# Impact of Digital Socialization and Empathy on Quality of Life: Exploring Role of Cyber Victimization and Social Intelligence Among University Students


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It is certified that M.Phil. thesis titled **" Impact of Digital Socialization and Empathy on Quality of Life: Exploring Role of Cyber Victimization and Social Intelligence Among University Students "** prepared by **Syeeda Hameed** has been approved for submission to the National Institute of Psychology, Centre of Excellence, Quaid-i-Azam University, Islamabad.

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*To my Beautiful Daughters, Menaal and Zimal...*

*Who made their mother face the fear of failure!*

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## Abstract

The current study aimed to investigate the mediating role of empathy in the relationship between digital socialization and quality of life. In addition, the moderating effect of cyber victimization and social intelligence was also examined. Using purposive sampling technique, data was collected from university students ($N$ = 451) from both traditional and online universities of Pakistan. Along with demographic information, measures of the Cyber socialization scale (Santhosh & Thiyagu , 2022), Questionnaire of Cognitive and Affective Empathy (QCAE) (Reniers et al., 2011), Cyber-offending and cyber victimization scale (Hinduja & Patchin, 2015), The Tromsø Social Intelligence Scale (Silvera et al., 2001), WHO Quality of Life (Brief) (The WHOQOL Group, 1998) were used to assess the study variables. Cronbach's alpha reliabilities for all the scales and subscales were satisfactory. Results of regression analysis show that quality of life is positively predicted by social intelligence and negatively predicted by cyber victimization. Digital socialization positively predicts empathy and social intelligence. Empathy mediates the relationship between digital socialization and quality of life in combined mode of study and online mode of study but not in conventional mode of study. Cyber victimization weakens the relationship between digital socialization and quality of life in both combined mode of study and traditional mode of study, but not in online mode of study. Social intelligence positively moderates the relationship between digital socialization and empathy in both combined mode of study and in traditional mode of study but not in online mode of study. The study emphasizes fostering positive digital socialization for university students, enhancing their quality of life through empathy and support. Interventions to promote empathy skills can create a compassionate online culture. Practical implications involve educators, counselors, and policymakers promoting digital citizenship, ethics, and safety.


*Keywords: Digital socialization, Quality of life, Empathy, social intelligence, cyber victimization*

# INTRODUCTION

# Chapter 1

## INTRODUCTION

Quality of life is one of the major concerns of contemporary man and thinking about this aspect seems to have gotten stronger worldwide in the past few years. The concept is understood and defined diversely both within individual fields of study and across various disciplines. (Haraldstad et al., 2019). The concept of quality of life emerged from a multidisciplinary approach in the mid-20th century, in which researchers from various fields of study began to investigate the factors that contribute to human well-being and satisfaction. The concept has its roots in the social sciences, including psychology, sociology, and economics, but has also been influenced by medical and health-related research. Generally, the word "quality of life" is used to describe various aspects of satisfaction, with the state of being viewed as good or bad in relative terms by individuals or groups (Ogunseitan, 2019). The phenomenon has been studied from multiple aspects such as health and medicine (Fayers & Machin, 2016), social interaction, economy, environment, poverty and quality of life throughout the life span. With the continuous advancements and changing demands and needs of human life, the variables affecting the quality of life have been transformed. The dynamic nature of life strongly influences human beings as throughout different stages of the life cycle, we face many issues related to the quality of life (Shek, 2011).

Quality of life is significantly impacted by social interaction, as supported by substantial evidence in psychological and sociological literature. It has been found that individuals possessing more extensive networks of social connections often experience greater satisfaction and happiness in their lives (Amati et al., 2018). With the rise of pandemic COVID-19, life circumstances changed drastically and the general manner of life altered. Humankind experienced a boom in digitalization in all spheres of life such as education, business, and social interaction etc. The term of 'social distancing' soon spread throughout public and policy debate, and face to face social interaction became limited to the closest family members (Long et al., 2022). This digitalization has facilitated as well as affected human lives globally. The changes brought about by cyber modes are vastly researched upon in different domains of academia, and Psychology is no exception.

Socialization is the process by which people start to develop the abilities needed to be productive members of their society. It represents the entire learning process over the period of a person's life and has a significant impact on both adults' and children's behavior, beliefs, and actions. Man being a social animal, is greatly influenced by society which determines physical, psychological, behavioral and attitudinal factors (Datta et al., 2015). It has been seen that supportive social interactions is related to higher quality of life (Yanos et al., 2001). With a shift of time, face to face social interaction has been replaced by digital socialization. Digital socialization introduced numerous networks that the people communicate through, which have an impact on their accomplishments, outcomes, and mobility (Milenkova et al., 2018).

A distinct feature of socialization is empathy, either online or face to face. Human conduct is mostly determined by how we interpret other people's actions, which reflects our adaptability in the social realm. Empathy is one of the most crucial mechanisms that social cognition depends upon to adapt and survive (Reniers et al., 2011). The ability to communicate with others is referred to as a social skill, and it has an impact on how well a person adjusts to their life as well as their academic and professional achievement. Empathy, which is one of the most important human traits in social interactions, is also essential for building relationships with others. (De Wied et al., 2007).

