A Study on Mobile Usage among College students in Goa

A Dissertation for course code and course title: LIS 651 & dissertation

Credits: 16

Submitted in partial fulfilment of masters / bachelor's degree in MLISc

By

AMEENA PEREIRA

Seat Number: 22P0010018

ABC ID: 898256800820

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Library and Information Science

GOA UNIVERSITY

April 2024

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled **"A Study on Mobile Usage among College Students in Goa"** is based on the results of investigations carried out by me in the **Library and Information Science** at the **D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University** under the Supervision of **Dr. Milind C. Mhamal** and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that **Goa University** or its authorities will not be responsible for the correctness of observations/experimental or other findings given in the dissertation.

I hereby authorize the University authorities too upload this dissertation on the dissertation repository or anywhere else as the UGC regulations demand and make it available to any one as needed.

Date: 19th April 2024 **Ameena Pereira**

Place: Taleigao, Goa Seat Number: 22P0010003

COMPLETION CERTIFICATE

This is to certify that the dissertation report **"A Study on Mobile Phone usage among College Students in Goa"** is a Bonafide work carried by **Ms.Ameena Pereira** on in partial fulfilment of the requirements for the award of the degree of **MLISc.** in the Discipline **Library and Information Science** at the **D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University.**

Dr. Milind C. Mhamal

Date: 19th April 2024

Signature of Dean of the School/Programme Director School/Programme Stamp

Date: 19th April 2024

Place: Taleigao, Goa

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Chapter 1

Introduction

1.0 Introduction

Nowadays, it has been observed that most of the students are busy with their mobiles. They spend hours on mobile, whether in class, library, or during other time. This makes me think what exactly they are doing? What exactly they are reading?

Definitions:

Mobile means, “A mobile phone is a wireless handheld device that allows users to make and receive calls. While the earliest generation of mobile phones could only make and receive calls, todays mobile phones do a lot more, accommodating web browsers, games, cameras, video, players and navigational systems.” (Viswanathan, 2022)

Mobile usage “Refers to the activities and interaction carried out on mobile devices, such as smartphones and tablets. This includes making calls, sending messages, using mobile apps, browsing the internet, and performing other functions on a portable device.” (Viswanathan, 2022)

The introduction and development of information and communication technologies (ICTs) has brought about a transformation in the methods used for teaching and learning. Immediate access to information resources required for teaching and learning is made possible by ICTs. Applications of information and communication technology (ICT) improve the information sharing between students and teachers as well as between learners. Several ICT technologies, such as computers, radios, televisions, cell phones, and other gadgets, are used to accomplish this. Teachers and students now collaborate more and are more interactive thanks to recent advances in ICTs.A tiny piece of technology has the power to drastically alter our lives. One of the technologies that have grown at the highest rate in the previous several decades is the mobile phone. A mobile phone is a smart gadget that enables users to snap pictures, check their health, listen to music, make and receive calls, and more. With 4.32 billion unique mobile internet users as of 2021, more than 90% of all internet users worldwide access the internet through a mobile device. Given that mobile technologies are getting

more accessible and affordable than ever, cell ownership and internet usage are anticipated to continue to rise in the coming years.

(Rao, Alwaaili, AL-abdali, & Alshaaili, 2023)

This increasing trend in mobile internet use is especially evident in developing digital markets where mobile networks serve as the main access point for the internet. Email, chats, online conferencing, messages boards and websites that share knowledge resources are the examples of web-based learning. It offers appropriate educational material, promotes group and interactive leaning, and improves evaluation throughout the interactive learning and improves evaluation throughout the teaching-learning process. Given that they are less expensive than other ICTs that can be utilized for education, mobile phones have the potential to enhance the process of teaching and learning. One of the biggest obstacles to communication studies throughout the history of mass communication study has been the quick advancement of information and communication technologies. Even well-known ideas about the media have grown hazy as they have complicatedly merged, erasing earlier distinctions within the media industry. (Rao, Alwaaili, AL-abdali, & Alshaaili, 2023)

It is obvious that traditional media, including radio, television, and newspapers, are changing significantly. The emergence of new media platforms and technology, which are transforming mass communication, is more noteworthy. Additionally, they are altering interpersonal interactions as a result of new technologies that combine elements of mass and one-on-one communication. (S.S, 2014)

Larger user groups have embraced mobile phones very quickly. In 1997, new, affordable mobile terminals hit the market, and mobile operators started charging more competitive rates for their services, which led to a growth in the number of mobile phone users in Finland, particularly among younger demographics. In comparison to the previous year, the quantity of SMS messages transmitted in the first two months of 1998 increased sevenfold. During that same time frame, there were twice as many GSM subscriptions in use. People over 60 who are considered elders acquired cell phones a few years later than other age groups. In November 2003, about 80% of Finns between the ages of 55 and 74 had a cell phone, according to Statistics Finland. By 2005, almost every age group had become familiar with cell phones. For example, cell phone penetration is currently higher than TV penetration. Additionally, people own mobile

phones more frequently than cars, computers, or video recorders. 43% of Finnish homes had at least one multimedia phone in 2005. In accordance with estimates, a phone is more common among individuals globally than the "more celebrated communication technology, the TV. The amount of text and multimedia messages sent as well as the quantity of outgoing calls from mobile phones have both increased in 2007.The development of mobile broadband connections has had an impact on the volume of data transmission has additionally grown. (oksman, 2010)

As a result, the current study evaluates the ways in which mobile devices support the teaching-learning process and lists the popular applications and categories of learning activities made possible by mobile devices.

This project is about the survey and analysis of mobile reading habits among college students in Goa

1.1 Objectives

1. To find what content the students read on a mobile device
2. To understand the mobile reading behaviour of the students
3. To know whether the students read e-library content on mobile
4. To compare the use of physical library v/s reading on mobile
5. To know the advantages and disadvantages of reading on a mobile device
6. To find out mobile users' expectations from their academic library
7. To suggest library content` which can be used on mobile device

1.2 Methodology

1. The researcher has browsed different related literature available on the topic.
2. The researcher has structured a questionnaire using Google form. In total, 300 randomly selected students from all over Goa were surveyed using the questionnaire method for the period of January to February 2024.
3. Before that, a pilot study was conducted before designing a questionnaire
4. The researcher has used suitable statistical techniques like Ms Excel and required data with charts and graphs foe analysing the data for clear interpretation and understanding.
5. APA 6th Edition, a citation style was used for references and citations.

1.3 Scope and Limitations of Study

This study is only limited to undergraduate students of Goa Colleges who use mobile devices.

The main forces of the study are the time spend by the students on mobile devices.

1.4 Organisation of Study

This study is divided in to 6 chapters. They are:

Chapter 1- Introduction

Chapter 2-Review of literature

Chapter 3-Over of mobile reading habits

Chapter 4-Data Analysis and Interpretation

Chapter 5-Finding, Suggestions and Conclusion

Chapter 6-Bibliography

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Chapter 2

Literature Review

2.0 Introduction

A literature review is a critical evaluation and synopsis of previous workand writing on a particular subject or research question. It includes searching, evaluating, and collecting important sources, journal articles, and other academic publications to present a summary of the individual's state of knowledge. By highlighting the relevance and context of their work, a literature review aids in understanding the present level of knowledge on a topic identifies gaps or areas that require more research, and lays the groundwork for future investigations. (Krishnaswami & Ranganathan, 2008)

The Purpose of Review

The reasons for the review of related literature are:

1. To learn background knowledge of the research topic.
2. To identify data sources used by other researchers and how structured their reports.
3. Researcher critically evaluates and analyses the quality and credibility of sources.

(Krishnaswami & Ranganathan, 2008)

Here in this literature survey, sources have been reviewed to form a base for my study And to identify the trends and gaps in the area. The literature search contains only 40 Journal articles. The sources visited included Google Scholar and Research Gate. The A literature review is arranged chronologically.

2.1 Review of Literature

(Wei & Kalko, 2005) This article covers the need to research mobile phone use in the context of a community, taking into account the political, social, and cultural aspects that affect phone use. This Article offers a case study of mobile phone usage in Uzbekistan, a republic in Central Asia with a distinct Sociopolitical setting and rising mobile phone usage. The political situation may be reflected in general caution and limited use of mobile phones in public. Mobile phone owners may be purposefully

cautious about how they use their devices in a society, where it could be safer to avoid raising attention from the police or transmitting too much information in a public place. (Adomi, 2006) The goal was to look into how students at Delta State University in Abraka, Nigeria's Department of Library and Information Science were to look into how to use their mobile phones. While the majority of respondents use their phones to communicate with their parents or relatives, some also use them to send and receive text messages; family matters and finances are the most common topics of mobile communication; for the majority of students, using their phones has reduced the need to travel; frequent breakdown of calls or networks.

(Mandal & Mitra, 2008) Goals how dependent college-bound kids in Kolkata were on their phones and how aware they were of the health risks associated with them.70% of students have become accustomed to using Android phones. Female students use their phones for six to seven hours a day, compared to twenty-four percent of boys. They utilize it as a resource for learning as well. Eighteen percent of the kids are aware of the drawbacks. Headache difficulties affect students, roughly equally as many boys as girls. In their daily lives, 51% of students get angry and 43.5% experience anxiousness.

According to (C & B, 2009)determines college students' usage patterns of smartphone accessibility, of college students of academic institutions in Bangalore City. The majority of students use their smartphones in the late afternoon or early evening, and some even use them at night. The majority of pupils utilize it at home. The results also imply that students are making the most of their smartphones to interact and socialize with their loved ones on Facebook and WhatsApp. As per the survey, one smartphone is available to each student. The results also show that the majority of them were utilizing smartphones at the time they started in their respective courses.

According to (Kreutzer, 2009) presents a pilot of usage patterns of cell phones among young people at a metropolitan school in Cape Town, South Africa's Samosa Machel neighbourhood. The students claim to use their phones extensively, to the exclusion of other, less accessible devices like desktop PCs.Significantly, the widespread use of mobile internet apps that students observed indicates that a large number of young urban South Africans may initially use the internet through their phones. The most popular uses on an average day were messaging services and websites

followed by personal communication and entertainment use which included music, images, and videos. Students spend money on cell phones.

(Zulkefly & Baharudin, 2009) Deals with mobile phone use among University Putra Malaysia also identified familial and personal variables associated with mobile phone use and the connection between student's psychological well-being and problematic mobile phone use. A survey discovered that students used their phones for an average of six hours per day. While female student's text more frequently than male students. Students from background higher-income families used their phones more frequently and for longer periods. Teenagers who use their phones more frequently. Students' mobile phone behaviour as well as the negative effects of heavy mobile phone use on their psychological health.

(Ogunyemi, 2010) Deals with the rate of usage the level of consumption and gender choices for the features on mobile phones and related satisfactions among teenage Africans in the UK.So it shows that young Africans have a strong sense of cell phone manners and typically minimize the obvious use of phone features. Teenage Africans also believe that using a cell phone for "emotional blackmail," "chewing out," and the rude, and that texting is a worthless means of expressing feelings like love they also believe that not owning a cell phone or having it stolen can cause one to feel excluded. African teenagers also employ video, gaming, and MP3 calls.

According to (Suleiman & Al, 2011) how beginners at Sultan Qaboos University currently use and study cell phones in the course of studying the English language their attitudes and behaviours, and the challenges in a classroom at Sultan Qaboos University. The survey's data shows that there is still little mobile phone use in classrooms and students enjoy using it. Students use their mobile devices for educational purposes and 31% of the subjects use their cell phones for English. Almost 3.2% of the subjects use text messaging daily, 2% have never used it, and nearly half of the subjects have written and sent text messages in English regularly.

(Behlol, 2013) Examine how mobile phones are used, why they are used, and how they affect students learning. This article enrolled the study of students at the University in the cities of Rawalpindi and Islamabad. So as per research students use their phones during lectures, interrupt the process of teaching and learning, waste time, and continue to message. Students are not aware of the laws that prohibit using mobile phones in the classroom. Students use their phones to text messages and make calls

during class. They are blind to the negative effects of phones, such as increased crime, less focus, health risks, and loss of their mental faculties.

(M & S, 2013) The study aims to investigate Chennai's youth and young adult population's usage patterns of mobile phones of first-year college students and higher secondary students, and 201 students were chosen using a random selection technique. There are signs suggesting that higher secondary and college students use their phones to maintain communication with friends and family. The majority of respondents stated that they are the owners of their phones and that they do not share phones also majority of parents had restrictions on their frequent messaging and late-night conversations concerning their adult children's mobile phone usage.

(Subba, et al., 2013) Deals with student’s who experience phantom ringing, ringxiety, and other perceived impacts, along with the usage patterns of cell phones among students of Southern India, at Mangalore, Kasturba Medical College. As per data Students used their phones in silent or vibrating modes in the evenings and at night. They also send out a lot of messages. Students' use of mobile phones negatively affected their sleep patterns, hindered their academic progress, and caused ringxiety. They also said that feeling stressed out if they lost connectivity.

(Akanferi, Azial, & Asampana, 2014)The study looked into how young adults in Ghana's public tertiary institutions used their phones. Young adults were found to use their phones more regularly for multimedia messaging, making and receiving calls, surfing the internet, talking on websites like WhatsApp, and listening to music and radio. Instead of using their phones for work- or school-related purposes, young adults utilize them for fun. The majority of respondents could survive without a cell phone, though the majority of them just use it for hobbies rather than for work or school-related purposes.

(Alfawareh & Jusoh, 2014) Study on smartphone usage patterns based on regular usage and for educational purposes among Saudi Arabian university students. So according to the results, the majority of pupils in Saudi Arabia utilized cell phones as digital cameras, computers with internet connections, and normal mobile phones. Most students have logged into their academic portal using a smartphone. Nevertheless, some also participants never used their cell phones to access Blackboard and never used their

smartphones to take notes in class. As per result, Saudi Arabian university students did not completely use smartphones for educational purposes.

(Chatterjee, 2014) Says today's lifestyle would not be the same without mobile phones. Even though mobile phones have many benefits, they also have drawbacks. The use of mobile phones varies by gender as well. This article focuses on how mobile phones affect society and how much of an impact phone have on people's lives and interpersonal interactions. So as a result, cell phones have a detrimental impact on society, increasing crime, diverting attention, and creating health-related issues. People now communicate more through text messages and mobile phones than in person, which has altered our social environment and altered how people connect so people are losing out on potential new social connections.

(North, Johnston, & Ophoff, 2014) The study investigates how South African University students use their mobile phones and their functions. This article focuses on students' mobile use and involves four primary categories: behavior-related difficulties, purchase factors, patterns of use, and motivations for using mobile phones. Students used their phones to socialize with friends and family. The majority of students used their phones for texting and calling. While buying a new mobile phone, women were far more interested in the brand and fashion than men. Most Studentsuse SMS and instant messaging while in class, never turn off their phones, and constantly check their phones for missed calls or texts.

(Rana, 2014) The article deals with how mobile devices increased the process of teaching and learning, so the author identified the kinds of learning activities that were made possible by mobile devices and evaluated the drawbacks of M-leaning at MRIU, Faridabad. Haryana, students, and members of the teaching staff were surveyed. Based on research majority said they used standard mobile learning apps, such as calls and texts. Some people didn’t use this app because their phones didn’t support them, while others didn’t know how to use them it was discovered that a large portion of the teaching staff misused their mobile phones since they were unaware of their capabilities.

