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Impact of Smartphone Usage on Social Interactions and Attitudes Among Keralites (India) in the Post-pandemic Period: A Descriptive Statistics Approach

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Abstract

In India, smartphone sales have increased in recent years, and Kerala, a South Indian state that accounts for 2.76% of the Indian population according to the 2011 Census of India[1], has seen an increase in smartphone use since the pandemic-induced lockdowns and quarantines. The rampant use of smartphone technology is believed to have a substantial impact on interactions among individuals. The current study aims to analyse the impact of smartphone use among various categories of people in Kerala, India, on their social interactions and the formation of social attitudes using primary data. The focus is on the time duration put aside for face-to-face interactions and for smartphone communications, and the results show that there is no drastic reduction in face-to-face interactions among Keralites due to phone use, despite evidence for widespread ownership and use of smartphones among all categories of individuals, especially for communication purposes. Strong associations among smartphone use, age, and employment status are also observed. Smartphone use is most prevalent among students and workers belonging to the age groups 15-29 years and 45-59 years, and no clear gender divide is visible.

Keywords

Smartphone, Face-to-face communication, Interaction, Social attitudes.

1. Introduction

Humans are social creatures with a deep desire to interact with one another. Recent developments in communications technology have made it possible for billions of people worldwide to use cell phones to satisfy this need; Przybylski and Weinstein (2012). The smartphone is a path breaking innovation in the field of Information and Communication Technology (ICT). Being the successor to cell phones, it has cutting-edge features and functionalities that go beyond standard features like placing or getting calls and sending or receiving text messages. Smartphones come with features such as the ability to show photos, play games, play videos, navigate, have a built-in camera, and record and playback audio and video. They also have built-in applications for social media and web browsing, wireless Internet, and much more. The implementation of innovative technologies, such as artificial intelligence (AI), the internet of things (IoT), cloud computing, augmented reality (AR), and virtual reality (VR), led to further advancements in smartphone features.

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Human interactions reached an entirely new phase with the advent of mobile phones. People are increasingly using computer-mediated communication to meet critical social and psychological needs; McKenna and Bargh (2000). Smartphone evolution facilitated inter-personal, inter-regional, and inter-generational communication. The popularity of smartphones, along with enhanced internet connectivity and accessibility, formed the basis of this grave change in communication. People spend a considerable amount of time interacting via online media, transcending regional, cultural, and linguistic barriers, thereby preferring computer-mediated communication over traditional face-to-face interactions.

Computer-mediated communication (CMC) is described as "any communication pattern mediated through some type of computer device"; Metz (1992). The ease and convenience of CMC may reduce the amount of face-to-face communication that people engage in; O'Donoghue (2002). On the one hand, recent research results indicate that people prefer communicating via their smartphones to in-person interactions; (Lenhart (2012); Metro Herald (2014) and Victor (2013)). It appears that some individuals think that CMC allows them to communicate more effectively while also requiring less dedication on their part; Karemaker (2005). On the other hand, Schumacher (2013) asserts that people develop better, deeper relationships with others, reduce misunderstandings, and boost productivity at work and at home if they engage in more face-to-face interactions and spend less time communicating via phones, emails, or other social media. Furthermore, Lee *et al*. (2011) discovered that face-to-face communication with friends and family members predicts quality of life more accurately than internet communication.

Any innovation may have flaws in addition to the many benefits it offers. People's associations with larger social networks and mobile devices suggest that mobile devices may have pervasive influences; Srivastava (2005). This diverts the *individual's* attention away from their immediate social context, along with a loss of focus towards fellow beings, social events, and interests. Therefore, people are losing crucial interpersonal abilities that are vital to building up positive social bonds and rapport. The social displacement hypothesis, which at its core explains how a person's life becomes confined to the virtual interface of mobile phones and eventually displaces his or her face-to-face interactions, can be connected to this. This will have a significant impact on the individual's social health and well-being. In contrast, the social augmentation hypothesis attempts to explain how mobile phones enhance social interactions among individuals. These two opposing points of view have been the subject of an ongoing debate that has served as the foundation for numerous studies about smartphone communications and their effects (Verduyn *et al*., 2021).

Smartphones have become an inevitable part of modern life, especially in the post-pandemic era. There have been few to no empirical studies conducted so far on Kerala's smartphone use and its impact on social health. The majority of people struggle with the issue of being unable to effectively communicate in person or hold face-to-face conversations because they have been using only the platforms offered by smartphones. Through the use of cell phones, people are also more likely to miscommunicate and, further, misunderstand information. Younger adults and teenagers who use their phones more frequently than the average and who are heavily reliant on them are particularly susceptible to this (Smith *et al*., 2017). According to Katz and Aakhus (2002), the novelty of mobile phone technology and its ability to snoop into people's lives enable us to observe elements of the human communication process that would otherwise elude our attention

or at the very least be very challenging to distinguish. Even claims that social anxiety and loneliness are caused by excessive smartphone and social media use have been made (Gao *et al*., 2016).