Individuals who utilize social media can experience several benefits, including greater awareness of current events, interpersonal relationships, and access to social support networks. Nonetheless, concerns about potential adverse impacts associated with social media usage are becoming increasingly prevalent (Hill et al., 2016). As the trends of socializing digitally has increased, many harms associated with internet have emerged which greatly hinder individuals to function effectively. One phenomenon, for example, is of cyber-victimization. Victimizing others via information and communication technology is known as cyber-victimization. Cybervictimization refers to the utilization of ICTs for both direct actions taking place within private digital domains and indirect actions unfolding in the public sphere of cyberspace. These activities are executed with the intention of causing harm to an individual (the victim) who lacks the means to readily protect themselves (Cañas et al., 2020). The traits of this behavior have been linked to a number of unfavorable outcomes for the victims, particularly with regard to teenage emotional development. Numerous studies have

demonstrated that cyber victims have increased levels of depressed symptomatology as one of the consequences of cybervictimization (Cañas et al., 2020) which greatly affect their quality of life.

One of the most important roles in socialization is of social intelligence. Relationships, communication, and social hierarchies are all impacted by social intelligence, which is the capacity to perceive and negotiate social circumstances. Recent studies have emphasized the value of social intelligence in many facets of life. One example is that successful love relationships are more likely to occur in people with higher degrees of social intelligence (Kogan et al., 2014). Digital socialization offers different platforms for interaction with others and education about various cultures and viewpoints, which can help people develop their social intelligence (Soldatova et al., 2020). In a research finding, it is intriguing that the social intelligence skills were more frequently in evidence, in the online academic courses as compared to web browsing or playing video games (Meyer & Jones, n.d.).

Additionally, research has demonstrated a positive relationship between empathy and social intelligence. For instance, even after adjusting for demographic variables and personality traits, a study of university students revealed that social intelligence was a strong predictor of empathy (Mayer et al., 2008). Empathy and socialization share a close connection, and numerous studies have consistently revealed a strong correlation between socialization practices and the development of empathy in individuals. Research has shown that qualities like parental warmth, responsiveness, and support are positively linked to the cultivation of empathy in children (Eisenberg et al., 2001). Empathy serves as a basic requirement for engaging in pro-social actions, while its absence can lead to tendencies toward offensive and aggressive behaviors. The process of empathy encompasses four essential stages: identifying emotions, responding emotionally, adopting others' perspectives, and taking appropriate corrective actions (Marshall & Marshall, 2011).

**Quality of Life**

Since the early 1970s, interest in the concept of quality of life has increased significantly in research. Despite its importance, there is still no consensus on the definition or exact dimensions of measurement of quality of life (Pennacchini et al., 2012). Today, the phrase quality of life is used not only in casual conversation but also in academic contexts, where it is associated with a number of specialized fields, including sociology, medicine, nursing, psychology, economics, geography, social history, and philosophy. However, the term "quality of life" can mean different things too (Farquhar, 1995). In general, there is no clear agreement on the definition of the concept, despite the fact that several determinants and indices have been proposed as benchmarks for quality of life. This lack of agreement can be attributed to the fact that the term's definition is, by far, the most multidisciplinary one. World Health organization defined quality of life as an individual's assessment of his or her position in life in respect to the culture and value systems in which he or she lives, as well as in relation to objectives, expectations, standards, and concerns (The WHOQOL Group, 1998). This shows the subjective nature of explanations for quality of life, which is rooted within a context comprising social, cultural, and environmental aspects.

Determining which domains should be included in the overall definition of this construct may prove to be a significant difficulty while defining quality of life. However, studies show that it is crucial to approach quality of life as a term comprising of a number of social, environmental, psychological, and physical characteristics in order to develop an appropriate explanation (Theofilou, 2013). The idea of 'quality of life' basically refers to how individuals evaluate the 'goodness' of many areas of their life. These assessments cover emotional responses to events in life, dispositions, sense of fulfillment and contentment in life, and satisfaction with one's job and interpersonal connections (Diener et al., 1999). Quality of life can be of two types i.e., subjective quality of life and objective quality of life. Both objective and subjective markers can be used to quantify quality of life, but the latter are more frequently used. Other individuals can see objective measures of QOL, such as a person's family income, the number of sick days they take from school, and the number of drugs they consume. Since subjective indicators are based on an individual's own feelings, such as those related to their health, education, or family, they can't, in theory, be filled by another

person. In general, there is little correlation between objective and subjective QOL indices (Davis et al., 2016).

