

**Uses of Mobile Phone Games and Gratifications:
A Study on the Responses of Sikkim Teenagers**

A Thesis Submitted

To

Sikkim University



In Partial Fulfilment of the Requirement for the
Degree of Doctor of Philosophy

By

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June 2022

DECLARATION

I, Aaron Eliza Lepcha, hereby declare that the research work embodied in the thesis titled “Uses of Mobile Phone Games and Gratifications: A Study on the Responses of Sikkim Teenagers” submitted to Sikkim University for the award of degree of **Doctor of Philosophy**, is my original work. The dissertation has not been submitted for any degree of this University or any other University.

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This is to certify that the thesis entitled **Uses of Mobile Phone Games and Gratifications: A Study on the Responses of Sikkim Teenagers** submitted to Sikkim University in partial fulfilment of the requirement for the degree of **Doctor of Philosophy in Mass Communication** embodies the result of bona fide research carried out by **Aaron Eliza Lepcha**. This work has not been submitted previously for any other degree or to any other university or institute of learning. It is further certified that the candidate has complied with all the formalities as per the requirements of Sikkim University. All the assistance and help received during the course of investigation have been duly acknowledged by him.

I recommend that the thesis may be placed before the examiners for consideration of award of the degree of this university.

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“Uses of Mobile Phone Games and Gratifications: A Study on the Responses of Sikkim Teenagers”

Submitted by *Aaron Eliza Lepcha* under the supervision of *Dr. Pooja Basnett, Assistant Professor, Department of Mass Communication, School of Professional Studies, Sikkim University.*

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“A journey doesn’t take long to end, what you experience on the way is what makes the Journey interesting and at the end of your life all you have are the experiences and the stories you share with all.”

-Aaron E. Lepcha.

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CHAPTER 1

INTRODUCTION

1. 1 Digital Games: Developments, debated use and abuse

Games are a way by which one can associate memories of their childhood and the times they spent on the fields playing the games which they willingly played or were made to play by their supervisors in schools and training centres. The games can help one communicate and coordinate with each other while teaching them the importance of teamwork, cooperation and coordination amongst the players. Similarly, Mobile games house similar functions where the participants learn and enjoy the experiences that they get in the field without breaking a sweat. The progression and advancement of technologies have allowed the participants to play at the ease of their homes and give them a chance to be better than they are on the field. The dawn of the age of digital gaming has made it possible for someone who loves the idea of scoring a goal from the centre of the field; from scoring like Messi, Ronaldo and Neymar to wiping out enemies like Arnold and Sylvester Stallone on the battlefield all is possible with the age of digital gaming. The games are now more interactive, realistic and responsive than ever. These games are made to run on the fastest processors with intensive graphics and realism that players often lose track of time. The games in the digital field make any player despite his appearance and physical attributes be the hero in the game. Normal people going and doing the extra-ordinary is what attracts players to the digital world of gaming. The ‘hyper-realism’ has grasped the attention of the gamers and the gaming industry is one of the largest revenue-generating industries in today’s global economy (PubNative, 2020).

Mobile gaming is a fraction of the gaming industry but is becoming an integral part of the gaming industry due to the progression of the Mobile Phone industry and the advent of smart phones. The mobile gaming industry's focus lies in the mobile phone platform since the youths are mostly engaged with mobile phones. The 'hyper-connectedness' mentioned by Veissière and Stendel (2018) has made it clearer that mobile phones are the tool for every individual for work and play. Mobile gaming has led to the creation of Gaming industries having separate branches for mobile phone gaming since the platform now caters to millions of players each day logging into their gaming accounts to play their favourite game (Lopez-Fernandez et al., 2018). More users mean that the demand for more games and gaming genres is on the rise and each genre of games has its audiences and participants who play the games based on their personal preferences (Anderson & Dill, 2000).

In the academic world however gaming and its effects have been studied with results indicating the positives as social interaction via online gaming, the dependence of gamers on their ability to handle tasks such as competitions in real life and achieving success, using teamwork in and off the game, mood management, pro-social behaviour (Yee 2005; Cole & Griffiths 2007; Andrews & Murphy, 2006; Kim et al., 2008) and attention are studied and found that the use of gaming can improve the spatial cognitive skills which can be transferred into academics making the players develop problem-solving skills (Uttal et al., 2013; Granic et al., 2014) and the negatives as in aggression, violent behaviour, sedentary behaviour, shyness and health issues related to lack of proper diet and eating disorder (Anderson et al., 2012; Bartholow & Anderson, 2002; Wallenius, 2009). The researchers have done various researches on the subjects and have given their opinions and results based on their findings (Barlett et al., 2009). However, the effects and the results of the debate on

whether gaming is good or bad should not be magnified by the distinctive results produced over time meaning that the results of the games' influences on the human mind should not be blown out of proportion. The findings and the results need to be seen with the eye of speculation and sound judgement (Cole & Griffiths 2007).

Digital Gaming has come a long way from the initial phases of minimal interaction based on the joystick movements to be able to get strapped with the Virtual Reality (VR) devices and experience the game on site. The digital world of games is more interactive and realistic and has an ocean of choices for players to choose from. Gamers can decide their choices of games and play accordingly from just arcade gaming to owning personal consoles and being able to play in the comfort of one's own home is indeed notable progress. The gamers are not restricted to time and movements, they have the independence to choose their time of play and play either offline or with their peer online the decision is solely based on the gamers' preferences.

1. 2 Use of Mobile Phones and Gratification

The mobile phone was made for the ease of the consumers which catered to the need of it being a phone without any wires; a wireless device created to woo the consumers when it was thought to be impossible. The mobile phone's birth was roughly 43 years ago when the first phone call was made via the Motorola Cell Phone developed by Martin Cooper, a senior engineer on 3rd April, 1973. The phone which was wireless at the time weighed 1.1 kg and 30 minutes of talk time and took around 10 hours to charge (Goodwin, 2015).

After a decade of innovation and testing the first mobile phones were available to the consumers in the year 1983 known as the Motorola DynaTAC 8000X. The mobile was launched with the features of storing 30 phone numbers, had about 6 hours of standby and offered 30 minutes of talk-time. The phone at that time was a marvel which only a few could afford due to the prices which were high for most.

However, the scene of the earlier devices was not for the average consumers but attracted mostly the ultra-rich and well-to-do personalities. Later in the 90s Nokia came into existence and a smaller lighter phone was launched known as the 'Mobira Cityman 900' which weighed 800gms. This was the beginning of mobile phones which were for the average consumers in selected parts of the world. The mobile devices were handier and more compact compared to the early Motorola handsets. The 90s was a period when mobile companies progressed with more technological features and portability keeping in mind the average consumer. The mobile which was ideally used for communication was now seen to be coming up with more features and usability. Then slowly the games on the mobile devices were launched like Snakes, Tetris, Memory etc. the Motorola StarTAC was the first flip phone with the ability to be folded and used by the consumers based on the idea inspired by the Star Trek movie.

The cell phones developed over time had more features added to them and more functions which could help the users do more than just talking on the phone. The launching of Blackberry which came to be known as a business-centric phone mostly carried and marketed by the Business class genre of the society. The phones were developing at a faster rate with more and more features being made available to the consumer over time. The transition of the traditional phone to portable Mobile Phones

to smart phones took over decades of testing, experimenting and technological upgrades which eventually gave us the more compact and easier to use 'Smart phones' which we carry around and is also the next entity of ourselves. One can always see that the yesteryears mobile phones are larger and heavier compared to the phones which we carry now. Smart phones began their journey in 1992 when IBM invented the first Smartphone and launched it for the public in 1994 naming it the 'Simon Personal Communicator (SPC)'. The launched smart phone SPC had a touch screen and had the ability to send and read emails and faxes along with a calendar, address book, an appointment scheduler and a stylus input screen keyboard. Thus began the long lists of phones which came with more features and lesser prices which made it affordable for the populous.

The year 2000 saw the evolution of cyberspace and mobile phones which made the latter thinkable to have features like video conferencing and transferring emails. The concluding part of the 2000s saw the commencement of devices devoted to a precise set of features that the mobile firms exhibited to entice the patrons. The game-centric, the camera-centric, and the business-class work-centric devices were introduced to fascinate consumers into purchasing the products based on their choices. The introduction of iPhones in 2007 was a game-changer at the moment due to its design and capability which only a few could afford. The new device had more features and a design which set them apart from the rest of the competitors. The seamless internet connectivity was the USP of the iPhone.

With the introduction of the internet available on the devices were now capable of doing much more than the regular wired telecommunication devices fixed at home. Smart phones with the capability of seamless internet connectivity made the users

conscious of things around them via emails, e-papers and social networking sites (SNS). A person sitting at his place of comfort could work and entertain at the same time. With the use of better internet connectivity and faster services provided by the telecom industry, information and entertainment were just a click away. More features made the consumer use the medium widely for entertainment, escape from monotony, time pass, information, proficient progress (Papacharissi, 2008), co-viewing, communication, and convenient information seeking (Haridakis & Hanson, 2009).

1. 2. a. Gaming and Gratifications

The gaming industry has recently tapped into the source of mobility which was not present in the 80s when the games were mostly played on the television. The year 1994 was the beginning of mobile gaming when the famous 'Tetris' was launched in the Hagenuk MT-200 device by Hagenuk Corporation in Denmark. Similarly, Nokia also launched its famous game 'Snake' on their devices which became popular in the market in 1997. This marked the beginning of the Mobile game world and since then a lot has changed and evolved in terms of gaming on the mobile handsets which has included the modern age games which have higher graphics and much better visual appeal in their manufactured games. In 2008 the Apple store was launched to cater to the needs of the iPhone market where iOS-compatible software and applications were stored and where it was available for the iPhone patrons to use them via internet downloads.

The mobile gaming community have become popular and with new games coming out and more gamers available the gaming industry has indeed grown from a few to billions. The game played is of different kinds, either outdoors or indoors which are played for relaxation and social interactions. However, in recent years this has

changed and the present generations opt for a more of an online mode of game play. (Sampat & Krishnamoorthy, 2016). The mobile gaming market in the Asia Pacific has grown to 740 million gamers (Statista, 2014) and is estimated to grow more as per the reports. The mobile gaming market in India is increasing according to the Economic Times (2015). The rise is due to the availability of mobile devices at many affordable rates. The use of mobile phone games has increased over the years and more players enjoy playing games online with their real friends and family have been found to be closer relationship-wise and enjoy the times spent on the mobile games (Cole & Griffith, 2007).

The gratifications derived from playing the mobile games can be (a) Hedonic, (b) Social and (c) Utilitarian (Buenos et al., 2020) which include enjoyment, escapism, fantasy, social interaction, social presence, achievement and self-presentation leading to a motive of continuous intentions to play a particular game as desired by the gamer. The mentioned gratifications can be a driving factor for users to play a certain game or adopt a certain habit due to which the subject enjoys the particular trait. The gratifications associated with the subject or individual depend his choice of use of the media in order to obtain the aforementioned gratifications. In relation to gaming, the gratifications of the user, consumer, and audience is the accomplishment of certain goals which lead to the commencement of the gamers to the next level or stage. The accomplishment yields result which give the gamers a sense of achievement that they intend to show off or acknowledge via social interaction with online friends, peers, groups or clans. The gamers or users of the online medium can achieve things which are not possible in the 'real' world which gives them the sense of escapism and fantasy to be a character more powerful than the real self. The main motivation for playing a video game is a challenge as the character and game level up (Sherry et al.,

2006). The studies done in many countries like the Netherlands and China found that the gratifications were mostly arousal, social interaction, diversion, competition, interaction and self-expression (Sun et al., 2006).

1. 2. b. Teenagers and Mobile Gaming

Teenagers are mainly the age group of children from 13 to 19 years. However, studies and deliberations have given different words to understand the age groups, separate categories are formed to term them ranging from ‘young adolescents’ (10 to 14 years), ‘teens’ (15-19 years), and ‘young adults’ (20-24 years). The term ‘teen’ however means thirteen to nineteen years of age (Helve& Holm, 2017). Mostly during this age, the children go through what is known as puberty when the body beings to develop and are often called the transitional period of children into legal adulthood. The changes during this period are mainly physical, social, emotional and intellectual. During the period of transition, teenagers go through the development of the body in terms of hormonal development leading to changes in voice, facial features and body parts. The above changes cause the brain to make irrational and impulsive decisions which affect its decision-making process. The changes as described can cause the teen to feel socially concerned about what others think and ‘peers’ play a vital role in their activities and overall behavioural development (Choi & Lee, 2009). These changes also created a psychological development which is characterized by identity formation and independence. Identity formation mainly depends on the exploration where they seek individuality and uniqueness and often seek peer acceptance.

During this period children ‘Teens’ explore the opportunities in which they feel comfortable and hence the activities which are interesting to them (Caskey & Anfara, 2014). The urge to make new friends and do more cooperative activities with their

peers opens up avenues to indulge in co-curricular activities which are the digital games known as video games, mobile games, and online games. Played from the convenience of their homes and any place, the games played on the devices have the easement of accessibility which is the reason for their popularity. The games available a largely centred to attract the youths hence the gaming industry thrives on them. The games have been developed since the first game was commercially available from the 1970s with the introduction of 'Pong' by Atari Company which became a successful arcade video game. Since then, the Video Game industry has come a long way and now has moved towards making it more compact and connected with the internet.

Mobile games are known for their mobility, simplicity and interactivity which form the main characteristics of mobile gaming which makes them differ from console games and computer games (Sampat, 2016). Mobile phone games are now widely used and played with an ocean of game titles to choose from the application stores of Apple Store and Google Play for iOS and Android respectively. The games have a series of genres to choose from rather than being able to play alone or in a confined space, the games can be connected virtually with the help of the internet and played on a global level. The video games console had to be played with the help of television and was not compact in nature as compared to the new age mobile phone games available in smart phones and had the easement of connectivity and space. The mobile phone games thus have had a huge impact on the young audience due to the 'on-the-go' feature of the Mobile Phone. Mobile phone games and youth have been a keen part of recent studies by scholars who try to see the effects caused by the devices on them. Most video game research to date has been focused on the impact of the games on the academic and social outcomes along with some studies on the

relationships between games and civic outcomes (Pew Internet & American Life Project, 2008).

Mobile phone games remain popular amongst the teens which they consider as a tool for socialization, where they play on a social level with friends either online or with them on a more physical level (Pew Internet & American Life Project, 2008). They play them in a variety of ways, including with others, physically in the case of Ludo, online like Clash of Clans, and Candy Crush and by themselves mostly offline games. The games chosen by them can be peer-influenced, popular in advertisements or choices of their own. The choice of games differs in content which can range from games like Mortal Kombat, Grand Theft Auto, Devil May Cry, and Resident Evil which are violent and gory to a more casual and calmer puzzles and non-violent games like Candy Crush, Talking Tom which are popular with the younger crowd.

1. 3 The Digital Games and its predecessors: Mechanical to Electromechanical to Digital

The concept of an ‘Arcade’ a coin-operated amusement device house was popularised by the ‘*Kinetoscope*’ parlour as mentioned by William in his book ‘History of Digital Games: Developments in Art, Design and Interaction’ where he talks about “*Bacigalupi’s Kinetoscope*” parlour: “Edison’s Kinetoscope, Phonograph and Gramophone Arcade.” From this point on, it became increasingly more common to see the word “arcade” in the titles of amusement spaces. (Williams, 2017, p. 7)

After the popularity of *Kinetoscope* arcades in the US and UK in the 1900s, the popularity of those arcades was replaced by the coin-operated movie viewing devices known as the *Mutoscope* which was created by William Dickson inventor of

Kinetoscope. The reason for the popularity of the Mutoscope was the easy maintenance and crank-powered mechanism which had a series of images on the paper which were clearer and better viewable by the spectators. (Williams, 2017, pp. 8-9)

For most parts of the 1900s the coin-operated arcades housing the technological marvel of the era the *Kinetoscope*, *Mutoscope* and *Quartoscopes* were popular and had the earliest leisure arcade houses for the public to entice their time with. These devices were the first arcade mechanical devices operated via coins which were the beginning of the digital gaming culture and industry of the world.

The standstill coin-operated viewing devices of the early 1900s were then replaced with the manufacturing of the more lively and interactive arcade devices such as the *Yacht Racer (1900)* and the *Cricket Match (1903)* which were sports-based arcade games manufactured by the Automatic Sports Company of London. Though the games didn't have all the aspects of the sporting elements and interactivity, however, they were the first devices to venture into the sports genre of games to be played in arcade mode. The other non-sports game was the *Climbing Fireman (1920s)* made in the UK where the task was using the machine's dial to get the fireman to the top and ring the bell.

Similar games evolved prior to the world war and games were more mechanical in nature and required manual handling of games. In the 25-years period after World War II, the games played in the arcades had a general transition from mechanical to electromechanical form. The year 1948 saw the first patent for the "Cathode Ray Tube Amusement Device" filed by Thomas T. Gold in America which can be arguably traced as the first amusement device of the modern world (Mitra, 2010 p.

11). The introduction of the timer was one of the electromechanical components introduced in gaming consoles of the era. The games like K.O. Champ by International Mutoscope Reel Co., 1955 and Captain Kid Gun by Midway Manufacturing Co., 1966 were such available games as mentioned in Williams, 2017, (pp. 20-21). The Spacewar game was invented by an MIT student Steve Russell in 1962, which became the first computer-based video and the game was popular across the country (Museum of play, 2020).

However, to exactly pinpoint the first computer game in 1952 Alexander (Sandy) Douglas, a PhD student at Cambridge University created the ‘noughts and crosses’ (Tic-Tac-Toe) which was played on the Electronic Delay Storage Automatic Calculator (EDSAC), the world first stored-program computer (Bryce & Rutter, 2003).

The next addition to the gaming genres was the popularity of driving games in the US as they were considered symbols of status, recreational activities and adventure lovers (Williams, 2017, p. 21). Games like ‘Auto Test’ by Capitol Projector Corp., ‘Motorama’ by Genco and ‘Road Racer’ by William Electric Mfg. Co. were games designed to give a simulation of the driving experiences to the players in the arcade form. This genre of games was made sophisticated with graphics and other elements by other games made during the period. The games had a “pseudo-3D” or a 2.5D perspective which was closer to 3D but not actually a fully representative 3D perspective.

The beginning of the mid-1970s and the early 1980s is metaphorically termed as the ‘Golden age of Arcade’ (Williams, 2017, p. 71) and a ‘Golden period of gaming development’ for the ‘historians of entertainment’ (Bryce & Rutter, 2003). This

period had notable advancements in technological and cultural arenas in Arcade Gaming with variations in the creativity and narrative of the gaming environment. The first commercial home video game or console (video game machine) was launched in 1972 and sold to the consumers named as the Magnavox Odyssey to over 100,000 units in a year (Bryce & Rutter, 2003). Games were mostly cartridge-based which were inserted into the consoles and had their own hardware. The popular games during the era were Space Invaders by Taito, 1978, Asteroids by Atari, 1979, Pac Man by Namco, 1980 and Donkey Kong by Nintendo, 1981 to name a few. These games were graphically enhanced and immersive to the given age and time. Donkey Kong by Nintendo was the first of its kind to have different play scenarios and narratives from the usual arcade gaming which housed blended-in game characters having distinctive behaviours and game design. The game also marks the beginning of more games which had similar characteristics. The early 1980s also saw the rising of home-based game consoles which would end the golden age of coin-operated gaming machines and would lead to the rise in the new genre of home-based consoles for gamers' ease of play. The introduction of the "multi-genre" games which combined multiple distinctive game types into one also known as the Eclectic approach was also introduced with games like Tron by Bally/Midway, 1982 which was based on the Disney movie with the same name which became popular for arcade gamers. The beginning of the multiplayer genre began with the launching of the game M.U.L.E. in the year 1983, a game where players compete to gather the most resources and reclaim lands as they progress through the game on the planet Irata. A game based on turns where each player needs to explore their luck and gain wealth.

The later part of the 1970s and early 1990s were the time of the growth of home consoles, and computer games and the fading of the popularity of the coin-operated

arcade machines. The advancement in the technological aspects of gaming led to fierce competition and rivalry between the manufacturers and designers which also led to the third-party developers of games which gave rise to the market and demands. The growth of the gaming industry thus began with the development of better games introduced by the manufacturers to woo the consumers who were still struggling to find the games they so desired. Huge promises and disappointing deliveries by the promise makers also led to the fall of many gaming companies and also led to the rise of newer companies who would soon rule the console world (Williams, 2017, pp.109-111). The introduction of the computer and its games was the beginning of the gaming diversity where the consumers were to be given choices to work and play at the same time on their home computers. The progression and amalgamation of gaming capabilities on the home computers gave users the freedom to play arcade-style games on their computers apart from the mundane tasks they usually performed on their computers. The computer and home console systems encouraged a vast genre of games from arcade-style to action to hack and slash to role playing games which were having different environments than the usual 'ping-pong' style home console games which were given to the public to enjoy. In the home consoles and arcade-style side scrolling action games like Double Dragon by Technos Japan, 1987, Kung-Fu Master, distinguished itself as fighting games emerged in Japan which later became popular in the US and other parts of the world. Street Fighter by Capcom emerged as the founder of the head-to-head fighting games in the early 1990s and paved the way for others to follow. Games like Super Mario Bros by Nintendo were striking a perfectly balanced game play for in-home gaming consoles catering to the players at the ease of their homes. The game expanded to 32 levels with multiple stages of difficulties and boss levels for the players to enjoy. The later part of the

gaming topography saw the introduction of the games like Legend of Zelda (1987) which was one of the first open world games to be played on a home console. These games received a series of successful sequels.

The graphical advancement in the gaming environment meant that the game was beginning to look more realistic and pleasing to the eyes of the gamer's games like Loom (1990) by Lucas film Games were such an example of it being graphically advanced and attractive. The technological and graphical improvements also led to the creation of games with a focus on management and strategy genres of game play (SimCity by Maxis, 1990) these games were not designed with an end goal however they were centred around players of the game to have the ability to build and interact with the game's simulation.

After the introduction of better systems on gaming consoles and Computers having higher processing powers, the games too developed along the way games like Age of Empires, and Call of Duty among the sea of games. The home console was now miniaturized into handheld gaming devices which were portable and easy to carry the popular Nintendo Game Boy was released in the late 1980s which had cartridges changing capabilities and portability. The famous PlayStation which is popular to date was released in 1995 in the US followed by Nintendo 64 in 1996. These machines were compact disk-operated machines and had no cartridge slots, they had better graphic and interactive sessions within game play. The progression of the gaming consoles was improving and so were other technologies side by side. 1999 began with the introduction of the famously interactive, online gaming multiplayer game 'Everquest' by Sony Online Entertainment which saw thousands of users join to play the online game. What followed next were more games which were remodelled and

made graphically intense to suit the players. The beginning of the 2000s was seen as a stride towards more aggressive gaming and gaming environments, the in-game atmosphere was more pleasurable, exciting and realistic than before. Joining the console brigade was Microsoft's Xbox in 2007 which began producing a series of games and consoles to compete against the already popular console manufacturing giants like Nintendo and Sony.

Encouraging online gaming and its peripherals the online streaming and downloading digital distribution platform 'Steam' was launched where the gamers could download, play and update their computer games online. This began the rise and importance of the technological prowess which is still available on most devices the platform for sharing and playing online is a technological marvel made possible due to the efforts of the earlier games manufacturers. The year 2000 was a busy decade with more technological improvements and other facilities being made available for the players the gaming industry saw a boom in the graphical arena and also the machines which played these graphic-intensive games. The launching of Xbox 360 and Nintendo Wii along with the successors of Sony's PlayStation made the gaming industry a multi-billion-dollar company.

The end of 2000 began with the introduction of Mobile Phone gaming a new platform of gaming which targeted the Nintendo's Game Boy and PlayStation's PSP. The games were generated for social players on their social media handles and the iPhones which introduced their gaming capabilities (Williams, 2017, p. 205).

The introduction of Java enabled phones saw the popular games like Snakes, Snakes II, Bounce, and Space Impact which was available on the Nokia enabled phones in early 2000. These phones had the games bundled with their devices and were actively

played by 350 million people (Wright, 2016). The advancement of mobile phone gaming has always been interlinked with the series of technological advancements in the mobile phone's hardware and software. These phones have had a vast and fast technological upgrade in their two decades of actual mobile phones' survival. This phone industry has led to the development of mobile phone gaming and the industry is now thriving as more concentration has been centred around the sales and penetration of mobile phones to the consumers today.

The launch of smart phones has helped the cause to come further than the latter, the smart phones are what is called the 'mini-computer' which everyone now owns. Gaming was limited to a small number of games back in the mid-1990s and early 2000s. However, the introduction of the iPhone and its AppStore launch in 2007 saw the booming of gaming platforms increasing their reach on mobile phones. The introduction of iOS and Google's Android OS led to the demise of the Java platform on the mobile phones (Gurumoorthy, 2018) and marked a new beginning for gaming to be made possible in various ways and various titles would be made available in the tiny 6 inches of screen with limitless capabilities in the near future.

1. 4 Communication through Mobile Phones

The existence of the mobile phone began when the first call was made in 1973 (Nielsen, 2013, p. 3) via a handheld mobile phone by Martin Cooper, an engineer at the Motorola company through a mobile phone (Goodwin, 2015). Since then, with new technological advancements and innovations, it has changed the mobile phone from being a handheld device for making calls, to it being a tool for information broadcasting and a copious source of entertainment available in countless forms. Mobile phones have come a long way from being the rich man's fashion accessory to

any man's daily needs such as food and air. It has become the centre around which one's life revolves and plays a very prominent part in it. Mobile phones have become the tool for one's business, education, entertainment and most importantly, communication. Decades ago, when landlines were an item of luxury during the early 1980s and communication was mostly a public sector enterprise. A lot has changed over the years with new telecommunication services being provided by the telecom operators which are both in the public and the private sectors. Mobile phones are no longer exclusive they have penetrated the majority of the population residing around the world.

Cell phone technology introduces a new sense of speed and connectivity in social life which was not possible two decades ago in India. If landline telephones were able to bring the communication links to the workplace and homes, Cell phones have gone to the extreme of bringing the world at one's fingertips from where one can access almost any information via the internet.

In the global landscape, cell phones have exceeded the expectations of manufacturers. In 2003 worldwide phone sales were 520 million units (Sharma, 2014). In the Indian scenario, mobile phones were introduced in the mid-1990s when only a few of the rich and well-to-do were capable of buying such a luxurious accessory. Since the 1990s India has emerged as the second largest consumer hub after China for mobile phone handset consumerism (Telecomasia, 2004).

Apart from being the second major consumer hub for mobile phone producers, India is also the 2nd largest user of the internet worldwide after China (Johnson, 2021). The most current number of internet users in India is 749 million as of 2020 reports which are bound to see growth in the future (Keelery, 2021). The internet growth in India

has seen a rapid pace since 2010 when it was reported that 97.57 million had access to the internet to it reached triple digits in just two years in 2011 when the internet users grew to 125.9 million in just one year and double the number to 251.59 in 2014 (Keelery, 2021). Hence with the advent of mobile phones along with the rapid penetration of the internet, the contents available for Indian mobile phone users are vast and easily available. Newer technologies have made it possible for mobile phones to become cheaper and have more features than the older versions of mobile phone which was limited only to calls, SMS and MMS. Further, the launch of smart phones, tablets and other handheld devices has made the consumers extremely picky about their needs and wants from an electronic gadget whose main purpose was communication. Now it is not about communication alone via text and calls but it is about the limitless functions and facilities which a phone can give to the consumers with a single hand-held device. The cell phone manufacturing companies have come up with cheaper handsets with the same number of functions as that of premium brands of cell phones like the iPhone. Consumers now want what tech-gurus call ‘a bang for their buck’, which basically means to have the full facility for the price paid by the consumer. The total cell phone subscriptions in India are documented to have 1167. 71 million at the end of February 2021 with a monthly increase rate of 0.94 per cent overall (TRAI, 2021).

Cell phones play a vital part in the lives of today’s youth and they use them for a diversity of communication and media-related activities such as retrieving news, hearing music, taking pictures, downloading content, creating content online, gathering the masses together and socializing in every way possible through web-enabled applications which are widely available for free. The development of mobile

phones in India and in specific their acceptance and use by young people in India has been the entity of international and national media attention in the past few years.

Mobile phone gaming, casual social gaming and social networking have become a subject of interest for researchers to understand how games are earning millions via the games we as consumers play either online or offline and also to study the cause and effect of the social networking amongst the users. Now games are no longer restricted to movements and are no longer limited to television sets and personal computers but they have evolved along with the progression in mobile technology which was not there decades ago. Games are no longer played in the premises of our drawing rooms in front of the television sets and PCs they are now mobile.

The first game on a mobile phone was a Tetris game on the Hagenuk MT2000 device from 1994(Hagenuk MT-2000, n.d.). Similarly, Nokia, a cell phone company came up with the classic game, Snakes three years later in 1997 (Banerjee, 2017). Mobile games themselves have evolved from these simple low graphics coded games to more complex MMPRPGs like Clash of Clans where players play from all over the world despite time differences and distances. They have come a long way similar to the introduction of mobile phones itself. Games which had limited stages are now replaced by an endless running game where one keeps running and achieving new high scores and competing with fellow online players.

Mobile games have recently gained an enormous audience and participants in the country due to the availability of handheld devices becoming affordable and more brands focusing on the youth to increase their sales and increasing their market capital via the launch of game-centric phones and other gimmicks. Mobile phone gaming has made an impact on the lives of all in some way or the other due to the constant

notifications and other alerts sent by the installed applications and games. The games are vast and have an ocean of choices for the players to meet their likability and freedom to choose them. The games have been classified into various genres which meet the desired wants and needs of the gamer.

Previously the games were available as video games which later came into a more compact version on the desktops then came the laptops and eventually on handheld consoles and into the most affordable and compact Mobile Phones. The compactness of the device has become the main tool for its popularity and the freedom to play anywhere has become the unique selling point which has led to the boom in mobile phone gaming.

