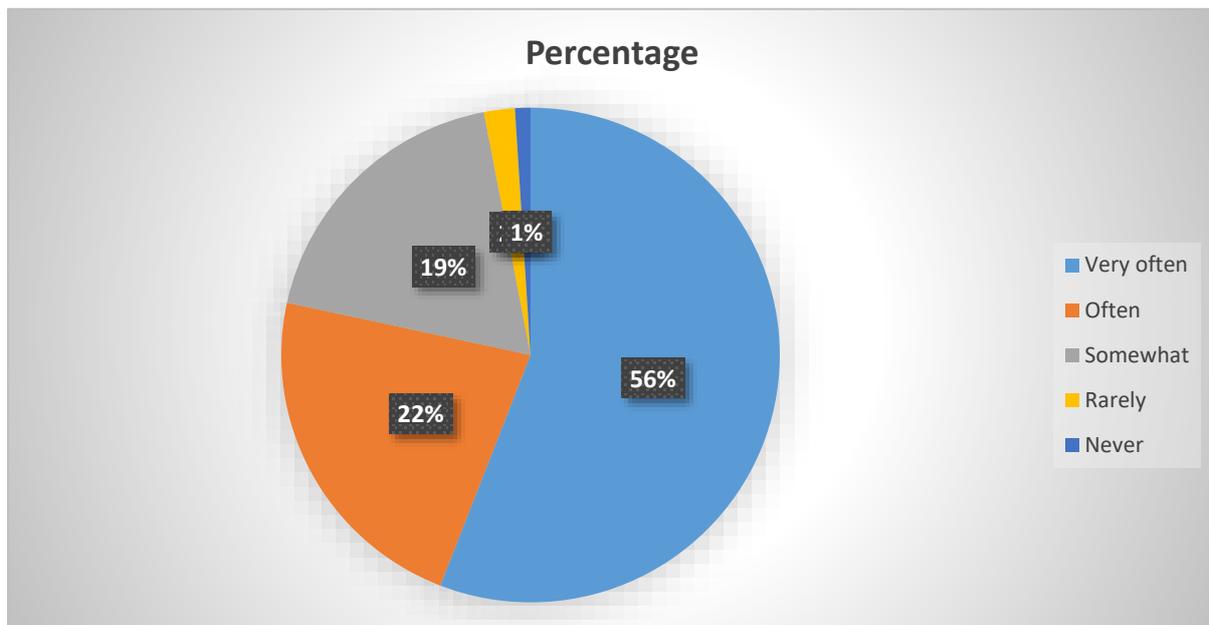


The researcher next inquired as to whether consumers consider phone prices while making their purchasing decisions, and the above results are shown in figure 5.3. When choosing a mobile, many students (59%) said they look at price points in addition to other factors. While (32%), students who frequently asked about price and value were followed by (8%), who had no interest in demonstrating the worth of their cell phone.

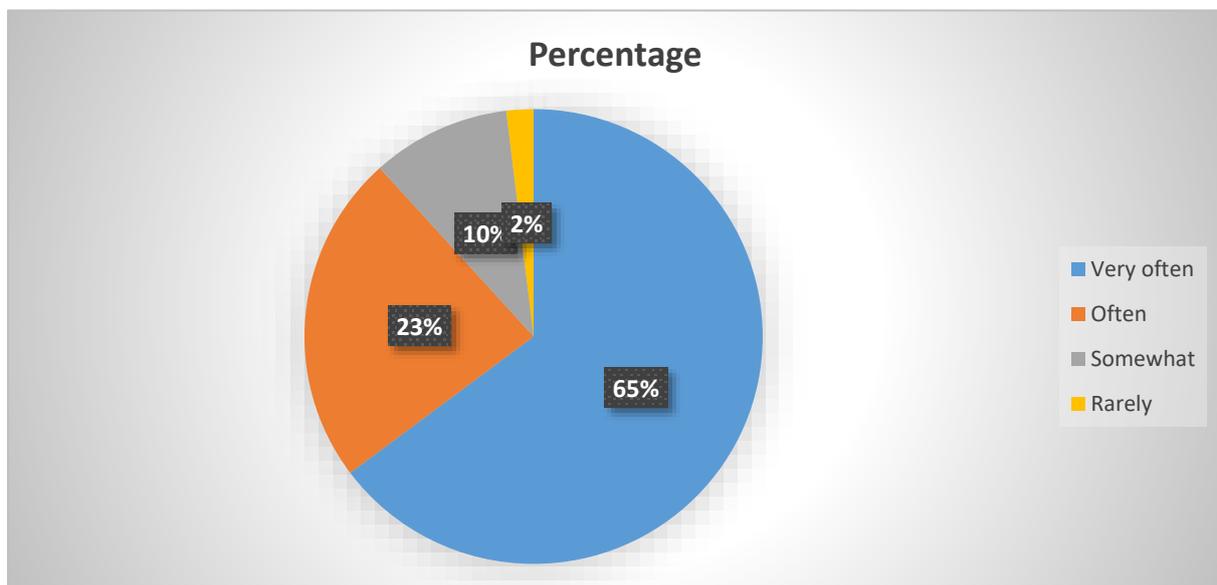
(Figure 5.4) Specification of Mobile Phone (RAM)