Generally, the concept of personal well-being has been frequently expressed by the term quality of life (QoL) across a variety of fields. The term "quality of life" is often used to refer to a broader concept that encompasses a variety of qualities that improve well-being, including independent financial standing, satisfaction with one's surroundings, and a stronger sense of joy or happiness (Malkina-Pykh & Pykh, 2008). The term Quality of life can be discussed in terms of two different concepts i.e., individual QOL and social QOL. Both contribute to each other as some individual feel better while living off in a healthier society and the society cannot flourish if the individuals are facing some unfortunate circumstances. If people assume that their social QOL is contributing into their personal identity, it makes them feel a functional member of their social group.

Quality of life is a phenomenon which has been studied in different disciplines with varying contexts as an individual’s quality of life may be impacted by multiple factors. The subjective perception of an individual's level of well-being has served as the beginning point for the majority of QoL investigations. The perception that one's life is generally going well can be the simplest definition of individual QoL. (Malkina-Pykh & Pykh, 2008). Numerous variables influence life quality depending on culture. Age, gender, marital status, education, place of residence, health status, employment, and socioeconomic status are just a few of the variables that have been studied in the past. Most of them are connected to quality of life and were generally investigated in quality of life research (Fleck et al., 2004). An individual’s quality of life may be affected by multiple factors such as environmental conditions, health conditions (both physical and psychological), economic conditions, social relationships and interactions and one’s own view point towards life.

A notable area within quality of life studies revolves around health-related quality of life, encompassing both mental and physical aspects. Given that illnesses cast specific impacts on an individual's quality of life, this concept has gained prominence as a crucial focus for research and practical application in the realms of health and medicine (Fayers & Machin, 2016). Health related quality of life can be defined as a term used to describe the health-related aspects of quality of life. It is typically thought

to reflect how illness and treatment affect disability and day-to-day functioning, but it has also been thought to reflect how one's perception of their health affects their ability to lead fulfilling lives. To be more specific, HRQOL measures the value placed on life expectancy as modified by impairments, functional states, perceptions, and opportunities as influenced by sickness, injury, treatment, and policy. In order to improve patient treatment, symptom relief, and rehabilitation, it is essential to comprehend QOL. Without quality of life assessment, the issues appearing later can go unnoticed (Haraldstad et al., 2019).

Social aspect in quality of life is of utmost importance as society plays an important role in determining the physical, psychological, attitudinal and behavioral factors of an individual. Social capital has been identified by researchers as one of the major variables affecting an individual's quality of life. Enhancing social capital is comparable to other elements that can significantly improve people's quality of life, yet long-term survivors may still face problems after being cured (Fleck et al., 2004). Positive social connections have been linked to better quality of life across the board in all four domains i.e., physical, psychological, social and environmental. Numerous studies have demonstrated that symptoms like anxiety, insomnia, stress, social dysfunction, and severe depression are caused by a lack of social engagement. These symptoms affect a person's physical and mental morbidity, which deteriorates their quality of life (Yanos et al., 2001). Social interaction and general well-being are positively correlated and family is found to be a key component of this system of social support. Due to significant social interaction and the presence of supporting companions, one's quality of life may be adequate despite physical and psychological illness (Datta et al., 2015). A study conducted in Pakistan on Quality of life showed a very strong correlation between QOL and social capital in the areas of physical, psychological, social relationships, and environmental and mental health (Lodhi et al., 2019). Another study found out that teenagers' psychological health in Pakistan is primarily improving as a result of their use of social media (Saleem, 2002).

Environmental aspect is another domain included while defining quality of life. When discussing the relationship between environmental factors and quality of life, it is important to use the term "environment" in its fullest definition, which includes not only physical environmental factors but also socio-cultural, political, and economic necessities for human success (Keles, 2012). The function of economic considerations

is certainly crucial in raising the level of quality of life, despite the fact that it has a wide range of characteristics, from physical to socio-cultural, psychological, and environmental ones (Keles, 2012). Scannell and Gifford discovered that imagining one's location of attachment promotes the fulfilment of several psychological needs, such as a sense of belonging, self-esteem, and significance (Scannell & Gifford, 2017).

With reference to quality of life researches in Pakistan Lodhi et al., (2019) conducted a study to evaluate the vital information on Pakistani peoples' subjective Quality of Life (QOL). The study also analyzed the effects of family structure and sociodemographic and all four domains of Quality of life. It was found that the general Pakistani population's QOL scores were determined to be low overall. Women's' QOL in the areas of physical, psychological, and social relationship health was shown to be lower than men.

Students go through a transition during their stay in college as they learn new skills, experience new things, expand their social networks, and acquire new knowledge. Being in college can be stressful since it forces students to change their routines, relationships, and environment (Ibrahim et al., 2013). This may cast an impact of their general quality of life.

Quality of life is an essential component of humans. According to the American Psychological Association, socioeconomic status (SES) is a key factor in determining the quality of life of older Americans (American Psychological Association, 2010). A study by Luo and Waite (2005) found that females reported lower levels of satisfaction with their daily activities compared to males (Luo & Waite, 2005). Additionally, studies have found that gender differences in quality of life can be influenced by a variety of factors, including socioeconomic status, social support, and health status (Ferreira et al., 2014). It is important to note that these gender differences in quality of life are not universal and can vary across cultures and contexts. Although a study conducted in Pakistan found no significant association between family structures (joint/nuclear) and QOL of the participants (Lodhi et al., 2019), some other studies found it an important determinant of QOL (Ganesh Kumar et al., 2014; Hernández et al., 2009).