The present study is significant in the sense that it will provide an insight into the extent and magnitude of people's reliance on smartphones to communicate in this modern age and the dwindling nature of social relationships and a sense of humanity among individuals. Apart from other studies, ours is aimed at analyzing the impact of smartphone use among various categories of people in Kerala on their social interactions and the formation of social attitudes using empirical data. The study primarily focuses on how much time people spend online on social media networks via technology devices such as smartphones versus time spent on traditional face-to-face interactions. It also aims to see how the trends connected to new technology devices and their applications influence individual's interaction and communication in different socio-cultural settings. The variables studied included smartphone usage levels, the frequency with which individual's social interaction is interrupted by their phones, communication preferences, and their attitudes towards phone use under a variety of social circumstances.

2. Methodology

The current study, which examines how smartphone use affects social interactions, is built on a combination of qualitative and quantitative research techniques, as well as exploratory research techniques. It is mainly aimed at exploring the topic, particularly how an innovative and advanced technological device—a smartphone—influences the nature and propensity of communication and interaction among individuals, especially in the backdrop of different social contexts.

A Google Forms-created questionnaire was used to gather information on the subject from a convenience and snowball sample of relatives of the study participants who are from various districts in Kerala, India.

2.1 Ethics statement

There is active consent from all the participants involved in the study.

2.2 Participants

Participants are individuals residing in Kerala, India, who have given active consent to participate in the online survey. Most of them are the near and dear ones of the researchers who filled out the responses and shared them with further contacts. The participants in the study included a convenient snowball sample of 131 individuals. These respondents belonged to various age groups, with most of them belonging to the age group 15-29 years (78.62%). The study population included both female (49.62%) and male (50.38%) participants. An appreciable participation of students, workers, homemakers, and retired hands is observed in the study.

2.3 Procedure

The empirical study to find out the association between smartphones and social interactions among individuals in Kerala, India, is undertaken through an online survey employing questionnaires prepared using Google Forms. It consisted of 25 close-ended questions, which were framed in tune with the research objectives, enlisting a series of basic questions related to the demographic characteristics of respondents, their ownership of electronic gadgets, especially that of a smartphone, as well as the use of smartphones as social tools and means of communication. Statements with a Likert-type scale asked respondents to state their level of agreement or disagreement related to their smartphone use and how it has affected their social interactions and shaped their social attitudes. The major online platforms such as WhatsApp, Facebook, and emails were used to reach participants all over Kerala, India, thereby transcending socio-economic, geographical, and temporal barriers. Among 150 questionnaires shared via the virtual platforms spanning over a week between 1st and 7th March of 2022, 131 questionnaires were filled and sent back thereby, yielding a response rate of 87.33%. The participants in the study included a convenient snowball sample of 131 individuals. These respondents belonged to various age and gender groups. There was also significant participation of students, workers, homemakers, and retired hands in the study, making the population diverse, accountable, and representative. The recorded responses from individuals were stored in the form of an Excel file and imported into R-Studio in the CSV format, where the data is tabulated and presented using charts. Both descriptive and inferential statistical analyses are carried out in R software. Based on the analysis, interpretations were made. The findings and conclusions so derived were vital for the study and may help in forming suggestions and alternatives to problematic smartphone usage.

2.4 Analysis of data and interpretation

Smartphones have become an indispensable part of modern life, particularly in the post-pandemic environment. In addition to playing a crucial role in communication and information broadcasting, it has broader applications in a variety of spheres of life, such as education, healthcare, safety, and entertainment. A growing number of people are worried that using smartphones for communication could replace in-person interactions; Kushlev *et al*. (2019) and Sbarra *et al*. (2019).The current study attempts to determine how trends related to new technology devices and their applications affect people's interaction and communication in various social settings, with a primary focus on how much time people spend online on social media networks using technology devices like smartphones in comparison to the time spent in traditional face-to-face interactions. An online survey using Google Forms is used to conduct the research among residents of Kerala, India. Among the 131 study participants, 66 are men and the remaining 65 are women. Figure 1 displays the split of participants who are male and female. The age composition of the participants is summarized in Table 1 and Figure 2.

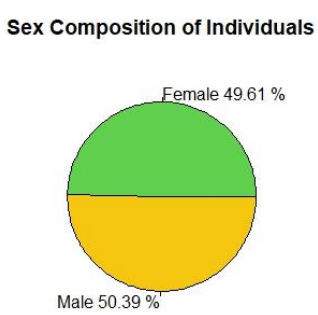

Figure 1: Gender distribution.

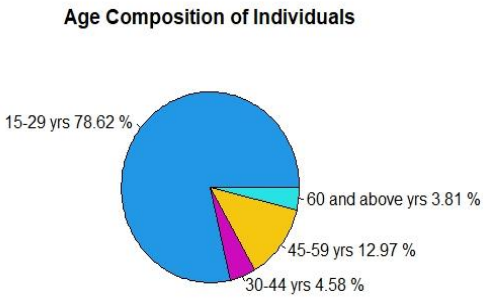

Figure 2: Age distribution.

Table 1: Age composition of participants.

S. No.	Age group (years)	Freq	%age
1	15-29	103	78.62%
2	30-44	6	4.58%
3	45-59	17	12.97%
4	60 and above	5	3.81%

The participation rate is highest among the individuals in the age group 15-29 years (78.62%), followed by the age groups 45-59 years (12.97%), 30-44 years (4.58%) and 60 and above years (3.81%), respectively. The individuals who participated in the study are mostly students (56.48%) and workers (29%). There is also significant involvement of unemployed individuals, retired individuals and home makers making the study group diverse and representative. These data are shown in Table 2 and Figure 3.