(Halder, Halder, & Guha, 2015)Aims to find out whether students are happy with their studies and whether there are still notable disparities in their attitudes toward using mobile phones for educational purposes in various colleges related to the University of Calcutta. Students who have lived in rural areas all of their lives find it difficult getting used to new technology. From this survey, students of undergraduate

said that students studying in English have a friendlier attitude toward utilizing their phones for education than undergraduate students studying in Bengali. Additionally, students in remote areas are unaware of the advantage of electronic books and journals in modern higher education.

(Venkaraghavan, 2015)Aims to determine the extent of cyberbullying in Chennai that occurs using mobile devices, it also determines which cyberbullying is more common among these kids and why they either become bullies or victims in the world. As a result, United States Great Britain India had the highest rate of child cyberbullying instances out of 24 nations in 2014.According to survey research, around 70% of Indian tweens and teens spend more than five hours online in a typical week, on a smartphone. While a minority of participants acknowledged having personally encountered cyberbullying, a greater proportion reported knowing people who have fallen victim to this danger.

(Arora, Singh, & Taneja, 2016) Says in this article that college students make up a significant portion of the smartphone user base. So an analysis of college students' smartphone usage patterns is attempted in this research. A sample of 124 college and university students residing in Gurgaon was used for research. This article provides some facts regarding student’s smartphone addiction and usage patterns so based on research students enjoy their smartphones. Students are also more addicted to social media, games, and music people use their phones for calling. Compared to girls, boys are more likely to acquire new phones and download more apps.

(Sylvester, 2016) Study of mobile phone use and accessing Bangladesh, India, Indonesia (Java only), Pakistan, Sri Lanka, and Thailand with four groups of people: urban men, urban women, rural men, and rural women. According to research phone usage women utilize it more often. Men use it more for social networking and livelihood-related activities. For a study from Sri Lanka, language was a bigger problem than for those from Indonesia While some people in rural areas believed that possessing a cell phone elevated their social status, for the majority of people, carrying a mobile phone was a necessary aspect of modern life. Men and women used it as an alarm clock; rural residents found great use for phones with built-in flashlights; women with tiny children used it to play music to keep them occupied.

According to (Vaidya, Pathak, & Vaidya, 2016) face to face communication has decreased due to the use of mobile phones. People have been observed texting while

conversing with others. Even during periods students use their cell phones to play games, send messages and make calls. Pune City College youth, use the android operating system. Most youths use their phones more at night than in the morning it also discovered that students favor 3G phones. The Pune city youths use their mobile phones for internet browsing, making calls, and sending SMS messages activities it. Most males and females said that they need to use mobile as they are addicted and also experiencing network problems.

(Iqbal, Khan, & Malik, 2017) Surveyed the mobile phone ownership pattern and usage among 320 undergraduate students in Pakistan. This article aims to explore university students' impressions of this new learning technology and their potential for M-leaning. So majority of students faced problems with frequent changes and poor connectivity. Students are comfortable using Google and the internet for research on their mobile. They also frequently communicated via SMS, snapping images, setting alarms, and using calculators. Students said they had a favorable opinion of m-learning. Most students can afford the internet packages that mobile service providers provide.

According to (Prashanthi, 2017)teenagers use their mobile phones. Two hundred teenagers from various professional and non-professional colleges in Hyderabad. The majority of teenagers, according to the data, use their phones more for texting and chatting with classmates. Teenagers were found to use mobile phones often. Teenagers use their phones for a variety of purposes, including easy communication and entertainment. Adolescents were also found to use cell phones habituated. Also, teenagers spend most of their time on their phones.

(Deka , 2018)The study looks at how undergraduate students in Assam's Jorhat area use their cells. Information Students bought their mobile phones independently, pupils utilized them by their parents. Students found that use mobile phones for sending massaging and internet accessing. Also students use it for watching banking purposes access news and clock and alarm. The study's finding that "mobile phones interrupted the personnel time of the students". Students believe that using a phone interferes with spending time with their parents and other family members. But some students believe that having a cell phone does not negatively impact their relationships with their parents and relatives.

(Fernandez, 2018) Goal was to find out what the students in an educational district in the Eastern Cape Province of South Africa thought about the use of cell

phones in university classrooms. As per result the study students had positive attitudes on using cell phones during lectures in university classrooms .Usage of mobile both out and inside of the classroom has increased their passion to learn. Study shows that using a cell phone for educational purposes inspired students but most of the students are distracted by cell phones when they are used rarely by staff members, finally author says that students are sufficiently grown up to use this equipment correctly and to call "L" for learning rather than "D" for disaster.

(Thapa, Pokharel, Sagdel, & Rimal, 2018) Says that younger generation find mobile phones more attractive, and their increased use can have a number of negative impacts. The author's goal is to assess hoe medical students of Eastern Nepal utilized their phones in general, aged 18 to 25, who had used using mobile phones for more than a year. So according to the research large number of students use their phones regularly. The student's messaging behavior was less frequent than their phone calls. It was found that male and female students used cell phones in similar ways. The usage of mobile phones among students may be charging from habit to an addiction.

(Waral, 2018)Primary goals of this study are to determine the logic behind mobile device use and to highlight the issues of Kerala University engineering study. According to a researcher most students use their mobile device foe academic purpose, and they spend two to three hours can day on them. Students can participate in learning activities outside of the class with the help of mobile device. The survey made it clear that students use their mobile device for educational purpose. The students agree that they faced different problems of IT skills. The respondents said they used their mobile device for audio and video books, some respondents agreed that they used them to seek foe academic.

(Atas & Celik, 2019)Study was to describe the uses, trends, and contexts of smartphone use among university students in a developing nation.842 university students from 101 different universities participated in this study. This study shows the usage habits, most college students have been using their smartphones. Majority of students are talking and messaging on a smartphone followed by browsing the Internet and social media. Students primarily utilize their smartphones when they're bored, alone, sending emails or lecture notes connected to a course.

(Duddagi & Jadhav, 2019) A study was carried out in Dharwad in 2018–19 to investigate graduate students' use of mobile phones. The interview schedule, created for

survey regarding the family head's occupation, fifty percent of them were farmers and thirty-six percent worked for the government. Majority of the student's internet usage. most of the students Samsung and Redmi mobile brand While purchasing mobile majority purchase on their own decision some on their father decision and least was on their mother decision. Most of the students spent their time on mobile and use their phones more at night than in the morning.

(Sharma, et al., 2019) Examine the usage habits of mobile phones among second year MMBS students of Medical College in Jaipur, Rajasthan. It shows s almost 48% of students had downloaded medical apps on their smartphones. The study revealed that the most usage of mobile internet occurred at night with the least amount of use occurring in the morning. The majority In contrast to 35.82% of students who kept their phones ringing and 20.12% of students who kept them vibrating, 40.85% of medical students preferred to keep their phones silent in class. Male respondents, as well as female respondents, were using their phones for online shopping, indicating a shift in buying habits.

(Dzansi, Chipps, & Lartey, 2020) Dealing with the importance of the adoption of health, the use of mobile phones and the factors influencing their utilization have received the least attention. With help of Survey was carried out among HIV+ clients the majority of calls were voice calls, with text messaging and cellphone alarm features being utilized infrequently. The majority did not use the keeping-supporting mobile application. The use of mobile phone a test messaging, and voice calls was predicted by age and employment. We found that employment and younger age have an impact on mobile phone use. Knowledge are essential to the development of mobile phone literacy skills and ought to be included into mHealth interventions.

(Kumar V. , 2020) Deals with Advantages and disadvantages of mobile phone usage. So author says that these days, a cell phone is a need for daily living. When cell phone manufacturing first began, people only used their phones to make calls and send texts. However, as technology develops, mobile phone software and versions are likewise enhanced and updated. These days, cell phones are utilized for more than just making calls and sending texts—they are also utilized for playing games so many problems are created like crimes, loss of money health issues and waste of time but there are some People stay linked to each other because of mobile phones. Also useful in an emergency, education, entertainment, office work and net banking.

According to (Ongek & Onjoro, 2020) Kenya university students utilize their mobile phones and negative effects. Kenyan universities students most use smartphones for communication, social networking on sites like Facebook and Twitter, research and general studies, entertainment, and financial transactions, among other things. Study covered, greatly exceed any negative effects that may arise from a fixation with mobile phones like irritation, restlessness, and depression. As per research smartphone addiction among college students and impact of mobile technology on university students' academic performance.

(Rahim, Qutoshi, Abida, Muhammad, & Hussain, 2020) deals with availability of mobile phones, how they are used, and how they affect mountainous rural women in two districts—Hunza and Nagar—in Gilgit-Baltistan, Pakistan According to the finding's women in the districts of Hunza and Nagar have access to mobile phones. Most of the women reported using their phones for everyday duties. Mobile phones are used by rural Hunza and Nagar women for a variety of reasons, including communication, entertainment, security, and knowledge sharing. As a result of the region's female population lacks literacy, despite being able to use a cell phone for routine tasks like communication.

(Tikadar & Bhattacharya, 2020) Deals with 1711 students from 188 academic institutions across India provided behavioural data about their smartphone usage. As per survey in and out of the classroom, boys are more likely than female students to read the news and play games. Compared to college students, school students view live streaming and share media much more frequently, and college students use social networking and random activities much more frequently. Students using a calculator, social networking, educational websites, instant messaging, and date and time updates inside the classroom.

According to (Bera & Chatterjee, 2021)how higher secondary school students' choice of brands and mobile phone usage habits differ based on their gender and how mobile phone users perceive themselves. Majority of Students, both men's and women's use their phones for entertainment. They chose cheap cell phones with more intriguing features for gaming and cameras have different download preferences. Students do monthly recharge plan depended on their pocket money, the majority of students and also they has a smartphone with internet access. The majority of student utilized 500 MB to 1 GB of data every day. Over 70% of students spent four to eight hours a day on their mobile devices.

Aims to describe how University of Aveiro students in higher education institution often used mobile phones in the classroom. Research indicates that an extensive number of apps are utilized in the Department of communication and Art's theoretical classes, with social networks like Facebook and Instagram are mostly used. It also claims that during class, students frequently utilize their laptops and cellphones. Students mostly used their mobile for Academic purposes. Students using social networks rarely and also use their mobile apps in class daily.

According to (Siddiqi, Kamal, Moin, & Rafei, 2021) whole public now uses mobile phones more frequently than ever, although it's unclear how much more so among young people attending school. Author's goal was to find out how common it was for Omani primary and secondary school children to use and own mobile phones both during and after school. Although the fact that mobile phones are not allow in Omani school, the youth use mobile phones outside of the classroom has increased. While secondary students mostly utilized it for internet access and photo shooting, primary section children spent most of their time playing games and viewing videos.

(Kumar R. , 2023) This article aims to investigate how mobile phones are used by farmers in Haryana to obtain agricultural information and how farmers interact and communicate with one another across the nation. According to study majority of farmers have been using cell phones and they are all literate in Hindi. They use these devices to gather and share information about various aspects of agriculture. Farmers most frequently use government agriculture officers and extension, as well as private agricultural solutions helplines. Although the majority of farmers use the Kisan Suvidha Agriculture Mobile App, WhatsApp, and YouTube, they also face challenges and language barriers in the mobile network.

(Rao, Alwaali, Al-abdali, & Alshaaili, 2023) Article is to comprehend how Omani student's university students use their phones for personal, professional and other purposes. To explain the nature of student's mobile phone usage and its impact on them. This article also says that mobile phones are an evil and a blessing for the younger generation as, although they are great for entertainment and education, they also teach a lot of bad behaviors to those who use them. It is found that intensive usage of mobile effects mental and physical health like eyesight, neck and back pain. There is less consistency for mobile usage for playing games and social media is more than for studying.

2.2 Conclusion

It is clear from the above literature review that students are becoming more and more reliant on their phones. In some articles it shows that students utilize their more time on social media, listening music, games, messaging and calls. While many students utilize smartphones for academic purpose such as accessing educational portals and taking notes. Moreover, in some articles deals with issues such as cyberbullying, distraction in classrooms, addictions smartphones and health issues. In one of articles says that famers use their mobile phones for agriculture purpose. Overall the literature underscores the need for balanced approach to mobile phone usage, recognizing both its advantages and optional drawbacks, while also emphasizing the importance of future research to better understand its implication on various aspects of life.

There is no literature available on this topic also No research as focused to find out what is available in mobile phone for educational purpose and how much they read. So my project deals with to search for what purposes college students use their smartphones and how much time there are engage with their mobile for what purposes and also deals with educational purpose for searching individuals choices and inclinations when it comes to using library services, resources and facilities on mobile phone

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Chapter 3

Overview of Mobile Usage

3.0 Introduction

The computing devices that fit in the palm of your hand are called mobile devices; they are compact and comfortable to grasp and use. They have touch screens with digital keyboards and buttons, LCD flat screen interface, or traditional keyboards and buttons. “They can be readily linked to the internet via cellular networks, Bluetooth, WI-Fi, or near-field communication. Mobile devices come equipped with build-in cameras, digital media players, calling and receiving capabilities, video games, and GPS features. Typically the lithium battery provides power. Since 2010, sensors including in mobile device, enabling the detection of motion and orientation. The offer biometric user identification using techniques like fingerprint or facial recognition. (Ferenadez, 2018)

3.1 HISTORY

Since their invention, mobile phones have seen an amazing transformation. They started as big, useless gadgets but have now evolved into sleek, powerful machines that influence how we live daily lives. This journey begins in the late 20th century and highlights significant turning points and technological developments that have influenced the development of mobile phones.

Over many years, several people and organizations contributed to the idea of mobile phones and the creation of early prototypes. But Motorola typically gets the credit for being the first company to introduce a mobile phone that was made available for purchase.

Motorola engineer Martin Cooper made the first call from a handheld mobile phone in public in public in 1973. Using a Motorola DynaTAC (Dynamic Adaptive Total Area Coverage) 8000X prototype, Cooper called his rival, Joel Engel, at Bell Labs. This device had a talk time of about thirty minutes and weighed about 2.2 pounds (1kg). However, the DynaTAC 8000X wasn’t made commercially available until 1983. It was big and costly and mostly aimed at well-known companies with DynaTAC, Motorola led the way in the mobile phone industry, but other businesses and academics also made substantial contributions to mobile communication technologies. These include Bell

Labs, which created the concepts of the phone: Nokia, which rose to prominence in the mobile phone industry and a host of other businesses that over time helped to drive the development of mobile technology Although the idea of mobile communication dates back to the late 1800s, the modern era saw the start of the development of mobile phones. (Lynn, 2016)

Late 19th -early 20th centuries: The origins of wireless communication can be traced to radio technology pioneers such as Guglielmo Marconi and Nikola Tesla. Even though these early devices weren't mobile phones, they did establish the foundation for wireless communication.

(1920-1940s): Voice communication over radio waves was made possible in the early 20th century through radio telephony experiments, but the main application for these systems was in stationary environments, like ships and cars with radio transceivers.