When we questioned consumers in question 6 if they consider a phone's RAM when making a purchase, we received the previously mentioned responses, as shown in figure 5.4. The majority of respondents select their smartphone based on performance and RAM.

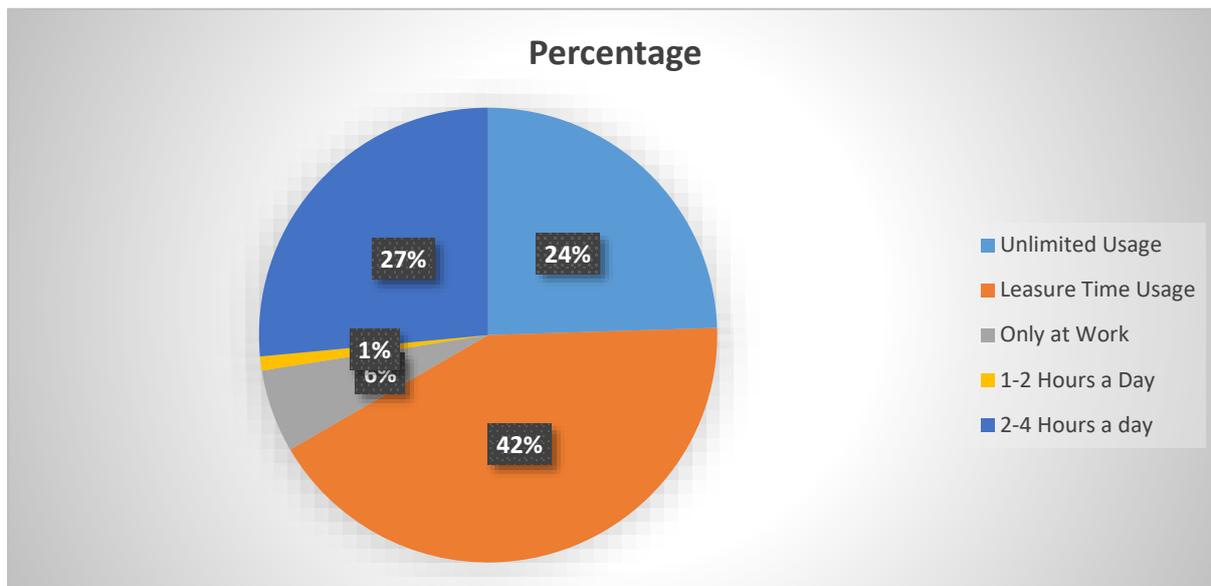
(Figure 5.5) Specification of Mobile Phone (ROM)

The majority of students is well aware of the specifications of mobile phones and choose based on the phone's speed and ROM for their own usage. In question 7, we questioned if individuals look at the phone's ROM when choosing what phone to buy, to which we obtained the answers shown above in figure 5.5.