Age is known to influence the enjoyment of quality of life, with research indicating that older adults tend to report lower levels of quality of life compared to younger adults. For example, a study by Power and colleagues (2005) found that quality

of life tended to decline with age, particularly in domains such as physical health, independence, and social relationships (Power et al., 2005). Contrary to the above mentioned, according to a study, the statistical analyses did not find any difference in quality of life between men and women, but age was a consistent factor in how satisfied they were with their lives. Older participants had higher satisfaction levels than younger ones (Memon et al., 2021).

**Digital Socialization**

Human beings are social animals and crave for companionship with others for which socialization is essential, a process that extends throughout one's life span. During this process, human beings perceive and internalize the sociocultural components of the environment. With the influence of others, they integrate these components into the structure of their personality and adjust to the social relationships. Socialization is a form of social learning that takes place as a result of interactions with other people. The development of social skills establishes the preconditions for people to be included in public relations, and the process of socialization thoroughly acquaints them with the real world of their social environment (Berger & Luckmann, 2016). Significant agents of socialization are family members, peers, educational institutes and media, however, today's digital technologies compete with family and school as a significant socialization agent (Soldatova et al., 2020). After family, which is first place," and job, which is second place, the internet is the third place in an individual's socialization process. These settings serve as the foundation for our social development. As a result, the internet, or more specifically, cyberspace, has developed into a third virtual location where people congregate to exchange information, communicate, enjoy themselves, seek or provide support, and make individual and collective decisions (Chitosca, 2006).

By the end of the second half of the 20th century, the growth of information technology made digital socialization an important area of academic interest and started highlighting the significance of the media as a factor in education, upbringing, and training (Frau-Meigs & Lee, 2016). The desire for socialization has led to the development of creative solutions by humans. The term digital natives refer to the generation born after the 1980s. This generation is fortunate to have unrestricted access to social networking sites, which helps them develop a new socializing style and mold

their personalities. The main factor promoting this kind of socialization is the internet. Internet technology has created venues to speed up socializing using virtual entities rather than more conventional real-world entities (Saleem, 2016). Traditional ways of socializing are not enough for the younger generation, who also use digital methods to learn what they need to know and do. Sometimes, they even prefer these new ways over the old ones (D.V. et al., 2018). In this digitalized world, individuals interact with each other via different online platforms in everyday life. This communication happens bilaterally, firstly, this is media socialization as it helps them in informing, educating, and getting advice and secondly, messages and images that people create, share, and discuss on social media help them leave their mark (Milenkova et al., 2018).

Digital socialization (Soldatova, 2018), media socialization, online socialization, virtual socialization, cyber socialization, information socialization (Aysina & Nesterova, 2019) are the terms which are used interchangeably (Lenkov & Rubtsova, 2019) while defining human interactions via different online platforms. Digital technology procedures for mastering and appropriating social experiences learned online are considered to be the mediating factors in digital socializing (D.V. et al., 2018). It has also been described as a collection of events that occur when someone is first exposed to the culture of electronic communication as well as the principles, standards, and laws that govern the particulars of communication in cyberspace (Chitosca, 2006). Digital socialization can be of two types, positive and negative. Positive digital socialization can be defined as a set of behaviors that include a user safely utilizing cyberspace, taking full advantage of all of its benefits, and applying the knowledge they have obtained in a virtual environment to real-world situations. Negative digital socialization can be explained in terms of presence of deviant patterns when communicating in the internet environment, a high vulnerability to aggressive network interventions, and a high level of user involvement in virtual communications along with a low ability to self-regulate when using network resources (Aysina & Nesterova, 2019).

Teenagers' perceptions of their identities are being shaped and formed by the media. Additionally, it influences the structure of their social interactions and cultural orientation (Yuliani, 2018). Through varied interactions, social media exposes users to different cultures and knowledge. Thus, the digital platforms provide information about recent occurrences instantly and assist people in learning, seeing, and experiencing

numerous things that occurred in many different regions. Social networking sites give users the opportunity to interact with others, encouraging them to be active. The relationship between changes in media and communication on the one hand and changes in culture and society on the other is what is meant when we talk about the mediatization of society (Grosswiler, 2016). It can be said that the media plays a part in forming civil society and the social involvements of various groups and communities because the socialization of personalities by the media results in the formation of the individual's values, norms, attitudes, and interests as well as his goals, objectives, and awareness (Peicheva et al., 2017). Researchers are not only interested in the usage trends and financial advantages of social networking sites; they are also concerned about other implications, such as how to establish, maintain, and mediate relationships through social networks, which are giving socialization processes in society entirely new meanings and dimensions. Social media is viewed as a development that will help to facilitate contact with both new and current relationships (Saleem et al., 2014).