The yesteryears arcade games have been redesigned and revamped into the 6-inch consoles where they can be played like before. Newer games have come into the spectrum which caters to all types of consumers spread across all ages. The game developers have indeed made a fortune because of the gaming industry's sudden expansion and sudden boom in the population of gamers who choose to play on their phones than on a stationary Play Station or XBOX.

The Indian mobile phone landscape started with the then Chief Minister of West Bengal, Lt. Jyoti Basu who made his first mobile phone call to Minister, Sukh Ram on July 31st, 1995 who was the then Union Communication. The telecommunication revolution developed with India's first mobile operator Modi Telstra (later branded as Spice) and the CM of Bengal's initiative (Saran, 2012). The mobile phone's sudden yet planned insertions on the telecommunication infrastructure are filled with the ups and downs relating to various stumbling blocks and other factors yet today it is the leading market for consumption of mobile phones as well as gearing up to be the

leading producer for mobile phones in the world. According to the Newzoo (n.d.) India has 31.8 per cent smart phone penetration for the year 2020. Since the inception of the idea of India having its own cellular networks, a lot has come to pass the use of better technologies and the progression of how those technologies shaped the economy and the development in India is notable with the rising of many players (Cellular Networks) to a few in 2021 (Kondur et al., 2012). According to the data of the Telecom Regulation Authority of India (TRAI) stated in their annual report that a total of 150,000 exchange lines were available in 1947 which grew to 18 million users in 1997 (TRAI, 2017, pp. 8). Since then, the subscribers began to shift their use to wireless networks due to them being more accessible, affordable and practical which led to the decline of landlines or fixed wire line subscriptions (TRAI, 2017, pp. 8). The subscription grew from 800,000 subscribers in 1998 to 1033.6 million in 2016. The advantages associated with Mobile devices have been seen as a major contributor to the rise in subscriptions. In less than two decades of its inception, the Indian Telecom has grown to become the second largest telephone market in the world making the telephone once an item of luxury to now the most common item in one's hand and household (Agur, 2018). Further India has a total subscriber base of 1180.96 million which has increased by 2.36 per cent over the last quarter (TRAI, 2020). The survey report also informed that the share of mobile phone owners in India in 2020 mention that there are 41% male and 25% female who own smart phones; 27% males and 23% females who own basic cell phones and 7% males and 7% females who own feature phones in India (Statista, 2022).

Sikkim shares its telecommunication circle with that of West Bengal which incorporates the number of subscribers and mobile phone holders in the same region of West Bengal. The state of Sikkim according to the Government data has about 30

per cent of telecommunication subscribers in 2017 (TRAI, 2017) after which the data survey hasn't been carried out however as per the newer trends of the availability of cheaper smart phones and the craze of the online medium of instruction due to the pandemic the mobile ownership rates are bound to grow.

The mobile devices becoming cheaper and more feature oriented has led to the surge in the demand and the supply of mobile devices as more compact and feature rich phones enter the market with the lowest 4G phones Nokia 225 4G available for Rs. 3768/- on Flipkart shopping site which the common public can use the devices to fulfil their needs of watching and streaming contents on YouTube, JioTV, Amazon Prime and Netflix, record videos and play games. These phenomena have become the daily routine of the people in the world. Especially when India ranks the 2nd largest country with 560 million users of the internet (Statista, 2021).

In the area of the gaming sphere, the use of compact mobile phones with the capability of having good speed and performance matters which the gamers indulge in. Gamers usually prefer mobile phones with the latest processors and gaming capabilities which the manufacturers of mobile phones have tapped into. Constructing phones as per the desired specifications demanded by games which are tailored to suit the needs of the gamers. The evolution of the device itself is a technological marvel from the monochrome to the colour to the presently used 10-bit colour display with High Dynamic Range (HDR) is a step closer to reality. The phones are no longer tools of telephonic communication but a tool which amalgamates the work and play; the entertainment, education and work in a single machine, a machine designed to use for a multitude of things and for a spectrum of needs that a fulfilled by a 6-inch device with a memory of a computer all in one device.

The phones available in today's market have been sorted to meet the needs of all. There are phones designed only for gamers like the Asus ROG Phone 5 (Republic of Gamers) specially designed and produced by the company Asus in the month of April 2021 for the gamers which is the best android gaming device available as per the reviewers' Android Authority and TechRadar who review the devices and latest techs in the market (Batra & Soni, 2022). These phones have absolute magnificent specifications which handle graphic intensive games and can play with zero lag and provide customization for the players who use the games and are almost budget friendly as per the specifications. Each mobile phone device is manufactured to meet their specific markets; the devices are bought by consumers who now have a strong fan base like in the days of the Blackberry which was marketed as a business centric phone and were ahead of the Apple iPhone in terms of sales (Appolonia, 2019).

In today's market, the storyline is different due to the booming of games available on mobile devices and the tough competition amongst manufacturers in the Android world where there is stiff competition starting from the budget series to the premium and ultra-flagship models (Palmer, 2022). The competition however is not so much in the iOS platform where the Apple's iPhone has established itself as the sole provider of the ultra-flagship makers of phones designed to perform at their own pace and comfort zone. The devices are bought by youngsters either for gaming or to engross themselves in the world of social media and streaming applications (Vaughan-Nichols, 2022). Their consumptions of social media and tools are what dictates their buying decision of mobile phones; hence each user's decision to choose and buy the medium is different. The mobile manufacturers, however, find ways to sell their phones to every section of the age group with their strategy and gimmicks. The use of BBKs model to sell 3 brands with different phone brands namely OnePlus; Oppo and

Vivo but almost the same design with slight modifications and tweaks is well known in the marketing world. Their models also are similar but slightly modified to suit the needs of the consumers (Our Bureau, 2019). The use of ultra-specs and performance is also another tool via which the manufacturers attract the buyer via their use of the largest and the widest gimmicks like that of the MI's MI 11 Ultra's extra-large camera and twin display, Samsung's 100x Zoom, Asus ROG's game centric capabilities and Apple's Cinematic mode are all tools which capture phone buyer's interest in the products.

According to Turner (2021), it was reported in the Statista there are about 6.378 billion or 80.63 per cent of smart phone users in the world and about 7.10 billion or 89.76 per cent of mobile phone users are currently using mobile phones which comprises 10.53 billion cellular connections which constitute 7.91 billion of the current world population which means that there are 2.65 billion more mobile connections than people worldwide. The numbers are huge which makes the picture more vivid and clearer as to how engrossed the world population is in the growing mobile communication and the use of the mobile device.

The extensive popularity of mobile devices and the game culture has led to the interest in the field which has attracted researchers from every discipline to ponder upon the possible impact of the devices on the human mind, body and world markets. Lenhart (2009) mentioned that in the study done for the previous years of 2004-2008 by Pew Research Centre the state mobile phone ownership gap between the adults and the teen in the US were almost similar by the end of 2008 which was 77 per cent in adults to 71 per cent in teens. It was thus predicted by them that the gap would get closer in the coming years due to the technological advancements and the competition

created by the manufacturers and cost reduction allowing all or almost all to own a mobile device. The research also stated that the older teens were most likely to own cell phones (Lenhart, 2009). The Mobile Indian Network (2010) mentioned that their findings in a survey of 2000 parents and 2500 students conducted during the month of September to November 2010 revealed that 88% of adolescents owned mobile phones in India and 40 per cent of teenagers aged 13-15 use cell phones which were found by Associated Chambers of Commerce and Industry of India (ASSOCHAM), a survey industry body in India with its headquarters in New Delhi.

1. 5 Theoretical Framework

The Uses and Gratification Theory (UGT) was formulated in a time when the media was considered all powerful and all passive towards its audience. The pronounced theories like the 'hypodermic needle theory', 'bullet theory', and others were designed to define the audience as passive and the media as active. All they saw and heard were considered concrete due to the media having fewer platforms, most of which contained newspapers, radio and television at that time. The UGT began with the researchers delving into the needs and gratifications they thought were present among the users/viewers/listeners. Media became a tool for the audiences to use and achieve gratifications from it. The UGT thus treated the audiences as 'active' members who used the medium for fulfilling their needs (Katz et al., 1973; Rubin, 2002).

The media use amongst the users was considered to be driven by a goal, focused users used the medium was the main essence of the UGT where theorists like E. Katz, Blumler, Gurevitch, Chandler and Rubin shaped the theory along their way, formulating new ideas and concepts within the theory shaping them to be relevant

along the time. The UGT encapsulated the time of modern media and their uses for the people who were shown to be goal-oriented users. The theory however has been exposed to several criticisms and shortfalls, it “being inattentive to conceptual problems” which causes the researchers the problems to interpreting their findings and also questioning their research integrity (Mondi et al., 2007).

Rubin (1994) in his book *Media Uses and Effects: A Uses and Gratification Perspective*, talks about the mass media effects and its paradigm shift. It talks about the evolution of the theory with the progression of the technology and the theory itself. He mentions how the effects and the uses have been magnified over the years and how those effects and uses have been showcased. Klapper, 1963 talks about the shifting of the focus from ‘what media does to the users’, to ‘what users do to media’. He mentions that the change of focus from the dominant nature of studies of what media does to the people has been changed with the advancement in the theory. The mobile phone in a parallel way is a standard used by the users for their needs. These needs are met with the interceding features of individual tendency and discerning insight processes, group norms, message distribution via social channels, opinion leadership and the free-enterprise nature of the mass media in some societies (Klapper, 1960).

The Uses and gratification theory fixated on the influence of the audience on the media rather than the media’s influence on the audiences which were previously measured as mere viewers and not active contributors in the content generation and were typically treated as receivers. The UGT cited that convinced spectators select media on their needs basis and remain using them owing to the gratification received by them. Katz et al., 1973 revealed the psychological and social needs which need to

be attained by the spectators to continue using the media in a certain way. They cited that the needs the viewers had, were related to the social roles and psychological character. They together developed the typology of needs which were created to satisfy the needs of the audiences and strengthen of self and self with others including family, friends, society or culture.

The use of media in this case the Mobile phone is based upon the individual which is used by the individual to gratify his or her needs and wants. Their needs are expressed as motives for adopting certain medium use and are connected to the social and psychological makeup of the individual. Based on those perceived needs, social and psychological characteristics, and media attributes, individuals use media and experience related gratifications (Papacharissi, 2008).

The beginning of telecommunications expertise and development towards advanced technologies have made the UGT more pertinent (Ruggiero, 2000). The deregulation of the communications industry and the junction of mass media and digital technology have altered the means by which media patrons consume media. Since the transformation in technology has made the merging of media platforms, the consumers have more choices and hence choices, inspiration and gratification become even more crucial machineries of audience analysis. Now the researchers have begun to apply the U&G theory (UGT) to a wide variety of newly promoted video media technologies.

Tanta et al. (2014) discuss about the rewards of U&G studies and that the main advantage of the uses and gratification approach is that it gives an insight into the motivation for consuming a particular media content, which complements the findings of the interaction between the media and its users. The theory considers the recipient's

motives, thus discarding an obsolete premise about passive media recipients all influenced by the media in the same manner. They also further state that the main disadvantage of the theory also lies in the same factor that media recipients are aware of their needs, that they can express them and link them to different media uses which gratify those needs. But they say that it cannot be claimed with certainty that recipients are always aware of their needs and that they can articulate them.

1. 6 Conceptual Framework

The use of a conceptual framework gives the researcher an idea to use and interpret the findings which are essential for any research to be able to clearly state the pathway and to expect what they find at the end of their destination. Similarly, the conceptual framework guides the researcher from straying into the abyss and helps maintain a clear direction towards the goal, here being the possible gratifications associated with mobile phone gaming. The previous works on the UGT help us to understand and make possible arrangements for framing a goal-oriented solution. The ideas propounded by the previous theorists like Katz, Palmgreen, Blumler, Stafford, Rubin and others help us to understand their shortcomings and analyse the theory while allowing us to use them aptly.

The main factors to be studied in the given research are the uses of mobile phone gaming amongst the teenagers who use the game as a tool to have social interactions within the games, their association with their peers and the influences it has on the academia. The study also deals with the gratification factor of respondents who play the game to achieve the gratifications as informed by the previous UGT theorists and researchers. The 5 factors outlined in the present study are 1. Emotional factor, 2. Achievement factor, 3. Enjoyment factor, 4. Social factor and 5. Escapism factors are

being studied as per the previous research done by Katz, Blumler & Gurevitch among many others. The concept of the Gratification model concept proposes that the user has a perceived use and gratification as informed above which while using the media accomplishes it and pertains to using the media again to fulfil the received gratification.

Figure 1

UGT conceptual framework in traditional context Gratification sought and gratification obtained

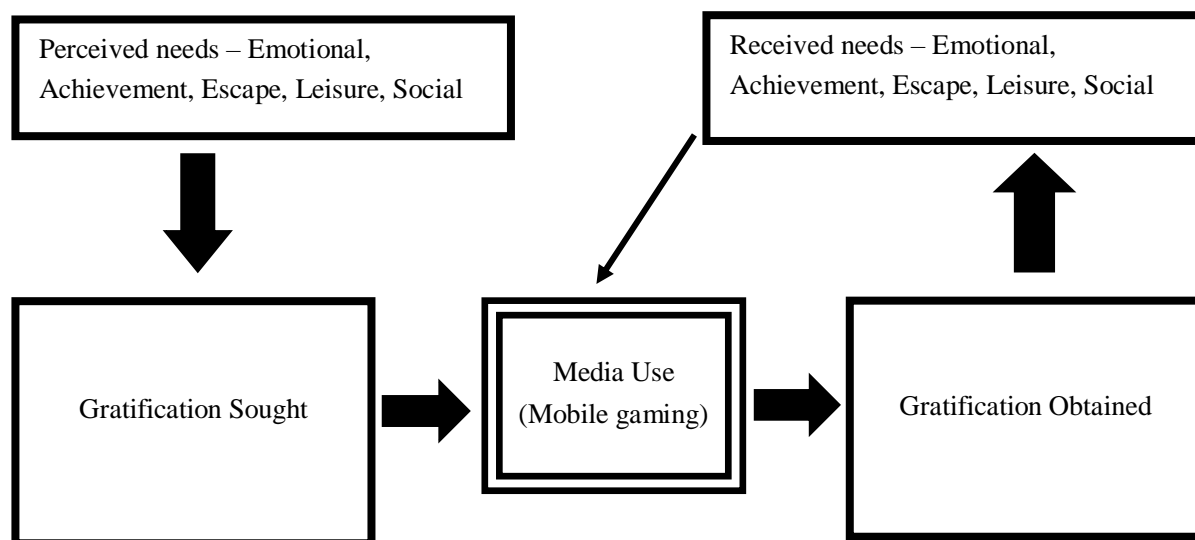


Note. Derived from the gratification model (Greenberg 1973, p 3).

The study seeks to understand the relevance of how the users interact with the media (mobile gaming) and gratify their needs if they are asked to categorise those needs and gratification. The medium of mobile gaming and the UGT is relatively new since its inception of mobile gaming in the early 80s. Thus, the studies on the uses and gratifications relating to mobile gaming have an enormous area of a void to fill. Gaming on mobile phones and digital devices has garnered huge audiences who either play or watch other gamers playing on the internet. The games and the audiences of these games have garnered a huge population which has directly increased the game's popularity and revenue over the years (Turner, 2021). Thus in regards to the popularity of games and their gaming culture have influenced many studies associated with it.

Figure 2.

An expectancy-value model of GS-GO in mobile phone gaming



Note. Derived from the Expectance-value model (Mondi et al., 2007, p. 438; Palmgreen & Rayburn, 1985).

1. 7 Objectives

1.7. i General

To assess the impact of mobile gaming and to understand the gratification achieved from mobile game playing amongst the teenagers in Sikkim.

1. 7. ii Specific

1. To find the influence of mobile gaming on academic performance.
2. To find the influence of mobile games on social relationships.
3. To analyse the kinds of gratification derived from playing mobile games.
4. To examine closely if the games played are different between male and female teenagers.

1. 8 Hypotheses for the Study

Following research, hypotheses have been formulated for this study. The hypotheses will be exposed to suitable statistical tests to find out their relevance. The hypotheses are causal hypotheses in nature as the change in the independent variable causes or leads to an effect on the dependent variable.

- **RH1** – Mobile gaming affects the teenager’s academic performance
- **RH2**– Mobile games affect the teenager’s social relationships
- **RH3**–Teenagers play mobile games as they associate different gratification with it

Following research questions have been formed and would be qualitatively answered during the course of the study.

1.9 Research Questions

RQ1. What are the different types of mobile games teenagers play on their hand-held devices?

RQ2. Is there a difference between the games played by male and female teenagers?

RQ3. Does mobile gaming affect academic performance and social relationships?

RQ4. What are the various gratifications derived from playing mobile games?

1. 10 Statement of the problem

The popularity and the easy accessibility of mobile phones amongst teenagers have made mobile gaming a popular feature in handheld devices. The advent of popular

smart phones with various features has become an instant craze amongst young mobile users. Along with the popularity of mobile and smart phones, games too have become a popular concept amongst teenagers. Downloading free games from the app store and playing games is a common phenomenon now. The uses of playing mobile games are far too many and it has already started to leave its impact also. While students or teenagers derive gratifications like companionship, escapism, enjoyment or tension-reduction, these games have led to the reflection of violent attitudes too in the teenagers. The impact of an extremely new phenomenon on relatively unexposed teenagers in a remote location can spring up many theoretical probables. So, there is an immediate imperative to examine Sikkim's teenage users' demand for mobile games from a uses and gratifications (U&G) perspective. This study seeks to explore what uses Sikkim's teenage users are seeking via mobile games and how it impacts their personality traits, performances as well as the different gratifications purportedly they derive from these games.

It also tends to find if there are any gender induced differences in their playing patterns.

1. 11 Social Significance

Technological progression and its advancements over the years have been the pillar of the digital gaming industry, with each year the improvement of the digital tools pushes the boundaries of the capability to which human minds can churn out games which are as real as life itself. The games which are widely played by all ages and gender have allowed researchers to focus their study on these digital games which have come a long way. The studies on how games are played, how they are used by institutions for enhancing the cognitive abilities of subjects and how they affect the

minds of the young have been researched which provides the base of this research. Despite several studies being conducted in this field across the globe each region's outcomes are different from the other which is relatable as we humans have different cultural backgrounds which can affect the outcome of a study especially if they are related to a popular medium. The studies done upon the said topic are mostly done in more advanced countries of the world where these facilities had been introduced decades ago as compared to India which got its first mobile device in the mid-1990s, which allowed them only to make calls which were expensive for the 'common-man' to afford. This study, therefore, acknowledges these studies done in various parts of the globe and focuses on replicating similar research in Sikkim and contributing to the existing literature by examining the effects of mobile phone gaming amongst the teenagers in Sikkim. the findings would not only enrich the existing literature on mobile phone gaming but extend them further and pave way for future researchers to work on Sikkim.

1. 12 Operational Definitions

1. **Mobile games:** Mobile Games are a form of video games played on a feature phone or smart phone. These games are usually downloaded at application stores like Google Play for Android devices similarly there are other app stores like the Apple store and Nokia store where such games are widely available for downloads.
2. **Teenagers/ Teens:** A teenager or teen is a young person whose age falls within the range of 13 to 19. They are termed as a teenager because of their age number ending with "teen". Children aged from 13 to 19 are basically on

the onset of hitting puberty and having considerable changes in their bodies biologically.

3. **Gratification:** Gratification is an emotional state of one being happy or satisfied in response to the fulfilment of the desired goal. Like all emotions, gratification is a motivator of behaviours. It is also associated with one having attained pleasure by doing something.
4. **Academic Performance:** academic is related to education, especially at the college or university level and Performance is the act of performing of doing something successfully using knowledge. Academic performance is the grading or score got in the examinations in schools. Cumulative grades and completion of educational benchmarks such as examination results of the student.
5. **Social Relationships:** Social Relationships refer to the connections that exist between people who have recurring interactions that are perceived by the participants to have personal meaning. This includes family members, friends and neighbours.
6. **Social Networking Sites (SNS):** SNS is an online platform that allows users to create a public profile and interact with other users on the website. Social Networking sites (SNS) usually have a new user input a list of people with whom they share a connection and then allow the people on the list to confirm or deny the connection. After a connection is established, the user can search the networks of connections to make more connections. It is also referred to as social networking website or social website.
7. **Telecommunication:** Telecommunications also known as telecom is the exchange of information over significant distances by electronic means and

refers to all types of voice, data, and video transmission. It is the transmission of signs, signals, messages, words, writings, images and sounds. Telecommunications occurs when the exchange of information between communication participants includes the use of technology. Telegraph, telephone, radio, television, computers and digital devices (mobile phones) are all telecommunication devices.

CHAPTER 2

REVIEW OF LITERATURE

The use of the Review of literature in any study gives the researchers a chance to get a glimpse of the work that has been done in regards to the subject he/ she is working on and the freedom of the use of research in any given subject the researchers to follow articles and academic materials concerning the given subject. The availability of the present literature and its resemblances with the previous works of literature allows the researcher to conduct an analysis via which they would be allowed to work upon. The use of the available literature on the subject and other similar topics allows the researcher to get a vivid subject on the topic which then in return helps him/her to see the gaps and identify them in their studies. The review of literature, in this case, is chronological and thematic and is done to ensure that the review allows the researcher to identify the studies done on mobile phones, digital games which include video games in all forms and the relatively new mobile phone games which have been considered a new topic of discussion and subject for research. The Review of Literature in this particular study has been started with the genesis of phones as a communicative device where the phone was allowed to be in a home or offices or booths where people generally had conversations which were personal or work related. The device's genesis from A. Graham Bell and how now it has taken the shape of a mini-computer in a person's pocket is worth indulging to one's imagination. The devices which were formally used as a calling device are now being used for almost everything. The devices are now a media content device where the person holding a 'smart phone' has the ability to watch content on the phone while at their work, home, bathroom, subway/metros, cars and various other locations. These

devices' nature of compatibility and compactness has allowed them to be the devices without which people feel hard to live. Similarly, there view of literature further ponders upon the mobile phone games where millions of games are now available on one's own devices which are free or paid. These games are small and consume less storage space in a phone which is widely used by millions if not billions (Gonsalves, 2006). The games and their popularity are seen and have been researched by many researchers. A similar study has been done to find out the available research materials on digital games along with how they came into existence. The review has allowed the researcher to notice the field has only been worked upon in the developed countries and less work has been noticed in India which is one of the booming markets for the gaming industry.

Each of the reviews of literature has been placed thematically to allow the reader of the research to understand the genesis and their importance of why this research has been undertaken.

2. 1 Mobile Phones as Communication Tool

2. 1. a Mobile Communication

Campbell, Ling and Bayer (2014) state that mobile communication is a relatively new form of interaction tool which has been recently and commonly available in developed countries for the past two decades and in developing countries for less than two decades.

They further define what mobile communication is by stating how people and groups use devices and services that support mediated communication while the user is in a physical motion. One can use this kind of technology to break the physical barrier of a

normal landline or to say a fixed communication system like that of a phone booth installed in many locations across the streets and malls which are no longer available due to the popularity of more compact mobile phones.

Mobile Communication which was a 'tech' of the future for the 'earthlings' of the 1950s is now available to everyone and anyone who can afford it, the subscription of mobile phone owners has risen according to the data about 520 million units were sold till 2013 (Sharma, 2014). The global scenario of mobile phone owners has made the medium popular and due to its compactness and ability to multi-task the 'communication' medium has risen in its area of usage to it being more than just a phone it is indeed an entertainment unit having the ability to send and receive emails, texts, watch movies, send pictures and pay the bills.

Tenhunen (2008) mentions that the rate of mobile phone sales in India has been record-breaking ever since the introduction of mobile technology in 1995. By October 2006, there were 130 million mobile phones in India, with six million new phones being purchased every month. With the arrival of third-generation telephony and growing sales in rural areas, Indian mobile phone users are going to exceed the 300 million mark by 2011 (Hindustan Times, 2006).

Mobile phones contribute to such processes by facilitating a multiplicity of relationships in areas that used to be relatively isolated. ICTs' ability to influence sociality's place-based conditions of existence and forms makes them anthropologically interesting.

In India, the mobile phone has become the home's second electric gadget after the radio. Among the first to buy mobile phones were car and tractor drivers, who found

phones useful in helping them to stay in touch with customers and call for help if they experienced problems on the road.

Mobile phones, being relatively more accessible, affordable, and easy to use than computers, promise the possibility of closing the digital divide through consumerist bottom- up interventions, even as questions regarding restricted computability remain.

The mobile phone is itself a technology/infrastructure that supports— that is, provides a foundation (operating system) for— applications like Skype and Uber to run, and slots for memory cards to function. The mobile phone exchanges signals (radio waves) with cell antennas (and cell towers) that form the extended cellular infrastructure. The strength of these signals determines whether cell phone calls will be completed or whether the amount of bandwidth required to stream a YouTube (Mukherjee, 2019).

Jeffrey and Doron, (2012) mentioned in their article that from about 2005, the cost of a mobile phone significantly lowered to less than one rupee per minute, and less fortunate people could now afford to own and operate a phone. The mobile phone began to take off in India about the same time that studies of the mobile phone took off in the rest of the world. India in 2001 had 36 million phones, close to 75 per cent of them landlines; by 2007, it had 206 million, 75 per cent of them mobiles which paved the way for mobile communication to be made accessible to the general masses as compared to the start of the decade.

Ling (2015) in his article ‘The playful use of mobile phones and its link to social cohesion’, mentioned that the mobile phones are increasingly providing access to the Internet and applications (or apps) allow the consumers to download small programs

that can have innumerable functions that let the user write notes and do lists. Some applications help carry out tasks and entertain. There are even applications for weather reports and stock prices, among many others that can be used to waste time or to budget it. There are fanciful applications and those that are useful. In the context of this paper, this development might augur the use of commercial mobile games, and it no doubt does to the degree that this is a general trend.

The rise of smart phones has seemingly taken our attention away from the idea of the simpler connections that are supported by the mobile phone. Smart phones, and in particular the iPhone, add some new dimensions and complexity to the situation. There is the sense that this will be “the Eldorado” moment for mobile Internet, and in some ways, this may be true. In the case of the iPhone, the numbers of events are about equally divided between talking, texting, and data.

The ability of mobile phones or more particularly the ‘smart phones’ have exceeded the capabilities of what a telephone could do. Initially made for inter-personal communication the telephone could connect people via sound transmitted through wires. However, the new age ‘smart phones’ have made this as one of the features it provides along with other forms of communication. Texts in the initial age were just limited to a maximum of 140 characters in the form of SMS now with the introduction of internet enabled phones and the limitless applications available on the phones the messages can be sent with unlimited contents and words in the form of e-books, photographs and videos. The communication format has changed and now audiences who use the particular format can talk and even see each other with the help of application like WhatsApp, Skype, hika and other similar applications.

Mobile phone communication at present has the ability to play games and communicate, new games like clash of clans, candy crush, and mobile legends have in-app text features which can connect the players to new players globally or locally depending on their personal preferences. The games also support a chat feature which requires the application permission to use the microphone and talk with the group who plays in a session of the games.

People also use mobile phones as a form of external advisors while purchasing products in relation to electronics, automobiles, gadgets, beauty products and almost anything where the users consult video reviews, blogs educating the viewers and readers in relation to a particular product, reviews done by 'vloggers' (video bloggers) on social media platforms. Mobile phone communication has exceeded its spectrum and has managed to keep the users well informed and educated. The consumers purchasing decisions are steered by these vlogs and blogs which provide an in-depth review of the latest products available on the market or to be launched products. Consumers use them to learn about the products and buy if they are assured it is good for them after reviewing the devices or commodities on the given platforms. Hence mobile phones have indeed increased their use of being an external decision maker for the consumers (Smith, 2012).

Further, research on mobile media users shows that apart from using it for just making phone calls, it has evolved to do much more than that. It has become a tool for self-representation like Facebook, Snapchat, Instagram and Tik-Tok (Ling, 2012) and documentary tools like vlogs on YouTube and blogs on social media pages (Chesher, 2007). The medium has become more than a communication tool, it has become an external part of one's existence and identity, and ideally use them for managing time,

creating a leisure activity to tackle boredom, avoiding social interaction by making fake calls to avoid physical human interaction which is available to the users on their smart phones. (Lindqvist et al., 2011).

2.1. b Mobile Communication and Gratification

In an article titled “*Shifting Media Uses and Gratifications among Singaporean Teens*” by Ferle and Edwards (2009) stated that the most widely used channels of communication for young people were the Internet, mobile phones and TV. Similarly, Patheiger (2009) mentioned that mobile phones were the 4th most used screen after the television, movies and computers used and viewed by the teens. The popularity of mobile communication which includes mobile phones, laptops, video game consoles, tablets and other portable devices, grants certain gratifications and needs that the users of the devices tend to observe and retain from the given lists of mobile devices (Katz et al., 1974; Leung & Wei, 2000; Lin, 1996). The mobile devices give the users a degree of freedom where one has the capability of movement and portability which encourages entertainment and use ‘on the go’ and also satisfy specific needs (Ferle & Edwards, 2009). The gratifications received and achieved by the users are what the present researchers desire to unearth from an array of studies on the given subject.

The use of mobile communication devices by the users can be debated and can have different uses with the users having their sense of gratifying the needs they derive from their respective communication devices. The devices which they hold in their palms may have a different use for each individual, their pattern of use and methods of attainment of gratification may be different from one another which can be linked to different aspects like age, socio-economic factors, education and race (O’Doherty et al., 2007; Arabi et al., 2012; Tuckle & O’Neill, 2004). Friedman (2007) stated that

the “potential of Mobile Marketing, Asian youth are particularly as a barometer of future adoption”. This statement was backed by the research done by WARC.com which stated that 8–24-year-old Asian users across 11 countries spent around 10 hours per day with media content (Ferle & Edwards, 2009).