(Figure 5.6) Specification of Mobile Phone (Camera)

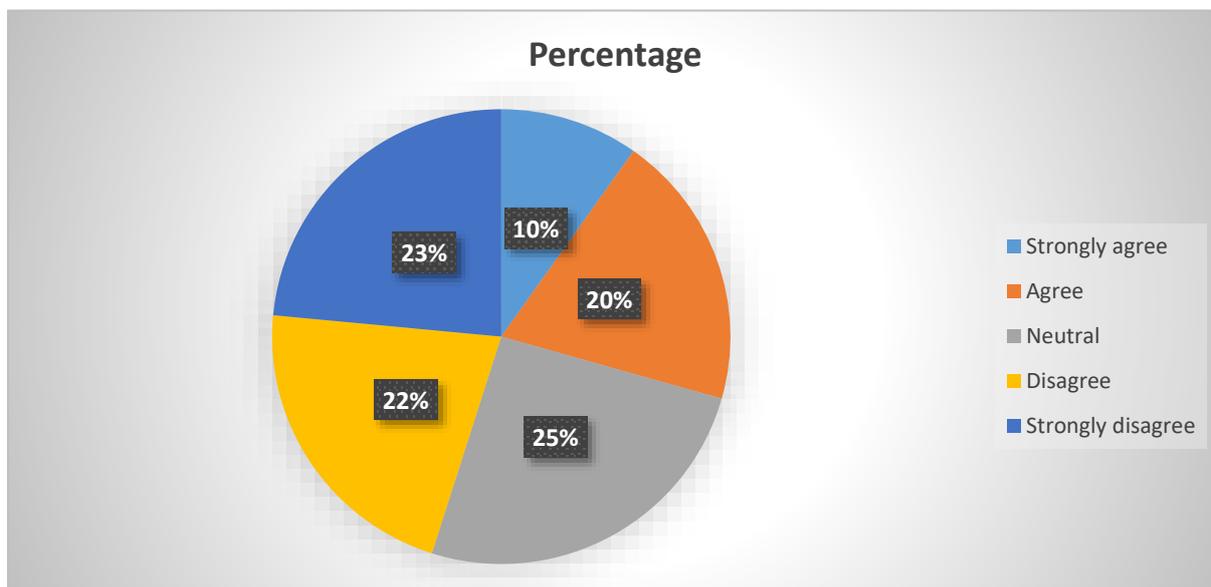
We asked participants in question 8 if they consider a phone's camera when deciding which one to purchase, and the answers we received are shown above (Figure 5.6). The majority of students (65%) choose a mobile phone for personal use based on the quality of the camera.

(Figure 5.7) Daily Time Spend in Cell Phones



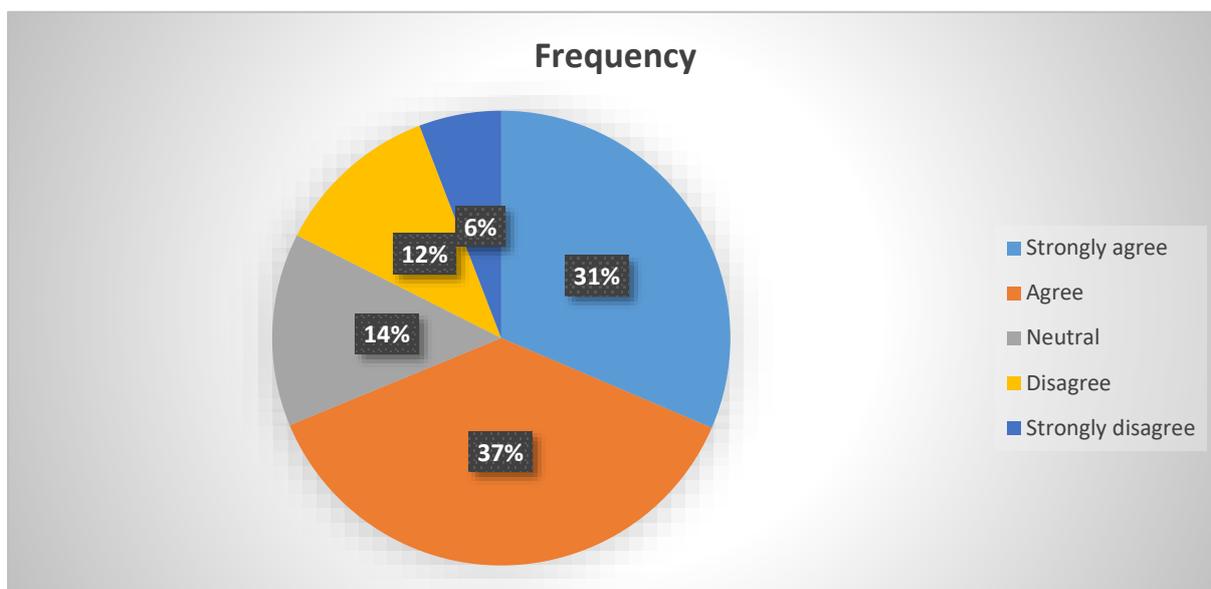
We inquired about student's daily phone usage duration in question 10. This showed the outcomes listed in Figure 5.7. Although some students (24.%) responded that they had unlimited time for mobile usage, the bulk of students (42%) stated that they use their phones in their leisure time.