Table 2: Employment status of individuals.

S.No.	Work status	Freq	%age
1	Home maker	2	1.52%
2	Retired	8	6.10%
3	Student	74	56.48%
4	Unemployed	9	6.87%
5	Worker	38	29.00%

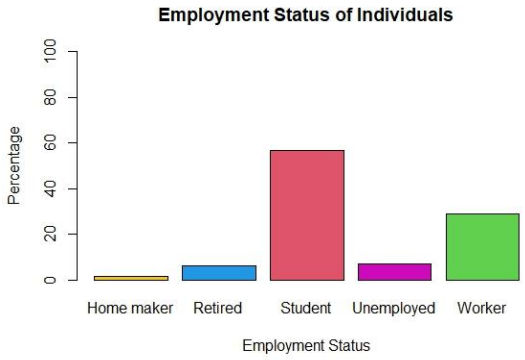

Figure 3: Employment status.

The educational qualifications of participants vary from each other, and a summary of the educational data is given in Table 3. There are various types of electronic gadgets in possession of households including television, radio, computer or laptop, and smartphone, for educational, entertainment, and communication needs. Table 4 gives an account of the percentage of the population owning the different electronic gadgets mentioned above. This table shows that smartphones are being owned by almost all individuals considered, and it hints at the popularity and wide acceptance of Android phones in contrast to other electronic gadgets such as personal computers, televisions, etc. There are individuals who own more than one gadget, which is not taken into consideration here for convenience.

Table 3: Educational attainment of participants.

S.No.	Educational qualification	Freq	%age
1	Post graduation	13	9.92%
2	Graduation	93	70.99%
3	Higher secondary	17	12.97%
4	Matriculation	3	2.29%
5	Others	5	3.81%

Table 4: Ownership status of electronic gadgets.

S. No.	Gadget owned	Freq	%age
1	Television	47	36.64%
2	Radio	7	5.34%
3	Computer	80	61.06%
4	Smartphone	131	100%

It is already known that smartphones are the electronic gadgets owned by most of the participants. Table 5 and Figure 4 assert that the smartphone itself is the most widely used electronic gadget as compared to television and computers.

Table 5: Mostly used gadget among individuals.

S. No.	Gadget used	Freq	%age
1	Television	7	5.34%
2	Computer	5	3.81%
3	Smartphone	119	90.83%

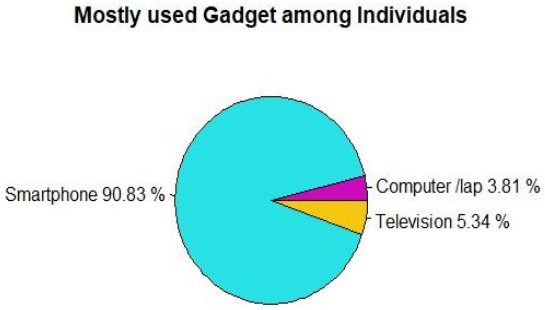

Figure 4: Electronic gadget usages.

It is worth noting the gender-wise and age-wise preference for electronic gadgets to be used. This is shown in Figures 5 and 6, respectively. Among the gender groups, women tend to use smartphones (62 out of 131) more widely than their counterparts. In the case of other gadgets such as computers and televisions, men seem to outnumber women marginally.

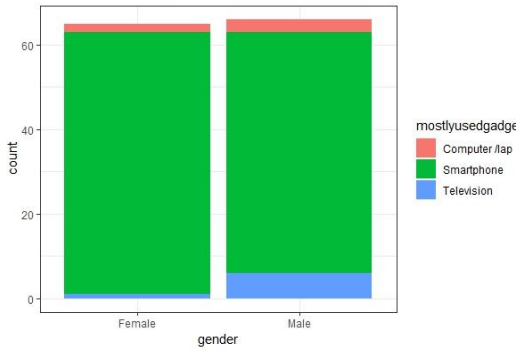

Figure 5: Mostly used gadget among gender groups.

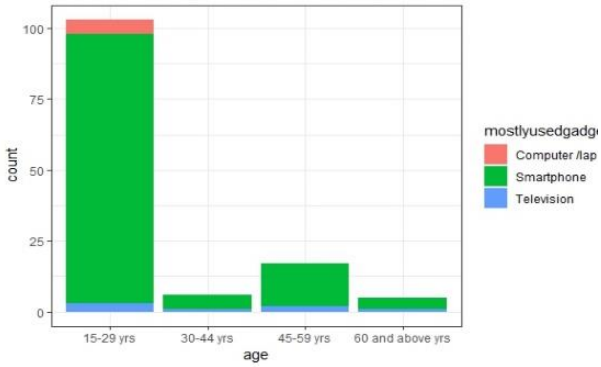

Figure 6: Mostly used gadget among different age groups.

Considering different age groups, the smartphone itself is the most widely used gadget, and this is most prevalent among the age group 15-29 years (95 out of 131). Participants belonging to the age group 45-59 years stand second in their widespread use of mobile phones, with only a very small percentage of individuals preferring to use smartphones in the remaining age groups.

Table 6: Average time spend on the smartphones among individuals.