(1970s-1080s): The first generation in the 1970s and 1980s saw the emergence of the first real mobile phone systems. The launch of Bell Labs' advanced mobile phone system (AMPS) in the US was one noteworthy development. When the Motorola DynaTAC 8000x was introduced to the market in 1983, it was among the first mobile phones to be sold commercially.

(1980s): Analogy mobile networks, voice calls could be made on early mobile phone systems using analogy technology, but their coverage and capacity were constrained. The groundwork for later digital mobile networks was established by these systems.

(1990s): The digital revolution a breakthrough in mobile technology was brought about by the advent of digital mobile networks in the 1990s.text messaging and other new features were supported but digital systems like global system for mobile communication and code division multiple access also provided better voice quality and increased security.

(2000s-present): Smartphones, which blend computing power and mobile phone functionally, became popular in the 21st century. Smartphones such as Apple's 2007 release of the iPhone helped to popularize the internet connectivity app ecosystem and touchscreen interface on portable electronics. Later developments in smartphone technology brought about features like integrated artificial intelligence, augmented reality, and high-quality cameras. (Lynn, 2016)

3.2 Evolution of mobile phones

Over time, mobile phones have evolved from being large, heavy gadgets to being thin, feature-rich smartphones. Here is a quick account of this development, highlighting key significant models along the way:

The 1993 Motorola DynaTAC 8000X

Often regarded as the original mobile phone to the sold commercially and weighed roughly 2.2 pounds and had a half-hour speaking time.

1982's Nokia Mobira Senator

Using the Nordic Mobile Telephone network, this is one of the original mobile phones from Nokia.

Nokia 3310 (2000)

A popular cell phone with long battery life and known for strength included the vintage snake game.

The 1996 Motorola StarTAC

Among the original flip phones or flip phones. Regarded as a fashionable and reasonably sized smartphone at the period.

1998's Nokia 5110

Made interchangeable front faces more common. Included the well-known game Snake.

1999's Nokia 3210

The built-in radio was introduced. Well-known for its small size and reversible covers.

1999's Ericsson T28

Among the first cell phones that included a lithium-polymer battery inside. Regarded as a small, light gadget.

1999's Nokia 8210

Reduced weight and size than the previous models were introduced including a wireless data transfer light socket.

2003's Nokia 6600

One of the first Symbian-powered cell phones included a camera and color display.

The 2004 Motorola Razr V3

Become a recognizable, thin-design flip phone that included a camera and a color display.

BlackBerry 8700 (2005)

Expanded the use of email on mobile devices and had a real QWERTY keyboard. **Apple iPhone (2007)**

Created a completed touchscreen interface that revolutionized the industry and presented the idea of an app store.

(2010) Samsung Galaxy S

Announced the arrival of an Android mobile device and a huge colorful show.

(2010) iPhone 4

Launched the high-pixel-density Retina display had a front and back made of glass.

Samsung Galaxy Note (2011)

Made the idea of a “phablet” with a bigger display more widely known contained an S-pen stylus.

(2012) iPhone 5

Added a lightning connector and a bigger 4-inch display.2014 Samsung S5

Included production against dust and water and had a sensor for fingerprints.

2014 iPhone 6

Introduced the iPhone 6 and 6 plus, which featured greater screen sizes.

Samsung Galaxy S7 (2016)

Included a display with a curved edge and enhanced waterproofing and camera a

2017's iPhone X

Introduced the super Retina display, which is edge-to-edge replaced the home button with Face ID.

2020 Samsung Galaxy S20

Had 5G connectivity and a fast refresh rate display. Sophisticated camera features.

2020's iPhone 12

Rolled-out 5G connectivity for the whole iPhone range included a front cover with a Ceramic shield for increased durability.

Phones that fold, like the Samsung Galaxy Z Fold 3, 2021

Reflect a current trend in the design of mobile phones that use foldable screens.

(Lynn, 2016)

3.4 Features of Mobile device

Due to its significant impact on social and academic life, mobile devices have become an essential aspect of modern life in the age of electronic devices. Any handheld computer or smartphone that is used for communication and information storage is referred to as a mobile device in general. The following are a few features of mobile devices.

Mobility

One of the key features of mobile devices is portability. They are mobile and can move from one location to another. Mobile devices feature rechargeable batteries that can for several hours as well as external power sources or chargers to help with their freedom of movement information can be entered using physical or on-screen on mobile devices.

Accommodation Dimension and Mass

The majority of adult's hands and pockets can accommodate mobile devices, which can also slide or fold a small, portable mode to somewhat larger size. They have suitable screens, keyboards and features to keep them compact.

Wireless transmission

The annoyance of using cable connections for communication can be avoided with mobile devices. The advancement of Wi-Fi connections has made Bluetooth communication easier and faster than it was previously users of wireless data networks have instantaneous access to communication and information sharing capabilities. Interaction with Co-workers, friends and family.

These days, mobile gadgets play a significant role in human connections by enabling people to communication across time, space, and location. They help us maintain

enduring relationships with friends, provided for our families and stay in touch with co-workers. Human relations brought initials together under one roof through mobile gadgets.

Continuous web Access

The fact that you may access any information at any with a mobile device is quite remarkable. We can stay connect and participate in the world wide web around-the-clock thanks to mobile smarthphones.Individual can access the internet and perform tasks based on their convenience with the use of mobile devices. (Galazzo, 2020)

3.5 Types of mobile device

There are many different types of mobile devices; however, the following are the most popular ones:

Mobile phones: In many nations, cell phones have supplanted desktop computers as the most popular computing device due to their lightning-fast 4G connectivity and desktop PC-caliber processing capability. There is little that a Smartphone cannot accomplish, thanks to features like email, internet access, and access to hundreds of thousands of apps.

Tablets: Consider a tablet to be a bigger version of a smartphone. Now that laptops and tablets have attractive add-ons like case/keyboard combinations and excellent app support, the distinction between the two has finally become less clear.

Laptops: Given the competition from tablets and smartphones, modern laptops are incredibly thin, light, and powerful. Their capacity to run entire desktop OS, including Windows and macOS, is advantageous.

Smartwatch: These little gadgets are tiny computers that are worn on the wrist. They provide a solitary experience and are commonly regarded as smartphone companions that provide easy-to-access notifications and fast-glancing info.

The distinctions between the aforementioned categories are getting increasingly hazy as mobile devices continue to advance at a breakneck rate. Given that a lot of consumers and professionals now use smartphones and tablets as their primary computing tools, laptops appear to be the largest casualty. (cooper & Harris, 2019)

3.6 Infrastructure

The ability to reuse frequencies to enable several simultaneous phone conversations within a service region is a key feature of modern cellular networks over their predecessors. This makes it possible to communicate simultaneously with thousands of users within a specific geographic area and makes effective use of the restricted radio spectrum allotted to mobile services. Cell towers, which are positioned to provide coverage over a telephone service area that is separated into "cells," are used by mobile phones to communicate. Every cell operates on a distinct frequency spectrum from its nearby cells and is usually serviced by three towers positioned at various angles. Typically, wired connections are used to link cell towers to the internet, phone networks, and one another.

Each cell has a limiting capacity for the number of phones it can handle at once due to bandwidth restrictions. As a result, the size of the cells is determined by the anticipated consumption density and may be significantly smaller in urban areas. In that scenario, broadcasting outside of the cell is prevented by using far lower transmitter powers. All aspects of the call are managed by automation that is embedded in both the customer's handset and the base stations. This includes identifying whether a handset is in the service area, temporarily allocating a channel to a handset that is making a call, interacting with the landline side of the network to establish connections with other subscribers, and gathering billing data for the service.

Automation systems provide the ability to manage the "handoff" of a customer's handset as it moves from one cell to another, allowing uninterrupted calls and channel changes as needed. In contrast, all control was done manually in the first mobile phone systems; the user would look for an empty channel and talk with a mobile operator to request that a call be connected. To accommodate the high traffic, multiple towers might be erected in the same place but on different frequencies. This can be carried out temporarily or permanently, for instance, on important events or in case of an emergency. A car outfitted with gear from cell phone companies will host the atypically heavy traffic. Capacity increased dramatically and introduced digital networks. When employing digital, many calls can be supported simultaneously on a single frequently, short-range Wi-Fi infrastructure is widely used by cell phones to forward traffic from mobile networks to local area networks.

The operating system, software, hardware (CPU, memory, display), and connectivity modules (Wi-Fi, cellular) make up a mobile device's infrastructure. Functionality is further enhanced by sensors such as GPS and accelerometers and the entire infrastructure is completed with networking choices, security measures, and battery. (Martin, 2011)

3.7 Mobility

Because they are lightweight and tiny, mobile device are easy for users to carry. Users that are mobile can access information and do tasks while on the go.

Wireless communication

Numerous wireless communication technologies including cellular networks, Bluetooth, and Wi-Fi are built into mobile devices. Users may interact wirelessly, access the internet, and share data with order devices thanks to this connectivity.

Interface for touchscreen

With the touchscreen interfaces found on many mobile devices, users can interact with the device by pinching, swiping, and tapping. Touch screen improves navigational ease of use and user experience.

System operating Environment

Specialized operating systems optimized for efficiency and touch-based interaction power mobile devices. Examples are Android, Windows Mobile, and iOS.

Stores for application

Applications (apps) are essential to mobile devices for a range of features and services. App stores offer users a way to download and set up applications.

Multifunctionality

Mobile gadgets combine the functionality of media players, phones, cameras, navigational aids, and more. It is not necessary to carry devices thanks to it multifunctionality.

Sensations

Many sensors, including GPS, gyroscope, accelerometers, and ambient light sensors are built into mobile devices. Features like screen rotation, motion detection, position tracking, and ambient light adjustment are made possible by these sensors.

Powered by batteries

Rechargeable batteries supply the energy required for mobile devices to function. Improvements in energy efficiency are made and battery life is an important factor.

Integration of cameras

A built-in camera on the majority of mobile devices allows for the capture of images and videos. The functions and quality of cameras vary and some gadgets are sophisticated of image age capabilities.

Integration of cloud

Cloud services and mobile devices are frequently integrated for data synchronization backup and storage. Users can now easily access their info on several devices thanks to this.

Features of security

Passcodes, biometric authentication (facial recognition, fingerprint authentication), and encryption are some of the security features that mobile devices use to safeguard users' data.

Constant connectivity

Mobile devices allow users to stay connected to the internet and communication networks are designed for constant networks.

Personalization

Users can alter the look and feel of their mobile device by configuring the app's themes and wallpapers.

Continual updates

Updates are often released for mobile operating systems and applications to enhance their performance, security, and functionality. (H, 2016)

3.8 Sales of mobile phone

Global events, consumer preferences, economic conditions, and technological advancements are some of the factors that impact mobile phone sales. It is advised to review the most recent reports from market research companies, trade journals, and mobile phone manufacturers' financial reports for the most recent data on sales.

Major Smartphone manufacturers, including Samsung, Apple, Huawei, and others, usually release quarterly and annual financial reports that include sales data. Reports on regional and worldwide smartphone market trends are also released by market research companies like IDC, Gartner, and Counterpoint Research. These reports offer information on sales numbers, market shares, and new trends. Check out recent industry reports, the financial statements of mobile phone manufacturers, and reputable news sources covering the technology market to obtain the most recent data on mobile phone sales. (Rouse, 2022)

3.9 Lifespan

The lifespan of a mobile phone can change depending on things like usage habits, new technology, and the specifics of each device. There are two main factors to take into account when talking about how long a mobile phone will last**:**

1. Strength of Function:

Hardware Durability: A mobile phone's external parts, such as its battery, display, and internal parts, all play a role in how durable it is overall. Phones that are well-made and have high-quality components may last longer**.**

Software Support: The functional lifespan is greatly impacted by the manufacturer's availability of software updates and support. Updates from manufacturers usually last for a specific amount of time, after which the software and security of the device may become antiquated.

2. Obsolescence of Technology: Mobile technology is developing so quickly that devices may become outdated sooner than their hardware would indicate. More processing power and capabilities may be needed for newer apps and features than older devices can offer.

The following are some important variables that affect a mobile phone's lifespan:

Battery Health: The battery is an essential part that progressively loses quality with time. A battery's capacity reduces after a certain number of charge cycles, which has an impact on the device's overall functionality.

Software Updates: Consistent software updates improve security and performance in addition to introducing new features. Nevertheless, after a while, older devices might

no longer receive updates, which leaves them open to security threats. **Manufacturer Support:** The length of software updates and support varies depending on the manufacturer. Certain companies offer updates for a more extended period than others.

User Behaviour: A phone's lifespan is also influenced by the way its owner uses it. Accidents that cause physical harm include falls and wet exposure. Furthermore, overcharging the battery or continuously using resource-intensive apps may shorten the device's lifespan.

Technological Department: As newer technologies appear, older devices might not be able to run the newest applications or utilize the most advanced capabilities. Some consumers may use their phones for longer periods than others, but some replace their phones every few years to keep up with technological advancements. It's important to note that some producers and consumers are putting more emphasis on sustainability, promoting longer device lifespans through repair ability and appropriate disposal methods.

Mobile internet technology

The infrastructure, protocols, and technologies that enable internet connectivity on mobile devices, like smartphones and tablets, are collectively referred to as mobile internet technology. It has completely changed how people engage with one another, with information, and with services. The following are essential elements and facets of mobile internet technology: (H, 2016)

3.10 Mobile system

Mobile networks have developed over the course of several generation, each of which brought advance in terms of speed, capacity and capabilities (2g, 3G, 4G and 5G). The newest generation, 5G offers lower latency, quicker data transfer rates and more device connection as the cut-off date in January 2022.

Mobile Equipment

Smartphones and tablets: These gadgets come with built-in wireless like Bluetooth, WI-Fi, and cellular data, which let users connect to the internet in a number of ways.

Modems and hotspots: Devices without integrated wireless capabilities can connect to the internet via external device such as USB modern, mobile hotspots and portable Wi-Fi routers.

Wireless Networks

LTE (long-team Evolution): Also known as 4G LTE, this technology gives mobile devices high-speed wireless connection. Globally, LTE is now the norm for $G networks.

5G: The goal of the fifth generation of mobile networks, or 5G, is to accommodate a large number of connected devices at once with lower latency, higher data transfer speeds and more capacity.

Operating systems for Mobile device

Apple Inc. Developed iOS (apple) for its line mobile device.

Google's Android is an open-source mobile operating system that is utilized by a number of manufacturers.

Others included BlackBerry OS and windows mobile, albeit less frequently in recent years. (Ongek & Onjoro, 2020)

3.11 Mobile apps and browsers

Mobile Browsers: Users can access websites and web-based services with mobile browsers, which are designed for smaller screens.

Mobile Apps: From social media and news to productivity and entertainment, native and third-party mobile apps offer a more specialized and effective way to access online services.

Data Connectivity: Mobile broadband, made possible by data plans from mobile carriers, allows mobile devices to connect to the internet. Customers must pay for the data they use, which covers streaming, browsing, and using apps.

Wi-Fi-Mobile device can also access the internet through Wi-Fi networks, which in some places might be faster and more affordable.

Wi-Fi: Mobile devices can also access the internet through Wi-Fi networks, which in some places might be faster and more affordable.

3.12 Standards for mobile internet

The core set of protocols that allow for internet-based communication, including mobile network communication, is known as TCP/IP (Transmission control protocol/Internet Protocol.