(Figure 5.8) Replace of books with cellphones



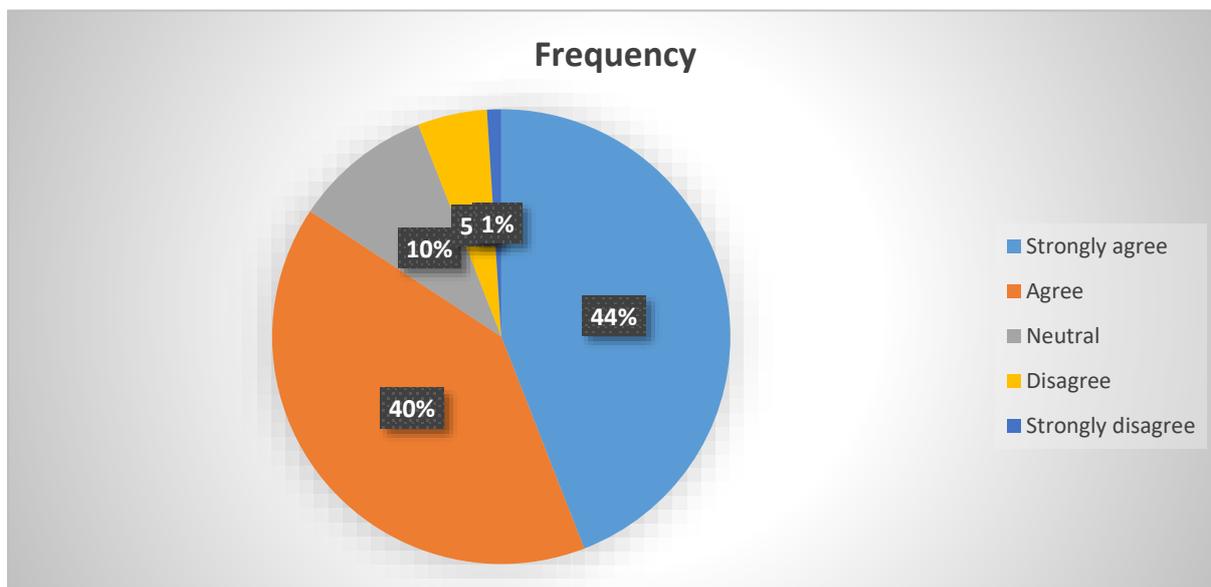
In order to lessen the load, we asked respondents in Question 11 if they would prefer that books be replaced with phones. The answers are shown in Figure 5.8. The majority of students (45%) disagree that replacing curriculum books by cell phones is a not a good idea for their education.

(Figure 5.9) Negative Effects of Cell Phones.