Duration	Age group (years)	Female (% age)	Male (% age)
Less than one hour	15-29	0.07%	3.81%
	30-44	0.07%	0%
	45-59	2.29%	1.52%
	60 and above	0%	0%
One to two hours	15-29	10.68%	6.87%
	30-44	1.52%	1.52%
	45-59	2.29%	3.05%
	60 and above	0%	3.05%
Three to four hours	15-29	17.55%	19.84%
	30-44	0%	0%
	45-59	1.52%	2.29%
	60 and above	0%	0.07%
Five hours and above	15-29	12.21%	6.87%
	30-44	0%	0%
	45-59	0%	0%
	60 and above	0%	0%

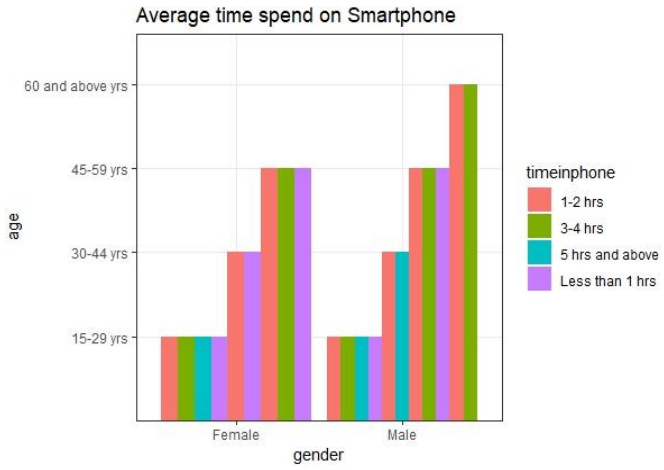

Figure 7: Average smartphone use duration.

The average number of hours spent on mobile phones by individuals is unquestionably an important parameter used to assess the extent of smartphone use. Analyzing the general trend, people on average engage with smartphones for one to four hours. Only a very small proportion of the population uses smartphones for less than one hour in general, and this is particularly true for both genders and all age groups. On this topic, our analysis is described in Table 6 and Figure 7. More young men (19.84%) and women (17.55%) use smartphones for three to four hours a day on average. Smartphones are used for five hours or more daily by individuals in the age group of 15-29 years, especially by females (12.21%). Individuals in the age group of 45-59 years on average use smartphones for an average duration below two hours per day. Every day, approximately 1.52% of males and females aged 30-44 years spend one to two hours on virtual media.

Smartphones have become a part of everyone's lives. It is used for a variety of purposes. They are mainly used as a communication medium, a source of entertainment, an aid in

academic matters, and several other socio-economic purposes. This classification is not mutually exclusive; that is, they can overlap, indicating that different individuals can use smartphones for more than one purpose. For convenience, the study considered only the main purpose for which a smartphone is used by any given individual. The results are given in Table 7 and are illustrated in Figure 8. Most of the participants make use of phones for communication purposes (42.74%), which is made possible by the advancements in internet technology and network connectivity. The second major use of a smartphone is for entertainment purposes (36.64%), which is facilitated by various social media platforms including YouTube, Instagram, Telegram, etc. Academic requirements can also be met by a smartphone since every piece of information is available at everyone's fingertip with search engines such as Google and informative websites such as Wikipedia, the Encyclopaedia Britannica, etc.

Table 7: Main purpose of a smartphone.

S.No.	Purpose	Freq	%age
1	Academic	21	16.03%
2	Communication	56	42.74%
3	Entertainment	48	36.64%
4	Others	64	58%

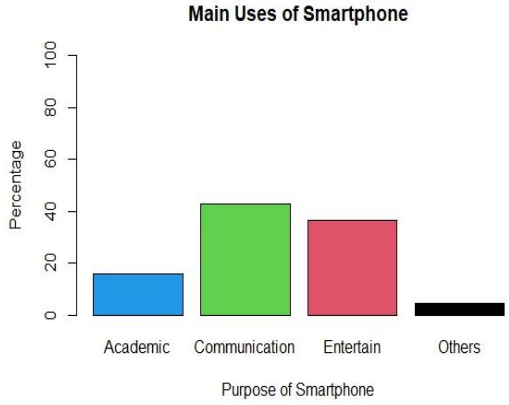

Figure 8: Smartphone uses.

The average duration of hours individuals spend on any social media platform is summarized in Table 8, which gives the number and percentage of participants using a social media platform for different time slots.

Table 8: Average time spend on social media platforms.

S.No.	Duration (hrs)	Freq	%age
1	Less than 1	34	25.95%
2	1-2	53	40.45%
3	3-4	35	26.71%
4	5 and above	9	6.87%

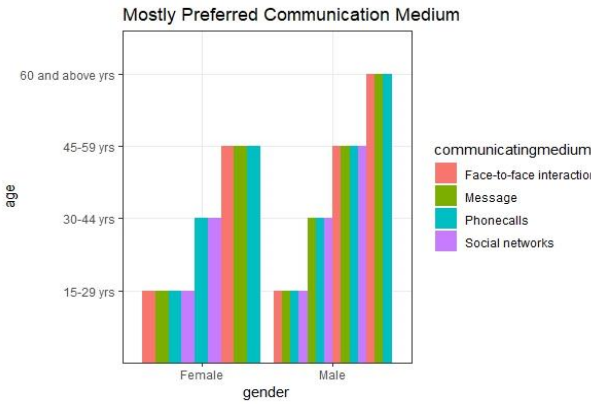

Figure 9: Mostly preferred communication medium.