Hypertext Transfer protocol/HTTPS (HTTP/HTTPS): protocol that are used to send online content across the internet.

Web Guidelines: Web standards are followed by browsers, guaranteeing consistent functionality and rendering on various devices.

Services Based on location

GPS and location service: The Global positioning system is frequently built into mobile devices to track their location. Applications such as mapping, navigation, and local recommendations are made possible by location-based services using this information.

PS and Location Services: The Global Positioning System (GPS) is frequently built into mobile devices to track their location. Applications such as mapping, navigation, and local recommendations are made possible by location-based services (LBS) using this information. (Rana, 2014)

3.13 Mobile Safety

Encryption: To secure data transmission, especially in sensitive activities like online banking and e-commerce, mobile internet technology uses encryption protocols. **Authentication:** To provide safe access, mobile devices frequently employ passwords, PINs, fingerprints, or facial recognition technology**.**

Cloud storage and computing

Cloud service: Users can effortlessly access their data and services from multiple devices thanks to mobile internet technology, which uses cloud computing for processing and storage.

Fifth Generation G is the newest advancement in mobile Internet technology, with lower latency, faster speeds, and more capacity. It makes new applications possible, such as the Internet of Things, augmented reality, and virtual reality.

The field of mobile internet technology is characterized by constant progress towards improving its speed, dependability, and functionalities. It is anticipated that technology

will continue to advance and impact a wide range of industries and day-to-day activities. (H, 2016)

3.14 Mobile application

App Ecosystem: A wide range of services, games, productivity tools and other content are provided by the numerous application (apps) that power the mobile internet.

App stores: Websites such as the Google Play store and Apple App store make it easier to download and set up mobile application.

Use of mobile Internet

Browsing: Users can access websites and online material with mobile browsers.

Streaming: Media content such as music and videos can be accessed by mobile users.

Social media: A lot of people use smartphone apps for Facebook, Instgram, Twitter and other platforms. (Rouse, 2022)

3.15 Types of mobile apps

Many different kinds of mobile apps fulfill different needs and accomplish different tasks. These are a few typical categories of mobile apps:

Apps for Social Media

Facebook, Instagram, Twitter, and LinkedIn are a few examples of goals to stay current on social networks, share content, and engage with others.

Application for messaging

Examples included Telegram, Snapchat, WhatsApp, and Messenger to enable text, voice, and video messaging in real-time

Apps for entertainment

Examples are TikTok, Spotify, Netflix, and YouTube is the goal of offering short-form, music, and video streaming services.

Apps for Gaming

Examples are Us, PUGB mobile, and Candy Crush goal is to provide engaging and entertaining mobile games for users to enjoy.

Apps for productivity

Ever note, Google Workspace and Microsoft Office Suite are a few examples to help users manage paperwork, keep tasks in order, and become more productive overall.

Apps for Fitness and Health

Examples are Headspace, Myfitnesspal, and Fitbit which measure physical activity, keep an eye on health indicators, and offer wellness tools.

Apps for Travel

Examples are Airbnb, Uber, and Google Maps help users arrange to make hotel transportation reservations and navigate.

Apps for Magazines and news

Examples include the New York Times, Filip Board, and BBC News, delivering news stories, information, and multimedia from multiple sources is the goal.

Apps for Finance

Examples are Robin Hood, mint, and PayPal track spending, handle personal finances, and carry out financial transactions.

E-commerce and shopping apps

Examples are Shopify, eBay, and Amazon to make secure transactions, product discovery, and online shopping easier.

Apps for Education

Examples are Quizlet, Khan Academy, and Duolingo promote learning and skill development with interactive courses, tests, and materials.

Apps for utilities

Examples include calculators, QR code scanners, and flashlight apps that offer features and tools that fulfill particular utility requirements.

Apps for the weather

Examples include Dark Sky, AccuWeather, and the weather channel to provide weather updates and forecasts in real-time.

Apps for cameras and photo editing

Examples of applications with this function include Instagram, VSCO, and Adobe Lightroom.

Apps for Navigation

Examples are Apple Maps, Google Maps, and Waze to offer traffic information, route planning, and navigation.

Apps for communication

Examples are Microsoft Teams, Skype and Zoom enable remote communication by utilizing collaboration tools and video conferencing.

Apps for Augmented Reality

Examples include IKEA, Snapchat, and Pokémon Go use AR technology to incorporate digital components into the physical world. (oksman, 2010)

3.16 Internet of Things Application

Examples include wearable apps and smart home control apps that link and manage Internet of Things (IoT) capable gadgets for home automation and tracking personal health.

These categories highlight the variety of mobile applications, each of which fulfills a distinct purpose and improves several user experiences. The world of mobile apps is always changing with new features and innovations appearing regularly.

Mobile security

Mobile security is the protection of mobile devices, data, and networks against various threats, vulnerabilities, and attacks. With the widespread use of smartphones and tablets for both personal and business purposes, ensuring mobile security is critical to protecting sensitive information and maintaining privacy. Here are some key features of mobile security:

Device security

Screen Lock: To prevent unauthorized access, lock your device with a strong passcode, pattern, PIN, or biometric authentication (for example, fingerprint or facial recognition)

Device Encryption: To protect the data stored on your device. This prevents unauthorized users from accessing your data, even if they gain physical access to your device.

Remote wipe: Use remote wipe abilities to erase data from a lost device, ensuring that sensitive information does not fall into the wrong hands.

Network Security

Secure Wi-Fi connections: Avoid connecting to unsecured Wi-Fi networks, especially public hotspots, as they may be compromised by an attacker. Use virtual private network services to encrypt your internet traffic when using public Wi-Fi.

Mobile Data Encryption: To prevent eavesdropping and ma-in-the-middle attacks, use encryption protocols such as SSL/TLS for secure communication over cellular data networks.

Bluetooth and NFC security: turn off both tooth and NFC when not in use to prevent unauthorized painting or data transfer with another device.

Application security

App permission: Before installing apps, review their permission and grant only those that are necessary to limit access to sensitive data and device functions.

Download Apps from Trusted Sources: To reduce the risk of installing malicious apps, only download apps from official app stores such as Google Play or the Apple app store

Keep Apps updated: Install updates regularly to patch security vulnerabilities and ensure that your apps are running the most recent, sure versions. (Fernandez, 2018)

3.17 Data security

Data Backup: Back up your mobile device's data regularly to secure cloud services or external storage to avoid data loss in the event of theft, damage, or malfunction.

Data encryption: To prevent unauthorized access, encrypt sensitive data stored on your device such as photos, documents, and passwords.

Security Awareness: Phishing Awareness be wary of phishing attracts via email, text messages or social media on your mobile device. Avoid clicking on suspicious links or sharing personal information with unknown sources.

Information with unknown sources: Install reputable mobile security software (antivirus, anti-malware) to detect and protect your device from malicious apps, viruses, and other threats.

Security Audits: Review your device's settings, installed apps, and security configurations regularly to basis to identify and address any security flaws or vulnerabilities. (Chatterjee, 2014)

3.18 Advantages

People use their mobile phones for several things, including communicating with loved ones, doing business, and having a phone nearby in case of emergency. Some people carry multiple cell phones, perhaps one for work and one for personal use. You can utilize more than one SIM card to benefit from various calling plans. For instance, a specific plan may offer less expensive roaming, long-distance, international, and local calls. So Because of their portability and versatility, mobile devices have become an essential part of our everyday lives. Here are some typical applications for mobile devices:

Communication: We can stay in touch using a variety of channels on our mobile devices, including calls, texts, emails, and instant messaging apps. They make it possible to communicate in real-time wherever you are.

Internet access: We can access the internet while we're on the go thanks to mobile devices. This includes using social media and websites to browse, shop online, get information, and keep up with news and current affairs.

Digital Media Use: By acting as portable multimedia centres, mobile devices let us view images and other multimedia content in addition to playing videos, music, podcasts, and audiobooks.

Productivity: Calendars, task managers, document editors, notes, and reminders are just a few of the many productivity tools that come pre-installed on mobile devices. They let us plan our days, set up assignments, and work while we're on the go.

Entertainment: A wide range of entertainment options are available on mobile devices, such as games, e-books, digital magazines, and streaming services for movies and TV shows. No matter where we are, they act as entertainment hubs.

Navigation: Whether we're driving, walking, or taking public transportation, mobile device's GPS capabilities and navigation apps make it easier for us to find our way around, find places of interest, and navigate foreign territories.

Health and Fitness: Mobile devices can monitor health metrics, track fitness activities, and give users access to apps, services, and health information. They let users monitor their progress toward fitness objectives and keep up a healthy lifestyle.

Control Smart Home Devices: A wide range of mobile devices can be used to operate smart home appliances, lights, security cameras, and thermostats. They provide ease of use and remote control over linked devices.

Education: With the availability of educational apps, e-learning sites, digital textbooks, and online courses, mobile devices are being utilized for educational purposes more and more. They make learning easier everywhere and at any time.

Mobile Payments: Users can safely use their smartphones to make payments at physical stores, online, and between peers by using mobile devices that support mobile payment services like Apple Pay, Google Pay, and Samsung Pay. (C & B, 2009)

3.19 Disadvantages

Mobile devices have many advantages, but they also have some drawbacks.

Health Issues: Overuse of mobile devices, particularly tablets, and smartphones, can result in repetitive strain injuries in the hands, eyestrain, and neck strain (text neck). Long-term blue light from screens can cause eye fatigue and interfere with sleep cycles.

Addiction and Distraction. Mobile devices have the potential to be extremely addictive, which can result in compulsive behaviors that affect relationships, mental health, and productivity, such as checking social media feeds, notifications, or gaming all the time. Overuse of screens has been linked to attention problems, poor academic performance, and social disengagement, especially in kids and teenagers.

Risks to privacy and security: Mobile devices are vulnerable to hacking, data breaches, and privacy violations because they store a lot of personal data, such as

contacts, messages, photos, and browsing history. Malware, scams, and harmful applications can jeopardize the device's security and data integrity.

Communication and Social Difficulties: While mobile devices make social interaction and communication easier, they can also make people feel lonely because digital communication may take the place of in-person interactions. Because text-based communication lacks the subtleties of tone, body language, and facial expressions, miscommunication, and misunderstandings can happen.

Physical Risks to Safety: Using a mobile device while operating a vehicle, walking, or performing other tasks can be distracting and raise the possibility of collisions, and injuries. Distracted walking, such as texting while walking, has increased the frequency of pedestrian accidents in recent years.

Reliance on Technology: An increasing dependence on mobile devices for activities like banking, entertainment, navigation, and communication can result in the loss of traditional skills and independence, In the event of device malfunction, loss or low battery users might feel anxious or difficult to carry out daily tasks.

Effect on the Environment: Mobile device manufacturing, use, and disposal all contribute to environmental pollution and electronic waste (e-waste) because they require energy consumption, raw materials extraction, and inappropriate disposal techniques.

Even though mobile devices are incredibly convenient and connected, it’s important to be aware of any potential risks and use them sensibly to reduce adverse effects on the environment, safety, privacy, and health. (Behlol, 2013)

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Chapter 4

Data analysis and interpretation

4.0 Introduction

This chapter deals with the analysis and interpretation part. To know about the usage of mobile phone among students. Data was collected by using tabular, percentage and graphical representation.

4.1 Gender wise distribution of Respondents

GENDER	FREQUENCY	PRECENTAGE
Male	23	22%
Female	82	78%
Total	105	100%

Table No: 1

The survey was conducted by taking 105 students as sample size to complete my research work. It can be easily understood from above table that 22% are male studentsand 78% are female students. Out of 105 students 23 are male respondent and 82 are female respondent. Female respondent replied in a majority as compared to male respondent.

4.2 Age Group

Figure No 1: The analysis for age group distribution is shown in figure

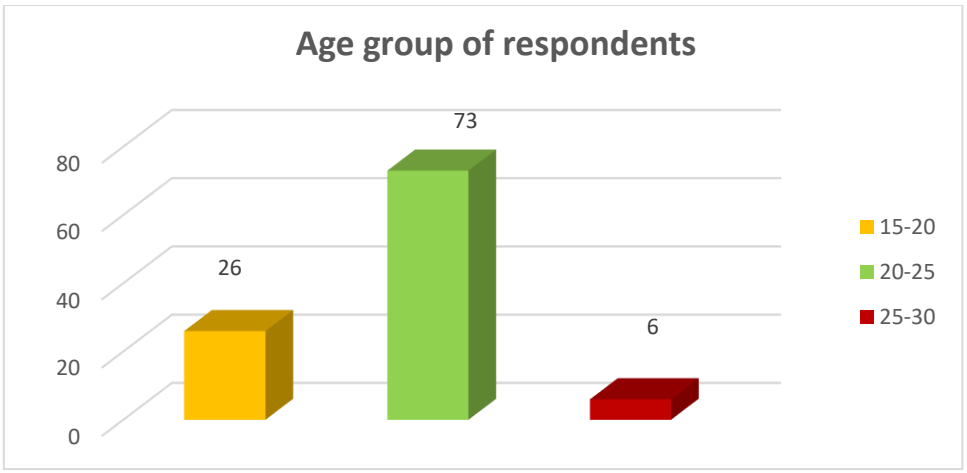

Figure No: 1

Above figure 2ahows age wise profile of the total sample.it shows that out 105 students,26 of the respondent falls into the age group of 15-20,73 belongs to age group20-25,6 students fall into the age group of 25-30. It can be clearly confirmed that half of students of college fall into age group of 20-30

4.3 Stream

Figure No 2: The analysis for stream wise distribution of study is shown in figure

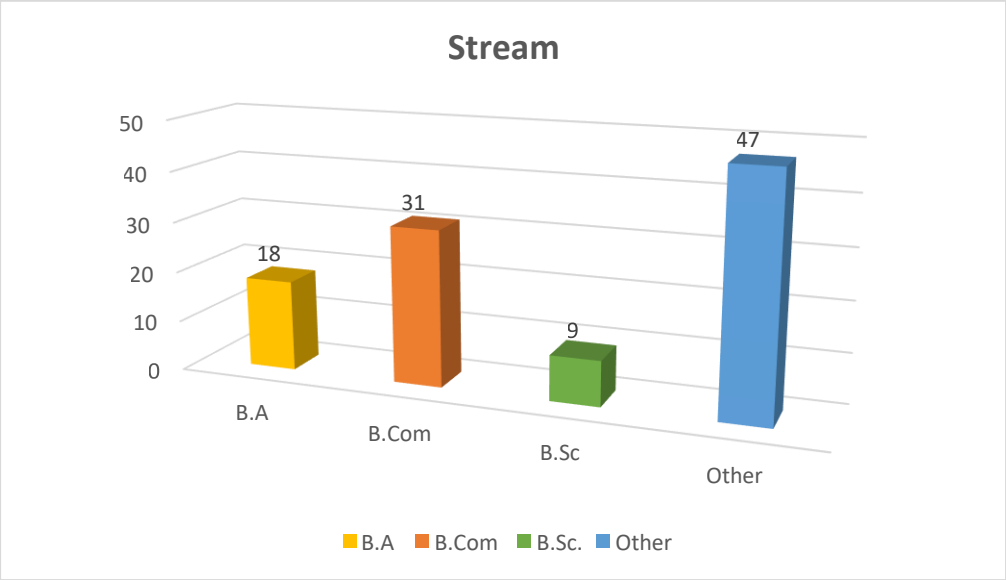

Figure No: 2

Above figure 3 shows stream wise distribution, consist of three steams and other streams. From B.A 18 students have responded. From B.com 31 students have responded. From B.Sc. 9 students have respondent and from other streams 47 studentshave responded. While majority of respondent are from other streams.