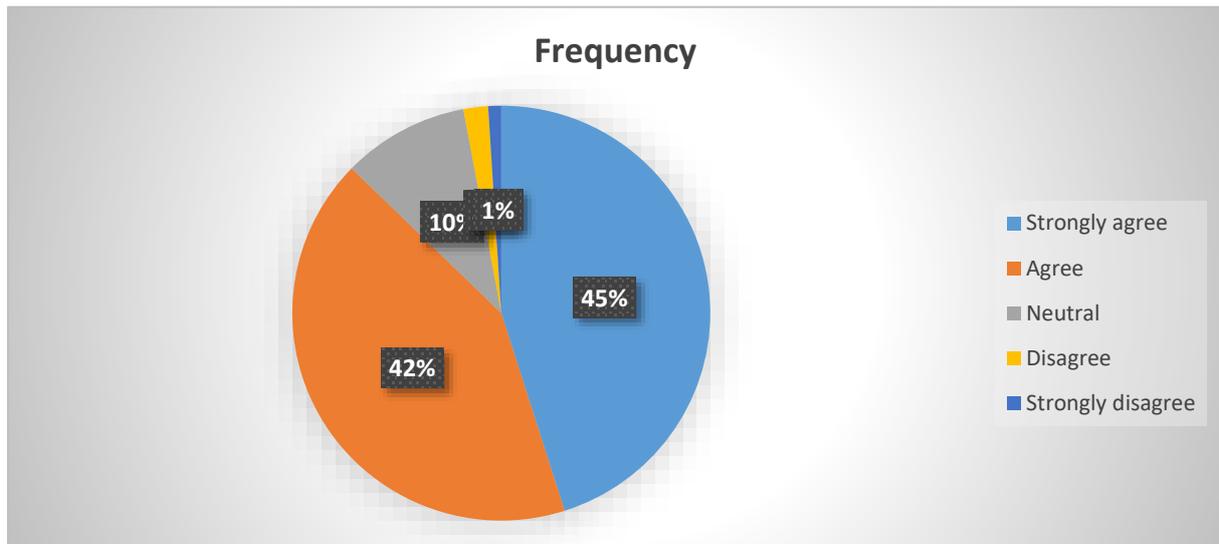
The next inquiry focused on whether smartphone users had ever considered the detrimental impacts that these devices may have on society. The findings are shown in Figure 5.9. The majority of students concur that using a cell phone excessively these days is having a detrimental impact on their academic performance.

(Figure 5.10) Parental Check on Cell Phone



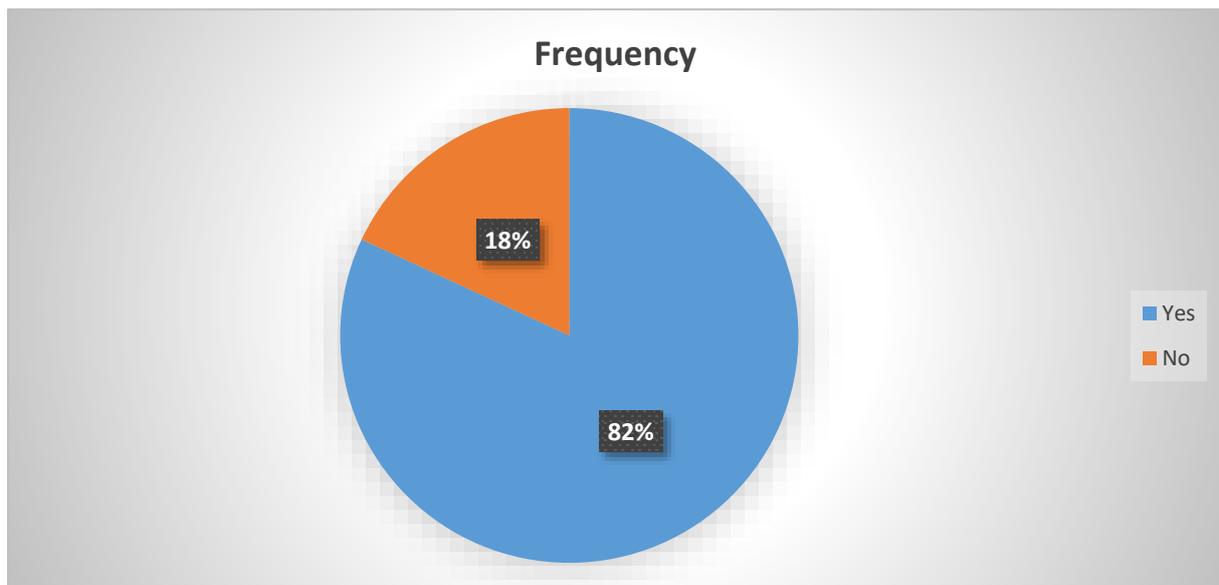
Our second concern was primarily about under-18 children's safety. When we questioned our audience if parents should monitor their children under 18 when using mobile phones, a sizable portion of them agreed. The outcomes are shown in Figure 5.10. The majority of students support strict controls and balances on parents' use of cell phones while their children are less than eighteen.