In general, it's important to socialize. According to research, older individuals' quality of life is significantly improved by socialization activities like visiting family and friends, going to social events, and volunteering. It has been seen that older persons who participated in social activities had reduced levels of depression, improved cognitive functioning, and higher levels of life satisfaction (Wang et al., 2022). Digital socialization is crucial for social inclusion and is fundamental to the revival of civil society because it introduces people to a variety of networks and contacts that they can interact with and that have an impact on their accomplishments, outcomes, and mobility. Digital socialization stimulates certain kinds of motivations: cognitive motivation for learning new information and abilities; affective motivation for managing mood and achieving goals; habitual motivation for planning the day and social motivation related to social behavior (Genner & Süss, 2017).

Digital socialization experienced a boom during the COVID-19 pandemic and brought about many changes in the modes of communication becoming reason of social transformation. Worldwide, individuals and organizations have had to adapt to new ways of living and working. Amid the aftermath of the pandemic, marked by an upsurge in the adoption of information technology, particularly the internet, its significance will persist in the days to come (De’ et al., 2020). Being so crucial element of the era, communication via different online modes have become a norm. More than any other

age group, young people are deeply ingrained in this shared media world. Researchers have found that engaging in creative collaboration with peers online has several benefits for young people, such as fostering the growth of media social skills, permits you to produce distinctive artistic works (Garayev, 2020) and helps develop important psychological wellbeing indicators such as respect, recognition, and sense of belonging (Coleman & Rowe, 2004), and strengthens different aspects of identity e.g., ethnicity or cultural origin (Blanchard et al., 2008). Following are few examples how one can socialize digitally:

1. Joining online communities or groups that share similar interests or goals, such as book clubs, gaming clans, or hobby forums.
2. Communicating with friends, family, or strangers through social media platforms or messaging apps, such as Facebook, Instagram, WhatsApp, or Snapchat.
3. Learning new information or skills from online sources such as websites, blogs, podcasts, or videos, such as YouTube, Coursera, LMS or TED Talks.
4. Creating or sharing digital content such as photos, videos, memes, or stories, such as TikTok, Pinterest, or Medium.
5. Participating in online activities such as gaming, shopping, dating, or entertainment, such as Netflix, Amazon Prime, Tinder, or Spotify.

Over the past ten years, social networking sites (SNS) have become an essential and unavoidable platform for social interaction. Social networking has drawn a lot of attention from academics across the world, not of just those who study communication but also of those who study sociology, psychology, business, information technology, etc. (Saleem et al., 2014). In addition to addressing cultural and social needs, social networks, which are a subset of social media (Kumar, 2019) allow users to communicate with others, participate in social activities through computers or mobile devices, and keep track of their activity in these online communities (Tunc-Aksan & Akbay, 2019). In online networks, young people form strong and meaningful connections with one another, learn about other cultures, and take risks free from the constraints of offline communities. For other people, online relationships offer vital acceptance and support, giving many people a sense of belongingness who might not otherwise feel like they belong in their families, schools, and towns (Genner & Süss, 2017).

Digital socialization may help in improving one's overall wellbeing. One research explored how interviewees adapted to new technologies and how this affected their views on growing up and gaining social recognition (Smith et al., 2015). Another study found that digital games could enhance one's life quality and foster family bonds through cross-generational gaming, socializing/interacting with friends and relatives, and acquiring a new skill (Marston, 2016). The digital environment is the primary medium for young people to communicate with peers and for practicing social skills (Kandybovich et al., 2021).

Social media may be utilized as a powerful tool to increase a person's social capital because it helps people stay in touch with old friends and learn about the goings-on in their lives, as well as establishing new relationships (Kraut et al., 2002). People in Pakistan, particularly young people, are engaging in greater online socialization. Today, they stay in constant contact with their family and friends despite distance, obligations, and a busy schedule. Social networking sites (SNSs), particularly Facebook, Twitter, LinkedIn, and Instagram, have become increasingly popular and convenient for online connection. People enjoy posting updates, photos, videos, and other intriguing content to their profiles. Today's youth have no qualms about posting personal updates and photos online, which was not considered socially acceptable a generation ago. Face-to-face communication is falling behind in favor of virtual sociability as a result of technology. This reliance on virtual connections is pushing society toward social change (Saleem, 2016) .

In Pakistani context, research on the effects of social networking sites on face-to-face socialization, participation in online relationships and activities, and patterns of virtual socialization reveals a decline in face-to-face and traditional postal contact (Saleem, 2016). It has been also found that the usage of the internet has an impact on young people in urban Pakistan and physically distances them from social capital, but they are also growing closer online (Muzaffar, 2019; Siraj, 2018). Different dimensions that make up digital socialization identified by another Pakistani study are online collaborations with friends, family class fellow and teachers, banking, shopping, reading news and seeking medical advice (Saeed, 2020).