Individuals differ in their interests and preferences regarding their choice of communication medium. Some prefer direct conversations, while others convey their messages through virtual mediums of communication that do not involve any face-to-face interaction. Both types of media can have their own pros and cons, which may certainly

influence an *individual's* choice. Figure 9 shows the gender- and age-specific preferences for the most used medium for communicating with other individuals.
Direct face-to-face interaction is least preferred among both males and females in all four age categories. Virtual media communications such as messages, phone calls, and social networking apps are widely preferred, especially by young men (30%) and women (38%). Among these, messages and social media apps are the most widely used for interaction among individuals nowadays, in contrast to classical face-to-face communication, which was prevalent a few decades ago. The following pie diagram consolidates the average duration an individual engages in some form of face-to-face interaction with other human beings. Figure 10 shows that above one third of the respondents spend two to five hours in direct interactions, while a small percentage of individuals make time to interact with their co-humans for ten hours or more per day.

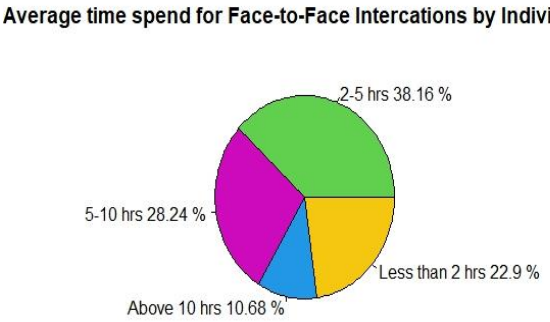

Figure 10: Duration of face-to-face interactions.

It is commonly observed that individuals are interested in using their smartphones even when they are dining. There can be several disadvantages associated with such reckless use of mobile phones, including prolonged hours of radiation exposure, over-calorie intake due to binge eating, leading to obesity, and other health problems. The study uses a Likert-scale question to assess an individual's preference for eating with their family, friends, and close ones overeating alone while watching a movie or series on their mobile phone. Table 9 and Figure 11 consolidate the above information.

Table 9: Individual's preference for eating with their family, friends and near ones overeating alone watching a movie/series in mobiles.

S.No.	Response	Freq	%age
1	Always	54	41.22%
2	Sometimes	56	42.74%
3	Never	21	16.03%

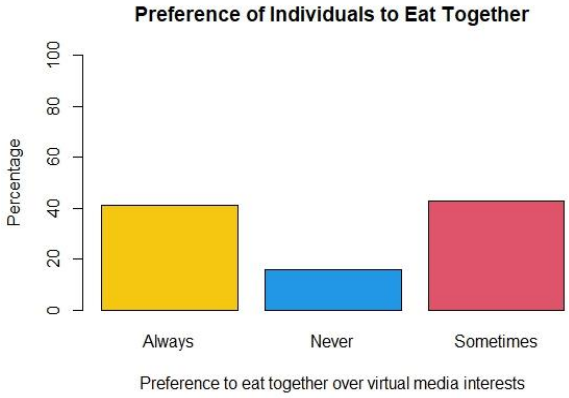

Figure 11: Preference of individuals to eat together over mobile use.

About 84% of participants prefer to eat together with their family and friends at least sometimes, in contrast to around 16% of respondents who always prefer the companionship of a smartphone while dining.

The current generation's smartphone addiction causes them to enter public restrooms with their phones in hand. About 18.33% of respondents have the habit of using phones in the washroom, and the remaining lion's share of individuals do not use phones in washrooms, accounting for around 81.67%. Among gender groups, more males (11.45%) tend to use phones in toilets than females (6.87%). Phone use in restrooms is more prevalent among those aged 15-29 than those aged 30-44 and 45-59. It is found that the senior citizens involved in the study do not possess the habit of using cell phones in toilets. This is observed in Figures 12 and 13.

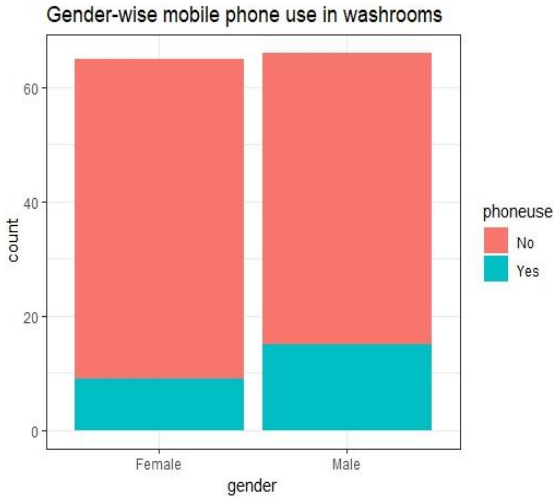

Figure 12: Gender-wise use of phone in toilets.