4.4 Brand

Figure No 3: The analysis for brand wise Distribution of mobile device is shown

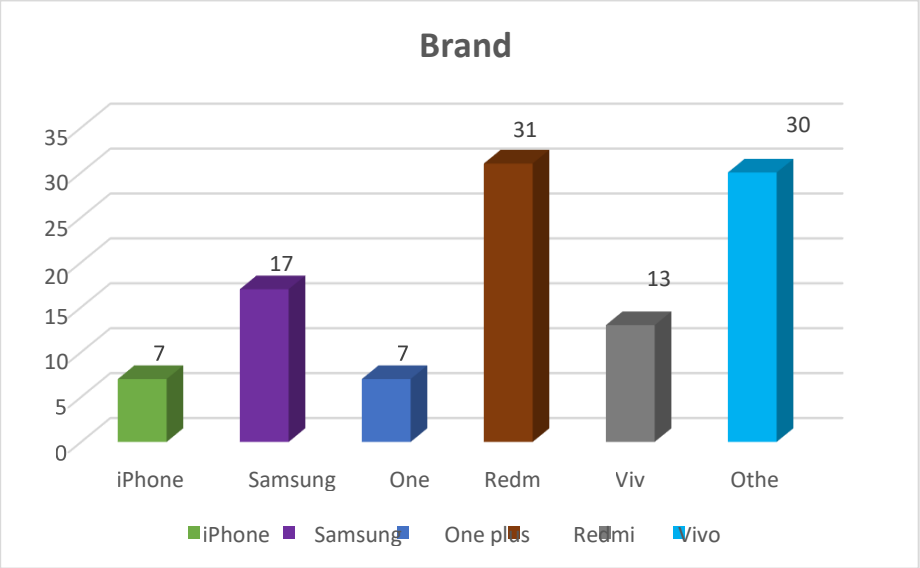

Figure No: 3

Above figure 4 shows brand wise distribution of mobile device. Majority 31 of the respondents use Redmi brand of mobile device. Followed by 17 of the respondent use Samsung brands of mobile device, whereas 13 of the respondents use vivo brand of mobile device, 7 of the respondents iPhone brand and also 7 of the respondent use oneplus brand of the mobile device. And remaining of the respondent using other brand ofthe mobile phone then what is there in option.

4.5 Age

Figure No 4: Analysis the age distribution as per what age mobile phone had brought

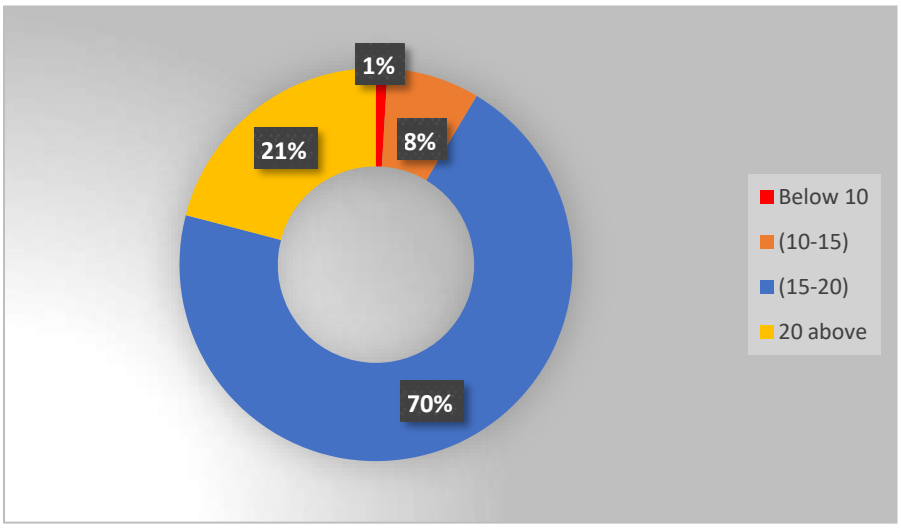

Figure No: 4

Above figure 4 shows that at what age students brought the mobile phone. It shows thatout of 105 students, 21% of students brought their phone at age of above 20.70% of students brought their phone at age between 12-20, whereas 8% of students brought their phone at age between 10-15, followed by 1% of student brought their phone at ageof below 10. It is clearly confirmed that 70% of students brought their mobile phone atage between15-20.

4.6 Purchased

Figure No 5: Analysis who had purchased mobile phone

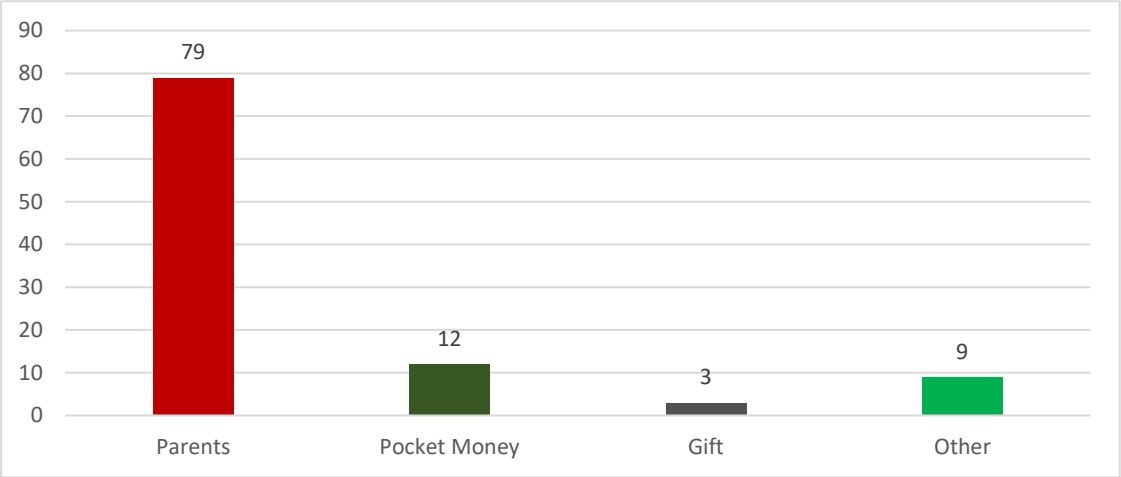

Figure No: 6

Analysis of the data shows that who had purchased mobile for you. From the above figure 7 it can be easily understood that majority of the 79 students purchased mobile from their parents, 12 students purchased mobile from their pocket money, 3 students had given as gift and 9 students had given by others.

4.7 Time spend on mobile device

Figure No: 6 analysis the how long spend time on mobile device

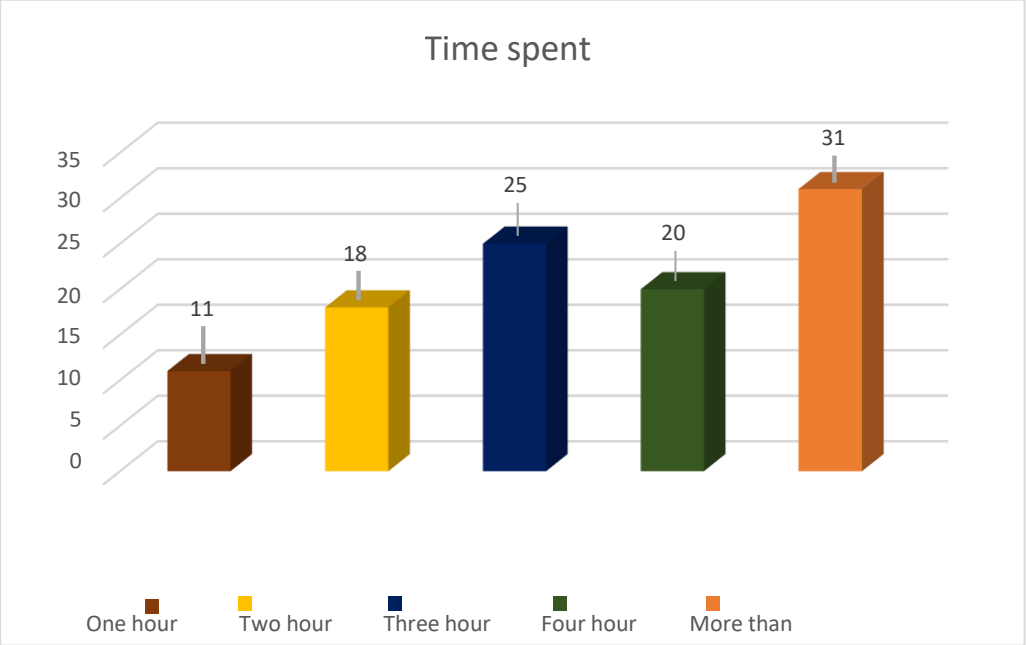

Figure No: 6

In this study respondents were asked how long you spent on mobile device. The abovefigure explains that majority more than four hours 31 respondent spent their time on mobile phone, followed by four-hour 20 respondent spent time on mobile phone, whereas three-hour 25 respondent spent their time on mobile, followed by two-hour 18respondent spent their time on mobile phone, whereas one hour 11 respondents spent their time one mobile device. So, majority of the students spent their time on mobile phone more than four hours.

4.8 Purpose of using mobile and how long it is use

Table No 2: analysis purpose of using and how long it is use

Purpose of mobile phone	Less than 12 minutes	15-30	30-45	1 hour	More than 1 hour
Communication	34%	34%	14%	5%	12%
Social media	13%	31%	12%	18%	26%
Entertainment	14%	26%	19%	11%	30%
Phone calls	43%	35%	7%	8%	6%
Reading for Educational purpose	15%	35%	21%	17%	15%
Testing messages	32%	28%	18%	10%	12%

Table No: 2

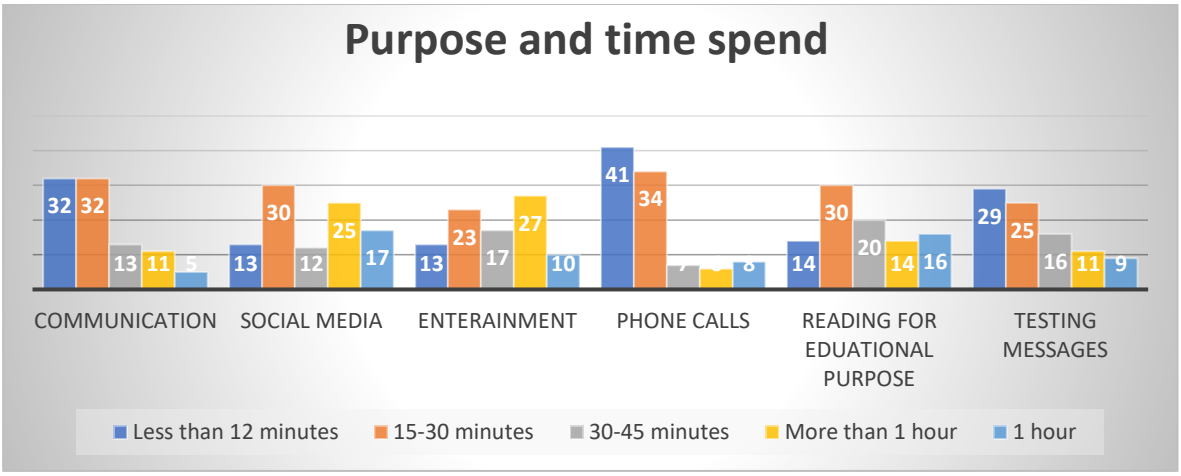

Figure No: 7

The data shows how respondent use their phones differently based on how long they use them. In durations less than 12 minutes, communication and phone calls dominate,with 34% and 43% respectively, followed by testing messages at 32%. As the usage time extends to 15-30 minutes, social media engagement rises significantly to 31%, while phone calls decrease slightly to 35%. Between 30-45 minutes, communication decreases to 14%, and phone calls drop to 7%, with a slight increase in reading for educational purposes to 21%. Moving to 1-hour usage, social media maintains a steady presence at 18%, and entertainment becomes more noticeable at 11%. For sessions lasting more than 1 hour, entertainment usage at 30%, reflecting a shift towards longerengagement with media content. Overall, communication and social media are consistent factors, entertainment grows with usage time, while phone calls and educational reading decrease. Testing messages also decline as usage time extends.

4.9 Duration of the mobile phone for reading purpose

Figure No: 8: Analysis how long mobile used for reading purpose

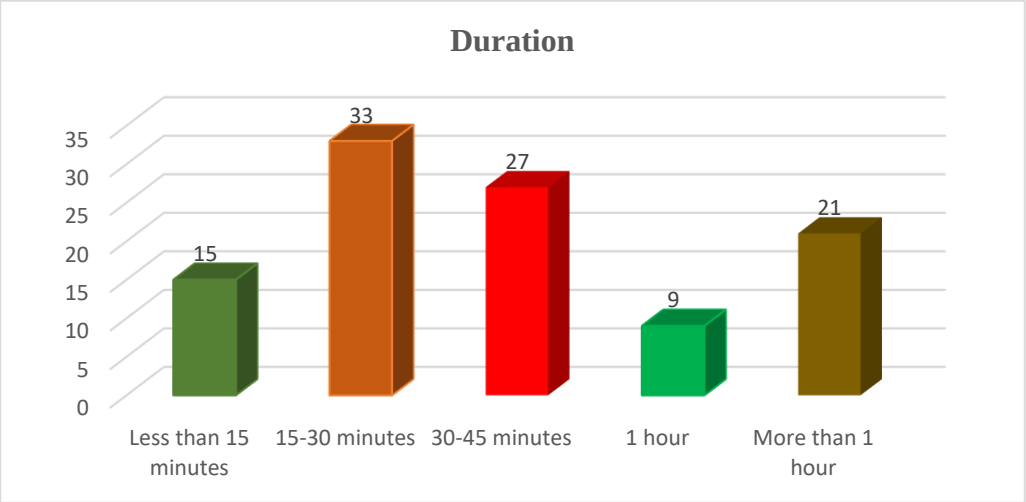

Figure No: 8

Time	Frequency	Percentage
Less than 15 minutes	15	14%
15-30 minutes	33	31%
30-45 minutes	27	26%
1 hour	9	9%
More than 1 hour	21	20%
Total	105	100%

Table No: 3

Table 2 describes that time spend on mobile phone for reading purpose In this above table it can clearly understood that majority of the respondent 33(31%) are spending their time to read on mobile phone is 15-30 minutes. While 27 (26%) respondents spend their time to read on mobile phone is 30-45 minutes, whereas 21 (20%) of students spend their time to read on mobilephone is more than 1 hour, followed by 15 (14%) respondents spend their time to read on mobile phone is less than 15 minutes and 9(9%) of respondentspend their time to read on mobile phone is 1 hour.