The youth are partially under the sway of these websites, unable to resist their allure and charisma as attractive tools for social contact. SNSs have a significant impact

on young people, and daily user growth shows this (Siraj, 2018). Researches posit that that less happy college students use modern media to boost their own comfort or happiness (Ellison et al., 2007). Social affairs in some manner evaluate contentment. When it comes to digital media, it is presumable that individuals who use social media frequently will feel happier and more connected (Valkenburg et al., 2006). Due to its magnetic appeal, it is important to investigate the causes of the users' and consumers' observed attitudes and behaviors. The possible risks and benefits of this phenomenon should be understood by parents, educators, and technologists.

The expansion of a person's digital system is determined by the integration of digital technology into our cognitive and social system. Hyperconnectivity on the internet, augmented personalities, mixed reality, and digital sociality are important aspects of digital socialization (Soldatova & Voiskounsky, 2021).

**Internet Usage in Pakistan**

The Internet can rightly be considered synonymous with lifestyle in today's digital era. The way we think, plan, expect, feel, and behave is largely influenced by what we see on the internet. Apart from personal use, the internet is now a business hub. There has been an upsurge of e-commerce stores and lead generation businesses that contribute now to the economy at large. Globally, internet usage stands at a staunch numeral of 5.18 bn. Placing this on a pie chart, it has been estimated that two-thirds of people are currently active internet users (Statista, 2023). In 2022, internet use was found most common among individuals ranging from 15-24 years. The most commonly used platforms so far have been Facebook, Twitter, and Instagram (Statista, 2023). Platforms like Facebook, LinkedIn and Twitter are used at a higher percentage by families having incomes above 75000$. So, it would be fair to say that social class also contributes to the nature and mode of an individual's online presence (Hare, 2009).

The increased popularity of internet usage as compared to previous eras must also be attributed to the chatbot era. A multitude of AI assistant software has made a number of tasks automatic, which were not possible without human intervention in the past. There is the diffusion of responsibility everywhere, getting instant results, by having another, much smarter bot doing the task for you seems like a blessing in disguise (Ghosh et al., 2018).

Pakistan's population is reported to be 22.7 million among which 49.3% are between the ages of 18-44 years. Pakistan has also fairly contributed its fair share in the global percentage of internet users. In 2023, the internet penetration was 36.7 %, and Pakistan had 87.35 active users of the internet (Kemp, 2023.). It has been reported that in May 2023 mobile broadband penetration stood at 52.30 % and 124 million people had subscribed to different packages using their mobile network data (Pakistan Telecommunication Authority, 2022). Research reveals that 42.2% of university students in Pakistan spend 1-3 hours on Facebook daily. The percentage of students decreased with an increase in usage hours according to which respondents fall to 2.5 % who spend 12-18 hours on the internet daily. The purpose of internet usage amongst Pakistani university students is mainly entertainment and homework (Qureshi, 2012).

According to a survey conducted by Gallup Pakistan on behalf of the Gilani Research Foundation, 76% of internet users in Pakistan access the web using a smartphone, tablet, or other mobile portable device.

Research suggests that males and females have different patterns of digital socialization, particularly when it comes to their use of social media. It has been found that women tend to use social media more frequently and for more personal reasons than men. Women are more likely to use social media to maintain relationships with friends and family, share information about their personal lives, and seek emotional support. In contrast, men tend to use social media for more instrumental purposes, such as networking and information gathering. They are also more likely to engage in online debates and discussions, particularly on topics related to politics or technology (Hampton et al., 2015). Additionally, research has found that gender differences in digital socialization can vary depending on the specific platform being used. For example, a study found that women are more likely to use social networking sites like Facebook, while men are more likely to use professional networking sites like LinkedIn (Duggan & Brenner, 2013).

E-learning is becoming more and more prevalent in the educational system. It offers the learner a robust virtual network where they can connect with other network members, whether they be teachers or other learners, to exchange ideas and information and form interactions (Cela et al., 2015). Online classrooms often use various forms of communication technology such as video conferencing, chat rooms, and discussion

forums to foster interaction and engagement among students (Palloff & Pratt, 2013). Research has also shown that online classrooms can promote a sense of community and social connectedness among students. For example, a study by Rovai and Downey (2010) found that students in online courses reported feeling more connected to their classmates and instructors compared to students in traditional face-to-face classes (Rovai & Downey, 2010).

## Empathy

Human conduct is mostly determined by how we interpret other people's actions, which reflects our adaptability in the social realm. Empathy is one of many mechanisms that social cognition depends upon for adaptation and survival. One of our species' greatest assets is our capacity to sense the emotions of others, which we often use to satisfy our innate urge to connect with others. A person's capacity for empathy is their capacity to experience and comprehend another's internal states. Empathy is usually understood to be the capacity to understand, perceive, and respond to the feelings of others, despite the fact that studies cannot agree on a single specific definition of it (Cuff et al., 2016). In many subfields of psychology, as well as in fields like neuroscience, ethology, and the health professions, empathy is a hot topic. There is little doubt that the idea of empathy offers a wide-ranging framework within which various research fields can explore the causes, mechanisms, and effects of humane social emotions, attitudes, and behaviors. The word empathy, in its broadest sense, is creative and unifying. However, as the topic of empathy develops, problems with conceptual consistency and clarity arise (Hall & Schwartz, 2019). A practical definition of empathy should take into account its multifaceted character while excluding behavioral expressions like sympathy (Reniers et al., 2011).