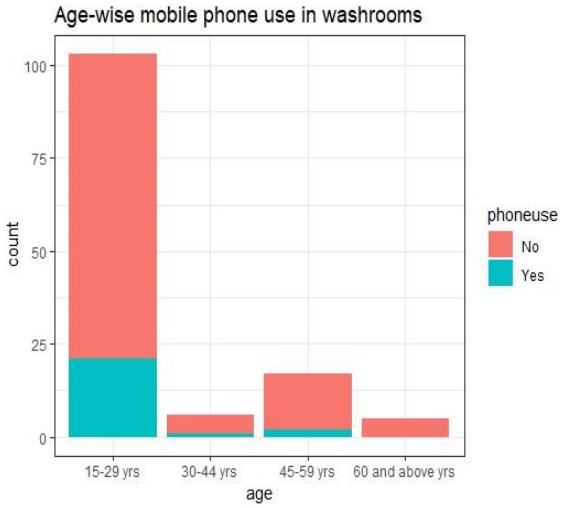

Figure 13: Age-wise use of phone in toilets.

It is quite common that we get involved in some sort of activity on our mobile phones that leads to the loss of our precious time. There are instances where individuals fail to complete their work within the deadline and end up getting fired. The most common reason for this is the widespread use of smartphones today. This hints at the degree of phone addiction and its influence on the work efficiency of an individual.

Table 10: Work completion failure due to mobile phone use.

S.No.	Response	Freq	%age
1	Always	7	5.34%
2	Sometimes	59	45.03%
3	Never	65	49.61%

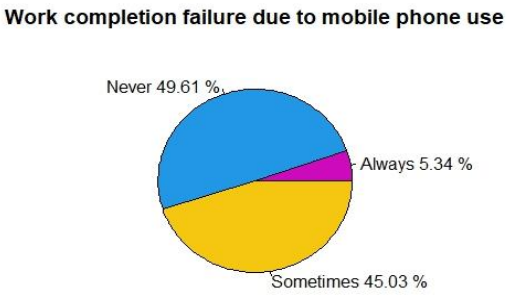

Figure 14: Failed to complete a work due to phone addiction.

Based on Table 10 and Figure 14, though only a small percentage of the population always fails to complete work on time, the proportion of the population that fails to do so at least sometimes accounts for about 50%. The remaining half of the individuals are able to meet their work deadlines on time in almost all cases.

There are certain areas where phone use is usually not allowed. Such places include schools, hospital wards, worship places, etc. There is an impulsiveness in individuals who are more attached to their phones and use them even at such prohibited places. The study finds that around 59% of the population has such an impulse to use phones in prohibited areas at least sometimes. This is a major share of the population, and it indicates the extent to which an individual is addicted to a phone, even in a social setting where phone use is not permissible.

Table 11: Annoyance of phone use among near and dear ones.

S.No.	Response	Freq	%age
1	Always	9	6.87%
2	Sometimes	69	52.67%
3	Never	53	40.45%

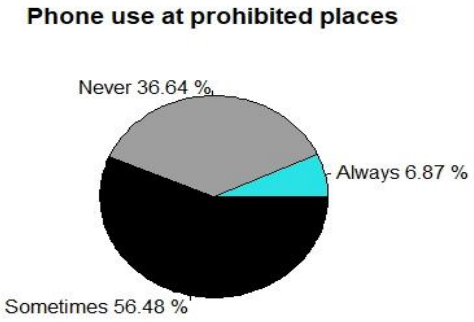

Figure 15: Impulse to use phone at prohibited settings.

Whether your family, friends, or colleagues are annoyed at your phone usage is a worthy question in the context of the current study. The answer to the same is collated in Table 11 and illustrated in Figure 15. The responses showed that about 6.87% of individuals use their phone in such a way that their fellow beings get annoyed by it, and another 52.67% of individuals create annoyance with their phone use at least sometimes.

Because mobile phones are the ideal artificial companion, it is unavoidable to leave them at home or at work when going out. Table 12 summarizes the frequency of going out without cell phones. Less than one fifth of the population does not use mobile phones on a regular basis. The vast majority take their cell phones with them while moving out. This can have a significant impact on individual's social interaction and attitude formation since such mobile phones confine an individual to a virtual world, disconnecting him or her from the real world.

Phone use while traveling can sometimes detract from an individual's enjoyment of the serenity of the environment, the scenic beauty of picnic spots, and so on. It can also affect the way an individual behaves and interacts with his or her co-travellers. Table 13 summarizes the preference of individuals to enjoy the serene environment and interactions with a co-traveller over social media platforms and other activities on their smartphones while on a trip. This is supported graphically in Figure 16.

Table 12: Frequency of going out without mobile phones.

S.No.	Response	Freq	%age
1	Always	17	12.97%
2	Sometimes	70	53.43%
3	Never	44	33.58%

Table 13: Preference for scenic beauty and companionship over mobile.

S.No.	Response	Freq	%age
1	Always	50	38.16%
2	Sometimes	61	46.56%
3	Never	20	15.26%

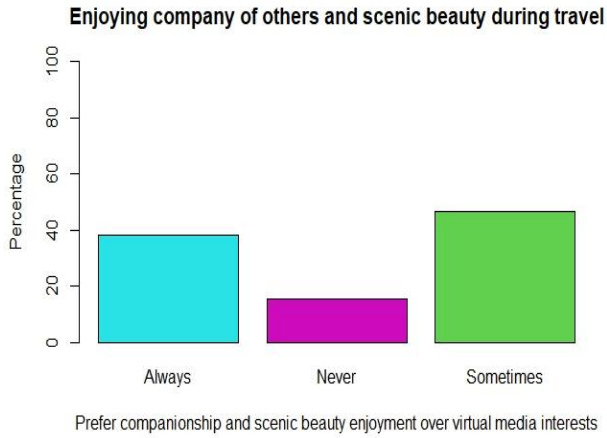

Figure 16: Phone use and natural environment while travelling.