Leung and Wei (2000) mentioned in their article that the induction of mobile phone technology was a source of technological innovation which propelled the way we communicate and the way distance was perceived by the then generation, how the communication pattern evolved among the users from the telephones to the personal communication system which was capable of being more than capable of being a vocal medium of communication to a more advanced form of texts, data sending and graphics which included audio and video. The use of the communication devices is what has made the study on the gratifications achieved by the users based on their individual preferences and patterns.

Previous studies on uses and gratification theory (UGT) have brought out numerous uses of the device such as the use of the mobile medium for connectivity within the family and peers’ group (Grellhesl et al., 2012), for leisure activities (Chen et al., 2014), for obtaining information and knowledge seeking medium (Papacharissi, 2010) and other similar attributes are associated with the uses of mobile devices under the UGT by the academicians. These attributes are what make the device an innovation for the researcher to study, opening avenues for them to acknowledge the medium as the ‘next big thing’ for the 21st century. The medium has brought to light the numerous activities associated with the active users who use the medium for numerous purposes as mentioned by the researchers above. The UGT is evolving with newer elements brought to light due to the wide use of the mobile devices where

Kubik (2009) found that the older adults in the study used the mobile phone devices for the security and usefulness of the device. The importance of the mobile phone as a device capable of having numerous applications (tools) within itself is what allows the users to use the device more. Applications such as alarm clocks, address books for storing numbers on the go and daily reminders associated with the in-built calendar which allowed the older section of the society too to use them for reminding them to take their medicines, and appointments with their doctors were an essential part of the uses and gratifications associated with the mobile phones (Kurniawan, 2008).

2. 1. c. Mobile Gaming and Communication

The gaming culture and its universe of gamers have evolved since its inception which had been formed by the inventors as a leisure activity for the consumers. The games since then have evolved into something unique with their own environment and atmosphere. The games are not limited to some person sitting in his living room and playing alone with no friends. The games now have the capability to communicate with other players of the earth through the use of the internet. The gaming culture since its inception has evolved into its own niche. The games, gamers and game designers have limitless opportunities to interact and communicate amongst themselves, allowing chat functions with audio and video for communicative purposes. Mobile games are the tools of communication where play meets communication and interaction.

In the 21st century, the use of games as communicative devices has been seen as an open market for creators to deliver their content via the internet. Timely updates, in-game tools and tricks, and selling and buying of virtual goods are areas of mobile games which relate to them being a tool of communication (Yung & Hui, 2012).

Game streaming platforms like ‘Twitch’, ‘YouTube’, ‘Hitbox’, ‘Beam’ and others have led the gaming to enter a new spectrum where gamers can view the games played by other gamers who upload their content in these game streaming services which are available for free to the viewers (Bennett, 2021). The gamers often watch these videos of games being played in order for them to succeed in places where they themselves are stuck or cannot proceed further. The games and the game play have evolved into a new form of online communication society where they communicate with one another to gain bits of advice and techniques to play better. Games are now not just played for leisure but are considered a sport, where players unite and form teams which work in close communication to win the title of the best player. These game tournaments are part of a larger gaming culture and people especially youths are attracted to participate and play with other players of the world.

These gaming tournaments are popularly known as ‘eSports’ where multitudes of gamers and game enthusiasts gather to play and watch games. Electronic Sports League (ESL) is one of the known tournaments in Germany where games like Counter-Strike, DOTA 2 and other games are played where the prize money is in millions. Similarly, Intel Extreme Masters (IEM) is a platform for the world’s best players to compete in digital games, North American League of Legends Championship Series is another place for players to compete. However, the world’s largest eSports event is “The International” where the DOTA2 game tournament is played with prize money of 25.5 million dollars (Biggest Esports Events: 5 Famous Tournaments Worldwide, 2021). The effects of mobile gaming on physical communication have been studied earlier as it is the main cause of social exclusion, strain in relationships and other negative factors however, the gaming opens up a world for the gamers who continuously interact with fellow players around the globe

and also to their peers online who aid them in playing the desired games. The constant chats in the chat room dedicated solely for players of the games allow the player to communicate their strategies and plans to defeat their opponents. This online environment allows the players to discuss their events and plan ahead, which have been studied as positive aspects of online mobile gaming (Fishman, n.d., Ninaus et al., 2019, Kahne et al., 2013, Jung, 2020). The whole interface of how the communication process works in the gaming sphere is an interesting phenomenon as described by Jung (2020) in which he states that the way the gamers engage in discussion networks where there is a multitude of views, tend to learn more in the area of the socio-political learning. These games with live discussion networks offer channels for discussion and education on issues pertaining the society to a certain aspect. The ‘Guild’ members, online peers and associates who play games together all encompass the reservoir for learning which extends as an important component for social integration via playing games (Jung, 2020).

The way games are made and depicted to the world has its communicative effects on the player. The use of historical elements inside the games and the use of mythological creatures and urban legends shape the popular culture and youth who play and follow the games. These games act as a depiction of society for the gamers who transcend into the gaming environment and understand these elements of games, learning the historical significance of the elements introduced in the games themselves. In games like the ‘God of War’ franchise the whole game revolves around the Greek mythological characters and places where ‘Zeus’, ‘Poseidon’, ‘Medusa’, ‘Aries’, ‘Athena’ and the protagonist ‘Kratos’ has been introduced which we can even see in the popular Hollywood movie franchise “Clash of the Titans”. Similarly, the “Medal of Honour” game uses the World Wars as the story for the

players to defeat their enemies to complete the game. Such examples of communication through gaming can be seen all around the game titles where the use of fact with fiction has been used by the designers to make the titles interesting. The designers of the games with the progress of technology have made use of the real world to shape the virtual world. The use of drones and other devices to shoot the real world in order to duplicate it in the popular game titled “Grand Theft Auto V” (GTAV) has taken the gaming world a step closer to reality. The game is an open world game where the character is given a task that they need to complete or simply roam the game map to their will. The use of technology, history and human characters all try and communicate with the player to help them understand the game and also the real world.

2. 2 Mobile Gaming

2.2. a Mobile Gaming Industry in India

Klimmt (2014) writes about the development of the video game industry and its genesis and how it all began with the development of games being simple and arcade in nature. Games like the Pacman were initially played in the arcade machines available at the game parlours which were a booming business crowded by children during their time off and holidays. The arcades were popular hotspots for the children as one could play their favourite games. He further states how these games have created a social bond between users and players alike.

Huh and Bowman (2008) mentioned that the AC Nielsen study reported that, of the 65 million active online gamers, over 15 million are over the age of 45 (as cited by Gonsalves, 2006), and over 64 per cent – almost two-thirds – are female (as cited by

Klepek, 2006). The same report found that, of the leisure time available to adolescents (about 55 hours per week), nearly 25 per cent of this time was spent with video games (as cited in PRNewswire, 2006).

Mobile and online models received further impetus in India owing to the telecom revolution and penetration of internet and cable in substantial parts of the country, and the increasing popularity of new media with the masses. The huge size of the potential market in India has led to a surge in the number of online gaming sites over the last few years. The evident impact of the rise in demand for quality game content, game developers, game development companies and the gaming industry, in general, is unstoppable. Gaming as a whole is gaining increasing significance as a major source of income and a profitable business venture worldwide for all involved in it. The FICCI-KPMG Indian Media and Entertainment Industry Report (2014) foresaw that the Indian gaming industry growth of 25.5 per cent in 2013 would grow at a CAGR of 16.2 per cent between 2013 and 2018.

Nair (2016) in his article talks about the influences of Digital Games on the children in an Indian scenario and how they affect their upbringing and the social norm which they follow. He mentions the different platforms of devices on which the games are easily available. He states, 'The focus on effects of digital technology has more concern with young children.' mainly talking about the ill effects of digital games on the children. He further mentions that games generally have six features namely – games are rule-based; they have variable and has quantifiable outcomes; has positive and negative effects depending on the choices made by the players; games are made challenging and players invest their effort to influence the outcome of the game; players are either happy by winning or sad by losing and lastly games can be played

with or without real-life consequences. He further talks about the present generation of children engrossed in games since technology and devices have become affordable and easier to acquire.

Nishith Desai Associates (2017) states that “The gaming industry has witnessed a paradigm shift with the evolution of television, digital and online gaming models. As the internet expanded in the mid-1990s, from its early roots in the academic world to the general population, internet-based online games gained popularity”.

2. 2. b. Games and their types of Genres: Action, Puzzles and others

The availability of Video games on all platforms of electronic devices is indeed a marvel of technology which has had a very humble start right from the 1940s to the present age of ‘hyper-connectivity’ when one is online every second of the day. Video games are available as TV game consoles, desktop consoles, tablets, and handheld gaming devices like the portable PSP from Sony and mobile phones or smart phones. These game contents are played as a single player to double or co-op players to multiplayer, which is usually three to four and the larger ones are known as the MMORPG (Massively Multiplayer Online Role Play Games). The games differ in their content, story and animations and game designs which make them have different genres and types of game after which they are categorized (Cășvean, 2015).

The games played on the above stated devices are popular and widely accepted as means of leisure. These games are categorized into different genres like music or movies which as we know have a variety of content differentiation which allows us to choose from a set of titles and styles of performances. These genres as put forward by many game researchers and academicians are mostly categorized into action games,

strategy, role-play, story-based games, erotic, card games, puzzles, simulations and educational or serious games. The games are designed to make the players have a sense of enjoyment as put forward by Fiske (1989).

Many discourses have been formed along the way and video game theorists have formed various game genres along their way of research and those have become fundamental in studying video game structures and contents based on their classification of gaming. The various studies have brought about the classifications of gaming genres which suit the needs according to the study being carried out.

The line between the genre and the type of titles produced by the gaming industry is rather bleak and confusing, these titles are generally based on and categorized as the players deem fit the decision of naming a title as their favourite is usually the game they play and have played in the past. The novice gamer names the games and not the genre as their favourite. The game genres and the titles are simultaneously well understood as put by Cășvean (2015). However, as media theorists and students it is important academically to draw the differences between the titles, game play and genres to which a particular game belongs. Thus, Wolf (2001) was one of the first pioneers of game genre specification where he modelled 42 categories of games which were largely based on game play and the nature of interactivity. The studied and covered genres or game types were Abstract, Adaptation, Adventure, Artificial Life, Board Games, Capturing, Card Games, Catching, Chase, Collecting, Combat, Demo, Diagnostic, Dodging, Driving, Educational, Escape, Fighting, Flying, Gambling, Interactive Movie, Management Simulation, Maze, Obstacle Course, Pencil-and-Paper Games, Pinball, Platform, Programming Games, Puzzle, Quiz, Racing, Role-Playing, Rhythm and Dance, Shoot 'Em Up, Simulation, Sports,

Strategy, Table-Top Games, Target, Text Adventure, Training Simulation, and Utility (Wolf, 2001). He was however critiqued for not including modern genres of gaming such as MMORPG, FPS (First Person Shooter) and other similar games (Clearwater, 2011; Whalen, 2004) as the study was one of the earliest hence the games which are available as other genres could not be included.

Other researchers like King and Krzywinska (2002) mention the 'Four-tiered Hierarchy' which accentuates the interactivity of the games rather than the narrative. The four-tiered hierarchical descriptions are Platform which indicated where the game was played; Genre indicated the larger categories of game design like 'Action adventure', 'driving' or 'strategy'; Mode referred to the experiences of the player in the gaming environment; and Milieu which mentioned or indicated the "location and atmospheric conventions".

Lastly, Apperley (2006) described the gaming genre into four broad categories based on the way they are played and processed by the players these were mainly Simulation, Strategy, Action and Role-Playing Games which encompasses the left-out games and their gaming styles by the previous researchers. Lee et al. (2014) studied the gaming genre where they studied and identified 12 Facets and Foci representing different characteristics related to video games and the facets they studied included Game play, Style, Purpose, Target, Audience, Presentation, Artistic Style, Temporal and Aspect of Gaming. Each of the studied Facets had its own classification of genres which has helped the gaming genres to be refined and defined according to the study. The researchers in their study have identified the genres and chosen foci and defined them along with examples which give the readers and the gamers a clearer view of

game play and the respective genres. However, they are similar to Apperley (2006) yet distinct and elaborative in explaining each genre.

Fencott et al. (2012) and Faisal and Peltoniemi (2015) have developed the 'data-driven' models of observing digital games based on "activity" and "topics" where activity contained modes of action as 'shooting', 'killing', 'building' and similar other and the topics contained categories like 'genre' (Vargas-Iglesias, 2018).

Whalen (2004) studied the gaming genre of MMORPGs their technological distinction and the principle of genre and came up with three terms: 'Massive' considering their participation in online game systems, 'Mobile' at their design and portability of gaming and 'Real' based on the kinetics of the player.

In the paper written by Vargas-Iglesias, (2018) he defines game genres by their elemental distinguishing feature which can be seen as "Action" which included games like Tennis for Two (1958), Spacewar (1961), Amusement Device (1947) which was studied earlier in by Goldberg (2011, pp. xvi-xix) and Kent (2001:17-20) and Pong (1972) (Baer, 2005, pp. 75-76). The other game genre that Vargas-Iglesias, (2018) talks about is "Strategy" which talks and includes games like Nimatron (1940) and Chess (1950) which were computer games, in video games it was Noughts and Crosses (1952) (Dillon, 2011, p.3) Donovan (2010, p.6). The era of the 1970s however had only the above genres of gaming developed and made popular to the public (Vargas-Iglesias, 2018). However, in the latter half of the 70s the Role-Playing Game (RPG) titles were brought out to the public namely Beneath Apple Manor (1975), Dungeon (1975) and Zork (1979) (Dillon, 2011, p. 61; Donovan, 2010, pp. 53-62).

However, as more years pass on these games improve and often mutate to form another genre of games and following. The games are basically played by the gamers based on the gaming genres and style of games being produced. The researchers and media theorists have to keep updating the fact that these games are played and studies on the newer styles of games need to be done by the researchers. The genres will replicate and form into newer genres which need to be studied and focused on by the academicians.

2. 2. c Mobile Gaming and Gratification

Gareth (2013) states in his research that the mobile users will continue to grow and that the sales of the hand-held devices will assumedly be “sky-rocketing” in the coming years which in fact, has become true. He stated that the number of mobile phone users was one billion and was expected to increase in the coming years. Hence will the size of the mobile game market would be the same. In 2011, the total number of American mobile games surpassed the 100 million mark: a year-on-year increase of 35% while Europe showed a growth of 15%, totalling 70 million for seven key territories. The growth rate in terms of the time and money spent was significantly higher. He further enlightens about the mobile gaming took 13% of all time spent on games worldwide, totalling more than 130 million hours a day, and 9% of the total money spent on games, grossing \$ 5.8bn. in addition to the growing installed base of smart phones and tablets, uptake of in-game purchases in free games and emerging separate markets created by tablets and smart phones also added momentum to the mobile game market as per his findings which makes the study more and more relevant to pursue.

Klimmt (2014) writes about the development of the video game industry and its genesis and how it all began with the development of games being simple and arcade in nature. Games like the Pacman were initially played in the arcade machines available at the game parlours which were a booming business crowded by children during their time off and holidays. The arcades were a popular hotspot for the children as one could play their favourite games. Thus, with the progress of technology and its capabilities, video games have expanded their relevance in the social life of the consumers (pp. 159-160). He further states how these games have created a social bond between users and players alike. He writes in his paper that the games have evolved from being a classic videogame to advanced video game technology to it being a contemporary video game technology where there is a rich game experience and shared experience alike. The general progression is what the author talks about in his paper.

Noyons et al. (2011) wrote about the availability of mobile games to the consumers which has been since 1997 when a team of Nokia Mobile Company engineers saw the potentiality of the mobile and its platform's capability to support games. The first created games for mobiles available on the mobile handsets were 'snakes' these were free games available on the mobile handsets, free of charge. According to him the first downloadable content was available in 2000 and emerged in Europe- the "Les Games" from Orange France which was managed by *In-fusio*. Ever since then downloadable titles have dominated the market.

They further talk about the market for mobile games changing radically with the launch of the Apple App store in 2008 which gave a boost to the developers and

broadened the market from the company to virtually every Smartphone owner downloading games.

Lee et al. (2009) trace the mobile gaming history by mentioning that the devices initially supported the casual games like Snakes, space invaders and bounce in the Nokia Mobile platform which has evolved into a more sophisticated multiplayer location-based ones in which the players compete with each other or work in groups to obtain a certain goal or prize within a geographic area set in the real world. The confluence of social computing, mobile content sharing, and pervasive gaming yields new opportunities for developing novel, engaging applications for content sharing on mobile devices that can address the lack of extrinsic motivational mechanisms identified above. In particular, a central theme of these new applications is that content is created and shared as a by-product of game play, and the gaming experience becomes an extrinsic motivator for content sharing activities. In addition, many of these games are social in nature, requiring multiple players to achieve the game's objectives.

They further state that the majority of video game research is focused on the negative effects of video game play which is related to the content of the game and its game play methods due to more social scientists focusing their efforts on the relationship between the video game content and violence on the gamers. They have also stated in their research that 'The Washington Post' reported that, in 2005, at least 10 people in Korea died as a result of excessive game play, including one man who was found dead in an Internet café after allegedly playing for over 50 hours with few breaks. Stories such as these have raised concerns from government agencies and citizen

groups, who wish to better, understand the dynamics of online game play, especially those variables that lead to online game addiction”.

Chang and Lin (2014) write “with the rapid diffusion of games, scholars have been busy applying many assumptions to examine a variety of games, including console games, and video games. Massively multiplayer online role-playing games (MMORPG), social network site (SNS) games and social games. Past studies derived from the U&G perspective pointed out that social and psychological factors may drive people to game playing. For instance, companionship, escapism, tension-reduction, challenge, enjoyment, social interaction, time killing, arousal, social rewards, and competition were unique gratification associated with game playing” (p. 6).

Chang and Lin (2014) further state in their paper that due to the freedom of mobility and high-speed mobile data services; mobile social gaming is gaining popularity. Young people are becoming more and more dependent or “addicted” to social games. For them according to the researcher is not game playing for the simple killing of time but a tool for improving the interpersonal relationship and lessening the degree of anxiety. In terms of Candy Crush, a similar mobile social online/offline game, the Wall Street Journal (2013) pointed out that nearly 15 million people were addicted to the game and 69 % were females (as cited by Chang and Lin, 2014).

Based on well-established theories like the Self- Determination Theory, Uses and Gratification Theory and Social Learning Theory in the past few decades many gaming motives researches and their motive questionnaires have been developed. With the formulation of these gaming motive questionnaire, two main aspects or approaches have been formulated dealing with the motives of different media use. Ryan et al. (2006) in their article ‘The motivational pull of video games: A self-

determination theory approach' state that with the use of the self-determination theory it was identified and discovered via their findings that the players seek to satisfy their needs (psychological) by playing of games.

Whereas on the other hand Sherry et al. (2006) concentrated on why people and gamers use video games to overcome their needs using the users and gratification theory. Further in the study, the researchers encompassed the six motivational dimensions or forms namely arousal, competition, challenge, social interaction, recreation, and fantasy. De Grove et al. (2016) recently identified eight main motives for playing games which were social, narrative, escapism, agency, performance, pastime, moral self-reaction, and habit.

Lopez-Fernandez et al. (2020) state that the studies done to form the Video gaming Motives Questionnaire (VMQ) in the initial years were divided into theoretical and practical approaches where eminent researchers like Sherry et al. (2006) developed motivational dimensions to check and understand gaming and its gratifications based upon the finding they conducted. However Yee (2006) conducted the studies on subjects who played MMORPGs in order to identify their motivation to play such an intensive and social game where initially he found that the study established 3 main motivations at play which were i) achievement which included advancement in the game, mechanics of how the game works and competition amongst players in the game; ii) Social which included socializing in game, relationship building and teamwork; and iii) immersion which included elements like discovery, role-playing, customization and escape. However, in his second approach Yee (2006) identified five main motives: achievement; escapism; immersion; manipulation and relationship. Further Demetrovics et al. (2011) developed the 'Motives for Online Gaming

Questionnaire' which was based on seven motives globally recognised in videogames which were: competition; coping; escape; fantasy; recreation; social; and skill development.

According to Bartle (2003) in his initial approach towards motivation and gaming using MUD players, he suggested the motives to be associated with four (4) playing styles which included the i) achievers ii) explorers iii) socializers and iv) killers. These styles of game playing in MUDs were included via the observation and were not an empirical finding.

The "achievers" were seen as players who were able to play the game by setting aims and achieving them in the game. The "explorers" were more interested in the gaming structure rather than the game achievements who play the game to explore, the unexplored parts of the game and conquer the unseen stages in the game rather than the main mission. The "socialisers" were as suggested by the name itself, drawn towards creating social bonds in the game and building relationships and the "killers" were basically the users who use the virtual world to seek and destroy the elements in the game along with them being a menace and creating nuisance amongst the dedicated and casual players.

For Frostling and Henningson (2009), the social aspect of playing which included communication and cooperation and escapism which included avoiding problems were the main factors of motivation of play in the online first-person-shooter and role-playing game players and seeking the experience of flow, which was observed by them through interviews and observations. In another done by Hsu and Lu (2007) in their article "Consumer behaviour in online game communities: A motivational factor perspective" they found that the satisfaction of factors like entertainment, fun,

curiosity, exploration, or seeking the experience of flow was seen to be the major factors which increase the users' interests, commitment and loyalty towards the game which was also found by Wan and Chiou (2007) when they applied the 'Online Gaming Motivation Scale'.

The findings accorded by Yee (2006) mention them being similar to Walther (2006) which is in line with that of McKenna and Bargh (2000) which suggests the four factors that create or enable a more positive social interaction online. He states that the 'anonymity' feature; 'reduction in the physical space and physical apparency' and 'users control over time and pace of interaction' are the major appeal for being a strong motive to use online interaction.

Wu et al. (2010) state in their article on online games that the gratifications as discussed and interpreted that the "gratifications" is a concept relevant to a person's individual expressions of how he/she feels after using the medium which can lead to them to use the medium further inducing an extended motivation or continued motivation for media use. He also mentioned that the use and the freedom of the availability of the medium for a user dictate the gratification acquired by the user as the motivation or the gratification is regarded as an expression of media use about the equal interaction between the persons (as cited by Weibull, 1985).

Senlow (1984) mentions that video games offer participation rather than being mere watchers of the content like in the case of television (Cowell et al., 1995) who found in his study that the notion of 'electronic friend' stood true in the case of video games and adolescents. Similarly, Dominick (1984) found that video gaming was a form of self-esteem enhancement amongst the players where weak self-image was compensated by successful video-game play in male subjects when they visited the

arcades (gaming centres). He further stated that playing alone in the arcades rather than visiting with peers it was seen as an exercise to get better in the game and raise their self-esteem which is further backed by researcher Miller (1993) who witnessed and found that the games played on the computer doesn't harm them (players) or bully them as they do in real life scenarios. He even indicated that the use of video game play was a source to escape themselves from the real-life scenarios and escape to a reality where they are in control of their actions and surroundings (as cited by Colwell et al., 1995).

Over the years since the keenness over the use and effect of media has taken its shape, many researchers have created a major point in learning how we as audience and players and stakeholders of the media use them and with what motives do we use it and what drives our wheels towards the use of a particular media. The fulfilment of such criteria and the end product of gratification is what researchers are trying to find. These motives are widely discussed based on the human emotions towards their desire to use the medium which fuels them to use the devices which excitement and aggression at the same time allowing them to escape the realities of life when they dedicatedly follow the medium to play or watch or follow. These motives are the gratifications which they get when they use the medium and which have been termed to be instantaneous or delayed depending upon the medium and the person using them.

2. 2. d. Mobile Gaming and Academics

In the course of time and development of Mobile Phones and their ability to gaming facilities available on the devices, recent studies have been conducted on their uses and impact on human lives. Devices which are capable of giving entertainment and

leisure factor to their consumers have indeed caught the attention of researchers who are learning about the use and the harmful factors. The gamer's attention and their habitual uses of the devices are being well studied by researchers in the Western Hemisphere. The studies on the impact of mobile phones and social life along with its reach on the academics are recent studies which are being conducted of late. Researchers like Muhterem Dindar, Florian Rehbein et al., Jancee Wright and others have worked on papers relating to the Effects of Gaming on academics or its association with academics to a large extent.

Dindar (2018) mentioned that the progress of video gaming society has given a rise to the concerns and optimism about the effects of gaming on people. He mentioned that there are various studies done on the above-mentioned topic where they have found a positive relationship between video gaming and knowledge development (Carr & Bossomaier, 2011; Coller & Scott, 2009; Kebritchi et al., 2010), video gaming and learning skills (Becker 2007; Michael & Chen, 2005). Dindar has also mentioned there are contradictory findings on the relationship between video game play and academic success. He stated that there are both positive and negative correlations between game play and academic scores.

Anderson and Dill (2000) also mentioned the study being done, which resulted that the video games in particular were found to have aggression and how it has impacted the academic performances of the respondents.

Similarly, Jackson et al. (2008) found out in their research that a negative impact was found between the time spent playing video games and poor grades in academics.

Wright (2011) in her paper talks about the prominence of Video Gaming more than anything else. She further talks about the immersive characteristics of the video games which hold the attention spans of the player making it difficult for them to stay away. In her work, she found video game players had lower grades than those who did not play at all. The finding she mentioned is similar to Anand (2007). She has mentioned that as per the review of literature there is no definitive answer to the question in relation to the impact of video games and academic disruption.

Dumrique and Castillo (2018) however found out in their research that playing online games didn't affect the academic performances of the respondents. The results indicated that the respondents although spending time playing Online Games had good grades as compared to other researches.

Felisoni and Godoi (2018) in their paper 'Cell phone usage and academic performance: An Experiment' discussed the effects of gaming on academics. It was noted that the experiment was carried out using mobile applications like 'Moment' and 'App Usage Tracker' which targeted the respondents' actual usage of mobile phones more accurately. The results of the experiment highlighted the effects of Mobile phone usage and its impact on academic performance as studied by other Researchers. They also discussed that the users' dependence on mobile devices makes them either over perform or underperform academically.

Ophir et al. (2009) stated that mobile phone use during class hours may distract them from their course work and lectures. The students often 'overestimate' their ability to multitask which leads to them underperforming in their academics.

Chen and Tzeng (2010) mentioned in their study that the extensive use of the Internet via their mobile devices for gaming purposes led to academic insufficiency however it was also identified that the students who used the internet for seeking information in relation to their academics performed better than their counterparts.

Chiu et al. (2004) stated in their study on game addiction noted a decrease in schoolwork performances when the student was addicted to gaming. They found out that game addiction impacted academic performances in the respondents due to their involvement in spending more time on their game rather than on their school work, home works and assessment preparedness.

Calvert et al. (2005) mentioned that in 2004 it was estimated that media consumption by American youth between 8 to 18 years of age was about 6 hours and 47 minutes per day with the electronic media and roughly 43 minutes with the print media. It was also shown that television was the primary source of media exposure, video game play and non-school-related computer access occupied approximately 2 hours of a typical child's day as per the Kaiser Family Foundation report.

Most of the studies done on Mobile gaming and academics report the effects of the media on the performances of the children in relation to the amount of time spent by them on their mobile devices.

All the above studies show that there is an increase in mobile gaming by the teens and has certain effects on their social behaviour however; there are not many studies that show the relationship between academics, social behaviour and mobile gaming from a gender perspective. Thus, this paper will bridge that gap with a focus on the teenagers in Sikkim.

2. 2 e. Impact of Mobile Gaming

2. 2. e. i. The positives

In a study done by Singh et al. (2020) they had informed about the importance of mobile gaming or the positives of mobile gaming they had encountered in the course of their study. Playing mobile games does affect their mental skills which include logic and determination, eye-hand coordination, visual-spatial ability (Thomas & Martin, 2010). They also master the skill of multi-tasking which is one of the chief playing components needed in Strategy genre games (Rehbein et al., 2015). Cooperativeness is also an important skill learned from playing online gaming where multiple players coordinate to play and win a certain mission which requires tremendous skills of cooperation and proper decision making, risking taking appetite for the gamers is high which allows them to make decisions in split seconds which could either result is winning or losing the game (Singh et al., 2020).

The researchers also speak on the importance of public debate on the violence and content of gaming which is freely distributed over the internet. They state that public policy debate which concerns the best possible measures to minimize media exposure is needed. They reiterate the concerns regarding the media exposure on the young minds and how easily the contents are available to them. They also question the readers to as what concrete steps are needed to be taken by the public and the concerned powerhouses to control the exposure to contents which can hamper the minds (Singh et al., 2020).

The use of video games in education is well known as to how the teaching faculty and infrastructure uses video games to educate the children and also the adults in

innovative ways Madigan states the importance of video/digital games in helping educate pupils in the schools. Games like “Portal” and “Civilization” are used to teach ‘coding, physics, architecture, political science, and history with great success’ (Madigan, 2015, pp. 11). He further states the importance of gaming in workplaces to treat workers for maintaining the energy of the office space by treating them with games to boost their productivity (Ibid). The idea of the Video game as “teachers” have also been unearthed by scholars who have studied the positive effects of the game on the human brain and their increase in the ‘grey matter’ which benefits cognitive reasoning in the human mind (Freeman & Wohn, 2017; Mentzoni et al., 2011; Ferguson, 2008; Choo et al., 2010; Pontes & Griffiths, 2014). Researchers who have conducted experiments have also mentioned that more active games like the ‘PlayStation Move’, ‘Nintendo’s Motion sensor operative gaming, Xbox games titles like the ‘Dance Dance Revolution’ and ‘Guitar Hero’ have made game play active by allowing less to none of the sedentary behaviour in gamers. The games use gamers’ movement tracking behaviour for them to play the required games. Games targeted as First-Person-Shooter (FPS) are known to have had vigorous effects on cognitive performance while playing them. This as the scientists mention is due to the game play environment and the intensity of the game design which allows the gamers to make decisions based on the landscape. These games allow the gamer to make decisions based on how they play them hence such games have shown to elevate gamers' cognitive capabilities (Granic et al., 2014). The relevant exposure to such games with open-ended problems has become an influential by-product for the prevalent generations to solve problems without receiving instructions and have been grown to be “digital natives” as termed by Prensky (2012), these children due to their digital environment and absorption of media have become capable of manoeuvring in

the given conditions based on their capabilities to understand their surroundings via the trial-and-error methods. The importance of strategy-based gaming has also shown evidence of showing games' abilities to increase problem solving skills (Adachi & Willoughby, 2013; Steinkuehler & Duncan, 2008).