(Figure 5.11) Negative effects of usage of Cell Phone



We inquired about any potential adverse effects of cellphone use in question 14. Figure 5.11 presents the empirical results. The majority of students think there will be a significant negative influence on society if cell phone use is used inappropriately.

(Figure 5.12) Cell Phone usage During Driving



Since using a phone while driving can be harmful to one's health, we questioned the audience in question number fifteen how many of them did so. The findings are displayed in Figure 5.12. The majority of students oppose using cellphones while operating a vehicle. Despite the fact that they recommended steep fines for using cell phones while driving.

Discussion:

After conducting the survey, the results were analyzed. There were total 102 participants from both genders of different age groups having different level of education. Audience was asked different questions to reach our objectives that are to know how people from different age group perceive use of smart phone. How much time they are giving to its use and how it is affecting their lives. If it is playing a positive role or negative one in their

lives. Of total 102, around 84% population was aged above 20. Male gender mostly dominated the results with a 58% result. While if we look at education level so most of the audiences were from BS level. On asking of cellphone is a necessity so 79% replied in positive which shows that how much cellphone have become important in people's lives. Asking about the aspects that people look for in a cellphone while buying, around 89% replied with price, 86% with RAM, 78% for ROM, 88% for camera, while asking about if people look for some other features as well, there was a 53% positive response. Results show that for most people the most important things are price, camera and storage capacity. Our next query was how much time people spend on their mobile to which around 42% replied that they use it only in their free time while others use it at different times while around 24% use it unlimited. Around 29% agreed in our survey that books can be replaced with soft copies with technology getting advanced and that will lower the burden on kids to carry those heavy school bags (Aziz, et al., 2024). We also asked audience if they ever thought about the negative effects that their cell might be having on them. Results showed that around 68% have paid focus to it. Our next query was safety for children under 18. We asked if there should be option for parental check. To which about 87% audiences agreed. Using mobile phone while driving can be dangerous at times. Around 95% of our audiences prefer not to use it while driving. Around 84% agree that fines must be imposed on those who use it while driving. Mobile phones help people connect, a statement to which almost everyone agreed. In our last question we asked audience whether people buy all these expensive and stylish phones just for showoff purpose to which 80% of our audiences agreed.

Conclusion:

The topic of our research was "Mobile Phone Usage Pattern and its Impact on Society: A quantitative Analysis". The research indicates that the mobile phone has become an integral aspect of our everyday existence. as every single person owns a cell phone. We have examined problematic smartphone use using standards akin to those set forth for substance abuse disorders or compulsive gambling. It is evident from our research that problematic cell phone use is a growing issue that is closely related to technological advancement; nevertheless, the criteria used to evaluate it lack consistency and coherence, so many of the conclusions drawn must be accepted with caution. In summary, given the limitations of its concepts, criteria, and approaches, a great deal of work remains to be done in this discipline. It's very likely that we will view cell phones as objects of easy addiction for weak, compulsive, or problematic personalities, but we'll also allow for problematic and required use in certain circumstances. Furthermore, it is imperative to expand the scope of studies in this domain to encompass the adult population in order to achieve a comprehensive understanding of cell phone usage and abuse. It is undeniable that adults too use cell phones problematically, even though there are concerns for children and teenagers. Followings are main points of this research paper.

- The subsequent findings were derived from our research.
 - Cellphones help people connect.
- Parental check should be kept for children under 18.
- The majority of people believe that cell phones have simplified their lives.
- People look at different aspects when selecting a mobile, with most of the people buying it for showoff purpose.

- Mobile has positive as well as negative effects on society.
- The progress of mobile technology offers numerous benefits, yet simultaneously restricts individual capabilities as people increasingly depend on technology rather than engaging their cognitive abilities.

Recommendations:

Based on our research findings following are the recommendations.

- To draw broader conclusions, enlarge the participant pool in research studies.
- Also include the individuals from the age group 10-16, as studies show that 30% cell phone users belong to the age 10-16. (Davis, 2017).

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