Only 15.26% of the respondents confine themselves to the world of virtual media, while the remaining population believes in enjoying the serenity of nature, the beauty of surroundings, and the companionship of fellow beings on a trip.

Table 14 shows the propensity for abandoning physical surroundings for smartphone use among the participants. A vast majority of individuals neglect their immediate physical surroundings while using mobile phones. This is an issue of great concern since the current generation is being more and more driven towards virtual world fantasies, making them negligent towards a wide range of social and moral responsibilities. Another parameter to measure the extent of phone addiction is the immediacy with which individuals check their phones on receiving a notification alert. According to Figure 17, around 25.18% of individuals always check their phones, and 60.30% of them sometimes do so immediately after receiving a notification alert.

Table 14: Propensity of abandoning physical surroundings.

S.No	Response	Freq	%age
1	Always	5	3.81%
2	Sometimes	85	64.88%
3	Never	41	31.29%

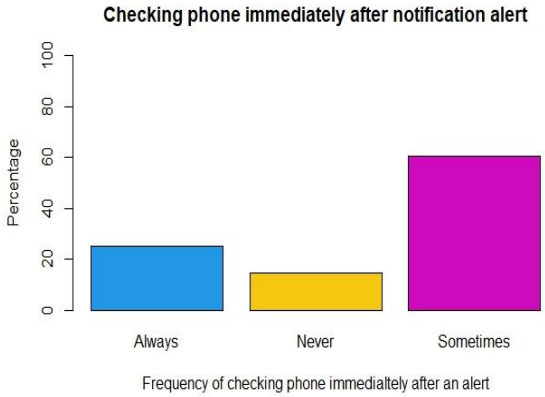

Figure 17: Frequency of immediately checking phone on an alert.

Furthermore, according to Table 15, 67.17% of participants believe that face-to-face interactions are more comfortable than text messages or emails when communicating with others because direct conversations can build a warm relationship and rapport among individuals while reducing the chances of misinterpretations and misunderstandings. Around a quarter of the population is indifferent towards both of these mediums of communication, while a smaller proportion disagrees about the comfortability of direct interactions.

According to Figure 18, the majority of individuals (70.99%) agree that direct face-to-face communication is preferable in conveying emotional matters, as it can enable the individuals to rightly understand their own as well as others' emotions without any chance of misunderstanding that may arise while a message or mail is sent to handle emotional things. Only 7.63% of the population disregards this opinion, while 21.37% are neutral in their stance regarding the same.

Table 15: Comfortability of direct conversation over messages or emails.

S.No.	Response	Freq	%age
1	Agree	88	67.17%
2	Neutral	34	25.95%
3	Disagree	9	6.87%

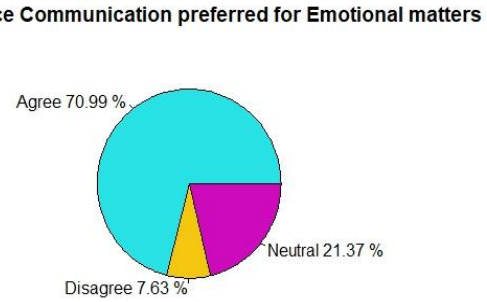

Figure 18: Direct interaction preferred for emotional matters.

Smartphones are those innovations that helped the world transcend various socio-economic, geographical, and temporal barriers with their advancements in technology and applications of the World Wide Web and artificial intelligence. Today's world is aware of the inevitability of smartphones, especially in a post-pandemic scenario.

Table 16 gives an account of the opinions of the male and female populations belonging to different categories regarding the inevitable nature of smartphones, supported graphically by Figure 19.

Table 16: Inevitability of smartphones.

Response	Response	Female (%)	Male (%)
YES	Home maker	1.52%	0%
	Retired	0%	1.52%
	Student	26.71%	17.55%
	Umemployed	1.52%	3.05%
	Worker	10.68%1	12.21%
NO	Home maker	0%	0%
	Retired	0%	4.58%
	Student	7.63%	4.58%
	Umemployed	1.52%	0.76%
	Worker	0%	6.10%

Smartphones are found to be more important for students (both males and females), accounting for around 43% of the population. Workers also consider mobile phones an essential utility in their lives. Though small in percentage, homemakers, retired individuals, and unemployed individuals acknowledge the vitality of a smartphone in the current era.