Moreover, an increase in creativity has been seen as a residue of the game play which has been seen in studies done by Jackson et al. (2012) which concluded showing results of almost 500 students aged 12 years showed a positive association between game play and creativity.

In discussing the positivity of video/digital gaming the playing of such games induced a positive and prosocial behaviour in the children. It was found in the study done by Gentile (2009) that playing prosocial games led to "helping" behaviour in children and more intensive and long-term studies showed that children who played such games showcased helpful and social behaviour later that same year (Gentile, 2009; Granic et al., 2014).

The use and distribution of the game Re-Mission, a game designed for child cancer patients that centres around the game of controlling nanobots which are designed to "shoot cancer cells, overcome bacterial infections and manage signs of nausea and constipation" (Granic et al., 2014). The medical marvel that has been distributed to medical centres treating Cancer patients has to be seen as an acknowledgement of the capabilities of video gaming and how the games can help children educate themselves while undergoing Cancer treatments and follow the required protocol for cancer treatment. The game now has been distributed to over 200000 patients and has been seen as a successful treatment approach (Kato et al., 2008).

The importance of gaming and its effects on the human mind has also been well documented by peer-reviewed journals and social, and psychological scientists have indulged in the study of video gaming as it sparks an interest in them to build the study forward.

2. 2. e. ii. The Negatives

The effects of video gaming can be used as an extension of Mobile Gaming effects as the latter is a part of the former. The nomenclatures are simultaneously used due to each having similar characteristics.

Hence, video gaming and its negative effects were first studied in the early 1980s which were reported by many scientists studying the field given the outcome of it being addictive (Ninaus, 1984; Nilles, 1982; Ross, 1982; Soper & Miller, 1983). Later it was also related to mental disorders or Internet Gaming Disorders (IGD) due to the video games being addictive in nature and it leading to players developing IGD (Billieux et al., 2015; Kim et al., 2016; Maraz et al., 2015) which were found and inculcated in the Section III of the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5; American Psychiatric Association, 2013).

The videogame has also been linked to the violence and how it affects the minds of the players who play the violent contents of the game for a longer duration of their life cycle Video games have been linked to the mass shootings in the United States by students who were believed to be under the influence of the video game, however, such bold sweeping statements were basically not scientifically proven and the contents are regulated by the regulation authority across the countries by various game rating boards like the Entertainment Software Rating Board (ESRB) in the US

and Pan European Games Information (PEGI) for all the European States as major stakeholders in game rating.

Researchers for decades studying the effects of gaming have linked video gaming to addiction, aggression, anxiety, depression, obsessive-compulsion disorder and other numerous physical and mental issues. The most talked about physical issue in humans due to the digital gaming is the sedentary behaviour which is linked to most of the diseases including cardiovascular problems due to the lack of exercise and growth of on-screen time however the findings and correlation between the two are still unclear (Puolitaival et al., 2020).

High screen time is also related with inadequate physical movement and higher sedentary period, rendering to studies of 13- to 18-year-old boys and girls; in these studies, the investigated area included the monitoring of screen time which comprised viewing television, using a computer, playing video games, and using smart phones where they found out that video game play negatively linked with physical activity among undergraduate, especially among those who play online video games. (Christofaro et al., 2016; Kenney & Gortmaker, 2017; Ballard et al., 2009)

Similar studies informed that a Spanish school-based study conducted on the adolescent boys who reported having weekly at least 4 hours of screen time were found to be more unlikely met the endorsement for reasonable to dynamic physical movement (Serrano-Sanchez et al., 2011). This study's outcomes designated that there is a assembly between high stages of video gaming and physical dormancy and inactive conduct. Scholars have informed that screen time is positively related to BMI in those aged 11–19 (Ballard et al., 2009; Arango et al., 2014; Lajous et al., 2009).

A similar study done by Ballard et al. (2009), found an association between playing video games and high BMI. Although the study's outcomes specify that there is no alteration in weight and BMI between the groups. The study's association between a high amount of video gaming and deprived self-rated health also ropes the previous findings (Sharma et al., 2017; Shiue, 2015).

Meagre eating habits are also related with playing video games. The outcomes of a preceding study of fourth-grade kids show a positive relation amongst video gaming and feeding of high-calorie and low nutrient foods (Pentz, 2011). Additional study's findings specify that 2 hours or more of screen time is linked with amplified energy consumption (Shang, 2015), such that adolescents with more screen time devour more sugar-sweetened drinks (Kenney & Gortmaker, 2017; Lowry et al., 2015). Scholars have also projected that those with high screen time tend to consume fewer vegetables and fruits, and a similar implication amid high video gaming and inferior ingesting of vegetables and fruits (Christofaro et al., 2016; Kenney & Gortmaker, 2017; Shang, 2015).

Video gaming commonly builds every day sitting time, as was likewise in most studies, they are related to damaging a person's wellbeing and other chronic weakness practices. These started after-effects of this investigation brace that video gaming is related to impeding wellbeing conduct, which would be worth considering with young adult men, who play a great deal on non-weekend days. Since less dynamic 17–18 years of age men appeared to invest more energy playing computer games, it very well may be concentrated later on whether computer games could be utilized in the actual enactment of juvenile men. Planned examinations are additionally required to

research the causality of the relationship between video gaming and wellbeing practices in juvenile men (Puolitaival et al., 2020).

Madigan (2015) mentioned that the anonymity combined with the competition and freedom from consequences led the gamers to inculcate the negative behaviour which they so proudly flaunted in the message boxes and online chats of the gaming community. The ‘no-consequences’ has led to the distortion of the ranting of lewd comments on the social media platform and the inclusion of derogatory comments has shadowed the world of gaming making it a toxic environment for gamers and the gaming community.

2. 3. Mobile Gaming, Gender, Age and Social Relationship

2. 3.a. Mobile Gaming and Gender

Mobile gaming and gender are terms used widely researched since the inception of the “Digital games” being recognised as “boys’ toys” (Taylor, 2006). The digital games although constructed and invented for only leisure purposes would have never thought it was a male exclusive product or male centric instrument. The games initially designed were simple and had no depiction of gender or sexuality. These games were simple in orientation which if allowed could have been played by all despite their gender. The games however were more exclusive as ‘male’ oriented as game titles creators thought it that way. The demand for games generated contents which were male centric (Jenkins, 1998). Games and gender are terms constantly being debated upon by researchers where the struggle between the games and the game content along with the depiction of characters and their roles have always been a subject of deliberation for researchers, gender activists and feminists (Taylor, 2006).

Leonhardt and Overå (2021) state that video gaming has always been associated with it being ‘a territory for adolescents and males’ solely the reason behind it being played by males more than the females. The desire to play digital/video games however in recent times is shifting focus as more female gamers are being reported playing games which were male dominated (Kuo et al., 2012).

Mobile Gaming or digital gaming has always been male centric and the games are designed in a way which is accustomed to males in general. However, due to the developments in the gaming industry and the feminist approach and critique towards the gaming industry have led to a change in the gaming topography. The games are gender neutral and aimed to target audiences which are pleasing to both worlds. The gaming atmosphere is yet to have a total gender-neutral phase however the topic is out and about for gamers to choose their characters and explore the game. The digital gaming industry is responsible for 45 per cent of the world’s economy (Newzoo Games, 2019) which is mostly achieved due to the rapid growth of smart phones and their accompanying ecosystem. The rise in technology has made it possible for the digital gaming industry to prosper and achieve success.

The majority of the gaming titles and the association with the gender gap are focused on the content and design of the typical games. Many scholars and academicians who have studied gaming have expressed that most games titles follow the stereotyped roles and portrayal of females as a ‘damsel in distress’ mostly helpless characters who await the ‘Knight in shining armour’ for their rescue and the whole game is centred as the ‘knight’s perilous journey to rescue his princess. The games are known to portray male characters as heroes who fend off evil wizards and generals to ultimately rescue the princess. Most games have typecasts which are not gender neutral and seem

biased as males' portrayal of strength and females' portrayal of weakness. The content of such magnitude may help garner more male players towards such gaming titles but it however repels females from playing such games which are male centric. Such portrayals could affect the game play amongst the female players (Hartmann & Klimmt, 2006).

The content of gaming has slightly changed over the years due to the uprising of the female voices over the internet but a lot of work needs to be undertaken in order to allow free content which serves both genders' right to play respectfully. Most of the studies done on mobile gaming have answered the fact of male players more drawn toward digital mobile gaming which has to do with the content of the game as most game titles are associated with violence and competition. In a study done by Vorderer et al. (2006) the influence of competition on gaming must have contributed to the fact that the female players refrain from playing digital games. Hartmann & Klimmt (2006) also stated that female players enjoy a more a casual approach to gaming where social interaction and casual nature attracts the female players to play games. Moreover, McLean & Griffiths (2019) mention that the area of research based on female gaming is less and needs more exploration on the subject. However, one cannot leave the idea of the increase in players being of both genders and how the female populous are also getting engrossed in gaming. Their active participation has been recorded by Cassell & Jenkins (1998) in their "From Barbie to Mortal Kombat: Gender and Computer Games" where the formation of all women groups "Crack Whore" and "Riot Girls" have been mentioned, who showcase the rise of feminism in the world of gaming in order to compete with male players in the popular First-Person Shooter (FPS) games like 'Quake' and 'Doom'.

2. 3. b. Mobile Gaming and Age

2. 3. b. i. Mobile Gaming and teenagers

Singh (2019) in his article ‘Compulsive Digital Gaming: An Emerging Mental Health Disorder in Children’ talks about the both positive and the negatives of video gaming on the player's mental and physical structure which he states depends on the attitude of the players. The benefits of video gaming and their possible ‘good’ effects are mostly related to the players playing periodically and in an intermittent manner which helps them release their imagination to a higher level, improve and expand their hand-eye coordination, reflexes are heightened and there is an improvement in their cognitive abilities. The playing of Video or Digital games releases dopamine in the brain which provides the players with a feeling of euphoria or a ‘High’ (Loton et al., 2016). However, the benefits of digital gaming are possible only when the players observe periodic play pattern and do not spend most of the time playing which tends to affect their study, work and other such activities.

The research on addiction based on the problematic gaming, internet gaming disorder and other similar studies have been done to intricate people and educate people on the importance of how mobile gaming can be problematic in terms of children and adults as well. These studies are a pathfinder for the general public to see how they can help their loved ones and near ones to tackle the stated problem of gaming disorders. Singh in his research states how the parents and others can monitor their children and act on how they can be handled. They are ought to be handled with care, sensitively and with compassion. He also suggests that the people with these kinds of disorders need to be handled without the use of any coercive methods. Encouragement also plays a big part

in making them socially conditioned and should be inspired to participate in social activities.

While studying about digital games the 'Irritation' factor has been considered as a sign of digital gaming addiction by researchers who have been studying the psychological effects of problematic mobile gaming (Ferguson et al., 2011; Kuss et al., 2012). The point is that you're likely some kind of gamer, as are the majority of individuals you know. Old generalizations of gamers as children, social nonconformists, or misfit hermits simply don't hold up.

In a 2014 article named "Unpopular, Overweight, and Socially Inept: Reconsidering the Stereotype of Online Gamers," Rachel Kowert, Ruth Festl, and Thorsten Quandt arbitrarily studied 4,500 computer game players utilizing an old innovation alluded to as "the telephone." The specialists discovered no contrasts between the individuals who mess around and the individuals who do not (Kowert et al., 2014).

2. 3. c. Mobile Gaming and Social Relationship

The technological advancements and the introduction of the internet to the world made the world what is known as the 'Global Village' (McLuhan, 1964). This networked society made the world a smaller place, a place where distances could be minimised with the click of a button and far away friends and family along with acquaintances would be closer. The introduction of the internet within the gaming consoles and in-chat features within the game is what gathered social relationships to be formed with the games themselves. The conversations in terms of messages typed from the keyboard of the computer and handheld devices triggered a sense of closeness amongst the gamers which created a niche for them, a haven for them to

thrive and showcase their skills along with managing the strategies to win against the opponents. The gamers formed groups which would create events to play together and achieve common goals. The use of voice and video pushed the gaming into newer areas and brought the medium and gamers much closer to creating bonds while playing games. However, with the introduction of these features brought other evils along with it like ‘cyber bullying’, trolls who constantly picked on people behind the screens, identity thefts and other such evils which made the internet and the games a toxic environment for players. Mobile gaming and the things happening behind the screens became harder to control and regulate. The abusive behaviour of certain elements and entities made the internet and mobile gaming an unsafe place for the gamers and their surroundings. The time spent on viewing and interacting with the devices and the exclusion of physical interactions amongst the users and the non-users of the mobile devices furthered the problem of addiction, social exclusion and other problems as widely researched by Chai et al. (2011); Choo et al. (2010); Nie and Hillygus (2002), and empirical evidence using data and numbers by the Stanford Institute for the Quantitative Study of Society (SIQSS), show how the impact of these games and virtual social interactions among the gamers have affected the relationships (Chai et al., 2011).

Cummings and Vandewater (2007) mentioned a similar study which studied the effects of digital game play and the displacement of time spent on other activities of daily life. Their study on the comparisons between the gamers and the non-gamers revealed that the gamers were spending lesser time studying and doing their homework as compared to the non-gamers. These findings were similar to that of the findings of Jones et al. (2002) where college students were studied and similar results on time displacements and other activities were seen. Most of the researches indicate

and points toward the time spent playing games engulfing the time spent with the real, physical people. The evidence in their empirical data shows and dictates that the use of gaming hampers and overshadows the physical intimacy between the gamers and their peers. The use of the digital world and its effects make the study relevant in the Sikkim due to Sikkim being a state with youth indulging in digital devices.

The social relations created within the games extended in form of texts and IMs. The internet played a huge role in the creation of mobile/digital gaming and social relationships. People found friends, sometimes long-lost friends who played a similar game and reunited with them. The popular 'Farmville', 'Hay Day' and other social games on the popular social networking sites (SNS) 'Facebook' allowed players to interact and send items to their fellow players. The use of the internet connection and messaging were tools which furthered the social integration among the players.

The new features added to mobile gaming are a sign of the progression of technology and their way of making the gaming more immersive for the player to play using social chat features and going online to connect with peers and acquaintances who provide useful aspects to mobile gaming. The new age devices have introduced new possibilities for the player to connect, which researchers describe to be an integral part of the gaming atmosphere (Kowert et al., 2014). Online gaming and the use of the mediated social environment have helped mobile gaming to have an interactive playful environment which helps gamers to socially connect amongst themselves across spaces. These games have their own platform of chats and interactive sessions where the players either participate or spectate anonymously which can aid in reducing the pressures of social networking and social interaction as gamers are mostly focused on the technicalities of gaming.

Most of the study done on gaming and its effects on social relationship relates to the negative effects it has on people and their time management (Chai et al., 2011). Studies done by Cole and Griffiths (2007) stated that the impact on the MMORPGs players and their social interaction capabilities were affected by the lengthy sessions of gaming which hampered their social relationships. However, the relationship is not that significant and is weak statistically. The consequences of gaming on relationships have been studied as a bad part of a player's life and their immediate peers (Woods et al., 2007). The reactions and devotions towards gaming and the chemistry involved are different for players and differ according to the amount of time spent on their respective devices. Thus, the social relationship is based on their ability to diversify time accordingly. It was also seen that gaming is always shown in a 'bad-light' as they are termed as addictive hence the restrictions make them more play-worthy, especially for teenagers (Chai et al., 2011).

Mobile gaming as stated in previous works done on the subject reveals that the virtual social relationship increases due to them being able to interact with each other during the game and also on their respective websites as mentioned by Deshbandhu (2020). The interactive game play allows the players to be socially active and provide essential support via chat boxes and instant messages (IMs). Krotoski (2004) stated that the heavy gamers of online MMORPGs instigate discussions on the game topics, and involvement in tasks which then result in friendships and personality development.

CHAPTER 3

METHODOLOGY

This section of the research describes the approach towards the methodology used to inspect and answer the research questions evolving in the study. The approach taken towards the evaluation of the data collected by the researcher in the present research is quantitative, with the number of the respondents is 540 which comprises of male and female students in the 16 different schools of Sikkim. The methodology used for the present study allows the researcher to find concrete results to answer the research questions which relate to the mobile phone gaming in Sikkim and its impact on academics, social relationships and gratifications achieved. Since the research is a maiden visit to the area of mobile phone gaming in Sikkim, the approach is kept simple in terms of using the data analysis and data interpretation. The use of SPSS and MS Excel has allowed the researcher to understand the data entered manually which has revealed the findings in a simpler form for all to grasp. The research tends to find the answers to the questions of how mobile phone gaming gratifies the children's use of mobile gaming, what are the games they play on their devices and is there a difference in the choice of games between the genders like in most of the previous studies (Sherry et al., 2006; Cole & Griffiths, 2007). Hence to answer these questions the best suited approach as per the literature available at the moment reveals that a quantitative approach would be beneficial for the study along with the use of a questionnaire which would be distributed to the respondent selected via a lottery method. The use of a simpler statistical tool would allow the researcher to indulge and spend more time on the outcome of the result which would lead to creating a pathway for future researchers in the state of Sikkim. The data collected would be primary data

collected during the survey which was considered due to the availability of the students in the schools which was dicey in nature and face to face survey needed to be taken due to the schools being far flung and some in remote locations of Sikkim.

For any research to materialise and unearth answers dedicated to the study, the use of proper methodology and tools are required by the researcher which aids his/her research. The use of proper methodology needs to be implemented to correctly garner concrete results while following similar studies, instruments of study and methods which help the researcher to follow previous research done in a similar fashion. These studies are done with care, precautions and deliberations which is suited for the study done by the said researcher. The use of proper methodology allows the researchers to acknowledge the difficulties faced by the previous works and allows them to modify those errors and replicated them in their areas of study while introducing the changes and the desired room for improvement.

Through Review of literature, it has been found that the studies in this area of research have primarily used surveys. Some of these studies are conducted by Katz et al. (1973), Griffiths (1997), Woods et al. (2007), Chai et al. (2011) and Cole and Griffiths (2007). Thus, for this study too Survey has been selected.

3. 1 Survey

Converse (1987) states that the survey research may have its origin in the social surveys conducted by the English and American Social Scientists in the 20th century who wanted to document the social problem's extent like poverty, and homelessness. The government of the United States conducted surveys to record and document the socio-economic conditions of the country. Since then, Survey research is one of the

most prominent tools used for the collection and recording of data used by researchers and social scientists. Survey research has a strong historical association with the social psychological study of attitudes, stereotypes, and prejudice.

Survey research can be defined as a collection of details from a sample of people via their responses. It is also called “*an instrument that serves as something of a social telescope in social sciences*” (Converse, 2009). The use of surveys can be for a variety of purposes and is often used to explore human behaviour (Ponto, 2015). The use of surveys in research has been associated historically with a large population-based collection of data which gives the users the ability to obtain a large group of data samples rapidly.

A survey is conducted by asking questions through a questionnaire with a quantitative or a qualitative approach. It also helps in taking the desired actions in a more natural setting rather than an artificial one. Surveys can be conducted anywhere and it is not bound by any geographical boundaries.

The survey method is beneficial for this research as the sample size is large and this method made it easier to reach the sample with ease and collect sufficient data with a high representation of the population. Moreover, the use of a survey benefited the researcher since large data could be collected within a limited timeframe. The researcher also explained the questionnaire face to face and the outcome of the entire task minimized the chances of errors which further benefitted in getting accurate results. The data collected through the survey could also be arranged efficiently making it easier to be tested statistically to draw relationships and bring out conclusions.

3. 2 Sampling Techniques and Tools

Conferring to the 2006 census, there were 65,148 kids amongst the age cluster of 5-9 in Sikkim (DESME, 2006). Probably, all of them have grown up to be teenagers by 2016. These 65,148 roughly teenagers establish the populace of the study. Therefore, a sample size of 540 respondents was selected for the survey using the Raosoft sample size calculator.

From the initial data collected from the Department of Education, Government of Sikkim, there were a total of 778 government schools and 397 private schools in Sikkim at the time of the study (2018-2019), out of the provided data schools with classes six (6) and above were identified as per sample age of the respondents being 13-19 years of age. The primary schools were not considered in the study due to their age limit and using stratified sampling, the schools having secondary and senior secondary schools were divided based on the number of districts in Sikkim, which is 4; East District with its headquarters in Gangtok, West District with its headquarter in Gyalshing, South District with its base in Namchi and North District with its headquarter in Mangan. Based on this, 25 schools from North, 35 from south, 50 schools from East and 30 schools from west were shortlisted, further based on the lottery method which is one of the oldest ways and a more mechanical way to sort samples (Fleetwood, 2021) was then used to select the schools in each district by assigning random numbers from the list of schools where the schools defined in Table 1 were selected as per the number that came out during the lottery method. After the selection of the schools was completed, the selected schools were visited and the students were then selected based on systematic random sampling where every 5th student was selected for the survey. A total of 600 survey questionnaires were

distributed and collected and analysed for properly filled forms, the inadequate forms were rejected and a total of 540 questionnaires were selected for better results so as to represent the population of Sikkim in a satisfactory manner.

A total of 60 students were selected from the North District of Sikkim from which Hee-Gyathang Senior Secondary School, Dzongu; North Sikkim Academy, Mangan; St. Joseph School; Pakshek and Mangshila Senior Secondary School, Mangshila were selected. 200 students from East District namely Singtam Senior Secondary School, Singtam; St. Xavier's School, Pakyong; Greendale English School, Tadong and Chujachen Senior Secondary School, Chujachen-Rongli were selected. A total of 160 students from Temi Senior Secondary School, Temi; Victorian Cross Ganju Lama Senior Secondary School, Ravangla; Namchi Public School, Namchi and St. Francis School, Jorethang were selected from the South District and lastly a total of 120 students from the West District were chosen from Yuksam Senior Secondary School, Yuksam; Pelling Senior Secondary School, Pelling; Don Bosco School, Malbasey and St. Mary's School, Gyalshing. The individual number from each school was based on the data provided by the Education Department, Govt. of Sikkim and Schools of the total number of students from classes 7 to 12 in each selected school. The respondents in each school were divided to get proportionate data from each district. Hence the total number of respondents was divided into four schools from each district based on their population district wise (DESME, 2011). East District with the greatest number of schools and enrolment had 200 respondents followed by the South District with 160 respondents; West District with 120 respondents and North District with 60 respondents since it is the least populated district and has less enrolment in schools.

The questionnaire design was simple with easy English used for the understanding of the students, and ample time to the students was given by the researcher to fill in the details to get responses from the students in a calm environment in open spaces.

Table 1

District wise listing of samples in Sikkim.

	Name of Schools	No. of Respondents	Total of each district	Grand TOTAL
	Singtam Senior Secondary School	50		
East District:	Chujachen Senior Secondary School	50	200	
	Greendale English School	50		
	St. Xavier's School	50		
West District:	Pelling Senior Secondary School	30		
	Yuksam Senior Secondary School	30	120	
	St. Mary's School	30		540
	Don Bosco School	30		
North District:	Hee-Gyathang Senior Secondary School	15		
	Mangshila Senior Secondary School	15	60	
	North Sikkim Academy	15		
	St. Joseph's School	15		

	Temi Senior Secondary School	40	
	Victorian Cross Ganju Lama		
South	Senior Secondary School,	40	
District:	Ravangla		160
	Namchi Public School	40	
	St. Francis School	40	

Note. The table features the numbers of students selected in each school in Sikkim.

N = 540.

3. 2. a Tools

The tools used for conducting the survey which has proved to be effective and the collection of the data was through a Questionnaire, formed in order to see the various aspects in place and study the variables of the study (Campbell, 2007; Katz & Sugiyama, 2005; Wei & Lo, 2006; Chang, Lee & Kim, 2006). The questionnaire was designed keeping in mind the factors which are the variables of the study. The researcher also used the literature review on the studies done on mobile phone gaming for the construction of the questionnaire.

The questionnaire was distributed to the teenagers aged between thirteen to nineteen years of age studying in classes seven to twelve. Each question in the questionnaire was explained by the Researcher himself in all the schools which he visited. The participants were given ample time and freedom to answer the questions which were supervised by the researcher himself.

The questions were primarily close-ended and had options for the participants to choose from a set of predetermined responses, however, few questions were left without choices but framed in a way to elicit objective responses. The questionnaire used for the survey was formed according to the findings of the study done by previous researchers (Chen et al., 2009; Hou, 2011; Sherry et al., 2006; Bulduklu, 2011) which had four (4) sections namely (a) Playing Mobile Games, (b) Academic performance, (c) Social Relationship and (d) Gratifications. The sections were divided to understand and test the variables of the subject. Section A had 10 questions which looked at the game playing ability of the respondent, their choice of mobile operating system, their ownership of a mobile phone, duration of mobile game-playing, choices and favourite games. Their game play patterns and the genre of games they tend to play and install on their smart phones. The sections also checked their interests on how often they view tutorials which are videos uploaded on YouTube, Twitch and other media platforms by gamers who have played the game and streamed it on the internet for others to follow to beat the game, advance the stage, acquire items which the gamers missed out on while they played the particular stage in the game, techniques to overcome the 'boss' in the game and basically all kinds of tips and tricks for fellow gamers to abide by in the game on the web and their rankings on the particular game.

Section B had seven questions that assessed their academic performances and gaming patterns included their ability to study and play games, their duration of study time in a day, their percentage acquired in the last exam and their ranking in the classroom. This section allows the respondents to unveil their time spent on their studies, their preferences on the game and their studies which one they would prefer and how they learn with the availability of the internet. The responses to the asked questions are

marked on a 5-point Likert scale from 'strongly agree' to 'strongly disagree'. This section deals with the important research question of if games do affect the respondents' academic performances.

Section C had eight questions which tried to check their social relationship with peers and kin. This section dealt with their time of game play which would enlighten their routine and their time on the phone or with the family, their other kin who play games on their respective phones which could relate to the closeness of their families, their personal traits and preferences while playing games on the phone, social networking via the games played on the devices, preferences to have on-screen or off-screen friends. This section would allow the researcher to determine the social relationship versus the online games that the respondents would answer. The sections deal with the physical social interaction rather than the electronic social relationships they get via gaming. The importance of their choice of physical over digital relations and vice versa would be checked in this section.

Section D of the questionnaire had around twenty-three statements where the respondents could either agree or disagree. These statements were included to understand their gratifications like Emotional Needs, Achievements, Enjoyment, Social Interaction and Escapism. The statements from 'a' to 'e' were to check the emotional needs, statements 'f' to 'k' was to see the achievements, statements 'l' to 'n' was for enjoyment, statements 'o' to 't' was for social interaction and lastly 'u' to 'w' was for escapism. This section was divided into the 5 factors of gratifications which were shown via literature reviews done to analyse the kinds of gratifications achieved by the respondents. The use of factor analysis to minimise the factors and

establish a relationship between them to reveal the kinds of gratification was taken into consideration.

The gratifications used in the questionnaire were developed using the Uses and Gratifications Theory which remains an integral part of the research.

3. 2. b. Pilot Study

It is highly essential to conduct a pilot survey before proceeding to the actual survey to uncover flaws and potential causes of confusion in the questionnaire; any misleading questions could potentially result in invalid responses. For the pilot survey, around sixty (60) questionnaires were distributed to the students of three (3) Government Schools of Gyalshing, West Sikkim to verify feasibility and compliance with objectives set out by the overall study. The West District of Sikkim was selected for the initial part of the pilot study as it was declared a backward district of Sikkim (NITI Aayog, GOI, 2018). The filled questionnaires were analysed and errors reported during the testing of the pilot survey samples were checked and corrected which included questions being incomplete and vague were channelled to be more precise and apt for the respondents to answer.

3. 2. c. Time Frame

Data collection using a survey questionnaire was done during the year 2018 to 2019 in a period of one year where the academic calendar was followed by the researcher to check the respondent's availability. Along with the academic calendar, some of the places like Hee-Gyathang, Yuksam and Ravangla are remotely located which led to the delay due to weather and road conditions in Sikkim.

3. 2. d. Rationale behind the selection of the sample

As the teenagers constitute the universe of the study, the 2006 census report was consulted on the number of children between the age group of 5-9 years who matured into teenage by 2016. Although Mobile gaming is becoming an all-pervasive phenomenon cutting across age groups, teenagers have been chosen as they are at an impressionistic age. The teens constitute a majority of mobile phone game players as per the reports and research conducted in the Western countries (Lenhart, 2009; Okazaki et al., 2008; Kee et al., 2014).

3. 2. e. Variables for the Study

The variables being studied for the present study have been distinguished between the two sets of variables which are grouped under the dependent and the independent variables (Table 2). The Independent variables for the study are the “Teenagers playing mobile games” whereas the Dependent variables for the study are 1. Academic performance; 2. Social relationship; and 3. To attain certain gratifications.

Table 2

List of Independent and Dependent Variables for the study

Independent variables	Dependent variables
Teenagers playing mobile game	Academic performance
	Social relationship
	To attain certain gratifications

3. 3 Data Collection and Analysis tools

The data collection was done with the help of a structured questionnaire. Tools used were questionnaires which were distributed to the student participants of the selected schools. All the data were analysed in SPSS to attain statistical analysis. The data collected via the questionnaire were first checked manually for any missing answers to the given questions and were screened, and finally, 540 data sheets were entered in MS Excel and carefully each data was entered manually by the researcher, double checked and then the analysis was done using SPSS.