4.10: Favourite reading content on mobile phone

Figure No 9: analysis reading content on mobile phone of respondent

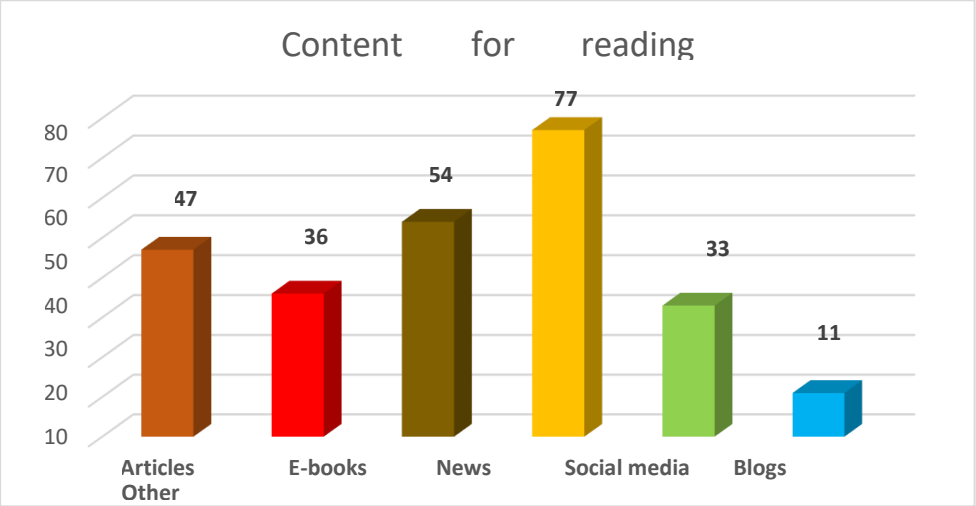

Figure No: 9

Analysis of data shows that what type of content students read on mobile phone for reading purpose. Larger proportions 77 of the respondents like to read social media onmobile phone, whereas 54 of the respondents like to read News on mobile phone, followed by 47 of the respondents like to read articles on mobile phone, 36 of the respondents like read E-books on the mobile phone, 33 respondents like to read blogs on the mobile phone and remaining of the respondent like to read other then what is there in option.

4.11: Use of specific genres or topic

Figure No 10: Preferences specific genres or topic while reading on mobile phone

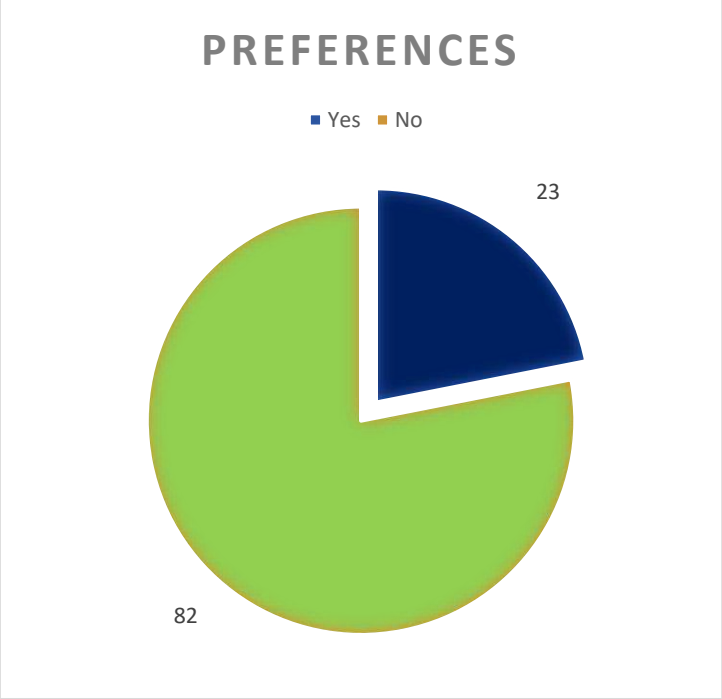

Figure No: 10

According to survey majority 80 of the respondent don't use any specific genres or topic while reading on mobile phone and 23 of the respondent says that they are using specific genres or topic while reading on mobile phone.

4.12: If yes which they are

Table No 4: Shows the genres or topic respondent prefer

Sr.No	Genres or topic	Respondent
1	Geopolitics,cricket,cars and bike	2
2	Data Analysis on different topics	1
3	Novels, science fiction and comedy	4
4	Architecture.art,Mystery and E-books	2
5	Automobile, self-improvements and technology	2
6	About sports	3
7	Media, General news, Drama and music and social service, GK,Fiction Gastronomy	2
8	Educational topics and articles to project submissions	2
9	Indian stock markets and economy	1
10	Entertainment	1
11	Hinduism and ancient Indian history	1

Table No: 5

In above table shows that what type of genres or topic respondent prefer while readingon mobile phone. It find that 4 of respondent prefer Novles,Science fiction and comedyfor reading on mobile phone, whereas 3 of the respondent prefer about sports forreading on mobile phone, followed by 10 respondent prefer geopolitics,cricket,cars and bike,architecture,art,mystry,E-books,autobile,self-improvenment,technology,media, general news, drama, music, social service, GK fiction,gastronomy,educational topicsand articles to project submission for reading on mobile phone. And 4 respondent preferData Analysis on different topics, Indian stock markets and economy, Entertainment,Hinduism and ancient Indian history for reading on mobile phone.

4.11: Factors influence

Figure 11: Factors influence to read content

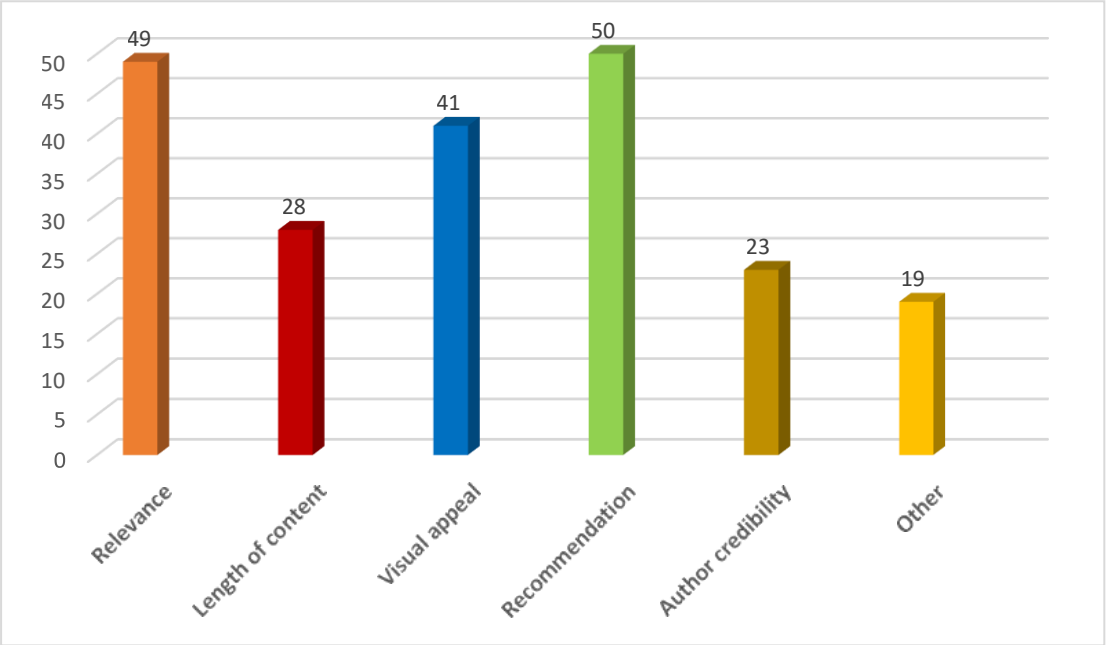

Figure No: 11

In this study respondents were asked what factors influence you to choice content on your mobile. The above figure shows that majority 50 of respondents read because of recommendation, followed by 41 of respondent read the content based on visual appeal,whereas 49 of respondent read based on relevance of content, 28 of respondent read based on length of content, 23 of respondent read content based on author credibility and remaining of the 19 of respondent like to read other then what is there in option.

4.12: Reading apps or platforms

Figure 12: Preferences apps or platforms for reading on mobile phone

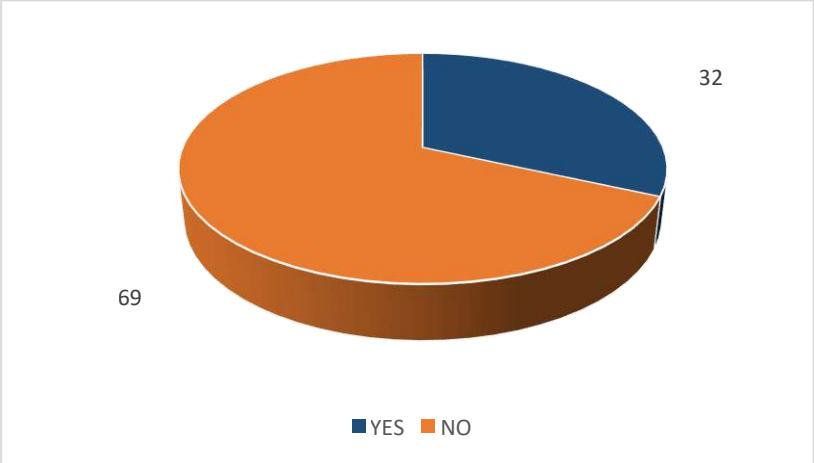

Figure No: 12

According to survey majority 69 of the respondent don't use any specific apps or platforms while reading on mobile phone and 23 of the respondent says that they are using specific apps or platforms while reading on mobile phone.

4.13: Use of specific apps or platforms

Table No 5: Shows the apps or platforms respondent prefer

Sr.No	Apps or platforms	Respondent
1	Google and Google play books	9
3	News apps , E-books and newspapers	5
4	WPS,word and pdf	4
5	Pocketbook	1
6	Chatgpt	3
7	Sports	1
8	Inshorts,telegram,dailyhunt,and instagram	4
8	Research gate and sahyadri	1
10	Whatsapp	1

Table No: 5

In above table shows at what type of apps or platforms respondent prefer while readingon mobile phone. It finds that 9 respondent use Google and Google play books for reading on mobile, whereas 5 of the respondent use news apps, E-books and newspapersfor reading on mobile phone. And 8 respondent use WPS, word, pdf, telegram, daily hunt, novel books and Instagram for reading on mobile phone, 3 of respondent use Catgut for reading on the mobile phone and 5 respondent use YouTube, Pocketbook, Sports, Research Gate, Sahara and WhatsApp.

4.14: Use of E-library

Figure No 13: Analysis Use of E-library content on mobile device

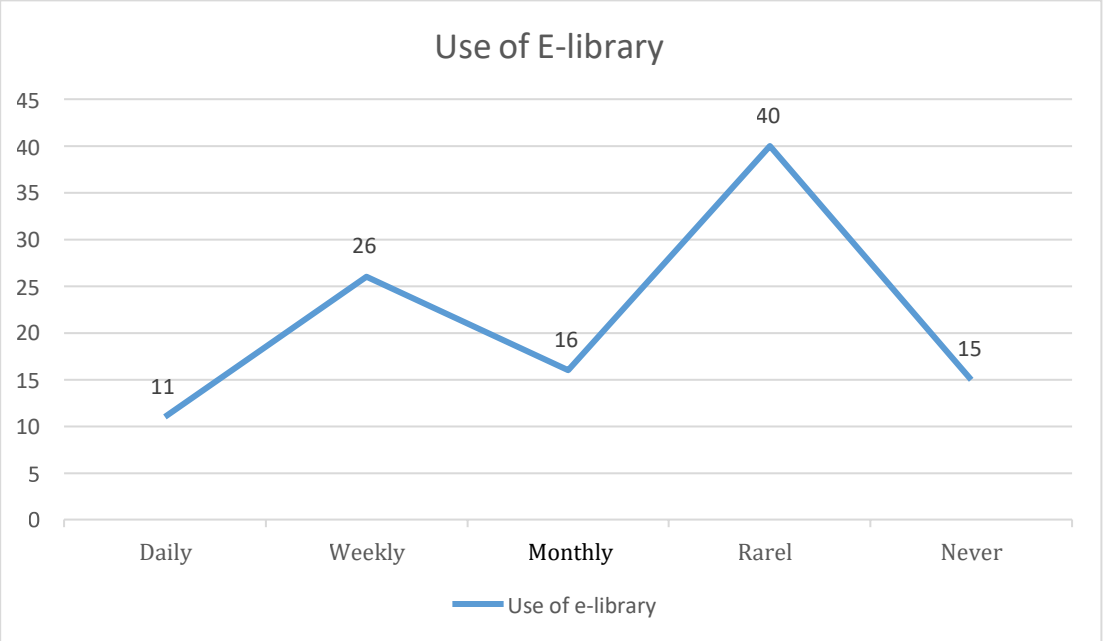

Figure No: 13

In this study respondents were asked how often you use E-library content on mobile device. The above figure presents that majority 40 of the respondent use E-library rarelyon mobile device, followed by 26 of the respondent use E-library weekly on mobile device, 16 of respondent use E-library content daily on mobile device, whereas 15 of the respondents never used E-library content on mobile phone, 11 of respondent use dailyE-library content on mobile device. So, it is clearly shows that majority of the respondent use E-library content rarely on mobile device.

4.15: Access content

Table No 6: Analysis access of content on E-library using mobile device

Sr.No	Respondent access content ofE-library on mobile device	Percentage
1	E-books	36%
2	Research articles	40%
3	OPAC	10%
4	Never use	11%
5	other	3%

Table No: 6

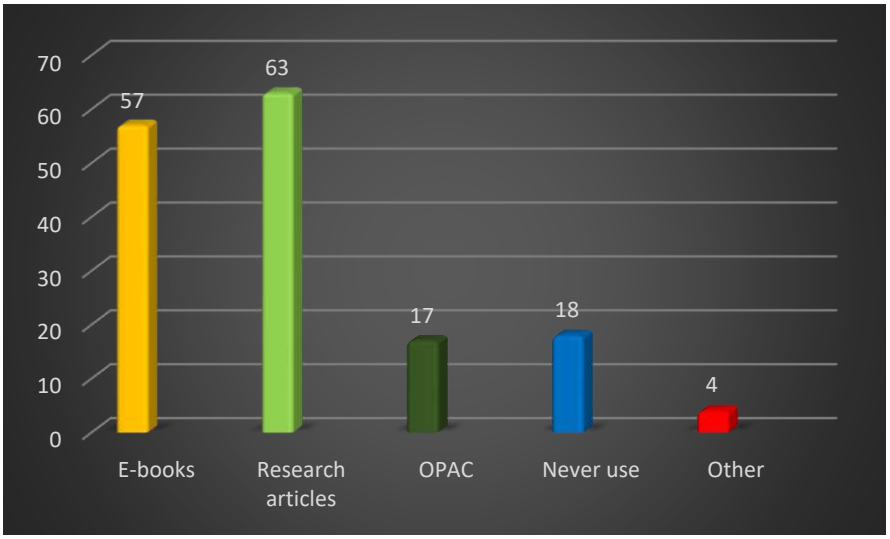

Figure No: 14

In this study respondent were asked what type of content usually access on e-library on mobile phone. The above table shows that majority 40% of the respondent access research articles on E-library, followed by 36% of respondent access E-books on E- library, whereas 11% of respondent never access E-library content on mobile phone,11% of respondent access OPAC on E-library, remaining3% of respondent says that thy use chatgpt and don't like to read on mobile.