Empathic theory was first proposed by aestheticians in the middle of the 19th century. Using the German word Einfuhlung, they described how one comes to "know" a piece of art on an emotional level by experiencing an emotional resonance with it. At the end of the 19th century, psychologist Theodore Lipps expanded this expression to include feeling one's way into the experience of another by postulating that inner imitation of other people's actions played a major role in inspiring empathy. An empathic relationship is described as I and Thou as opposed to I and It by philosopher Martin Buber, who added depth to the concept of empathy (Buber, 1970).

Generally speaking, empathy refers to one's response to another's perceived experiences. It is also described as having the skill to recognize and relate to the feelings and emotions of others (Decety & Lamm, 2006). According to many researches, empathy is made up of three parts: an affective component, a cognitive component, and a motivational component. The affective component, also known as affective empathy, emotion contagion, or experience sharing, enables people to virtually experience the emotions of others. Theory of mind, cognitive empathy, or perspective-taking are all terms used to describe the cognitive component of empathy, which involves taking into account the feelings and experiences of others. Other names for the motivational aspect of empathy include compassion, prosocial concern, or empathetic care. All these terms allude to the desire to improve others' well-being or alleviate their suffering (Marsh, 2018). Recently, it has been suggested that there is a difference between affective and cognitive empathy and that both involve partially separate brain processes (Reniers et al., 2011). Theory of mind relates to cognitive empathy (ToM). ToM entails the technical capability to attribute others' mental states, such as thoughts, intentions and feelings, and in particular the comprehension that people can have different information and hence have different mental states (Kellij et al., 2022).

Empathy allows people to understand and share each other's feelings, needs, and desires. It also creates an emotional bond that promotes cooperative behavior. Empathy plays an important role in interpersonal and social interactions. This ability is dependent on the delicate interplay of brain networks and allows us to recognize others' perspectives, understand their emotions, and resonate with them on an emotional and cognitive level (Riess, 2017). Often, the emotional pain we experience from observing another person's suffering motivates us to act with compassion. Giving aid to others lessens our own pain and is necessary for the survival of our species. Helping each other is a trait that goes back to the earliest records of tribal behavior and still exists in the modern world, where millions of people and thousands of organizations work together to reduce suffering on a global scale (Harris, 2007).

According to Blair (2005), there are three basic systems that make up the term empathy i.e., cognitive empathy, emotional empathy, and motor empathy. The term of cognitive empathy is utilized whenever one person represents the internal mental state of another. Emotional empathy has two forms i.e., response to another individual’s emotional display, and the response to other emotional stimuli. Mirroring the observed

person's motor responses is referred to as motor empathy. (Blair, 2005). Although empathy is discussed in empathy theories, researchers see empathy as a special ability and do not link it to the mechanisms that underlie first-hand emotional experiences. Additionally, current theories of empathy concentrate on circumstances in which an observer experiences the same emotion as a target and ignore other vicarious emotional experiences, as though matching makes empathy a distinct phenomenon in its own right (Wondra & Ellsworth, 2015).

Studies investigate how attributes, group affiliations, sociodemographic characteristics, psychopathology, interpersonal outcomes, and physiological/neurological processes, among other things, are related to empathy. The idea of empathy and its widespread presence shows how important it is for social interaction and human wellbeing, according to researchers (Hall & Schwartz, 2019). We are motivated by empathy to nurture our young, to share and expand our knowledge, and to work together toward common goals (Waal & Preston, 2017). Empathy is linked to adaptive results including higher emotional well-being (Morelli et al., 2015), more social connectivity (Morelli et al., 2017), and better health (Cohen, 2004) given its fundamental role in social functioning. Altruism, cooperation, and helpful behavior are all enhanced by empathy (FeldmanHall et al., 2015). Higher levels of empathy have been linked to happier moods, less mental fatigue, as well as better mental and professional health (Jeffrey, 2016).

Empathy can be sparked by envisioning, remembering, watching, or learning about other people's positive outcomes. Individuals may experience empathy as an uninvolved observer as well as while interacting with others of while creating a positive experience for someone else. A wide range of social targets, such as individuals or groups, close or distant others, and actual or imaginary characters, can elicit empathy (Morelli et al., 2015). Human beings extend different empathetic responses to others depending upon circumstances and it demonstrates how empathy is naturally adaptable, so empathy depends on the situation (Zaki & Cikara, 2015) and sensitive to motivations and goals (Cameron, 2018). As a result, it changes depending on the circumstance and can be purposefully altered by experimental manipulations and psychological interventions (Weisz & Zaki, 2017). A significant amount of research on outcomes associated with empathy looks into empathy as a whole. However, rather than looking at empathy as a whole, researchers have looked at how various components of empathy,

rather than empathy as a whole, give diverse results in at least four separate areas. Helping, professional burnout, relationship fulfilment, and negotiating are some of these domains (Weisz & Cikara, 2021).