3. 3. a. Correlations

Correlation is used to test relationships between quantitative variables or categorical variables. In other words, it's a measure of how things are related giving them a mathematical value that solidifies their relationships. The study of how variables are correlated is called correlation analysis. Correlations are useful because if you can find out what relationship variables have, you can make predictions about future behaviour. The use of correlation helped to achieve the results of how the particular variable was related to the other variables and how these identified variables were interrelated to one another causing the positive or negative correlation amongst themselves to allow the researcher to know the cause and effect of a certain variable like age with mobile gaming, gender with gaming and studies with game playing pattern, the degree of use of mobile for games between the genders.

The results of the correlation were used to predict the use of the respondents via this test. The use of this method allowed the user to conclude as to what would happen to

the variable and how those variables would establish connections amongst themselves.

3. 3. b. Factor Analysis

The use of the factor analysis has been carried out to check the gratification variables and find out their relationship which could be used to explain the research analysis better and provide a clearer picture of the gratifications achieved by the respondents (Basto & Pereira, 2012). The different gratification factors in Section 'D' of the questionnaire delves into the respondent's psyche of finding out the desired gratifications achieved while and when playing mobile games which have been unearthed by the use of factor analysis. Factor analysis is carried out on the correlation matrix of the observed variables. A factor is a weighted average of the original variables. The factor analysis hopes to find a few factors from which the original correlation matrix may be generated (Basto & Pereira, 2012, p. 2). The goal of factor analysis is to aid data interpretation. The reports from factor analysis are designed to aid in the interpretation of the factors and the other goal of the factor analysis is to reduce the number of variables. The use of factor analysis is to minimize the set of variables in a data and to identify the relationship between the variables in a given data set. It is also useful to provide an interpretation of the factors that are common in the data set (Bartholomew et al., 2011).

The use of Factor Analysis (FA) has been taken into consideration in this particular research due to the sample size being above 100 respondents which are considered an ideal data size for the use of FA as per Comrey and Lee (1992) as cited by Koyuncu and Kılıç (2009) where the term that factor analysis is apt for 'explaining a construct' which is what the results need to do for the present study. The Factor analysis was apt

for the research due to the survey questionnaire section D being a close-ended questionnaire with scales to record their responses ranging from 1 (Strongly Agree) to 5 (Strongly Disagree) on the Likert Scale. Moreover, this type of analysis helps to condense large data sets and break them down into factors that can be measured easily. Thus, for this study too keeping factor analysis in mind Section D of the questionnaire has been designed and the factors identified are - Emotional; Achievement; Enjoyment; Social and Escapism factors.

3. 3. c. Data Analysis tool

SPSS: Since the research is quantitative, the tool used to quantify the collected data via the questionnaires was SPSS where the correlation between the variable was tested. The Skewness and Kurtosis test was performed to screen the data for its normal distribution. All the categorical variables were represented using percentages and analysed with the help of Chi-square and the Fisher Exact test was used to understand the association between the categorical variables or classifications like age and gender. While all continuous variables were described as mean, and standard deviation (SD) and analysed with the help of a *t*-test which is used to determine the significance between two sets of data or groups. The Chi-square and *t*-test have been used to test the variables and examine them statistically in the study (Hayes, 2022). Karl Pearson's correlation test was used to understand and establish statistical backing to the mobile phone gaming and scoring in exams between the male and female respondents (Laerd Statistics, 2017). The Multivariate logistic regression analysis along with Backward regression was introduced in the analysis to understand the factors/variables which cause statistical differences in mobile phone gaming and the social relationship of the respondents which included aspects of relationship

establishment, hanging out with friends, playing videogames rather than meeting people, playing mobile games than talking to people and other similar factors and also to check which factors effected the social relationship the most in both respondents. The p values of $<.05$ were considered statistically (Laerd Statistics, 2017). Further, the ANOVA test was used to determine the influence of the independent variables on the dependent variables for the analysis of the data (Kenton, 2021).

CHAPTER 4

DATA INTERPRETATION

4.1 Socio-Demography

Primarily, it's significant to mention the demographics of the respondents. The respondents were nominated based on their age which entailed of 13 years to 19 years old studying at the numerous government and private schools in the four districts of Sikkim. The respondents selected are 274 males and 266 females (Table 3).

The study comprised of a total of 274 males which comprised 50.74% of the respondents contributed to the study along with 266 females comprising about 49.26% of the respondent population in Sikkim. the thirteen-year-old were the maximum number of respondents from the entire group of study followed by sixteen years old and fifteen years old as second and third respectively.

Table 3

Demographic details of Participants (N=540)

Particulars	Frequency	Percentage
Age (mean; standard deviation)	15.57 ±1.91 (range 13-19 years)	
Gender		
Male	274	50.74
Female	266	49.26
Other	Nil	0

Continuation of Table 3

AGE GROUP (in years)		
13	100	18.52
14	85	15.74
15	87	16.11
16	93	17.22
17	71	13.15
18	54	10
19	50	9.26

While answering the questionnaire during the survey 495 (91.26%) respondents claimed that they owned mobile phones and 45 (8.33%) respondents mentioned that they did not own or have mobile phones. The most popular operating system that the respondent used on their phone was the Android OS with 96.30% followed by Apple's iOS which were used by a meagre 2.96 % of the entire 540 respondents. Android OS can be linked with the popularity in Sikkim due to it being offered in more affordable handsets available in the market as compared to an Apple product which starts as low as ₹ 30,000/- which for a school going student is very high considering the per capita income of Sikkimese household which averages to ₹ 35,800/- (Statista, 2021).

Figure 3

Respondents who own phones in Sikkim. (N=540)

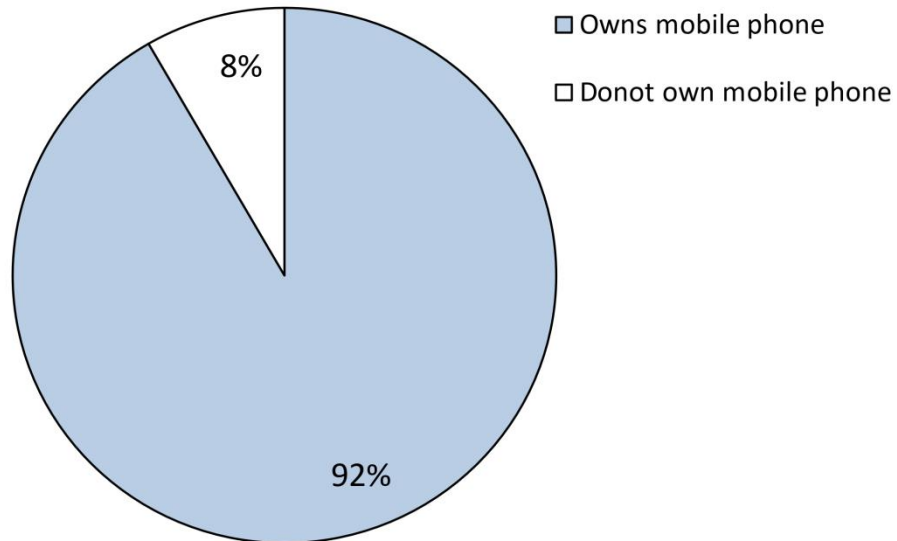
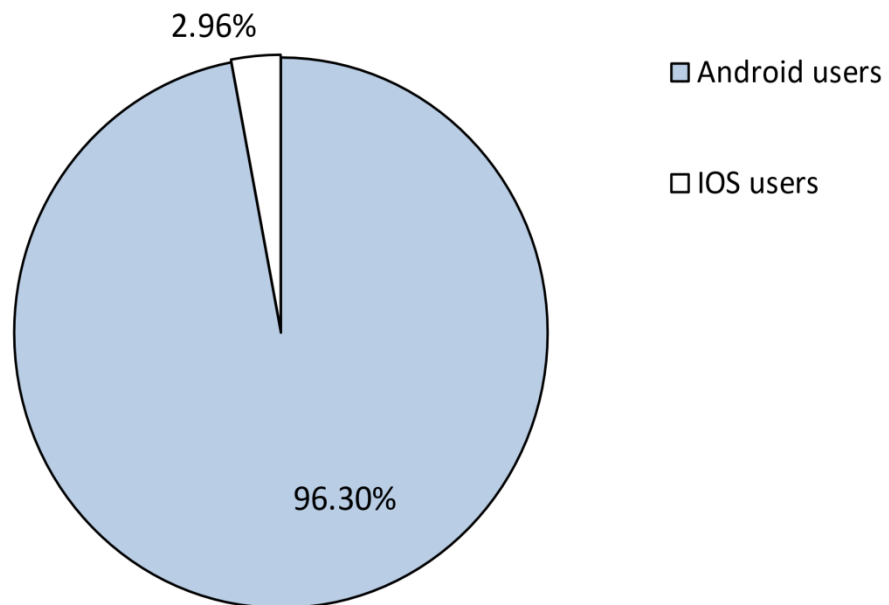


Figure 4

Android users and iOS users in Sikkim (N=540)



In terms of Game play on mobile devices an astounding 98.52% of respondents admitted that they play mobile games on their cellular devices as compared to the

1.48% of respondents mentioning that they do not play games on their cell phone devices. The majority of respondents stated that they spend about an hour or less on their mobile phones (46.48%) and about 7.41% mentioned they spend more than four hours a day on their cell phones playing games. 35.04% of males responded that they spent less than one hour on their phones playing mobile games and 58.27% of females responded the same. 10.22% of males admitted that they spend more than four hours on their mobile devices playing games and about 4.51% of females admitted the same. The time spent on mobile phones was higher in case of male teenagers as compared to female teens.

Figure 5

Respondents who play and who don't play games on their phones. (N=540)

■ Play games on cellular device □ Donot play games on cellular device

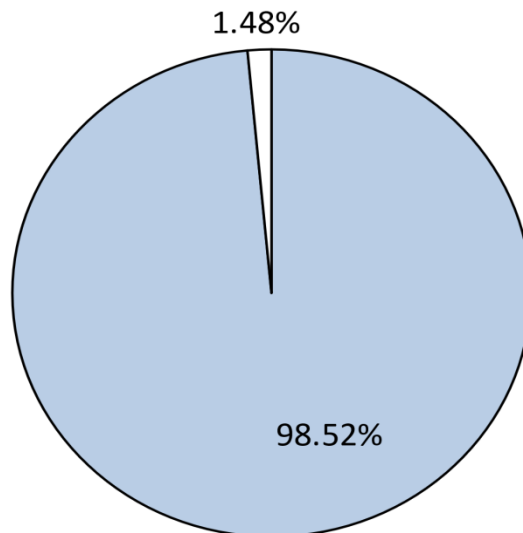


Figure 6

Time spent on the phone while playing games. (N=540)

▮ Spends hour or less on games □ Spends more than four hours in games

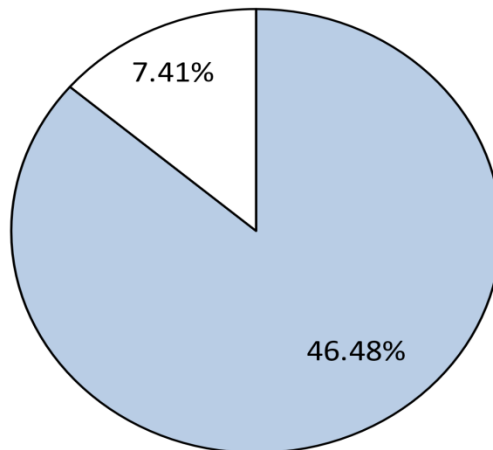
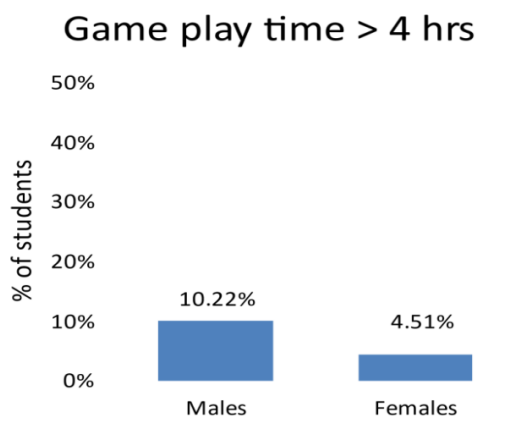
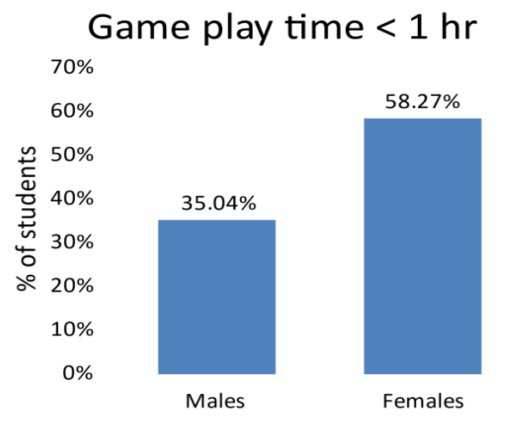


Figure 7

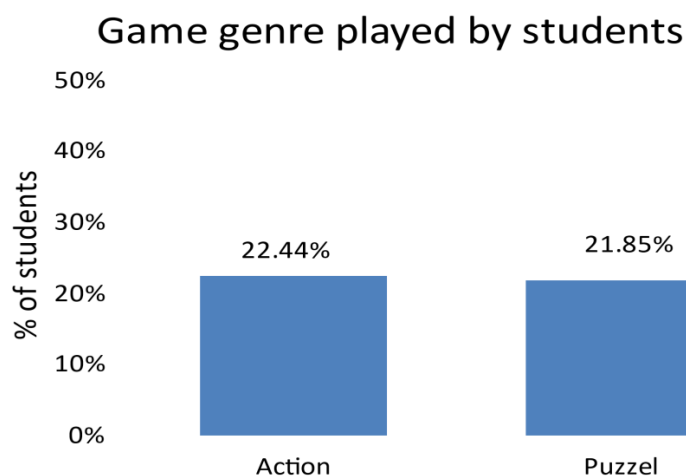
Game play time percentage < 1 hour and >4 hours (N=540)



In regards to the Game genre and their popularity in Sikkim, it was found that ‘Action’ Genre (22.44%) was the most liked genre followed by the ‘Puzzles’ genre (21.85%). While asking if they use strategies and other plans during and in course of their gaming which is highly essential if they are playing games like Clash of Clans, Mobile Legends: Bang Bang, PUBG, Garena Free Fire and Call of Duty 21.46% of respondents agreed that they do use strategies and game plan to play such games. The maximum numbers of respondents were players who would use game play as a part of their game ethics in order to progress forward in their games. Games today are highly technical and progressive even on the Mobile phone where they use a lot of social gaming to be played with peers and groups which requires cooperation and an effective plan in order to win certain levels in a game and have certain upgrades.

Figure 8

Game Genre played by Students. (N=540)



Mobile Gamers today often view YouTube content creators who are expert games and follow them on social media platforms as well. YouTubers like PewDiePie, original name Felix Arvid Ulf Kjellberg has the highest number of subscribers with about 105

million YouTube subscribers making him one of the most subscribed YouTubers, ‘JuegaGerman’ aka Alejandro Garmendia Aranis, ‘elrubiusOMG’ aka Ruben Doblaz Gundersen, ‘MrBeast’ aka Jimmy Donaldson and ‘CarryMinati’ aka Ajey Nagar from India are some popular gamers who live stream their games on the internet for followers to follow their tactics and styles of combat during certain missions (Beganovich, 2021). Mobile Phone Gamers similarly follow them to learn tactics and other skills to improvise their own gaming skills for them to earn a spot for them in the Gaming Arena. However, in Sikkim the respondents mentioned in the survey that 39.26% of players sometimes look for expert tips and watch videos on gameplay, 20.37% stated that they don’t watch such videos or look for expert tips at all and 11.30% responded that they “Always” look for expert tips and videos while gaming.

Figure 9

Use of Strategy (Game Planning) while playing games on the phones. (N=540)

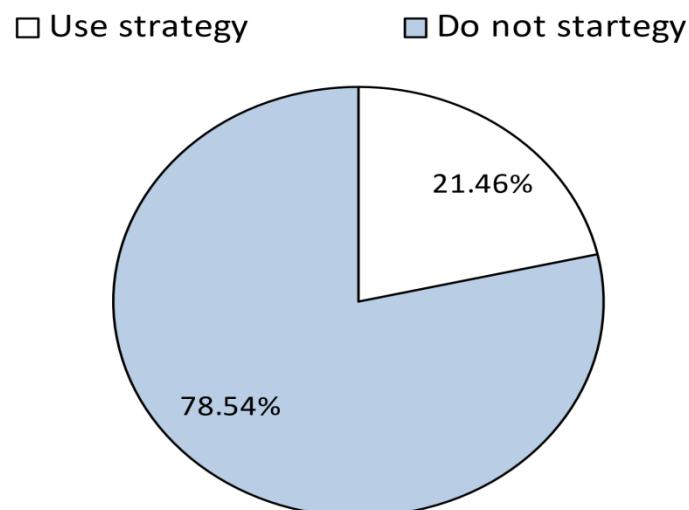


Figure 10

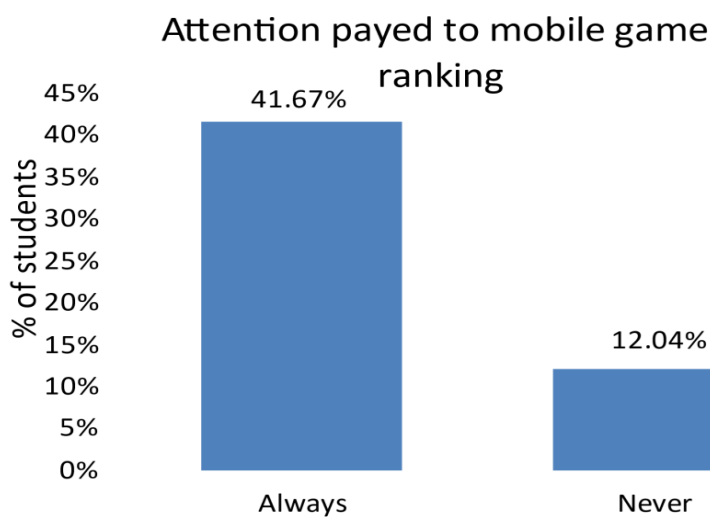
Respondents who use videos to seek tips from experts. (N=540)



In terms of 'attention to rankings in mobile games', a majority of gamers stated that they always pay attention to their rankings (41.67%) as compared to 12.04% of gamers who stated that they don't follow their ranks and achievements in their games.

Figure 11

Attention paid to the game ranks in Mobile games. (N=540)



Shifting our focus to Academics, 45.19% of respondents stated that they don't play games during their examinations and 12.04% students mentioned that they do play games during their exams. 50.56% of respondents responded that they don't play games during their busy school hours and assignments which was followed by 44.07% of respondents mentioning that they reduce their time of gameplay during their busy schedule. When asked if games helped them in their performance in exams and assignments 55.19% mentioned that they do not think that gaming would improve their studies. 4.44% believed that playing games do give them a better chance of improving their performances in assignments and exams. When asked how many hours the respondents spend on studying 49.63% stated that they spend about one to two hours studying followed by 18.89% spending about 2-3 hours studying and 16.85% spending less than an hour on their studies.

Figure 12

Students who play games during exams. (N=540)

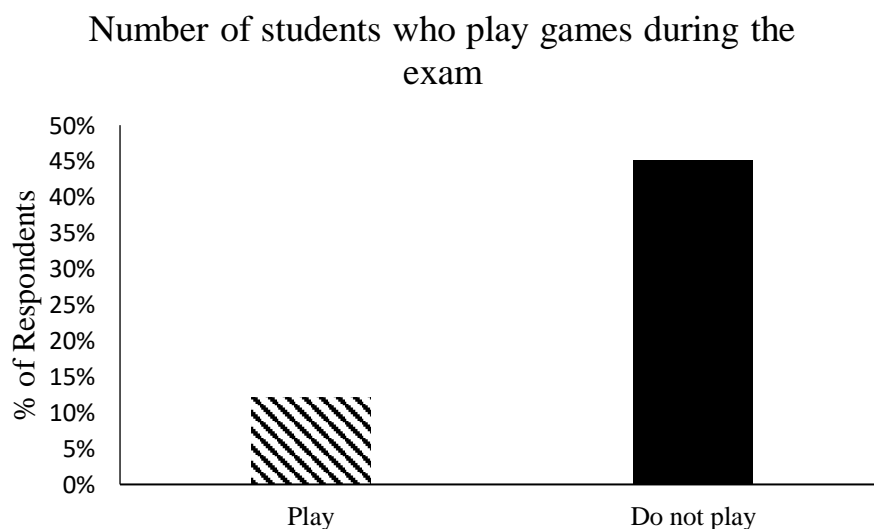


Figure 13

Games played during busy school days. (N=540)

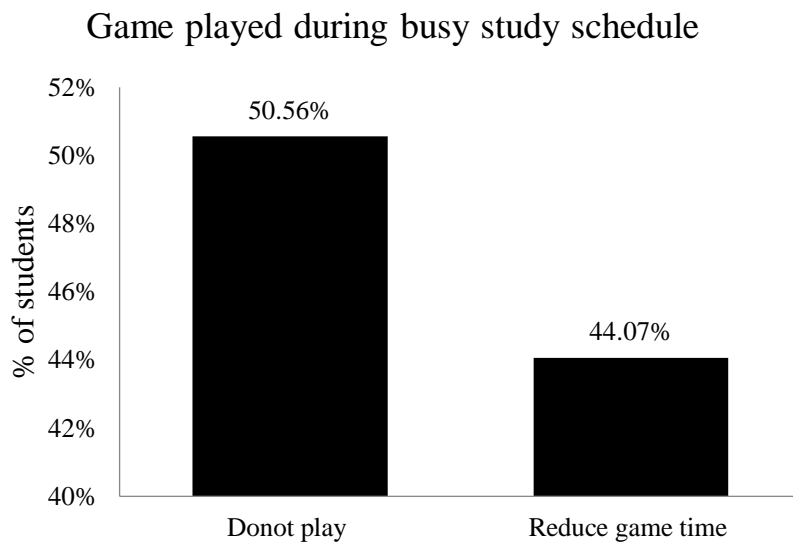
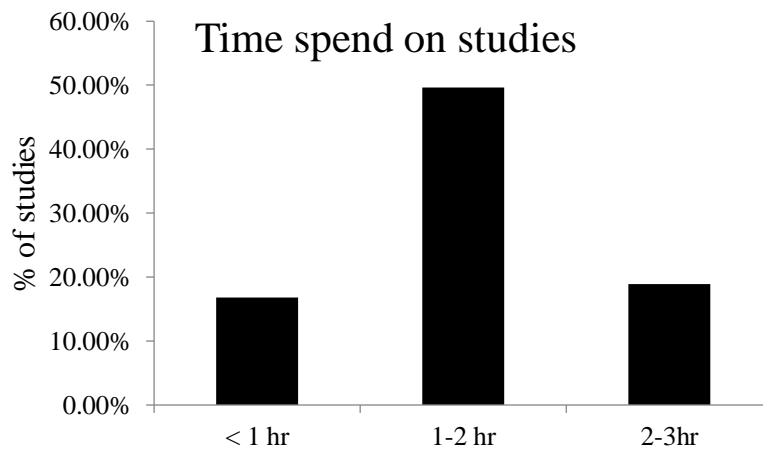


Figure 14

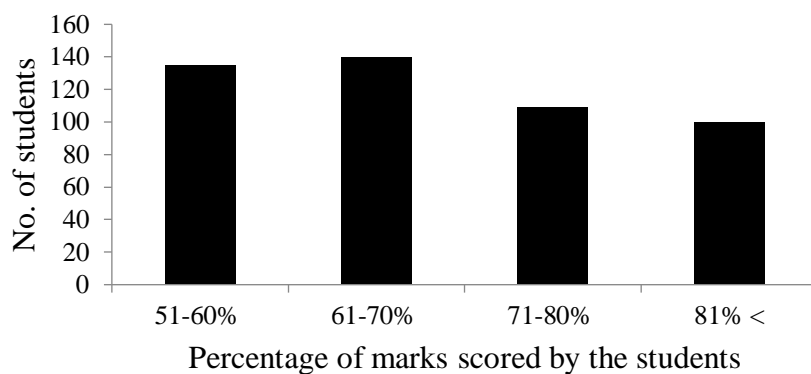
Time spent on studies. (N=540)



The Academic Score of the respondents in the majority were 61-70% scored by 140 (25.93%) students followed by 51-60% scored by 135 (25%) students; 71-80% scored by 109 (20.19%); 81 % and above were scored by 100 (18.52%) students as per their last academic assessment.

Figure 15

Academic scores of respondents. (N=540)



The respondents also mentioned that most of them (30.56%) use their mobile devices for e-notes and guidance to perform better in their studies. About 36.48% and 22.04% of the students mentioned that they sometimes and often look for advice and guidance to perform better in their academics.

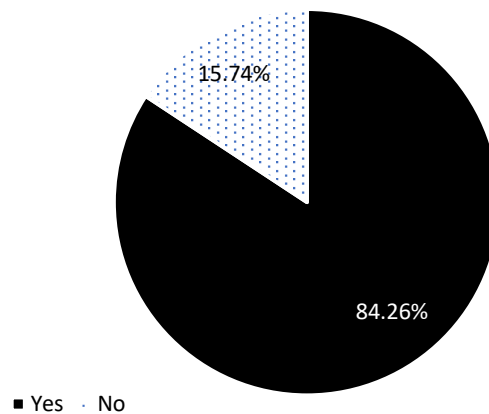
When asked about their ranking and their attention towards their academic rankings 42.93% stated that they always pay attention to their ranking in terms of grades in their class.

Further, 84.26% of the respondents stated that besides them their family members also play mobile games in their homes. About 35.19% of respondents mentioned that they feel irritated when people disturb them while playing mobile games and 35.93% mentioned that they sometimes feel irritated when they are disturbed.

Figure 16

Family members of respondents who play games. (N=540)

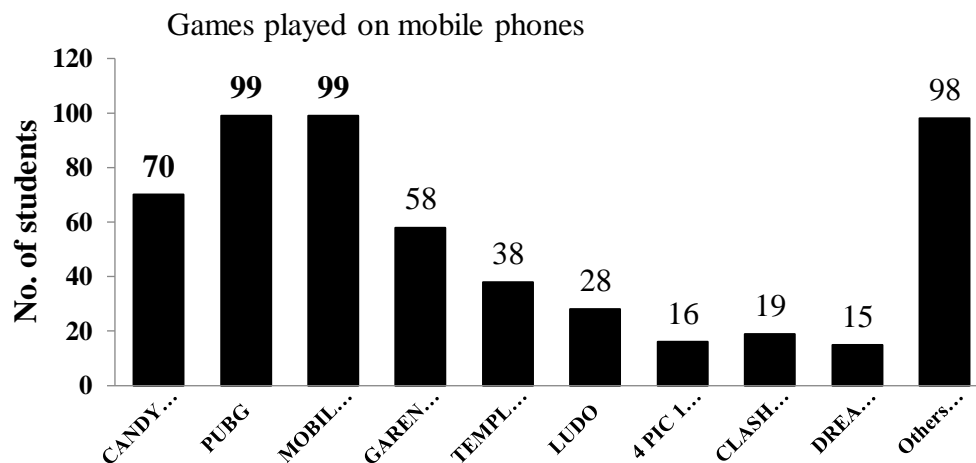
Do other members of family play mobile games ?



When the respondents were asked about their choice of the gaming titles that they prefer to play on their mobile phones, the game titles Mobile Legends and PUBG were the most popular choice followed by Candy Crush (Figure 17).

Figure 17

Games played on mobile phones by the respondents. (N=540)



When asked to then respondents what they enjoyed more ‘Talking face to face with friends’ scored the highest responses (33.15%) followed by ‘Playing games with friends’ (25.56%). 83.30% of respondents mentioned that they enjoy going out with their family rather than sitting and playing mobile games. 81.11% of respondents mentioned that they like spending time with their friends rather than staying home and playing games. 57.59% stated that they like being with friends and family rather than being alone with a phone. 64.63% stated that they like visiting relatives and 57.96% like spending time talking than being alone.

The Respondents when asked if playing games made them feel happy 42.96% of them agreed to them being happy while playing games, 24.07% strongly agreed to the statement, 23.89% remained neutral to the statement, 6.30% disagreed and 2.78% strongly disagreed with the statement.

Table 3.i

Feeling Happy while playing mobile game

Variables	Frequency
I feel happy playing mobile games	
Strongly Agree	130 (24.07%)
Agree	232 (42.96%)
Neutral	129 (23.89%)
Disagree	34 (6.30%)
Strongly Disagree	15 (2.78%)

When asked if playing games give them satisfaction 39.81% agreed to the statement, 25.19% gave a neutral stance on the statement, 18.33% strongly agreed, 11.48% disagreed and 5.19% strongly disagreed with the statement.

Table 3. ii

Feeling Satisfied while playing mobile game

Variables	Frequency
I feel satisfied playing mobile games	
Strongly Agree	99 (18.33%)
Agree	215 (39.81%)
Neutral	136 (25.19%)
Disagree	62 (11.48%)
Strongly Disagree	28 (5.19%)

The participants were asked if they felt powerful while playing mobile phone games 34.81% disagreed to the statement and 23.33% were neutral to the question, 16.30% agreed to the statement, 14.26% strongly disagreed to the statement and 11.30% strongly agreed with the statement.

Table 3. iii*Feeling powerful playing mobile game*

Variables	Frequency
I feel powerful playing mobile games	
Strongly Agree	61 (11.30%)
Agree	88 (16.30%)
Neutral	126 (23.33%)
Disagree	188 (34.81%)
Strongly Disagree	77 (14.26%)

When asked if Mobile Gaming helps them with depression 35.59% agreed to have mobile gaming helping them cope with depression, 22.22% strongly agreed with the statement, 17.22% gave a neutral stance, 17.78% disagreed to the statement and 10.19% strongly disagreed with mobile gaming helping them with depression.