4.16: Reason

Table No 7: Analysis reason of never used E-library

Sr. No	Never used E-library specify the reason	Percentage
1	Not comfortable	16%
2	Less awareness	33%
3	Limited availability	25%
4	Not reliable or trustworthy	7%
6	Limited access to internet	15%
7	Other	4%

Table No: 7

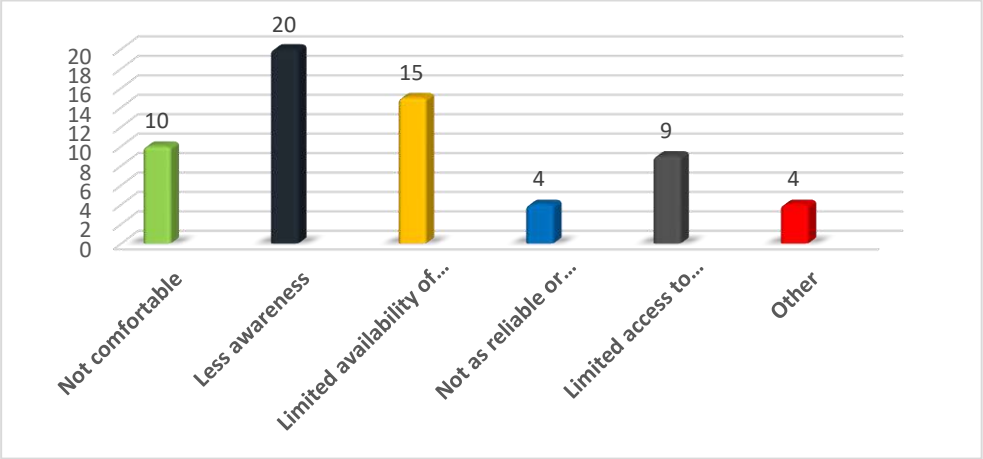

Figure No: 15

Table 7 shows that reasons of never used E-library by the respondent, While 33% of respondent says that they have less awareness about E-library, followed by255 of respondent says that limited availability of resources on E-library,16% of respondent says that they not comfortable to use E-library, whereas 15% of respondent says that they have limited access to internet to use E-libray,7% of respondents says that E- library content is not reliable or trustworthy, remaining 4% of respondent they don't like E-library.

4.17: Visit of physical library

Figure No 16: Analysis visit of physical library in month

how often do you visit a physical library in a month?

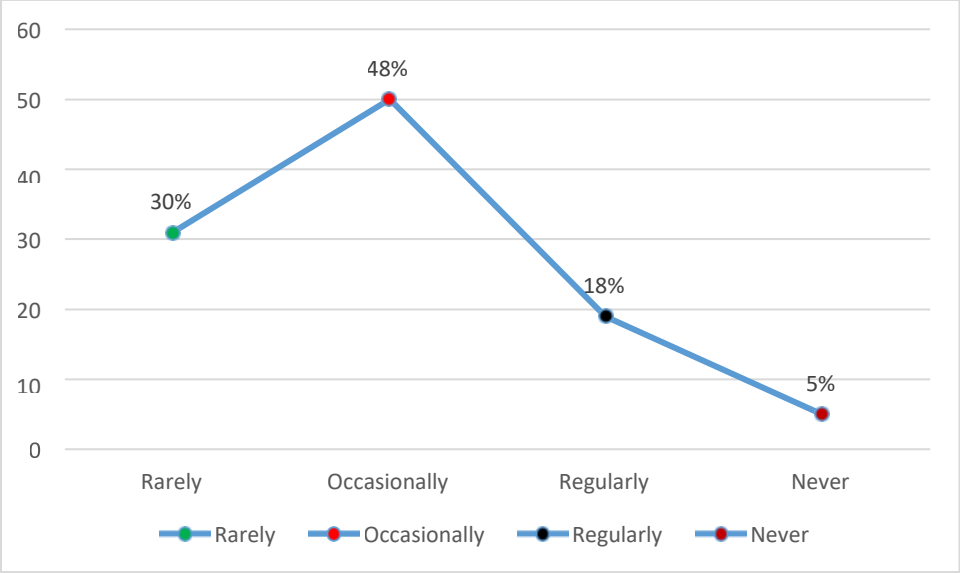

Figure No: 16

In this study respondents were asked how often you visit physical library in a month. The above figure presents that majority 48% of the respondent visit physical library occasionally, followed by 30% of the respondent visit physical library rarely, 18% of respondent visit physical library regularly, whereas 5% of the respondent never visit physical library. So, it is clearly shows that majority of the respondent visit physical library occasionally.

4.18: Variety of resources

Table No 8: Analysis which library offer a wider variety of resources

Sr. No	Library offer variety of resources	Percentage
1	Physical library	34%
2	E-library	13%
3	Both equal	52%

Table No: 8

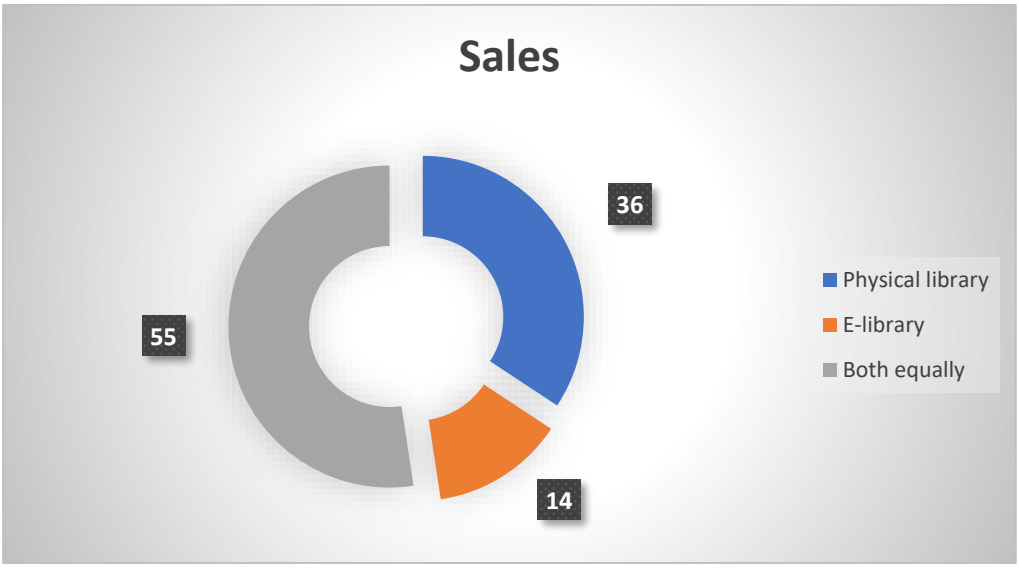

Figure No: 17

Table 8 describes about the opinion of the respondent. In which majority 52% of the respondent says that both libraries offer a wider variety of resources equally, followed by 34% of respondent says that physical library offer a wider variety of resources, whereas 13% of respondent says that E-library offer a wider variety of resources. So, it is clearly shows that both libraries offer a wider variety of resources equally.

4.19: Overall reading

Figure No 18: Analysis of overall for reading and research needs

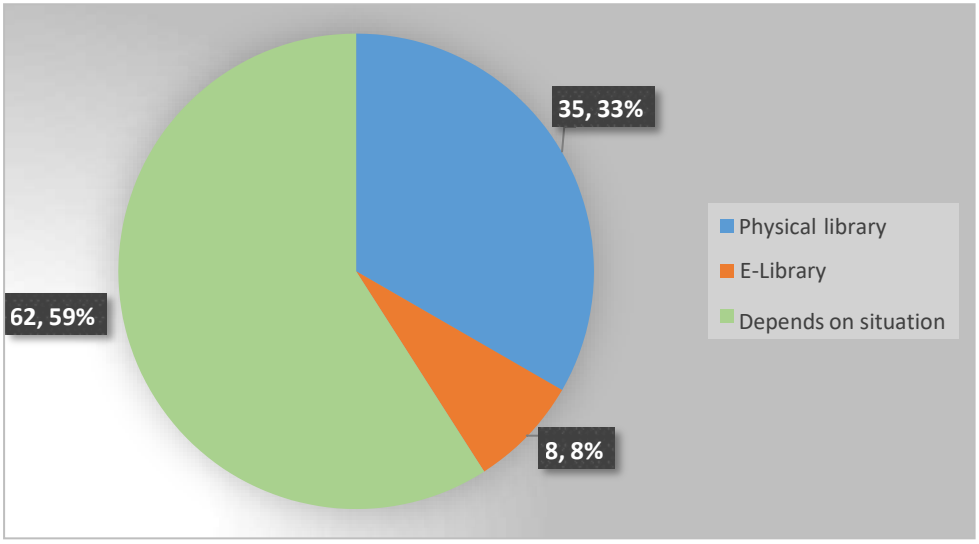

Figure No: 18

In this study respondents were asked which library prefer overall for reading and research needs. The above figure presents that majority 59% of the respondent prefer depends on situation for reading and research needs, followed 35% of respondent preferphysical library for reading and research needs, whereas 8% of respondents prefer E- library for reading and research needs. So, it is clearly shows that majority of the respondent prefer depends on situation for reading and research needs.

4.20: Comfort level

Table No 9: Shows comfort level with technology while using E-library vs. physicallibrary

Technology	Least comfortable	Uncomfortable	Neutral	Comfortable	Most comfortable
E-Library	18%	9%	30%	35%	9%
Physical Library	18%	6%	16%	40%	20%

Table No: 9

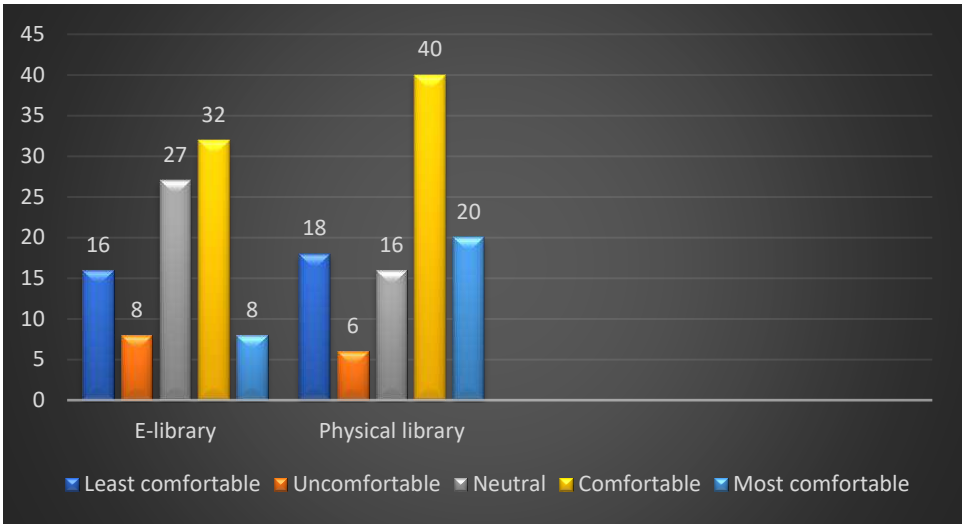

Figure No: 19

Above data shows that respondents feel most comfortable with physical libraries, with40% indicating it as "comfortable" and 20% as "most comfortable." This suggests a strong preference or satisfaction with traditional libraries. On the other hand, for e- libraries, while a significant portion (35%) still finds them "comfortable," the percentage of those feeling "neutral" about them is notably higher at 30%. Additionally,18% find e-libraries "least comfortable," which is the same percentage as those findingthem "most comfortable." This indicates a more divided opinion or less consistent comfort level with electronic libraries compared to physical library.

4.21: Advantages

Table No 10: shows the advantages of reading on mobile device

Advantages	Percentage
Portability	10%
Convenience	15%
Access to variety of content	19%
Customization option	15%
Search functionally	15%
Cost-effectiveness	13%
Offline reading comfortable	12%
Others	1%

Table No: 10

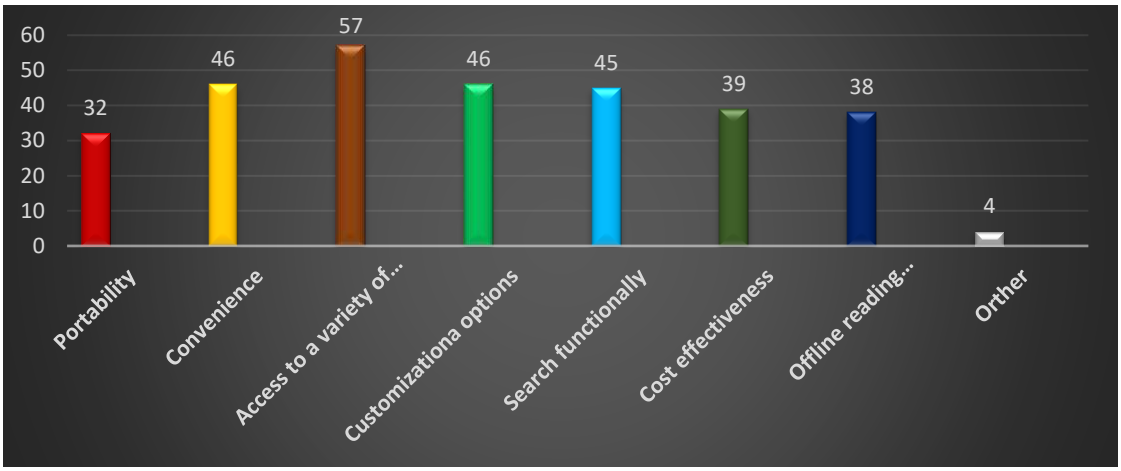

Figure No: 20

Above table shows that majority of the respondents value the access to a variety of content 19%, indicating a preference for the extensive range of materials available digitally, additionally 15% of respondent says that it is easy accessing and reduce work and time. Whereas customization options (15%) and search functionality (15%) are also important factors says by the respondents, followed by Cost-effectiveness (13%) and offline reading comfort (12%), Portability (10%) ranks lower among priorities of respondents, and other 4% respondent says that offline reading is better than to carry books and catgut for reading. So, it is clear shows that majority of 19% respondents saysthe advantage of reading they can access variety of content.