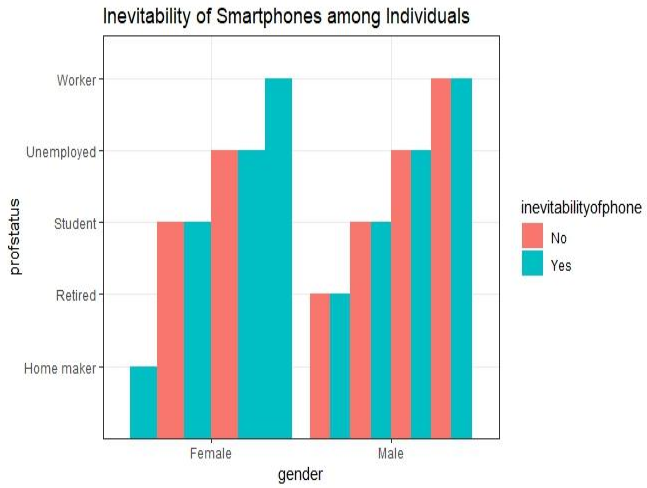

Figure 19: Inevitability of smartphones.

To end the study, the chi-square test of independence is performed to find out whether significant relationships exist between the different categorical variables considered. The null hypothesis is stated as- H_0: There is no significant relationship between the variables under consideration. Suppose the *p*-value of the chi-square statistic is less than 0.05, the null hypothesis is rejected and an alternative hypothesis is accepted. The alternative hypothesis states the possible significance of the relationship between the variables (*).

Table 17 summarises the association among the concerned categorical variables. Age group of individuals is found to have statistically significant associations with respect to smartphone ownership, time spend on phone and duration of face-to-face interactions. It is also noted that employment status significantly affects the smartphone ownership among the participants.

Table 17: Association between different variables-Chi square test.

S. No.	Variable	Parameter of comparison	χ^2	df	*p*-value
1	Smartphone ownership	Gender	0.0076	1	0.9304
		Age	203.63	3	< 2.2e-16*
		Employment status	138.81	4	< 2.2e-16*
2	Time spent on phone	Gender	2.165	3	0.5389
		Age	29.469	9	0.0005399*
		Employment status	17.435	12	0.1339
3	Duration of face-to-face interaction	Gender	1.9225	3	0.5886
		Age	17.227	9	0.04528*
		Employment status	15.924	12	0.1947

3. Conclusion

The inevitability of smartphone technology is a clear-cut truth in the modern era, especially at the outset of the COVID-19 pandemic when prevention measures against disease transmission took the serious form of stringent lockdowns and quarantines, during which life is in peril and social relationships are worst affected. It was a time when physical distancing norms were stringently implemented to contain the pandemic, and disease-affected individuals, along with their primary and secondary contacts, were isolated from others to prevent any possible outbreak of COVID-19. Smartphone technology was a boon

in this context, as it assisted in overcoming many of the challenges posed by the pandemic crisis. Online education, virtual consultation with doctors, virtual court trials, and working from home are some of the noted achievements of advanced communication technology such as the smartphone. During the pandemic period, there was a surge in the use of mobile phones and other such technologies, raising serious concerns about their impact on face-to-face communications and social interactions.

Smartphone use has certainly changed the way individuals interact with each other in the present-day world. Smartphone-mediated communications have significantly replaced classical face-to-face communications and intervened in social attitude formation processes across the globe. These novel virtual media companion smartphones frequently shape and influence how today's generation approaches socioeconomic, political, and cultural issues.

The empirical study undertaken among Keralites to analyze the social impact of smartphone use concludes that there is no drastic reduction in face-to-face interactions among individuals as a result of phone use, though there is evidence of wide scale ownership and use of smartphones among all categories of individuals. The study observes that a vast majority of individuals possess their own smartphones, which are mostly used for communication purposes other than educational and entertainment needs. There is a significant relationship between smartphone use, age, and employment status. Smartphone use is most prevalent among students and workers belonging to the age groups 15–29 years and 45–59 years. The gender divides in smartphone use and possession is not clearly visible in Kerala, India.

It is true that most of the population under different age and gender categories uses smartphones for two to four hours on average every day, but there is no significant fall in the duration spent in direct face-to-face conversations with fellow beings, except for a very few individuals. The majority of people agree that traditional face-to-face communication is more comfortable, reliable, and expressive than text messages, phone calls, or electronic mail. At the same time, there is evidence for the popular use of phones in travel, while going out to nearby places, and even at the dining table and washrooms. The impulse of certain individuals to engage in phone conversations while at work, in places of worship, or in classrooms, where phone use is usually restricted, is a matter of concern.

There are instances of phone use creating an annoyance to fellow humans and seriously affecting the social health and well-being of individuals. Smartphone use can be detrimental to professional life when it interferes with the completion of work and degrades work efficiency. Prolonged phone use can expose one to radiation and its associated health problems. So, it is essential to achieve a balance between technology and human interactions. At the individual level, this can be made possible through mindfulness in the use of phones and making efforts to reduce over-reliance on technology. Society can also play a vital role in achieving this goal through the interventions of friends, family, relatives, etc. At the organizational level, companies and industries can take the necessary steps to reduce the workload of employees, thereby relieving them from hectic schedules. Promotion of recreational activities at home or even at workplaces involving direct social interactions can be helpful in enhancing the social and mental health of individuals.

The current study has several limitations pertaining to temporal and spatial aspects. Further studies in this direction can solve these shortcomings if a broader research perspective is

adopted. The study is confined to social interactions, especially face-to-face communications. A future study could investigate the impact of smartphone use on other forms of interaction. Besides, the current study can be expanded to study the impact of smartphone use on voluntary and involuntary face-to-face communications across individuals.

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