Table 3. iv*Playing mobile games and depression*

Variables	Frequency
Mobile gaming helps me suppress my depression	
Strongly Agree	120 (22.22%)
Agree	176 (35.59%)
Neutral	93 (17.22%)
Disagree	96 (17.78%)
Strongly Disagree	55 (10.19%)

The respondents were also asked if they like to discuss their game avatars/ characters to which 31.85% of them denied having any liking towards discussing their characters to other peers, 27.59% strongly disagreed with the statement, 14.81% agreed to the statement, 13.33% were neutral and 12.41% agreed to the statement.

Table 3.v

Mobile game and character discussion

Variables	Frequency
I like to discuss my character and make others jealous of me	
Strongly Agree	67 (12.41%)
Agree	80 (14.81%)
Neutral	72 (13.33%)
Disagree	172 (31.85%)
Strongly Disagree	149 (27.59%)

When asked about the rewarding factor in gaming and levelling up in their quest while playing mobile games 40.56% agreed to have experienced the rewarding factor with achieving a level up in their quest, 35.74% strongly agreed to the statement, 15.93% were neutral to the statement, 4.26% disagreed to have felt such rewarding feeling while playing mobile games and 3.52% strongly disagreed with the statement.

Table 3. vi*Mobile game and rewards factor*

Variables	Frequency
I will feel very rewarding to get to the next level of the game	
Strongly Agree	193 (35.74%)
Agree	219 (40.56%)
Neutral	86 (15.93%)
Disagree	23 (4.26 %)
Strongly Disagree	19 (3.52%)

The respondents were asked if they would like to play immediately after they lost the game to which 32.96% agreed to them wanting to play immediately if they lose to someone, 32.78% strongly agreed to them also wanting to play immediately, 18.33% were neutral to the question, 10.19% disagreed with the statement and 5.74% strongly disagreed with the statement.

Table 3. vii*Mobile game play*

Variables	Frequency
I will immediately want to play again if I lose to someone	
Strongly Agree	177 (32.78%)
Agree	178 (32.96%)
Neutral	99 (18.33%)
Disagree	55 (10.19%)

Strongly Disagree	31 (5.74%)
-------------------	------------

The respondents were asked if they would play until they complete a level to which 32.14% of respondents strongly agreed to them wanting to play until they complete the required stage or level, 31.11% agreed to the statement, 19.81% remained neutral towards the statement, 12.22% disagreed to the statement and 4.44% strongly disagreed to the statement altogether.

Table 3. viii

Completion of level in mobile game

Variables	Frequency
I will play until I complete a level or win a game	
Strongly Agree	175 (32.41%)
Agree	168 (31.11%)
Neutral	107 (19.81%)
Disagree	66 (12.22%)
Strongly Disagree	24 (4.44%)

In terms of a player being skilled or the most expert player on the game while playing amongst peers 27.41% agreed to the fact that they would like to be the most skilled person while playing the game, 23.89% were neutral, 19.63% of respondents strongly agreed to the statement of them being the most skilled person to play the game, 18.89% disagreed to the statement and 10.19% strongly disagreed to the statement.

Table 3. ix*Mobile game and Skill factor in gaming*

Variables	Frequency
It is important to me to be the most skilled person playing the game	
Strongly Agree	106 (19.63%)
Agree	148 (27.41%)
Neutral	129 (23.89%)
Disagree	102 (18.89%)
Strongly Disagree	55 (10.19%)

When asked if it mattered that their virtual wealth achievements and equipment were better in comparison to others in their gaming portfolio, 30.74% gave a neutral stance to the question if the virtual things mattered to them, 27.96% disagreed to the fact that such things mattered to them, 19.33% agreed to the statement, 13.15% strongly disagreed to the statement and 9.81% strongly agreed to the statement of it being an important aspect of their gaming portfolio.

Table 3. x*Virtual reality items and its importance*

Variables	Frequency
It matters if I have items/equipment/virtual money and coins which are better than those of other players in the mobile games that I play	
Strongly Agree	53 (9.81%)

Agree	99 (19.33%)
Neutral	166 (30.74%)
Disagree	151 (27.96%)
Strongly Disagree	71 (13.15%)

The respondents were asked if they feel relaxed while playing mobile games to which 36.48% agreed to them feeling relaxed while playing mobile games, 24.26% were neutral towards the statement, 23.70% strongly agreed to the statement, 10.56% disagreed to the statement and 5% strongly disagreed to them feeling relaxed while playing mobile games.

Table 3.xi

Mobile game and relaxation

Variables	Frequency
I feel relaxed	
Strongly Agree	128 (23.70%)
Agree	197 (36.48%)
Neutral	131 (24.26%)
Disagree	57 (10.56%)
Strongly Disagree	27 (5.00%)

When asked if Mobile game playing causes excitement, 42.41% of the respondents agreed that game play does make them excited, 29.44% stated that they strongly agreed to feeling relaxed while playing mobile games, 18.52% remained neutral towards the statement, 5.56% disagreed to the statement and 4.07% strongly disagreed to the statement.

Table 3.xii*Mobile game and excitement*

Variables	Frequency
I feel excited	
Strongly Agree	159 (29.44%)
Agree	229 (42.41%)
Neutral	100 (18.52%)
Disagree	30 (5.56%)
Strongly Disagree	22 (4.07%)

When asked if Mobile games gave them pleasure, 32.22% agreed that they derive pleasure from playing while 30.74% were neutral, 16.11% disagreed that it gives them any pleasure, 14.81% strongly agreed that it gives them pleasure and 6.84% strongly disagreed to the statement.

Table 3. xiii*Mobile game and pleasure*

Variables	Frequency
Gives me pleasure	
Strongly Agree	80 (14.81%)
Agree	174 (32.22%)
Neutral	164 (30.74%)
Disagree	87 (16.11%)
Strongly Disagree	35 (6.48%)

In terms of respondents being popular amongst their friends while playing mobile games, 25% were neutral towards the statement, 22.59% disagreed to the statement,

22.09% agreed that playing mobile games makes them popular, 17.04% strongly agreed that playing mobile games gives them popularity amongst their peers and 13.33% strongly disagreed to the statement.

Table 3. xvi

Mobile game and peer popularity

Variables	Frequency
While playing mobile games I become popular with friends	
Strongly Agree	92 (17.04%)
Agree	119 (22.04%)
Neutral	135 (25.00%)
Disagree	122 (22.59%)
Strongly Disagree	72 (13.33 %)

In terms of mobile games being an easier way of making new friends, 31.30% agreed that playing mobile games helps them in making new friends, 21.67% remained neutral towards the statement, 19.44% strongly agreed to the statement. 19.07% disagreed with the statement and 8.52% strongly disagreed with the statement.

Table 3. xv

Mobile Games and peer connection

Variables	Frequency
Mobile gaming has made it easier for me to make new friends	
Strongly Agree	105 (19.44%)
Agree	169 (31.30%)

Neutral	117 (21.67%)
Disagree	103 (19.07%)
Strongly Disagree	46 (8.52%)

In terms of Communication through mobile games, 34.81% of the respondents agreed that the mobile games have helped them stay in touch with their long-distant friends, 26.67% strongly agreed with the statement, 15.74% disagreed with the statement, 15.37% remained neutral and 7.41% strongly disagreed to the statement.

Table 3. xvi

Mobile game and communication

Variables	Frequency
I can stay in touch with my long distant friends through mobile games	
Strongly Agree	144 (26.67%)
Agree	188 (34.81%)
Neutral	83 (15.37%)
Disagree	85 (15.74%)
Strongly Disagree	40 (7.41%)

The respondents when asked if the mobile gaming helped them meet new people, 43.70% agreed to the statement of it helping them in meeting new people, 22.33% strongly agreed that gaming does help them in meeting new friends, 15.19% remained neutral, 12.22% disagreed to gaming helping them in meeting new friends and 5.56% strongly disagreed to the statement.

Table 3. xvii*Mobile game and peers' connection*

Variables	Frequency
I will meet new people	
Strongly Agree	126 (23.33%)
Agree	236 (43.70%)
Neutral	82 (15.19%)
Disagree	66 (12.22%)
Strongly Disagree	30 (5.56%)

In terms of mobile gaming and it helping the respondents to be a part of a group or peers, 29.44% were neutral towards the statement, 23.70% agreed that the gaming does help them from being left out, 22.41% disagreed to the statement, 12.59% strongly agreed to the statement and 11.85% strongly disagreed to the statement.

Table 3. xviii*Mobile game and connected game play*

Variables	Frequency
It will decrease the likelihood of being left out	
Strongly Agree	68 (12.59%)
Agree	128 (23.70%)
Neutral	159 (29.44%)
Disagree	121 (22.41%)
Strongly Disagree	64 (11.85%)

When respondents were asked if their gaming friends knew them better than other people, 31.67% disagreed, 24.26% strongly disagreed with the statement, 19.81% remained neutral, 14.81% agreed to the statement and 9.44% strongly agreed to the statement.

Table 3. xix

Virtual friends Vs real people

Variables	Frequency
My mobile gaming friends understand me better than other people	
Strongly Agree	51 (9.44%)
Agree	80 (14.81%)
Neutral	107 (19.81%)
Disagree	171 (31.67%)
Strongly Disagree	131 (24.26%)

The respondents were asked that if games were an escape from the reality towards doing things, they are not able to do in reality, 32.22% agreed to the statement, 24.07% strongly agreed to the statement, 18.89% remained neutral, 14.07% disagreed to the statement and 10.74% strongly disagreed to the statement.

Table 3. xx

Mobile game and Virtual Realism

Variables	Frequency
In mobile games I feel I will be able to do things I can't do in real life	

Strongly Agree	130	(24.07%)
Agree	174	(32.22%)
Neutral	102	(18.89%)
Disagree	76	(14.07%)
Strongly Disagree	58	(10.74%)

The respondents were asked if playing mobile games helped them forget real life problems when playing games to which 32.52% agreed to the statement, 26.67% strongly agreed to the statement, 17.04% remained neutral, 12.78% disagreed to the statement and 10% of the respondents strongly disagreed to the statement of mobile gaming helping them forget their real-life problems.

Table 3. xxi

Mobile game and escaping problems

Variables	Frequency	
While playing mobile games I will forget some of the real-life problems I have		
Strongly Agree	144	(26.67%)
Agree	181	(32.52%)
Neutral	92	(17.04%)
Disagree	69	(12.78%)
Strongly Disagree	54	(10.00%)

In regards to mobile games' ability to have their own avatars and characters which transcends the players to a virtual world where they can do anything to which 25.56% of respondents remained neutral to the statement, 24.26% agreed to the statement,

19.63% strongly agreed to the statement, 18.33% disagreed to the statement and 12.22% strongly disagreed to the statement.

Table 3. xxii

Mobile game and Virtual World

Variables	Frequency
While playing mobile games I will be able to pretend I am someone/somewhere else	
Strongly Agree	106 (19.63%)
Agree	131 (24.26%)
Neutral	138 (25.56%)
Disagree	99 (18.33%)
Strongly Disagree	66 (12.22%)

4. 2 Gender, game choices and Academics

4. 2. a. Gender and their gaming preferences

The 540-respondent comprising of 274 males and 266 females responded with the following genres as their favourite genres. More males were inclined towards Action games on their Mobile devices as compared to the females (Table 4). The puzzle genre had more inclination towards the female respondents who constituted 44.36% of their entire respondent graph. Male respondents also picked Puzzles as their next favourite genre and females chose Action as their next favourite genre.

Further, the Chi-Square analysis suggested that there is no significant difference between the male and female gamers which indicate that both male and female are equal participants in mobile gaming ($\chi^2=0.12$, $df = 1$, $p = 0.73$). Gender is the frequency data where the chi-square test is only eligible to perform. However, when compared

with specific game genres such as ‘Action’ and ‘Puzzles’, males were significantly associated with ‘Action’ games than females and females associated significantly with the ‘Puzzles’ genre (Table 4).

Table 4

Different types of mobile phone game genres played by the participants

Game Genres	Participants	Male	Female	<i>p-value</i>
Action	292 (54.07%)	216 (78.83%)	76 (28.57 %)	$\chi^2=109.90,$ $df=6, p=0.001$
Others	68 (12.59%)	11 (4.01%)	57 (21.43%)	
Puzzles	140 (25.93%)	22 (8.03%)	118 (44.36%)	$\chi^2= 0.12,$ $df= 1, p= 0.73$
Racing	6 (1.11%)	4 (1.46%)	2 (0.75%)	
Shooting	3 (0.56%)	1 (0.36%)	2 (0.75%)	
Simulation	11 (2.04%)	5 (1.82%)	6 (2.26%)	
Sports	20 (3.70%)	15 (5.47%)	5 (1.88%)	
Total	540	274	266	

Note. ** $p<0.001$. * $p<0.05$.

4. 2. b. Mobile Gaming, Gender and Academics

This section of the study delves into the playing of mobile games and its relevant impact on the score of the respondents studying in the 16 different schools of Sikkim. As mentioned earlier the students are from the age of thirteen (13) to nineteen (19)

years of age. The analysis has been done using the SPSS package and the answers are collected by the researcher through a survey questionnaire.

4. 2. b. i. Academics and Mobile Game Playing Pattern amongst Teens

The mean time spent on mobile phone gaming was $M = 1.41$ ($SD = 1.41$) hours and the mean academic score was $M = 66.20$ ($SD = 12.87$) marks. To analyse the effect of Mobile Phone Gaming on Academic Performance, the correlation test was performed between the 'time spent on Mobile Gaming' and 'academic score'. The Pearson's correlation analysis was conducted as the data were normally distributed which suggested that there was a negative correlation between the game time and the exam score ($r = -0.024$, $p = 0.001$).

The t-test analysis was performed to compare the study time, game time and academic scores of male and female students. The time spent on playing of mobile games was significantly higher amongst the male respondents ($M = 3.02$, $SD = 1.39$) than the female respondents ($M = 2.11$, $SD = 1.35$) ($t = 7.66$, $df = 538$, $p = 0.001$).

However, female students were seen spending more time on their studies ($t = 1.98$, $df = 538$, $p = 0.001$) as compared to their male counterparts which resulted in them performing better in their examination scores ($t = 1.85$, $df = 538$, $p = 0.001$).

The following hypothesis related to mobile gaming affecting the academic score (RH1) is accepted since the correlation test and the *t-test* analysis as mentioned above on the respondents revealed that the game playing factor showed a negative correlation which was highly significant ($p = 0.001$).

4. 2. b. ii. Academics and Mobile Game Playing Pattern amongst Genders:

The Pearson's correlation test was performed to analyse the correlation between the academic and mobile gaming patterns among the gender (Table 5). The Pearson's correlation test denoted that the Game Time negatively correlated with the academic scores in Males($r = -0.046$, $p = 0.05$) whereas the Game Time and academic score in Females were not significantly correlated (Table 5). In addition, Study Time significantly correlated with score in both the Male ($r = 0.236$, $p = 0.001$) and Female ($r = 0.180$, $p = 0.001$) students. The correlation test also suggested that there was a significant relationship between study time and scoring in examination in both the participating genders.

Table 5

Correlation test of Study Time, Game Time and Academic Score between Male and Female Students

	GAMETIME	STUDYTIME	SCORE
GAMETIME_M	1	0.081	-0.046*
STUDYTIME_M		1	0.236**
SCORE_M			1
GAMETIME_F	1	0	0.014
STUDYTIME_F		1	0.180**
SCORE_F			1

Note. ** $p < 0.001$. * $p < 0.05$.

4. 3 Mobile Gaming & Social Relationships

4. 3. a. Mobile Gaming and its effect on Social Relationship of Respondents

Correlation test was employed to understand the relation between gaming and social relationship. This correlation test was done between the ‘Game-Time’ and ‘Family-Time’ variables. The test suggested that there was a significant negative correlation between ‘Family-Time and Game-Time’ ($r = -0.762, p = 0.001$).

Further, a Multivariate Regression analysis was performed to find which variable highly influenced the Social Relationship (Table 7). The backward multiple regression analysis was conducted to identify the parsimonious combination of the dependent variable (Time-Spent) with the values of other independent variables namely S1, S2, S3, S4, S5, S6, S7, S8, and S9 (Table 6).

The mentioned variables were inserted to analyse their influence on mobile gaming and social relationship which concluded that the mentioned variables S1, S4 and S9 were statistically significant to the prediction ($f(3) = 10.26, p = 0.001, R^2 = 0.385$). S1 denotes that the respondents feel irritated when people call them on their mobile phones while playing the mobile game had the highest level of significance. S4 denotes that the games particularly requiring internet and having in chat features along with an online Facebook community can be used as a medium to connect with friends like Mobile Legends, PUBG, Garena Free Fire, and Candy Crush. The S4 variable however was less significant than the Irritation (S1) variable. The participants also responded that they would rather spend playing mobile games than talking to people in real time (S9) which means that mobile gaming encourages more online presence from the respondents and them in return like to establish online friendships rather than talking to a real person (Table 7).

Table 6*Independent variables of social relationship*

Variables	Description
S1	Irritated (I feel irritated when anyone disturbs me while playing mobile game)
S2	Receive calls (receive calls during a game session)
S3	Enjoy more (enjoy playing with friends or with mobile game)
S4	Relation ESTD (play games which has online friends)
S5	New play hangout (play game than go out with family)
S6	Play than meet friends (play game than go out with friends)
S7	Alone phones usage (like being left alone with friends)
S8	Play than meet relatives ((play game than visit relatives)
S9	Play than talk (play game than talk to people)

Table 7*Backward multiple regression analysis summary indicating game playing influence in social relationship from predictor variables of the respondents*

Model	B	Std. Error	Beta	R²
(Constant)	0.062	0.187		
IRRITATED	0.369	0.044	0.344**	0.381
RELATION ESTD	0.1	0.046	0.088*	
PLAY THAN TALK	-0.226	0.114	-0.079*	

Note. * p< 0.05, **p< 0.001.

4. 3. b. Mobile gaming and its effect on social relationships between Genders

Another correlation test was conducted to analyse the social relationship with mobile gaming based on gender. The test result showed that in both the genders i.e., male and female mobile phone gaming time negatively correlated with social time ($r = -0.794$, $p = 0.001$) and ($r = -0.697$, $p = 0.001$) respectively.

Further, a Multivariate Regression analysis was performed between the male and female participants to find which variable highly influenced the Social Relationship. Hence, the backward multiple regression analysis was conducted to identify the parsimonious combination of the dependent variable (Time-Spent) with the values of other independent variables namely S1, S2, S3, S4, S5, S6, S7, S8, S9 (Table 6). The mentioned variables were inserted to analyse their influence on mobile gaming and social relationship which concluded that from the mentioned variables S1 and S9 were statistically significant to the prediction in males ($f(2) = 19.03$, $p = 0.001$, $R^2 = 0.35$). Furthermore, in Female's variables S1, S5 and S8 were significant ($f(3) = 19.25$, $p = 0.001$, $R^2 = 0.43$). Based on R^2 the researcher has selected the best-fitted model from the array of results to provide a concise picture (Table 8).

Table 8

Backward multiple regression analysis summary indicating game playing influence in social relationship from predictor variables amongst the genders

	Model	B	Std. Error	Beta	R ²
	(Constant)	0.57	0.28		
MALE	IRRITATED	0.39	0.07	0.32**	0.35
	PLAY THAN TALK	-0.42	0.18	-0.14**	
	(Constant)	0.10	0.25		
FEMALE	IRRITATED	0.36	0.05	0.40**	0.43
	NEWPLAYHANGOUT	-0.47	0.19	-0.14**	
	PLAYTHANMEETRELATIVES	0.27	0.15	0.11*	

Note. * $p < 0.05$, ** $p < 0.001$. The best-fitted model has been placed for observation

The research hypothesis (RH2) which state that mobile games affect the teenager's social relationship is accepted since the statistical findings using the correlation test analysis revealed that there is a significant negative correlation between 'Family-Time and Game-Time' ($r = -0.762, p = 0.001$).

4. 3. c. Mobile Games and Gratification: Correlation between Gaming, Gratification, and Age.

Variances between the gratification concerning the age and gender recommended that the mean score of the Gratification factor was higher in Female respondents than the Male respondents (Table 9). The Female respondents recorded comparatively notable

in every feature of the socio-demography as related to the Male Respondents while considering the mean.

The valuations for Emotional Gratification were the highest (Table 10) pursued by Achievement Gratification had the second highest assessments on the table followed by Social Interaction and Escapism. Also, the correlation amongst the factors presented associations that were from moderate to strong. Escapism with enjoyment factor had the maximum correlation amongst them ($r = 0.59$, $p = 0.001$) trailed by enjoyment with emotional factor ($r=0.59$, $p=0.001$) and lastly social interaction factor with enjoyment factor ($r = 0.52$, $p = 0.001$).

Respondents who were involved in using the game for avoiding realism had a potent positive correlation with the emotional factor to their mobile game play. Respondents positively correlated with them liking mobile game play and the emotional factor of being able to play mobile games. However, the escapism factor with the emotional and achievement Factor was the lowest in the relationship amongst themselves.

Table 9

Means, Standard Deviation and correlation between Mobile Gaming, Gratification and age

	M (SD)	1	2	3	4	5	6
Emotional	2.92 (0.91)						
Male	2.70 (0.88)	1					
Female	3.14 (0.90)						
Achievement	2.82 (0.91)						
Male	2.63 (0.87)	0.50**	1				
Female	3.01 (0.91)						
Enjoyment	2.39 (0.87)						
Male	2.19 (0.79)	0.59**	0.47**	1			
Female	2.59 (0.90)						
Social interaction	2.60 (1.02)						
Male	2.32 (0.81)	0.44**	0.51**	0.52**	1		
Female	2.84 (0.93)						
Escapism	2.58 (0.91)						
Male	2.44 (0.94)	0.43**	0.43**	0.59**	0.50**	1	
Female	2.77 (1.08)						
Age	15.57 (1.91)						
Male	15.60 (1.91)	-0.03	-0.05	-0.01	0.05	-0.04	1
Female	15.56 (1.91)						

Note. * $p < 0.05$, ** $p < 0.001$.

4. 3. d. Factor analysis for gratification using mobile phone games

The Principal Component factor analysis and Varimax rotation were run to govern the applicable grouping of the 23 items/questions for classifying the gratifications related to the mobile phone game play among the youths. Firstly, Factor Analysis (FA) was executed to govern the gratification of the participants for playing mobile gaming where it was found that Kaiser Meyer-Olkin (KMO) and Bartlett's Value was (KMO = 0.94, $p = 0.001$) which specified that the sampling was satisfactory for conducting Factor Analysis (Glen, 2021, Koyuncu & Kilic, 2019). Table 10 shows the five-factor solution inclusive of the factor structure, eigenvalues, variance explained and reliabilities. The overall results of the factor analysis indicated that all the factors were found reliable as per the Cronbach alpha (α) test which was above 0.70 which statistically is considered reliable (University of Virginia, 2015). Considering the mean of the reported elements the Emotional factor ($M = 2.92$, $SD = 0.91$) ranked the highest followed by the Achievement factor ($M = 2.82$, $SD = 0.91$) and Social Interaction factor ($M = 2.58$, $SD = 0.91$).

Chronologically, as per the list of gratification factors, the first factor labelled "Emotional" encompassed of 5 items where each item portrayed the necessity of the gamers in relations of why they like playing the game. The outcomes exhibited that the statements 'I feel happy playing mobile games' and 'I feel satisfied playing mobile games' recorded higher than the rest in the list. The "Emotional" factor described 52.76% of the total disparity with the Cronbach's alpha score of ($\alpha = .76$) and the Eigenvalue of 2.63. These items also had the maximum mean scores ($M = 2.92$, $SD = 0.91$) (Table 10).

The “Achievement” factor which was the 2nd factor comprised of six (6) items where the competition and rewards of the individual playing mobile games were taken into deliberation. The said factor had a total variance of 44.06% and the Cronbach’s alpha score of ($\alpha = .72$). From the six (6) matters, statement like ‘I like to discuss my character and make others jealous of me’ and ‘I feel rewarded to get to the next level’ noted high than the other in the unit. These items had also the maximum mean scores ($M = 2.82, SD = 0.91$) (Table 10).

“Enjoyment” factor which was 3rd in the list had three statements signifying the specific playing mobile games which were connected to them being calm, relished and thrilled when they play the mobile games. The third factor described for 64.02% of the total variance and had the Cronbach’s alpha score of ($\alpha = .72$). The items ‘I feel relaxed’ and ‘I feel excited’ were better achievers than the others ($M = 2.39, SD = 0.87$).

Factor number four (4) was ‘Social Interaction’ which had six statements that dealt with the notion of mobile gaming and its skill to have and make new friends, attribute on a digital level, and have admiration associated with the game playing characteristics. Objects such as ‘While playing mobile games I become popular’ and ‘I will meet new people’ had the maximum scores among the six items. It had the 51.04% of total variance and the moderately higher Cronbach’s alpha score of ($\alpha = .81$) ($M = 2.60, SD = 1.02$).

“Escapism” which was the final factor had three statements which stated that game play on mobile gives the player a logic of escapism from reality and transcends them to the ‘augmented reality’ of the world of mobile gaming. The three statements ‘While playing mobile games, I forget some of the real-life problems I have’ and

‘While playing mobile games I will be able to pretend I am someone/somewhere else’ scored higher among the three. The above factor elucidated the 62.48% of the total variance and had the Cronbach’s alpha score of ($\alpha = .70$)($M = 2.58, SD = 0.91$).

Table 10

Factor Analysis for motivation using the mobile phone.

Scale Items	Factors				
	Emotion al	Achieve ment	Enjoym ent	Social interact ion	Escapis m
I feel happy playing mobile games	0.80				
I feel satisfied playing mobile games	0.80				
I feel loved while playing mobile games	0.76				
I feel powerful while playing mobile games	0.66				
Mobile gaming helps me suppress my depression	0.59				
I like to discuss my character and make others jealous of me		0.65			
I will feel very rewarding to get to the next level of the game		0.64			
I will immediately want to play again if i lose to someone		0.61			

I will play until i complete a level or win a game	0.62
It is important to me to be the most skilled person playing the game	0.59
I Have Items/Equipment/ Virtual Money and Coins Which Are Better Than Those of Other Players in the Mobile Game That I Play	0.60
I feel relaxed	0.81
I feel excited	0.80
Gives me pleasure	0.80
While Playing Mobile Games I Become Popular with Friends	0.54
Mobile Gaming Has Made It Easier for Me to Make New Friends	0.44
I Can Stay in Touch with My Long Distant Friends Through Mobile Games	0.50
I will meet new people	0.56
It Will Decrease the Likelihood of Being Left Out	0.53
My mobile gaming friends understand me better than other people	0.49
In Mobile Games I Feel I Will Be Able to Do Things I Cannot Do in Real Life	0.58
While Playing Mobile Games I Will	0.63

Forget Some of The Real-Life Problems

I Have

While Playing Mobile Games I Will Be

Able to Pretend I Am

0.67

Someone/Somewhere Else

Eigenvalue (λ)	2.63	2.64	1.92	3.06	1.87
Variance explained	52.76	44.06	64.02	51.04	62.48
Cronbach's alpha (α)	0.76	0.72	0.72	0.81	0.70
Mean	2.92	2.82	2.39	2.60	2.58
SD	0.91	0.91	0.87	1.02	0.91

Note. 23 items, (N= 540)

The research hypothesis (R3) where the teenagers play mobile games as they associate different gratification with it is accepted since the correlation test done between the factors of gratification with mobile gaming and age showed that they were significantly correlated amongst each other (Table 9).

CHAPTER 5

FINDINGS AND DISCUSSION OF RESULTS

5. 1. Introduction

The purpose of this research was to identify the use of mobile phone gaming in achieving different gratifications whilst playing the games by teenagers of Sikkim. The analysis of the data collected via survey questionnaire using statistical methods and their discussions of the result is presented in the chapter. The findings after the statistical analysis in accordance with the previous literature review have been discussed in the sub-sections of this chapter. The major findings revealed during the course of the study and the results indicated that there is a difference in the choices of the games played by the male and female respondents of the study majority of the males preferred 'action' games and the females sided with 'puzzle' games as their choice of preferences (Table 4). It was also revealed that male respondents played games more than the female respondents, which has been shown to affect their academic scores (Table 5).

The study unveiled that mobile gaming was reducing the physical social relationship and the social gratification (online) was shown to be higher in the respondents, which meant that they desired more online presence than physical appearances in the physical world. The gratifications achieved from playing mobile phone games were: emotional factor, achievement factor, social interaction factor and enjoyment factor.

5. 1. a. Gaming genre preferences of the Genders: Action, Simulation, Strategy, Puzzles, Sports, etc...

The research's analysis and findings indicated that the mobile phone games player in Sikkim were equally divided and equal participation was observed which is different and unique to other researches done where the participation is more.

Mobile phone gaming and the selection of the gaming genres like action, puzzle, simulation, sports, strategy and others were used for the present study where the majority of males chose the action genre as their favourite genre of choice and the females chose the puzzle genre as their favourite (Table 4). The study unveiled that the genre choice was basically with the items they were playing at the time of research where games like Mobile Legends; Clash of Clans, PUBG, and Candy Crush were popular. The game PUBG was later banned by the Indian Government citing privacy and information leaking issues (DNA, 2021). The popular games had a more of a complex gaming technique which has been recorded by researchers who have studied the gaming processing in male and female games and gaming patterns. Similar findings were shown by Veltri et al. (2014) where there was a positive relationship between male players and more complex games. It was also concluded by Veltri et al. (2014) in their study that males exhibit better spatial skills in virtual environments and also had greater spatial problem-solving ability than women. The study also revealed that male respondents came out to be better performers in a variety of tasks (Veltri et al., 2014).