4.22: Disadvantages

Table No 11: Shows the disadvantages of reading on a mobile device

Disadvantages	Percentage
Battery	20%
Screen size	21%
Input challenges	4%
Internet connectivity issues	16%
Distractions	21%
Compatibility concerns	4%
Security and privacy concerns	10%
Device diversity	2%
Other	2%

Table No: 11

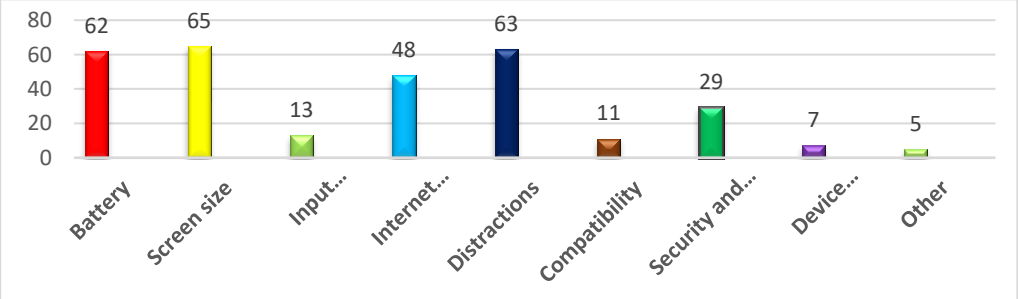

Figure No: 22

Above table shows that majority of respondents says that screen size and distractions rank high at 21% each, indicating that many users struggle with either the physical limitations of their screens and distractions that affect their productivity, 20% of respondents suggesting face challenges in managing the power consumption of their is devices, whereas internet connectivity issues, at 16%, followed by security and privacy concerns are notable at 10% important the need for users to feel confidentable. 4% respondents face input challenges and compatibility issues, 2% respondents say disadvantages of mobile reading is device diversity and other 2% of respondents feels mobile reading can affect the eye side and can distracted **f** not focused. So, it clear that majority of 21% respondents says disadvantage of mobilereading

4.23: Services implemented

Table No 12: shows features or services like to see implemented in academic library support mobile users

Services or features	Percentage
Mobile-friendly access to the library	21%
E-library and digital resources optimized for mobile device	17%
Push notification for library announcements, events and due dates	12%
Mobile access to research databases and scholarly journals	14%
Integration with academic platforms and leaning management systems on mobile	6%
Virtual assistance or chat support for library inquires via mobile	8%
Mobile-friendly workshops or tutorials for utilizing library resources	9%
Seamless integration with note-taking and citation management apps	4%
Mobile access to reservation services foe study rooms or equipment	8%

Table No: 12

The analysis data indicates a clear trend towards enhancing mobile access and servicesin libraries. A significant portion of respondents, 21%, prioritize making library systems mobile-friendly, highlighting the importance of accessible interfaces, Additionally 17% emphasize the optimization of e-library resources for mobile devices,whereas push notifications for library updates (12%) and mobile access to research databases (14%) are also essential , followed by 6% despondent says integration with academic platforms have implement in academic library, 8% respondent says that virtual assistance and reservation service for study rooms equipment ,further mobile- friendly workshops (9%), and seamless app integrations (4%). It is clear that majority of 21% mobile user's respondents says that mobile friendly access to the library features or services they like to see implemented in academic library.

4.24: Content or resources availability

Table No 13: Shows content or resources like to have available for use on mobile device

Resources	Percentage
E-books and audiobooks	19%
Mobile-optimized research databases	12%
Digital magazines or journals	11%
Podcasts or audio lectures	10%
Interaction learning modules or quizzes	9%
Mobile-friendly access to academic and papers	14%
Virtual reality (VR) or augmented reality (AR) experience	5%
Mobile access to archival materials or special collection	7%
Education videos or streaming or special collection	13%
Other	1

Table No: 13

The data analysis shows that e-books and audiobooks are the most popular digital resources among respondents, accounting for 19% of usage, followed by mobile-optimized research databases at 12% whereas 11% respondent says digital magazines or journals are also significant,10% respondent says podcasts or audio lectures and interactive learning modules or quizzes are fairly close in usage, Mobile-friendly access to academic papers holds a notable share at 14%, indicating the importance of convenient access to scholarly materials. 5% respondents says virtual reality or augmented reality experiences like to have available for use on mobile device, 7% respondents says mobile access to archival materials or special collections, additional 13% educational videos or streaming from special collections and 1 respondent says that self-improvement content or resource like to have available for use on mobile use.It is clearly shows that majority 19% of respondents says that E-books and audiobooks content or resources respondents like to have available for use on mobile device.

Chapter 5

Texting Hypothesis, Finding, conclusion and Suggestion

5.0 Texting Hypothesis

1) The student spends most of their time on mobile.

   Testing: The data shows that Figure No: 6 the most of the students spend more than four hours on mobile phone. Therefore, the hypothesis is true and accepted.

2) Most of the students do not browse the educational or library content on mobile device.

   Testing: The data shows that Table No: 6 the students browse the library content on their mobile phone. Therefore, the hypothesis is not true and rejected.

3) Students need awareness about E-resources available on mobile.

   Testing: The data shows that Table No: 6 the students are aware about E-resources available on mobile.

5.1 Finding

1. The study found that majority of respondents, particularly students, spend more than four hours per day on their mobile phones.
2. The study reveals that as mobile usage time increase, communication and social media remain consistent, entertainment grows, phone calls and educational reading decrease and testing messages decline.
3. The data indicates that the majority of respondents spend 15-30 minutes reading on their on their mobile phones.
4. The analysis reveals that a significant majority of students prefer reading social media content on their mobile phones, followed by news, articles, e-books, blogs and various other content options.
5. The survey findings show that the majority of respondents do not use specific genres or topics while reading on their mobile phones.
6. The data indicates that respondents prefer a wide range of genres and topics are Novels, science fiction and comedy for reading on their mobile phones.

7. The study finds that the majority of respondent bare influence to choose content on their mobile phones based on recommendations.
8. The survey finding indicate that the majority respondents do not use specific or platforms while reading on mobile device.
9. The data shows that respondents prefer Google and Google play books apps and platforms for reading on their mobile phones.
10. The study reveals that the majority of respondents use E-library content rarely on mobile phone.
11. The study finds that the majority of respondent's access research articles and E-books on E-library through their mobile phones.
12. The finding indicate that reasons for using E-library among respondents are limited awareness about E-library.
13. The study reveals that the majority of respondents visit physical libraries occasionally.
14. The majority opinion among respondents is that both physically libraries and E-library offer a wider variety of resources equally.
15. The study finds that majority of respondents prefer using libraries based on the situation for their reading and research needs.
16. The data shows that respondents have higher level of comfort and satisfaction with physical library.
17. The data indicates that the majority of respondent values access to variety of content as most significant advantage of digital reading.
18. The data reveals that the majority of respondents consider screen size and distractions as the primary disadvantages of mobile reading.
19. The analysis shows that majority of mobile users prioritize implementing mobile-friendly access to library features or services.
20. The data analysis reveals that the majority of respondents prefer having access to E-books and audiobooks on their reading and listening materials.

Conclusion

Now day’s technology is getting really advanced and it is becoming an essential part of the life. The most rapidly growing technological in the world is smartphone. Today smart phone is the device which provides all the facilities. The study showed that the mobile device made great impact on users in their reading of content on mobile device.Mojority of students spent more than four hours daily on their phones mostly for communication and social media. They prefer a wide range of content, from novels to educational topics and choose content based on recommendations and visual appeal. It also shows that mobile devices give variety of content on mobile phone for reading but there is also disadvantages of mobile reading is screen size and distractions. The study also shows that there still value the comfort and experience of physical library either than E-library content. Study also shows that user’s wants mobile friendly access to the library services implemented in academic library and availability of E-books and audiobooks on mobile device.

5.2 Suggestions

1. Libraries should expand collection of E-books and audiobooks across various genres and subject to cater to diverse interests and learning styles in E-library.
2. Libraries have to Ensure that search databases are mobile-friendly, making it convenient for users to access scholarly articles, journals, and other academic resources on their smartphones or tablets.
3. Library should Offer a wide range of digital magazines and journals covering different topics such as science, technology, arts, and literature, providing users with up-to-date information and insights.
4. Curate a collection of educational podcasts and audio lectures on various subjects, enabling users to learn on-the-go and enhance their understanding through auditory learning.
5. Develop interactive learning modules and quizzes that users can access on their mobile devices, fostering engagement and knowledge retention.
6. Ensure that academic papers and scholarly articles are easily accessible and readable on mobile devices, facilitating research and academic pursuits.
7. Enable mobile access to archival materials and special collections, allowing users to explore historical documents, rare books, and unique resources from anywhere.
8. Curate a collection of educational videos and offer streaming services for special collections, making learning visually engaging and accessible on mobile devices.

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Appendix-1

Synopsis

A Synopsis of Project

A Study on Mobile Phone Usage among College Students in Goa

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Taleigao – Plateau, Goa

2023-2024

Introduction

Nowadays, it has been observed that most of the students are busy with their mobiles. They spend hours on mobile, whether in class, library, or during other time.
This makes me think what exactly they are doing? What exactly they are reading?

Mobile means, “A mobile phone is a wireless handheld device that allows users to make and receive calls. While the earliest generation of mobile phones could only make and receive calls, todays mobile phones do a lot more, accommodating web browsers, games, cameras, video, players and navigational systems.”
Mobile usage means, “Refers to the activities and interaction carried out on mobile devices, such as smartphones and tablets. This includes making calls, sending messages, using mobile apps, browsing the internet and any other functions performed on a portable device.”

This project is about the survey and analysis of mobile reading habits among college students in Goa.

Objectives

1. To find what content the students read on a mobile device
2. To understand the mobile reading behaviour of the students
3. To know whether the students read e-library content on mobile
4. To compare the use of physical library v/s reading on mobile
5. To know the advantages and disadvantages of reading on a mobile device
6. To find out mobile users' expectations from their academic library
7. To suggest library content` which can be used on mobile device

Methodology

1. The research will browse all the literature available on the topic.
2. The researcher will use structured questionnaire using Google form.
3. A pilot study will be conducted before designing a questionnaire.
4. The researcher will use suitable statistical technique like MS word and required data with charts and graphs.
5. APA 6th Edition, a citation style will be used for references and citations.

Scope and Limitations of Study

This study is only limited to under graduate students of Goa Colleges who use mobile devices.

In total 300 randomly selected students from all over Goa will be surveyed using questionnaire method for the period of January to February 2024.

Hypothesis of Study

1. The students spend more of their time on mobile.
2. Most of the students do not browse the educational or library content on mobile device.
3. Students need awareness about e-resources available on mobile.

Organisation of Study

Chapter 1- Introduction

Chapter 2-Review of literature

Chapter 3-Over of mobile reading habits

Chapter 4-Data Analysis and Interpretation

Chapter 5-Finding, Suggestions and Conclusion

Chapter 6-Bibliography

Annexure-2

Questionnaire

1. Name

2. Gender

   Male ☐ Female ☐ Transgender ☐

3. Age

4. Stream

   B.A ☐

   B.Com ☐

   B.Sc. ☐

   Others _____

5. Brand of your mobile phone

   iPhone ☐

   Samsung ☐

   One plus ☐

   Redmi ☐

   Vivo ☐

   Others _____

6. At what age you had bought the mobile phone?

   Below 10 ☐

   10-15 ☐

   15-20 ☐

   Above 20 ☐

7. Who had purchased mobile for you?

   Parents ☐
   Pocket money ☐
   Gift ☐
   Relatives ☐

8. How long do you spend on your mobile device?

   One hour ☐
   Two hour ☐
   Three hour ☐
   Four hour ☐

More than four hours ☐

9. For what purpose do you use mobile phone and how long do you use?

	Less than 15 minutes	15-30 minutes	30-45 minutes	1 minutes	more than 1 hour
Communication	○	○	○	○	○
Social media	○	○	○	○	○
Entertainment	○	○	○	○	○
Phone calls	○	○	○	○	○
Educational purpose	○	○	○	○	○
Texting messages	○	○	○	○	○

10. How long to you spent on your mobile phone for reading purpose?
    - Less than 15 minutes ○
    - 12-30 minutes ○
    - 30-45 minutes ○
    - 1 hour ○
    - More than 1 hour ○
11. How long of content do you read on your mobile phone for reading purpose?
    - Articles ☐
    - E-books ☐
    - News ☐
    - Social media updates ☐
    - Blogs ☐
    - Others _____
12. Are there any specific genres or topic you prefer while reading on your mobile phone? YES/NO

    _____
13. If YES then which genres or topic you prefer while reading on your mobile phone?

    _____
14. What factors influence your choice of content on mobile devices?
    - Relevance ☐
    - Length of content ☐
    - Visual appeal ☐
    - Recommendations ☐
    - Author credibility ☐
    - Other _____
15. Do you use any specify apps or platforms for reading on your mobile device?

    _____
16. If YES then which apps or platforms do you use for reading on your mobile?

    _____

Next

Exploring library preferences

To search individuals' choices and inclinations when it comes to using library services, resources and facilities on mobile phone.

17. How often do you use the e-library content on your mobile device?
    - Daily ☐
    - Weekly ☐
    - Monthly ☐
    - Rarely ☐
    - Never ☐

18. What type of content do you access on the E-library using your mobile device?
    - E-books ☐
    - Research articles ☐
    - OPAC ☐
    - Never use ☐
    - Other

19. If never Used E-library then specify the reason (please select which apply)
    - Not comfortable ☐
    - Less awareness ☐
    - Limited availability of desired materials in E-library format ☐
    - Perception that E-library resources are not as reliable or trustworthy as physical ☐
    - Limited access to internet ☐
    - Other ☐

20. How often do you visit a physical library in a month?
    - Rarely ☐
    - Occasionally ☐
    - Regularly ☐
    - Never ☐

21. In your opinion, which offers a wider variety of resources (books, journals etc.)
    - Physical library ☐
    - E-library ☐
    - Depends on the situation ☐

22. Rate your comfort level with technology when using E-library vs. physical library on a scale of 1 to 5 (1 being least comfortable,5 being most comfortable)

	Least comfortable	Uncomfortable	Neutral	comfortable	Most comfortable
E-library	○	○	○	○	○
	○	○	○	○	○

Physical library

23. What are the advantages of reading on a mobile device?
    - Portability ☐
    - Convenience ☐
    - Access to a variety of content ☐
    - Customizations option (Front size, background, colour etc.) ☐
    - Search functionally ☐
    - Cost –effectiveness (considering E-books, subscriptions etc.) ☐
    - Offline reading comfortable ☐
    - Other ☐

24. What are the disadvantages of reading on a mobile device?
    - Battery ☐
    - Screen size ☐
    - Input challenges ☐
    - Internet connectivity issues ☐
    - Distractions ☐
    - Compatibility concerns ☐
    - Security and privacy concerns ☐
    - Device diversity ☐
    - Other ☐

25. What features or services would you like to see implemented in your academic library support mobile users?(select all the apply)
    - Mobile-friendly access to the library catalog ☐
    - E-books and digital resources optimized for mobile device ☐
    - Push notifications for library announcements, events and due dates ☐
    - Mobile access to research database and scholarly journal ☐
    - Integration with academic platforms and learning management systems on mobile ☐
    - Virtual assistance or chat support for support inquires via mobile ☐
    - Mobile –friendly workshop or tutorials for utilizing library resources ☐
    - Seamless integration with note-taking and citation management apps ☐
    - Mobile access to reservation services for study rooms or equipment ☐
    - Other ☐

26. What types of library content or resources would you like to have available for use on your mobile device?(select all that apply)
    - E-books and audiobooks ☐
    - Mobile-optimized research databases ☐
    - Digital magazines journals ☐
    - Podcasts or audio lectures ☐

Interaction learning modules of quizzes ☐
Mobile-friendly access to academic and papers ☐
Virtual reality (VR) or augmented reality (AR) experience ☐
Mobile access to archival or special collection ☐
Education videos or streaming services ☐
Other ☐