While talking about gaming choices Figure 17 show the respondent's choice of gaming titles which was recorded during the survey which included popular game like 'PUBG', 'Mobile Legends' and 'Candy Crush' as popular choices for the

respondents. These games when cross-checked showed that the males had an inclination towards the games like PUBG and Mobile Legends along with Candy Crush whereas the females showed their choices to be 'Candy Crush' along with other games like Temple Run, Ludo, and Barbie. These games differ not only in terms of game genre and design but also in the way it is played. The differences in games like PUBG and Candy Crush are huge with less to minimal similarities and more towards the game's uniqueness in the way it is played. The game PUBG falls under the MMORPGs action genre which is a fast-paced strategic killing game where the players kill in order to win the game. On the other hand, Candy crush is a casual puzzle game where the players can play using the movement of their fingers which allows them to coordinate with patterns and candy elements which allows them to move forwards after successful completion of the pattern. These games are played in a more casual environment to clear boredom and pass time (Quaiser-Pohl et al., 2005).

In accordance with the previous studies (Sherry et al., 2006; Morlock et al., 1985) and the multiple literature reviews clearly stated that the gaming scenario had a dominance of males in comparison to females (Buchman & Funk, 1996; Funk, 1993), their (females) involvement although recently have become more updated and actively participate in the other countries in gaming and other aspects of the gaming industry (Krotoski, 2004; Norshuhada & Syamsul Bahrin, 2009). Similar findings were revealed in the present research as the data interpretation showed that the majority of the mobile phone game players show an inclination towards the action genre which was mostly preferred by the male and the females chose the puzzle genre (Table 4).

The set up as discussed in the book by Bryce and Rutter (2002), the “gendered Public spaces” were seen to have minimal participation from the females. The other factors at play were mainly the game titles were “for males, by males”, initially introduced computer games like “Quake”, “Doom” were games which were violent where the chief objective was “to kill or get killed”, and studies have shown that games with violence have shown to displease females towards games (Buchman & Funk, 1996; Funk, 1993). Important gender differences were found like the preferred violence: boys were more likely to prefer games with more realistic “human violence”, while girls were more likely to prefer games with cartoon or “fantasy violence” (Buchman & Funk, 1996; Funk, 1993). These preferences appear to be generally consistent with the findings of the Morlock et al. (1985) survey of college freshmen.

The games before that was mainly the stereotyping of females as the “desperate Lady in Despair” who was always waiting for her prince charming to save her from the evil warlord. Game titles like “Mario”, Donkey Kong and Contra were mainly made for male audiences and females were non-playable characters hence the gaming industry was not keen on or bothered by female participation, hence these factors were reasons for female participation being low in the area of gaming. Although the gaming sphere has been developed and garnered a lot of interest among the female there is still a vast gap to fulfil.

When it comes to games available on mobile devices, have encouraged the participation of female gamers today there are various genres of games available to the gamers and one no longer has to visit public arcade centres to play games but the devices they hold in the palm of their hands now have the ability to play games made for anyone. The content and choices are scattered and one can choose to play the

games they desire and it can be played anonymously without the interference of anyone which was not possible before.

The findings in terms of game playing time are similar to that of Chou and Tsai (2007) where the male respondents showed more inclination towards the playtime in consideration to the females who played less. The findings also correlate to that of Griffiths and Hunt (1995) and Griffiths (1997) studies which mentioned that the males played computer games more frequently than the females. The results from the current study are consistent with the above-mentioned findings. Similar findings were unearthed by Uz and Cagiltay, (2015) in their paper 'Social Interaction and Games', where it was reported that a significant difference was found between the male and female respondents in terms of hours played per week.

In relation to the gender and game genres the present study depicted that male respondent chose Action games as their genre of choice followed by Puzzles and Sports genres whereas, female respondents chose Puzzles as their genre of choice followed by Action and others. These findings coincide with Chou and Tsai (2007) and Griffiths' (1997) works.

The gendering of public gaming spaces has been the main exclusion of minimal gender participation according to Bryce and Rutter (2002) where the gaming arcades and other places where the consoles were kept were usually frequented by males and very less by females. The rise in the introduction of game consoles and the portability of gaming on mobile phones thus can be seen as a reason for the increase in female participation which is not worthy as 45 per cent of US gamers (IDSA) are now girls which close the gender gaps in gaming and creation of gaming content (Bryce & Rutter, 2002).

The introduction of the online gaming and its prospects of it being anonymous has helped female players play anonymously which can be seen as a form of increased participation in the gaming scene along with the genres of their choosing, where no one dictates the games they choose, they are now free to play the games they desire hence their choice of gaming genres are mostly games preferred by males. This also allows us to acknowledge that the games if allowed to be played on their personal devices can affect their choices of games. More female respondents were seen to play action genre games like the MMORPG 'Mobile Legends' and MOBA 'PUBG' which were essentially targeted at male players. Games which are stereotyped to be played by males have been seen to be played by females as well hence the mobility and anonymity of Mobile gaming have helped the genders to close the gap of "Gendered Spaces". The participation in the internet spaces has allowed females to compete against the male players with the anonymity the confidence in gaming skills improve to be able to behind the screen and play as one normally plays.

Games are played by both genders however the content and the playing experiences distinguish the gamers. The phenomenal success of Mattel's 'Barbie Fashion Designer' (November, 1996) was an eye-opener to the game market. The sales of more than 500,000 copies in the first two months were massive and the sales were at par with the most popular games of the time like 'Quake' and 'Doom' targeted at male players. The success of Mattel's product was huge to the extent that major industry giants like IBM and Broderbund accompanied the girl-specific companies like Her Interactive, Purple Moon and Girl Games to create GIRL, a Girl Interactive Library targeted to increase the visibility and broaden female game market (Just4girls, 1997).

The dominant genres of digital games like science fiction, horror, supernatural, mystery and other are and has humongous participation from women as contributors and consumers to the genre titles and productions (Bacon & Smith 1992; Donawerth, 1997; Jenkins 1992; Lefanu, 1989; Penley et al., 1991; Pinedo, 1997). There are also debates as put forward by Sega's Lee McEnany regarding the need for not creating gender specific titles but rather to improvise the previous titles laced with only male prominent male characters to include stronger female characters in the titles. The introduction of females as the main protagonist in the games are needed to let women choose their style of gaming and understand how and to what extent they can play the games produced in the market. These factors as argued by McEnany would allow the players of both genders to choose and attract them as players. A study done by Lei and Wu (2007) mentioned that virtual social interaction unbiased of any gendered elements (Cassell & Jenkins, 1998 pp. 29).

In some studies, conducted by researchers it was found that the play patterns of digital games were gender specific which created the argument that the playing pattern of males and females differ in terms of their seeking different priorities and orientations in gaming (Mäyrä & Alha, 2020). The study by Mäyrä and Alha (2020) further mentions the preferability of females choosing the casual genre of gaming which included Candy Crush Saga by King 2012 which also backs the present research where games titles like Candy Crush are the top choice of the teenage female players in Sikkim. Mäyrä and Alha, (2020) further mentioned that because of the gender division in casual games the left-out consumers of the genre are mostly females which give out a sense of the gaming sphere or more strongly the "real games" being extremely male dominated which give less space to the female gamers for freedom to play.

The above statement made by McEnany has been proven true in the case of the popular game “Tomb Raider” by Core Design which saw huge success and both genders purchased the game despite the protagonist being a female lead character ‘Lara Croft’, an archaeologist’s epic journey to find the treasures in all historic places.

The formation of rebellious women gamer groups like the “Crack Whores” and “Riot Grrls” as mentioned in the book reveals the attitudes of the females wanting to step out of their stereotypical norms of how and what a female gamer should be and act. The formation of such groups was the beginning of the female outcry for revolution in relation to them and their desire for games. Such incidents began in the 1990s when such stereotyping was common in games set in gendered norms. The Crack Whores’ spokesperson mentioned in their briefing that such radical statements and language are used to justify the fact that the women are always treated as sub-par by males hence such names and persona are created so as to “shock and stimulate” the opposite sex (Cassell & Jenkins, 1998, pp. 33). This phenomenon of radicalism was in the 90s and such incidents in the area of study which is in Sikkim are ‘rare’ as women are respected and honored. Thus, in Sikkim, the fact that the gaming patterns are different and girls divulge towards more casual and ‘light-hearted’ games in the area of study justifies the social fabric and the gaming has not progressed so much as in the West. The development of study on the different tribes of gamers and its related niche still unexplored needs to have a genuine study to explore the hidden realities and areas where research needs to be accompanied by facts and empirical evidence. Games in the area of study are in their first phase of gaming as the gaming atmosphere is yet to evolve like in the west where there are competitions held every like the ‘Olympics’ and with a huge amount of sponsorships and cash prizes. These kinds of phenomena are rare in Sikkim and India as well, such large conventions are rarely back by

sponsors and gamers have very less career prospects which is also another reason why digital games are directly linked to being a bad influence in academics and the perception towards gaming is towards the negative side.

One of the reasons why games are generated or were generated by men as put forward by game designer John Romero (Revolution, 1997) was due to them understanding their idea of 'Fun' in games created by them and their content being for male centered approach (Cassell & Jenkins, 1998, pp. 24). Gender differences characterize electronic game playing in childhood: Boys play more than girls and prefer more realistic violent games (Buchman & Funk, 1996; Funk, 1993; Funk & Buchman, 1996; Griffiths, 1991).

Studies in Digital Gaming and Video Games which have been used interchangeably in this research have been seen to find males as higher time spenders when it comes to gaming. Their dedication towards playing games has been recorded well in the research as mentioned below where the intensity of gaming, when compared to their female companions, has always been higher. The females on the other hand have been accustomed to playing games but not so much as compared to the males. This can be compared to the various phenomenons surrounding the gaming sphere. Since its beginning and inception, games be it video games, computer games or arcade games were mostly visited by the males due to the environment created by them. The results from the present study show that male adolescents spend more time playing mobile games than female adolescents. In general, the results of this study indicate that male students play action games which for this research included role-playing games (RPG) for the ease of the younger students to understand which resulted in an increase of preferences in action as compared to female students who play more casual puzzle

games which included Candy Crush, Piano tiles etc. as found in the previous research by Quaiser-Pohl et al. (2005) where the researchers found that males were more capable to navigate through the interactive spatial problems than their female mates. In particular, male students' choice of game genre is high in the Action category as compared to female students who chose the Puzzle genre. The findings coincide with the study done by the KMPG India and Nielsen, where more female participants chose the puzzle genre for its social interaction and fresh updates available on the game. The games in the action genres have a more complex environment which includes violence and multiple tactical movements for the protagonist to follow. It can also be related to the gaming pattern differences in males and female where females prefer casual games where they are able to correct their mistakes easily and can undo their actions (Wang, 2013).

According to the analysis done in order to find the amount of time spent on their mobile gaming was higher in the male students as compared to the female gender which was similar to the findings of Chou and Tesai (2007) in their research. Similar findings in relation to time spent on mobile games were found by early researchers (Nishith Desai Associates, 2017; Hartmann & Klimmt, 2016; Terlecki et al., 2011). A similar kind of research finding was seen by Hainey et al. (2011), where onscreen time in terms of computer games was greater in males than in females. In a study done on Norwegian children aged 11-19 years, it was statistically found that the male respondents spent more time playing video games on their hand-held devices as compared to females in all age groups (Leonhardt & Overå, 2014). It was also seen that being a "gamer" was a social status for the boys and the researchers found that boys terming themselves as 'Gamers' reflected having a "passionate Hobby". This phenomenon was also present in the children of Sikkim where they showed visible

signs of excitement when asked to answer about their favourite games which they played on their mobile phones. Numerous studies on 'time spent on gaming' have showcased those male players have had the higher ground in spending a longer time on their devices. These evidences are backed by the concept of the gendering of public spaces where since initial days of gaming on the coin-operated arcade machines and games parlours were mainly flocked by boys and men in general which have been accounted for in the books of Deshbandhu (2020) where he recalls his visits to the game parlour to be mostly occupied by males and the atmosphere of words and gestures indicated that the presence of females visiting those parlours were close to none. These spaces and conditions of it being male centric have embedded deep into the system of the minds of all that video games are men's toys to be played with, like the difference between a boy playing with his G.I. Joe and not a barbie. One can also see a similar scene in the 1994 American Sitcom "Friends" where in one of the episodes titled 'The One with the Metaphorical Tunnel', the character "Ross" is upset with his child "Ben" playing with a Barbie doll as he is raised by his "Lesbian" Mothers (Ross' Ex-Wife and her partner) and how the whole episode is of him trying to make Ben choose G.I. Joe over the Barbie. Such instances are telecasted as a general norm of how a boy/girl should be has been cast in to the system hence the lack of interest shown by females towards gaming and the time spent being less than boys in most of the researches on Video Games are no mere coincidences. They are 'conventions' that no one talks about loudly yet it is present. In their research paper, Marja Leonhardt and Stian Overå mention the same things present in the Norwegian Society, the 'appropriate gender roles' which are taught by the parents, teachers, peers and the media to the children. Disassociation due to the lack of female playable characters in games can also be the concern of females lacking interest in gaming as

there are more male game characters possessing super powers which are fun to play (Leonhardt & Overå, 2021). Skowronski et al. (2021) in their paper, talk about the similar documentation of how male characters outrun the female character which is not many in numbers. Cassell and Jenkins (1995) documentation of how the gaming industry personifies women and female gamers has also been well documented in their book 'From Barbie to Mortal Kombat: Gender and Computer Games'. A mixture of studies and results have been unearthed by researchers who have mostly found that Males play more than women (Uz & Cagiltay, 2015; Wood et al., 2007).

5. b. The influence of gaming on mobile and its effects on Academics:

5. b. i. Teenagers' mobile phone gaming patterns and academics:

Gaming durations depend upon each individual and their preferences to spend time on the gaming platform depend on the factors which include the immersive landscape and the detailing of the game and other similar external factors. The games played by the respondents who are in their teen years play on the devices whenever they have time this has been possible due to the portable nature of the devices being studied, the mobile phone which we as individuals carry along with us where ever we go. In the present study from the results indicated in Table 5, it is shown that the female students spent more time on their studies which resulted in them scoring better than the male students who according to the survey scored less than the females. These findings are aligned with several studies before like the negative relationship between the time spent on video games and academic performances (Anand, 2007; Choo et al., 2010; Gentile et al., 2004; Weaver et al., 2013), the use of games decreasing the time spent on educational activities (Burges et al., 2012; Weis & Cerankosky, 2010) and the results are contradictory to the similar studies done on the academic success and

gaming having no relationship (Drummond & Sauer, 2014; Ferguson, 2011) which is similar to the results produced by the current study. The study although has a negative correlation with the time spent on gaming is not highly significant which can be seen in the researches done by Drummond & Sauer (2014) and Ferguson (2011). The results vary with the amount of time spent on gaming and the action it produces in the academic scores which are varied across the field of study as we see that Dindar points out that the literature concerning the topic is “both inconclusive and contradictory” (Dindar, 2018). However, in the case of this study, it contradicts the results of Dindar (2018) where it was found that in his study the female respondents played more games and had higher GPA (Score). However, in the case of the present study the game time was higher in males and as a result, the score of males was affected, which led to the assumption that although significance was less in the relation between the game time, study time and score was negative in males (Schmidt & Vandewater, 2008; Weis & Cerankosky, 2010; Anand, 2007; Choo et al., 2010; Gentile et al., 2004; Weaver et al., 2013) and positive in females. It may be concluded that although the relation between the gaming and study score is negative in males there are no major differences in the scores, the scores in females may be higher due to the amount of time spent on studying rather than playing games like the male respondents. Further according to the researcher, Borgonovi (2006) in her article *“Video Gaming and Gender difference in the digital and printer regarding Performances among 15-years-old students in 26 countries”* mentioned the differences in gender amongst the academic habits in and out of school and its various factors contributing towards their ability to grasp knowledge. He further states that *“Boys and girls differ not only in academic achievement in general and reading achievement in particular but also in how they behave while at school”*, which can be

further found in other researches by Francis (2000); Paechter (1998); Warrington and Younger (2000).

The significance of gaming on the academic scoring based upon the responses of the research indicated that the respondents' efforts towards working hard by playing fewer games as discussed by some of the researchers fall into them being evident. The results of game time hampering the scoring capabilities in males and the study time enhanced both of the respondents' scoring capabilities back the previous studies on games and academics.

Similarly, it was analysed by OECD (2015) that mostly it was the boys who are poor in academics, who have poor discipline in school and who play more video games than studying and doing homework (p. 13). Olson et al. (2007) also mentioned in their work that boys tend to choose and play actions games in front of their peers which indicates that they play in order to show off their talents and skills while they are in a group where they gather and spend time playing either after school or during their weekends when schools are off.

In the present study on teenagers and their academic scores being affected by mobile gaming, it was also seen that female students devoted more time to studying and less time on mobile games which is one of the main variables for them scoring better marks and having a positive correlation with studying and improve their marks scoring capabilities as aptly put forward by Borghonovi "*time is a scarce resource, when students play video games they are, de facto, forgoing the opportunity of being engaged in another set of activities or rest*", which indicated and formulates to them losing out on daylight and leaving our academics for the sake of enjoyment which given an advantage to the other gender to do better in their studies. Further, the game

time variable is more in the boys hence their reduction in study time has held them back from their achievements (Borgonovi, 2016). Like all previous findings from different researchers, Borgonovi also found that excessive online gaming does hinder academic performance which can also be seen in the present study (Table 5) which is similar to the findings of OECD (2015).

In terms of time, it was found in the study done by Valentine et al. (2005) that the game time interfered with the study time during the weekday or school nights which made the males perform less in their standardised tests. Similar results were discovered by Cummings and Vandewater (2007) where video game players spent 30 per cent less time reading and 34 per cent less time completing their homework than the ones who didn't play games (Weis & Cerankosky, 2010). Studies time and again have mentioned and found via experimental studies to show that mostly boys/males were likely to displace academic activities after school with a video game (Cummings & Vandewater, 2007).

Gentile (2009) mentioned similar traits to as twice as many numbers of boys in comparison to girls reported skipping their homework, and performing poorly on tests because of video games which indicated that the present study on the teenagers in Sikkim show similar traits of habit in terms of scoring less than their female gender in Schools which are consistent to the findings of Roberts et al. (2005); Vandewater et al. (2006); Cummings and Vandewater (2007); Schmidt and Vandewater (2008) and Weis and Cerankosky, (2010).

Wallenius et al. (2009) stated that "Boys are more likely to play than girls, and they play more frequently and for longer periods than girls" which has also been backed up by other researcher in their findings (Buchman & Funk, 1996; Colwell & Payne,

2000; Durkin & Barber, 2002; Griffiths, 1997; Phillips et al., 1995; Wallenius et al., 2007).

5. c Teenagers' social relations and gaming on mobile

The findings of the present study showed that there was a significant relationship between the playing of mobile games and social time, which indicated that the respondents associated themselves with the feeling of being socially active on the electronic medium, than the physical self with family or friends and associated to be more into the “electronic friends” who were available to them when they would log into their devices and the games, they played were mostly games having such patches and features. The impact on the social relationship was negative which indicates that the games were more popular for the respondents than the real-world friends, family and colleagues. It was also revealed that the respondents chose to alienate themselves rather than talk to a physical person due the element of irritation to which they responded which was statistically highly significant. The results as shown in Table 7 gives a clear picture to a what were the reasons which they inclined more towards gaming than talking or meeting or indulging in physical activities. The results of the present study align itself with the findings of the study done by Cole and Griffiths (2007) on games and their ability to have internal communication within the game. The feature of in-game chats and groups showed that gamers made valuable friends within the game however the relationship outside the games was not discussed. In the present study, the significant negative correlations between the gamers and the social relationship are based on the time spent on the phone *vs.* the time spent with their family. The study explores the proximity of how games can negatively affect the physical social interaction amongst the family. The physical interpersonal

communication which is desired by our society is shown to be getting affected via gaming which has been seen statistically. However, e-communication or virtual communication and other forms of online approaches to interpersonal communication are also being observed.

A study done by Lei and Wu (2007) mentioned that virtual social interaction may work as a “buffering system” for social development. They also mentioned that in order to have meaningful relationships the adolescents turn to the internet when they feel alienated or detached from their paternal relations. Jansz and Martens (2005) also mention that the induction of games in the family can help produce stronger bonds between fathers and sons. Kutner et al. (2008) also mentioned in their work that the video games were slowly accepted as a social tool for the family to enjoy together when interviewing the parents for the study. Although some parts of the researches have been positive towards the use of gaming and social interaction, the other side of the study has mentioned that the use of video games has seen as an escape from problems at home, avoiding physical family interactions and also addictive behaviour relating to gaming (Kim et al., 2008). Similar studies have been put forwards by Vandewater et al. (2005) where children who have experienced high conflict levels at home tend to spend more time playing violent games than non-violent games. The study however has seen that the social interaction increase is related to online communication and most of the researchers have agreed in consideration to time the physical relationship does suffer setbacks which can clearly be seen in the present study. The general theory of digital as mentioned by Aarsand (2007) on the digital divide and the gap between the parents and the children of today does make logical inclusions in the study as the state of mobile phone gaming and the production of ‘budget smart phones’ have recently picked up the pace in India where the major

market was flooded with Chinese mobile phones (Bhalerao, 2020; Uniyal, 2021), a number that is constantly increasing and recently well-structured phones although Chinese manufactured phones (MI, VIVO, OPPO) now have been able to provide internet services embedded on their devices which has helped the growth of internet and gaming in India. These devices have indeed divided the children who are grown in the “Digital Technology- Video games, computer games, the internet and email” (Aarsand, 2007) era had their parents who are recently learning them create a rift between them. The amount of time spent on the devices by their parents and the limited time the children have the phones to themselves do add up to them spending their maximum time with the devices creating a negative correlation between them and their family.

Although the present study doesn't delve into the psychological psyche of the player however numerous studies on the digital technologies and human dependence on it have shown that it often leads to addiction and its related symptoms including the irritability, functional impairment, compulsion and withdrawal (Lin et al., 2014). These conditions are considered severe and the findings may point towards future researchers to investigate on these lines.

In relation to the mobile gaming and the effects of it being on the social relationship among the respondents aged 13-19 years, the main factor which indicated the effect on mobile gaming and social relationship was the S1 variable which indicates that both the genders felt irritated when they were disturbed by external factors while using their mobile phone to play games. The result (Table 7) shows a relatively significant relationship between mobile phones and irritation (S1) which suggested

that the respondents did not want to be disturbed while they were engaged on their phones.

The mobile or digital games have the scope of being an interactive medium which gives the users power over the device to be socially connected with their online peers and also be able to play simultaneously on the devices these factors help them to explore their talents however the aspect of chats, social connectedness and game play is disrupted when a cellular call appears on the devices of the players playing the game which can cause the game to freeze or slow down or worse crash and one loses all their hard earned talents in the game. Thus, this effect can cause irritability, concern and sometimes a dilemma to pick the call or just play through. Although the gaming on mobile phones is compatible and easier due to the feature of getting calls to block the players from playing seamlessly. This may be one of the reasons for teens to be irritable while receiving calls on mobile phones. The other obvious reason for the irritability is the slowing down of the mobile network while getting calls on their devices. Since Sikkim is surrounded by mountains and deep valleys like most Himalayan regions of India, most parts of Sikkim don't have proper seamless internet services while most parts of India enjoy true 4G, Sikkim still struggles to get proper reception on their mobile devices. The expansion of Reliance's Jio has just recently entered Sikkim and their connectivity till today has been enjoyable only for the people of the state's capital Gangtok. Even Gangtok which is the main centre for all struggles to find coverage and people now have started relying on Internet services provided by optic fibres. The situation of the internet and its coverage also adds up to the irritable variable factor for teens when receiving calls on their devices, especially while playing mobile phone games.

The next variable which greatly impacted the teenagers' social interaction was playing on their devices rather than talking with real people. The negative relationship with the variable denoted that the gaming patterns in the teens have been more focused on them playing constantly rather than talking with real people. As discussed earlier the reasons for such findings may be due to their limited time with the phones as stated by the researcher on digital games and their impact on the parents who dislike games being played their children and restrict them to do so which causes the players to play more aggressively with the limited time they get with their devices. The study done by Chai et.al. (2011) has similar results where the respondents have agreed to the fact that they are restricted from mobile games on their devices and they are allowed to do so only after the fulfilment of certain requisites. However, this variable though had a negative impact on the social relationship factor had less significance overall.

Most of the researches done on mobile phones uses and their effects on social interaction has been found out to have a negative effect on the quality and quantity of interpersonal social interaction. These findings can be seen in the works of Drago (2015); Elsobeihi and Naser (2017). Their research defines that the use of technology can interrupt the social interaction process when it is interpersonal. This can be due to their divided attention on the devices and the people around them which can be distracting and reduce more intimate communication. The findings of Ictech (2014) however have argued that the use of smart phones can both help and disrupt the interpersonal communication of humans, these can be different amongst different people and their use patterns which can affect the process.

Similarly, in the research done by Hou (2011), it was found that using the mobile phone for sociability purposes had a negative association with loneliness, a finding similar to other researchers. The use of the medium is what connects the findings of how one uses the medium (Cacioppo et al., 2015)

In the study done by Cumming et al. (2007) it was examined that the social interaction and other family related activities dropped when the study was done on 1941 children aged 10-19 years of age which also exactly forms the centre of this research. Similar results on study time and academic scores have been exhumed, which can be related to the findings of Cummings and Vandewater (2007). The negative correlation between the children's gaming activities and other social activities including studying, and interaction with their friends and relatives has shown similar results in the research done by the researcher as well. Females are more likely to be socialized toward cooperation (Eron, 1980; Unger & Crawford, 1992), which may decrease success with violent games. Both males and females reported a preference for games with violent content (Buchman & Funk, 1996; Funk, 1993; Funk & Buchman, 1996).

5. d Teenagers' Gratification on mobile phone gaming

The results directed that the respondents acquired gratification from playing games on their mobile phones which included the Emotional, Achievement and Social Relationship Factors as the major gratifications achieved in Sikkim teenagers.

Test results from the present study indicate that the factor related to 'Emotional' was the highest on the basis of mean (Table 10). The study was done by Hollebeek et al. (2022) also found that the emotional factor along with enjoyment and arousal factors were found significant in the study which coincides with the present study as well.

The playing of games for emotional values which include happiness, satisfaction, sense of power, elevating mood while playing and adornment for the game was found high in the present study which also aligns with that of Bulduklu (2017) where similar results were shown when tested upon the school students of Turkey which indicated that the study suggested that *“people may create a virtual world where they can realize themselves”*(p.13-14) this is also relatable as the sense of being able to enjoy with varied emotions is one of the effective gratification as discussed by Wilmer et al. (2017). The outcome of the results leading to the emotional factor being one of the major gratification factors can be related to the design of the games which they play on a regular basis, the sudden twists in the game, the plot, the game design and the graphics may be termed to be one of the bases on why they choose the game they play and why they derive emotional gratification from the game when playing (Bopp et al., 2015). The interactiveness of the games has also been found one of the reasons for games to derive emotional gratification from the games they play (Elson et al., 2014). The previous researches even found that the game’s direction and the outcome of the game and the scenes made the gamers emotional (sad, angry, happy, excited, frustrated, reluctant) during an episode of their game play (Bopp et al., 2015) which may be derivative to the present study since most of the gamers play action games like PUBG, Mobile Legends and Candy Crush (Figure 17) such feeling may be evident to them from which the results indicate that gamers achieve emotional gratifications from the games they play.

The study and the analysis also indicated that the correlation (Table 9) between the gaming and gratifications was significant amongst the respondents in Sikkim which is similar to the studies done by most of the researchers studying gratification and the

UGT indicating that the respondents achieve gratifications from the games played by them on their mobile phones.

The findings of the present study indicated that the respondents played these games to be socially connected via the features like chats, leagues, groups, guilds, clans, and game choices. Cole and Griffiths (2007) mentioned in their finding which is similar to the one reported above. Playing online games requires a high level of social interaction and cooperation which can only be achieved through time and working amongst the players. They also stated to challenge the myth that gamers are socially inactive where the respondents showed more interest in playing with their friends and family. Similarly, in the present study, 84.26 per cent of the respondents informed that they have a family member who plays games on their mobile phones (Figure 16).

Krotoski (2004) mention similar findings in the MMORPGs which according to the findings encourage social interaction which is the essential characteristic of the game genre. Weibel et al. (2007) suggested that people prefer playing with a live person rather than playing with a computer or artificial intelligence which grants them greater feelings of satisfaction and motivation. Similarly, in the present study also the games chosen by the researcher had the MMORPGs characteristics like Mobile Legends, PUBG, Garena Free Fire and Clash of Clans were selected by the respondents, which as per the findings of researchers like Krotoski (2004); Weibel et al. (2007) and Jansz & Martens (2005) encourages social interaction.

In regards to gaming, we must understand that like other media where the audience is passive and view the medium as they are presented, the gamers are “not passive recipients of the influence of games”, but their choices and their reactions towards the game play is what makes digital gaming interactive (Williams et al., 2008). The

studies done by researchers like Sherry et al. (2006) have stated and found that the socio-demographical factors can play an impact on the types of gratifications received by the players from a particular game. The pattern of gratifications achieved will differ according to their demographic profile and will tend to nurture outcomes of the gaming experience based on what they expect from the particular games. Hence Sherry (2001) finds that the U&G approach is suited well for studying the interactivity of Gaming. Williams et al., 2008 also state that the U&G method of approach provides a basis for a better understanding of the impact of the gaming experience, the role of the player choices and actions and their usage.

The results revealed that the Social Interaction factor was one of the major motivations or gratification for the respondents which is similar to the study conducted by Sherry et al. 2006 in their study of Video Games and Gratification. The current study is rather similar to the results of Huang and Yang (2015) where the students who played Happy Farm a social media platform game which uncovered that the respondents voiced their support for the social gratification and their findings were comparable to that of Stafford et al. (2004). The diverse prospects and purposes are one of the reasons people choose certain media based on their liking. The reputation of social interaction and the bond factor is similar to that of Chou & Tsai (2007) where they state to find that the players bond over mobile gaming and improve the quality of friendship along the way.

In mobile gaming, the social interaction factor of female respondents ($M= 2.84$) showed more disposition toward the social interaction than the male respondents ($M= 2.32$) which is contradictory to the study done by Griffiths et al. (2011) where male respondents favoured social interaction than the females in online gaming. Other

studies in terms of social relationships and gender, females tended to divulge more towards having gratification towards social factors which are more about relationship building factors, while playing mobile games this is similar to that of Yen (2006), where the females played games which had a more social lookout and interactive session amongst themselves as compared to males.

Female players derived more social interaction while gaming as seen in earlier studies by Cole and Griffiths (2007) where the female players indulged themselves in online interaction where they found themselves more likely to discuss intimate or serious issues with their online gaming partners and peer than they would to a real-life friend or a family member. The advantage of online friendship and other factors also allows users to discuss their issues with each other as the consequences are minimum and they can even fake a reaction towards issues and problems in order to escape judgement. They have even challenged the myth that gamers are “socially inactive” which the present study also backs because of the gratifications achieved by the players of games in Sikkim have mentioned that their main gratification for gaming is the social interaction factor for which they feel like playing the game.

Chen (2011); “*multiple media compete for users’ attention*”, and “*active users select the medium that meets their needs*”(p. 759), this quote from Chen (2011) reveals the importance of human participation in the area of medium related to media, the gratification and motivation of games is determined by the players’ activity and participation. The medium which motivates them the most to play ultimately thrives. In the case of the present study done on the respondents in Sikkim, the Social Interaction factor rose to the contributing gratification factor which motivates the gamers to use the mobile devices to play games. These games' popularity in Sikkim is

as put forward by Papacharissi and Mendelson (2011) that “*online media serves as functional alternatives to interpersonal and mediated communications providing options or complements for aspects of an individual’s environment that are not as fulfilling*” (p. 214). The motives or gratification received towards the uses of playing mobile games by the teenagers in Sikkim tend to associate themselves with experiencing social interactions which can be seen in the studies of Wan (2009) who performed the initial empirical studies on Social Networking Sites (SNS) (Ryan et al., 2014), in the study done on the 335 Chinese college students it was revealed that the use of SNS was significantly associated with motives of socialisation and relationship building similar to the present study which only reinforces the finding that youths seek “social interaction” in whatever they do.

The present games which we all play on our devices are a mixture of SNS and mobile games. It replicates the SNS in its abilities to chat with other members in the game using the internet as a medium of information relay where they can even use internet-based voice calls to the other members to have clearer information dissemination and directions given to the other player in the group. They can even send texts and emojis to the other players on their achievements and coordination. These can be sent while one is gaming and planning their coordinated attacks and using strategically aimed strikes in PUBG, Mobile Legend and other similar games. Since during the study majority of gamers chose games which have these features (Figure 16) it may be correct to state that the games are a form or rather a new way of communication which the teenagers of Sikkim communicate amongst themselves and for which the social interaction factor ranked the highest amongst the 5 other gratification factors.

In another study done on the 1971 adolescents by Floros and Siomos (2013), it was revealed that the motivation or use of SNS was for: 1. Seeking friendship, 2. Relationship Maintenance, and 3. Escapism. Further different types of motivation or gratification achieved by many researchers can be seen (Fernander et al., 2020, p.3).

Yee (2006) who conducted three (3) years long surveys on the 30,000 (thirty thousand) MMORPG Players found that the users under the age of eighteen (18) were all males and the data on their motivation showcased that they felt that their friendship which they made online were equal to or better than real life friendships (Yee, 2020, p. 324) which is similar to the findings of the present study where they have responded similarly (social interaction, $\alpha = .82$).

A study by Hainey et al. (2011) mentioned that during their course of study it was revealed that computer gamers mostly played for the gratifications or motivation relating to Challenge as their 1st ranked gratification perceived by the players followed by curiosity and fantasy. The following motivation factors were the results of the surveys done in 2005, 2007, and 2009 by the authors have a total of 2226 participants over the course of 3 years.

The study also tends to talk about the two kinds of Motivation/motives which are intrinsic and extrinsic motivation. Intrinsic motivation is self-rewarding or personal gratification which they give themselves. Extrinsic Motivation is basically outer factors at play which can be a monetary benefit for playing games, praises received for an extraordinary feat achieved during the game or recognition received from fellow players on the internet or achievement sheet at the end of the contest. These factors are basically for players who play to outperform others during a live session.

Similarly, the gratifications in terms of genders as assessed by them revealed that between males and females the results were similar which are Challenge, Curiosity and Competition where the males had higher mean score than females.

As quantified by Sherry et al. (2006) the alteration from real life and into the dominion of the virtual world is not necessarily a departure from the people and anthropoid communication. This discovery accords with that of the cited scholars and reverses the idea of a 'solitary player isolated from social contact'. Sherry et al. (2006) have rightly explained that the ritualistic approach is the same, only the site has rehabilitated which is true in the sense that the physical arenas of gaming and human contact have diminished however the players seek contact and interaction with their liked peers, companions and virtual friends with whom they continually link via their phones and chat options provided with their game's inbuilt chat devices. The players have transcended themselves into virtual reality where endless hours of gaming can be achieved with the help of their devices at their own homes where comfort is priority to them.

The factor of social interaction was found as the third factor in the current study which aligned with the findings in the studies by Sherry et al. (2006) and sixth in the studies by Durdu et al. (2005). The achievement was the second factor found in the research which was similar to the studies led by Grace and Coyle, (2011) and Sherry et al. (2006).

The motive of escape was the fifth factor in the study which accords with the preceding study conducted by Sherry et al. (2006), where in the study of Lee et al. (2010) which was their first motive.

In previous research done by Huang et al. (2015) in their paper, on Social Network Sites (SNS) games like Happy Farm exposed that pleasure was one of the main stimuli of playing the game however in the Mobile Gaming in Sikkim the results were different with the findings as pleasure was not at the top.

According to the Entertainment Software Association (2012), there are about 70 per cent of gamers tending to play games with their friends, collaboratively or competitively (Yumpu.com, 2012). In virtual social groups, the judgements in regards to whom to trust, whom to reject and how to be the best and lead a particular group must be made on the go. These decisions are largely based on their performances, their capability to use the surroundings and capitalise on the surroundings according to their benefit is a crucial decision one must face each time they play. Hence these gaming capabilities are in some way enhancing the gamer's social skills and their prosocial behaviour inside and outside their games (Gentile & Gentile, 2008; Gentile et al., 2009).

To have clearer implications for policy and practice, the social advantages of cooperative versus competitive game play should be researched longitudinally with recurrent evaluations. Civic involvement, or the capacity to organise organisations and lead like-minded people in social issues, is another example of social skills.

The relationship between civic participation and gaming has been the subject of several studies. For example, large-scale, representative research in the United States (Lenhart et al., 2008) found that teenagers who played games with civic themes like Guild Wars 2 (MMORPG game) were more likely to participate in social and civic activities in their daily lives.

Social Interaction which was one of the main factors in the particular research is similar to the findings of Colwell, (2007) where companionship, preference for playing games over being with friends, challenge and stress relief were identified as significant indicators of play for adolescents playing games. Sampat & Krishnamoorthy (2016) figured that social interaction was a factor which entices youngsters towards online (SNS) games.

It is also noted that different genres of games give different gratification to the players which can be assessed across many works of literature dealing with gratification studies. Each game that the player chooses to play gives him/her a different sense of gratification which makes them play the game again and again. (Kuss, 2013)

Owing to the technological advancements and the increase in the features for the game and its users' facilities the ability to be more social online has been beneficial to many as recorded by the Deshbandhu (2020) in his book "*Gaming Culture(s) in India: Digital Play in Everyday Life*", he mentions that gamers are starting to rely on streams and user-generated video created by other players' streaming media. They prefer to see solutions to in-game challenges, watching in play, observe other people's strategies, and finally, seek entertainment. The advent of streaming platforms and the ability to monetize streaming media provide gamers with a wealth of content to choose from.

Online games mostly provide players with miscellaneous services like SMS and microphone support to communicate. Dialogue boxes and voice conversations are standard in most multiplayer games, but there are some types of games where this form of communication is not allowed.

Participants also found that social media is a great way to follow their favourite players and share a variety of content. They found that the aggregation power of social media and the resulting social aspect of media were very useful for immediate communication and super mediators. Players have also found that social media is an easier way to connect to a company that designs their favourite games, provides feedback in the process, and immediately seek customer support.

Deshbandhu (2020) further spoke on the ability of the gamers to use social media as platforms which are an ideal place to display their talents which can be associated with the achievement gratification as why people, who play, play games in general. These new features of gaming have led them to share scores and performance videos, showcase the games they are playing, and comment on their favourite games and gaming experiences as found by the participants of the research. Appearing on social media platforms not only helps gamers find and become part of the community of their choice, but it also allows them to discover new niche communities and participate in the games of their choice on a deeper level.

The use of gaming sites and their ability to use the instant messaging platform have formed the extension of older and more casual games which are very now obsolete but these groups on the various IM have revived the game's life span. The participants of the study mentioned that the players of such games have multiple mobile phone groups which form as a support group for games and that groups updated the members on their schedules, in-game achievements, and their play, comments and other related information. However, during the course of the study by Deshbandhu (2020), it was found that most of the WhatsApp groups remained inactive and over

time redundant while the players of such games mentioned that such groups if carefully managed would be able to contribute well to the games functioning.

Games that are made in the recent years are made by women for women as more and more females step into the world of gaming and designing games for them will be better suited for them hence in the study the amount of gratification found by the females are higher than in the males due to these changes in the gaming industry. Since the progression of users of games is more and increasing in number one can assume that these factors which are related to gender are due to more participation being brought by female players which were predicted by Greenberg et al. (2015) in their study, where they presented the argument that games need to be designed with keeping the view of female gamers in mind rather than it being designed by males for males (Greenberg et al., 2015).

The previous generation of video games was made for men and the character representation and other factors reduced female characters as a non-playable entity on the gaming story-board which could have been the reasons for them not being actively involved and gaining popularity and gratifications from them. However, with more games focused on female gamers and an atmosphere of more ‘unisex games’ have been developed by the developers which have affected the gaming pattern and how they perceive gaming. The most popular games in the present study are Moonton Games “Mobile Legends: Bang Bang” and PUBG by Tencent are all unisex games where the content is simple with playable female characters which were not present before. These games are mostly MOBA and MMORPG styled games where the players can choose from a variety of characters each possessing their own style of gaming and playing style this can be termed as the sort of “Street-Fighter” styled

game where players meet to end each other's lives in a localized place with their powers which is drawn from their avatar. Hence the gaming scenario although changed, can have an effect on the gratifications achieved by the gamers where female players tend to derive more gratification as compared to their male players.

In terms of game play, the gendered bias that only male players play better is considered a myth due to many female players outplaying the male gamers in many competitions. It was also seen that women were the number one players of mobile games (Norshuhada & Syamsul Bahrin, 2009). The increase in the gaming titles dedicated to female gamers and the game designers being females have created a niche for females to play games which previously were ruled by only the male gender. The use of feminine aspects of game design and etiquette has led to a rise in female gamers.

It is well-known and studied that market is driven by demand and supply the demand for games on the basis of game play population has also created a space for game designers to make games which the consumers want to play a company eyeing for the billion-dollar market would project their expertise and designs to games which are popular and played by both the genders. The use of successful market study and researches has led to the designers and game writers to think beyond the stereotypical roles of humans and advance their designs based on popularity and trends which they follow closely. The modern game designers seeing the available market gap have sought to create games and titles which incorporate gender-inclusiveness aspects in their game designs which women are eager to respond to (Krotoski, 2004).

Krotoski (2004) mentions that the advancement in technologies relating to the gaming industry has led to the increased women's participation in the digital gaming platform

where women are creating a market for being both the consumer and the creators of the digital games which has created opportunities for the future gamers and content creators. It was also noted that the gap between the gaming titles that interest both genders were encouragingly narrowing which indicates that the stereotypical notion of digital games being the 'all male' dominion is slowly fading out creating new avenues for female gamers and creators to experience the medium of entertainment.

The introduction of females in the creation process of gaming titles has allowed the games to be of diverse characters attracting wider audiences and increasing their consumer base.

CHAPTER 6

CONCLUSION

This chapter assesses the findings and their relevant impact on the respondents along with answering the objectives and research questions.

The research brought about light to the popular yet untouched subject in Sikkim. The impact of mobile phone gaming is a new subject which is yet to be explored by academicians and scholars in the North East, although a handful of researchers have tried to indulge themselves in the subject which in the Indian context is also new, a lot needs to be done to understand its possible effects on people including adolescents, teenagers, youths and the middle-aged in India. Studies on Mobile Phones have been done in India by many renowned personalities however Games and mobile games are a subject of unexplored territories for many. The new topic and its impact need to be studied empirically and experimentally so that researchers can discover the impact of mobile games on people's lifestyles and academics.

The impact of mobile games on the present study done on the teenagers of Sikkim sheds light on their ability to gain gratification from them which is mostly related to social gratification which indicates that the majority of the respondents enjoyed the in-game interactions rather than off-game.

6. 1. Popular genre choices and academic ramifications in Sikkimese Teens

The choice of gaming also was looked upon by the researcher which indicated a difference, although not significant, among them. It showcased that the male students inclined themselves towards choosing the 'Action' genre and the female students

chose 'Puzzles' genre as their favourite gaming genre (RQ1). The most popular game for males was "Mobile Legends: Bang Bang" and for females, it was "Candy Crush" which did indicate that their choices of games do differ in Sikkimese teenagers who chose "Action" and "Puzzles" as their favourite genre (RQ2). Gaming choices and gender did play a certain role in their choices of games as females chose casual gaming over action and more complex games which were mostly seen in the previous researches. The choice of action gaming which does require more tactical solutions and cooperation was chosen by males. Most of the researches done on gaming and gender studies have similar results in terms of choices of gaming genres and the amount of time played. These can be due to their perception of gaming and how it is looked upon by the society due to the researches on gaming mostly linking towards Internet Gaming Disorder (IGD) and addictions. The recent researches, however, shows that the gaming scene is changing and more female players are adopting gaming genres which were earmarked to be for "Men Only", are now being conquered by female players. The complex gaming and techniques are for men only notions have been slowly broken down by female players. This is similar to the case of Sikkim as the next choice of genre of Mobile gaming in their list was the Action genre which included games like PUBG, Mobile Legends and Garena Free Fire where a lot of strategy and cooperation are needed in order for them to win. The gaming sphere in Sikkim and also in India needs to be explored in order to see the gaming patterns and if they can be compared to the level of gaming in the western nations. The gaming culture in Sikkim can be considered to be in a nascent stage and frowned upon as they do not have scopes which are available for gamers in other countries. The gaming scenario is mostly related to depreciating academic scores and bad influences from peers in Sikkim.

The stigma surrounding gaming and the effects of gaming shown by the studies are what can alter the findings, and the student respondents may however, mentally not state their true answers to the questionnaires given to them due to self-inflicted guilt and shame. The state of gaming is relatively new and most often frowned upon by society can also have an impact on the game studies not taken seriously in these parts. Gaming and the whole culture around it need to evolve and that can only happen when the gaming community can express themselves not from the comfort of their beds but by creating events and other sources where people can see the effects of good and responsible digital gaming and the shunning of the gamers will stop once they achieve this feat.

The researcher also discovered that the impact of the game had an effect on the academic performance which indicated that the males played more than the females and their academic achievement was lower in comparison to the female respondents. The majority of teens interviewed/surveyed stated that they own mobile phones and played on their devices on regular basis except during examinations, sessional tests and assignments. The male respondents were more inclined towards playing mobile games which related to them scoring relatively lesser than the female students. It was also seen during the course of the study that the male students spent more time on their mobile devices as compared to the female respondents. In academics, the female respondents performed relatively well in terms of scoring marks in their examinations which was relative to them spending more time in their studies and avoiding playing mobile games during those times.

6. 2. Teens, social relationship and gratifications

In terms of social relationship, a strong relation indicates that respondents indicated that they play the game to garner social interactions amongst themselves and the players in the game which stated that in-game conversations and exchange of messages are an essential part of their gaming pattern. However, this also indicated their physical social interaction was affected by gaming since they preferred playing games rather than talking, meeting and visiting people offline. This indicated and also showed that a strong negative correlation was shown between ‘family time and game time’, which further confirmed that physical interaction between family members and the gamers was being affected by playing games. Surprisingly, most of the gamers also mentioned that in their households most of them played games besides them at around 84.26 per cent of the 450 respondents in Sikkim (RQ3).

The research also indicated that amongst the 5 gratifications identified by the researcher through the literature review were Emotional, Achievement, Enjoyment, Social Interaction, and Escapism. The respondents mentioned that amongst the various gratifications, emotional gratification was the highest which indicated that the teenagers in Sikkim were motivated to play the mobile game (RQ1) where Mobile Legends: Bang Bang and PUBG ranked the highest followed by Candy Crush which require you to be connected via the internet at all times and which also requires you to perform via cooperation and strategic instructions received through the other players in the group or clans (RQ4). Since the emotional factor of gratification is strong in Sikkim, it paints a vivid picture of the gaming community being strong and having their own community and clans which often lead to them being actively participating in the communication of plans and gaming styles via their gaming platform. This also

provides a picture for future researchers to study the gaming communities in Sikkim and present it in either empirical or qualitatively exploring various aspects of mobile gaming in Sikkim.

However, the gratification achieved was interesting more in females although they spent lesser time playing mobile games. This can be due to their focused participation in social interaction within the games where games like Candy Crush, Township and other similar games require interaction amongst the players and the resources in the game can be shared amongst the players when they are online.

Since Sikkim is a relatively new smart phone consumer market in. It is booming and has a promising future in terms of sales and internet penetration. Simultaneously the mobile gaming market is also on the rise due to the demand by the youths. These mobile gaming trends are changing and are up scaling to meet the never-ending line of new gamers every time. The scope of the study is increasing where researchers have the scope to look forward to reaching a new spectrum of findings in relation to this form of media. A media that is relatively modern for a researcher to conquer. The New age media is bound to rise and so researchers need to keep themselves updated. The state of Sikkim is no different with a huge population engaged in mobile phones and the internet due to the pandemic, new avenues for mobile media are opening up for researchers to explore. The findings are just the tip of the iceberg waiting for all to dive into. The findings of this research are just the beginning of the milestone for the rest to follow. With the state government of Sikkim encouraging the public to go paperless and online mobile activities will be humongous in the future.

The mobile gaming scenario is new and young where more youths are engaging themselves in it. Mobile gaming and its effects on society are to be studied and

analysed in order for us to have a perfect overview of the Sikkimese Teen Gaming Culture, their preferences and the effects of Mobile Phone Gaming. The researcher has tried to point out the effects rising from mobile gaming, the factors impacting the need for gaming by the respondents and the impact of gaming on their academics. The researcher has also tried to analyse the difference in the gaming patterns in relation to the studies done in other parts of the world, especially in the US, China, South Korea and Japan.

Additionally, further research on the exploration of the positive and negative influence of games in regards to the cognitive and emotional viewpoints. The study would also be enlightening for the upcoming researchers to if parallel studies can be done amongst them and in contrast between the college and university pupils. Further it would be informative to indulge in the dimensions relating to the gaming section and its observed gratification with the same or different games played on the mobiles amongst the college and university going students. Moreover, an exhaustive study can be implemented and undertaken in India mainly targeting the gender induced dissimilarities and realized gratification from mobile game playing.

Mobile gaming although new has a lot of potential, which has not been explored to its fullest. Future researches could be centred around the psychological impact of mobile gaming on the students' abilities to comprehend the changes in the education sector and their diverse curriculum. The mobile game has a diversified choice of games to choose from and different platforms to play on. The mobility of mobile gaming and the ease of the gaming design has indeed made gaming reach another height of portability. Mobile gaming researchers need to focus more on the literature which is already booming in game centric countries like China, Korea, Japan, USA and

European countries where the researches are more advanced and have prospects of better informational resources in the field.

In the medical profession, both researchers and practitioners have begun to harness the power of video games to encourage patients, and as a result, enhance their health results. Mobile gaming and their associated gratifications have opened avenues for researchers to associate gaming with social interaction being the chief gratification which indicates that as human we desire to associate with fellow human even during intense gaming sessions. The desire to communicate is always a priority for gamers to achieve gaming and reach higher levels. Mobile gaming gratifications like the emotional factors indicate that how we feel while playing mobile games is an integral part of mobile gaming the situation of gamers playing for the sake of playing games is not the case in Sikkim. The gamers in schools play because they play in order to emotionally connect themselves with the game in terms of happiness while playing games which they prefer to play. They play games as the games give them a sense of satisfaction. The gamer's decision to play games and their motives to play certain games are also based on 'Achievement' which is primarily a source of desire for players to play the said games in order to achieve gaming gratification where they can compare their characters, the different equipment collected over a period of time while gaming and reaching certain stages only few can conquer. The desire to perform better and have a sense of competition is one of the chief desired gratifications which Sikkimese teenagers associate themselves with games when they play games which are competitive in nature. The desire to achieve another level of gaming is what fuels their desire to play further.

6. 3. i. Suggestions and recommendations

The present research revealed significant findings about the mobile phone games and the gamer's gratification. The gratifications received by mobile phone gamers can be different from those already studied in other parts of the world and states. Therefore, based on the findings the following suggestions and recommendations as for how digital games can be more perceived, developed and use in the future by academicians and policymakers.

The content provided to the young gamers needs to be overseen and the government should develop measures for Mobile Phones to be made available after certain measure, especially during the pandemic the rise in the use of mobile phones by teens was on the rise due to the online classes, and the current mode of study hence the gaming scene needs to be monitored. Problematic use of mobile gaming has not been assessed by the researcher however, future researchers need to indulge in such studies, and interdisciplinary research and amalgamation of different subjects relating to media need to be encouraged, in order to tackle the problem of IGDs in the future which seems evident due to the pandemic and online lifestyles of teens.

The Government bodies can also create focus groups which can be used to educate and inform parents of the teenagers on monitoring the mobile game and data usage in consultation with Information Technology Officers who can help detect onscreen time spent on mobile phones apart from studies. On the other hand, mobile game developers need to focus on the aesthetics of gaming and provide solutions which can help adolescents play responsibly.

The state of Sikkim being a small state can effectively monitor the adolescent's usage patterns and through rigorous use of information technology and public relations can educate the citizens on the difference between the use and problematic use of the Mobile phone technology. The dissemination of information to dedicated social media and press in Sikkim can also be utilized to inform the public regarding the same. The efforts made early can indeed save the teens from IGD and other social evils relating to problematic gaming in the future. Since technology has become cheaper, the use and problematic use of the mobile phone technology is merely a footstep away. The sooner we can identify the problem, the better it would be for the future of the state and the country.

Essential researches on the negative effects of gaming have already been studied for decades which have churned out the results of it being linked to addiction, depression and aggression (Anderson et al., 2010; Ferguson, 2007). A large-scale survey has also been conducted which has concluded that 3 per cent of Dutch (van Rooij et al., 2011) and 8 percent of US youths (Gentile, 2009) have shown signs of addiction (deteriorating family life, school and psychological functioning). Moreover, meta-analyses published on the studies relating to aggressive behaviour and violent video games (Anderson et al., 2010; Ferguson, 2007) have shown considerable results linking the two.

As Tamborini et al. (2010) perfectly put in their description that the different types of games and the variety of games attract each player in a different way based on the individual differences based on their personality, needs, mood and other factors. These games enchant the player to a world that they would visit often or regularly

depending on their needs and gratification. The games on the other hand shape the influences of players' motivations, emotion and social interactions.

Lastly, we must understand and live by these words while studying digital gaming and its effects, as rightly put by Cole and Griffiths (2007), "*The possible negative effects of the games must not be ignored, nor should they be blown out of proportion.*"

Hence careful consideration and intellect is needed for the researchers who are and will study the topic in future keeping in mind that the effects mustn't be ignored but also kept in check with proper information and data on the said subject of study.

6. 3.ii. Limitations

1. Research conducted on school children and hence the results can't be applied to the entire Sikkimese youths as the results may vary amongst college students and working youths.
2. One of the first research on mobile phone gaming and gratifications hence more improvement can be done in the statistical part of the research adding more value to it.
3. Psychological aspects are not seen; hence future researches can delve into the subject.
4. The extraneous variables (free time at home; natural intelligence; socio-economic status etc.) were not considered due to time constraints and the focus of the study being solely relying on the responses of the teenagers.

6. 3 iii. Scope of Study

1. Mobile Phone and Impact on Mental Health in Sikkimese Teenagers.
2. Gaming and academics: Study exploring the youths of Sikkim.

3. Mobile Games and Sikkim's Youth: A study on mobile gaming addiction.
4. Mobile phone gaming and gendered spaces.

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Annexure

Questionnaire:

General Instructions:

The below-stated questionnaire based on mobile phone games and I would like to collect some information as a part of my research. The data collected will be kept confidential and will be used for research purposes only. The result will also be analyzed and this research will not have any impact on your academic and personal life. The information provided by you will help in developing a new understanding of mobile phone gaming activities in Sikkim. Therefore, kindly give your honest answers as there is no right or wrong answers to any questions. Please fill in the details given below before you proceed with the questionnaire.

Name: _____

Age: _____ Gender: _____

Name of your School/College _____

Class/Semester _____

Contact No.: _____ Email Id:

Permanent Address: _____

Consent of the participant:

I declare that I don't have any problem in participating in this academic survey.

Signature of the Participant

Date:

Section A

1. Do you have a mobile phone?
 - a. Yes
 - b. No

2. Which phone platform do you use?
 - a. Android
 - b. IOS

3. Do you play games in your mobile phone?
 - a. Yes
 - b. No

4. On average, in a day how much time do you spend playing games on your mobile phone
 - a. Less than one hour
 - b. One to two hours
 - c. Two to three hours
 - d. Three to four hours
 - e. More than four hours

5. What games do you play in your mobile phone?
 - a. Most often I play: _____
 - b. Second: _____
 - c. Third: _____

6. Which is your favorite type of game? (Select only 1)
 - a. Racing
 - b. Action
 - c. Sports
 - d. Simulation
 - e. Puzzles
 - f. Shooting
 - g. Other – please specify

7. How often do you play the following mobile game?

Sl. No	Games	Never	Rarely	Sometimes	Often	Always
a	Dream League Soccer					
b	Temple Run					
c	PUBG					
d	Ludo					
e	Candy Crush					
f	Clash of Clans					
g	4 Pic 1 Word					
h	Mobile Legends					
i	Garena Free Fire					
j	Asphalt					

State if any other game you play **ALWAYS** but is not mentioned in the above list _____

8. How often do you use game plan in your mobile games?

- a. Never
- b. Rarely
- c. Sometimes
- d. Often
- e. Always

9. How often do you look for expert tips, and advices in order to play the mobile game well?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always
10. How often do you pay attention to your rankings in the mobile games?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always

Section B

11. Do you stop playing games during exams?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always
12. During a busy time of study (such as lots of assignments, tests etc.)... (Tick only one option)
- a. I do not play games at all
 - b. I reduce the amount of time I spend playing
 - c. I continue playing games
 - d. I play games even more
 - e. I only play games and avoid my studies
13. Do you think that playing games gives you a better chance of improving your performance in assignments and/or exams?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always
14. On average in a day, how much time do you spend studying?
- a. Less than 1 hour
 - b. 1- 2 hours
 - c. 2- 3 hours
 - d. 3 - 4 hours
 - e. More than 4 hours

15. How much did you score in your last examination?
- 81% and above
 - 71 – 80%
 - 61 – 70%
 - 51 – 60%
 - Below 50%
16. How often do you look for guidance and advices to perform better in your studies?
- Never
 - Rarely
 - Sometimes
 - Often
 - Always
17. How often do you pay attention to your rankings in your class with relation to your grades?
- Never
 - Rarely
 - Sometimes
 - Often
 - Always

Section C

18. What time of day would you most likely play mobile games the most?
- 3am - 9am
 - 9am - 3pm
 - 4pm -10pm
 - 11pm – 3am
 - All the time
19. Does anyone else play mobile games in your home?
- Male _____ also mention their age _____
 - Female _____ also mention their age _____
20. Have you ever had a crush on a mobile game character? If so, who?
- _____
21. Do you feel irritated when any one disturbs you while playing games on your phone?
- Never
 - Rarely

- c. Sometimes
 - d. Often
 - e. Always
22. Do you receive calls when you are in between a game?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always
23. What do you enjoy more
- a. Talking face to face with friends
 - b. Playing mobile games with friend
 - c. Playing outdoors with a friend
 - d. Chatting with friend through a mobile game
 - e. None of the above
24. Do you play mobile games that involve establishing relationships?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Always
25. Do you agree with the following statements? Tick Yes or No
- a. I enjoy playing games on my mobile rather than going out with my family.
Yes / No
 - b. I enjoy playing games on my mobile rather than going out with my friends.
Yes / No
 - c. I prefer being left alone with my mobile game. Yes / No
 - d. I prefer playing mobile games than visiting my relatives. Yes / No
 - e. I prefer playing mobile games than talking to people. Yes / No

Section D

26. Following are some statements based on playing mobile gaming experience.
Please rate the statements on your level of agreement.

Sl. No	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a	I feel happy playing mobile games					
b	I feel satisfied playing mobile games					
c	I feel loved while playing mobile games					
d	I feel powerful playing mobile games					
e	Mobile gaming helps me suppress my depression					
f	I like to discuss my character and make others jealous of me					
g	I will feel very rewarding to get to the next level of the game					
h	I will immediately want to play again if I lose to someone					
i	I will play until I complete a level or win a game					
j	It is important to me to be the most skilled person playing the game					
k	I have items/equipment/virtual money and coins which are better than those of other players' in the mobile games that I play					
l	I feel relaxed					
m	I feel excited					
n	Gives me pleasure					

o	While playing mobile games I become popular with friends					
p	Mobile gaming has made it easier for me to make new friends					
q	I can stay in touch with my long distant friends through mobile games					
r	I will meet new people					
s	I will decrease the likelihood of being left out					
t	My mobile gaming friends understand me better than other people					
u	In mobile games I feel I will be able to do things I can't do in real life					
v	While playing mobile games I will forget some of the real-life problems I have					
w	While playing mobile games I will be able to pretend I am someone/somewhere else					