Information must be stored in memory and modified in order to engage in cognitive empathy. The cognitive and emotional state of another person can be represented by visual, aural, or situational signals. This representational process may occur explicitly, but it may also manifest as meta-representation at an unconscious, higher-order level. On the other hand, affective empathy entails a prompt identification of the other person's feelings based on facial expressions, body language, and voice prosody. This causes one to react emotionally to the other person's circumstances and correctly identifying their own emotional condition, possibly through self-reflection and understanding (Reniers et al., 2011). When a human being has less capacity to empathize with another person and to feel what they feel, it becomes harder to act appropriately in ta certain social situation (Melchers et al., 2015).

Recent studies have found a correlation between empathy traits and important lifetime relationship outcomes. Children whose parents score higher on global empathy exams are better at managing their emotions than children whose parents score lower. Additionally, their systemic inflammation levels are lower, suggesting that children benefit both physically and mentally from their parents' empathy (Manczak et al., 2016). Empathy in adulthood is associated with satisfaction in romantic relationships (Sened et al., 2017).

Being able to comprehend the feelings, intentions, and thoughts of another person is a skill (Baron-Cohen & Wheelwright, 2004). Empathy is a personal trait as well as an appreciable skill (Kliszcz et al., 2006). Therefore, it is reasonable to anticipate that an individual’s efforts to promote the others’ wellbeing will be aided by one’s conscious practice of empathy (Neumann et al., 2011). Researchers posit that empathy is engraved in the human brain and develops through social interactions (Decety & Jackson, 2004). It results in fitting in properly in a social setting (Singer et al., 2004). Social connectivity is a key factor in the development of empathy, particularly in adolescence. Empathy in adolescents is influenced by their friends and the larger social environment (Wölfer et al., 2012). Researchers have found that empathy enhances efficient communication and results in relationship conflict

resolution (Mar, 2011). Empathy is inversely correlated with violent and antisocial behavior (Loudin et al., 2003), and positively with prosocial behavior (Hodges et al., 2010), successful social interactions, and agreeableness (Melchers et al., 2015). It has also been found that empathy is essential for moral judgement and restrains aggressiveness (Decety & Lamm, 2006).

Empathy may be influenced by many factors. Gender is one of the most researched phenomena among that. One research conducted in clinical setting found that age, self-reflection, evaluation, and emotional displays were linked to the empathy of female social workers. When social workers had prior work experience, their empathy rating was greater (Stanley et al., 2020). There are studies that also suggest that having a female gender makes you more empathetic (Greeno et al., 2018). Prosocial work conduct and positive personal and environmental resources have been found to be protective factors for an individual's empathy (Ben-Porat & Itzhaky, 2015). Empathy is also positively correlated with one's self-worth, participation at work, and emotional control (Ben-Porat & Itzhaky, 2015).

In context of Pakistani researches, empathy has been studied from multiple perspectives. A study on medical students found that empathy levels were alarmingly low in Pakistani medical students. Students who planned to pursue careers in medicine and related fields scored higher on empathy tests than those who chose technical or surgical specializations (Tariq et al., 2018). A study showed that empathy played a moderating role in how environmental CSR and pro-environmental behaviors affected environmental degradation. It found that employees who had high empathy were more likely to act in an eco-friendly way and identify with their organization when they saw their organization engaging in social responsibilities related to the environment (Islam et al., 2019). Another study conducted revealed a rise in the undergraduate dentistry students' mean empathy ratings following COVID-19, showing a noticeably higher level of empathy at that time. It draws attention to the pandemic's effects, which include how chaos and death appear to have improved social peace (Ghaus et al., 2020).

Empathy is a prerequisite for pro-social behavior; in contrast, a lack of empathy results in offensive and aggressive inclinations. It involves four steps: emotional detection, emotional reaction, perspective taking, and remedial action (Marshall & Marshall, 2011). Empathy and aggression have an inverse relationship. Journaling, art,

role-playing, and simulation games are some of the innovative teaching techniques that are growing in popularity worldwide to help students learn more about and develop their empathy (Papouli, 2019). The findings of a study among social work students indicate that instructors' and field supervisors' sympathetic modelling enhances social work students' empathy (Eriksson & Englander, 2017).

It has been found that there are gender differences in empathy. Females are more empathic than males because females are better in understanding others' emotions, they tend to be more empathic than males. Research has shown that there are indeed gender differences in empathy. A meta-analysis of 63 studies found that women tend to score higher on measures of empathy than men do, although the difference is small to moderate in magnitude (Jolliffe & Farrington, 2006). More recent studies have found similar results. For example, a study of 1,787 participants in the United States found that women scored higher than men on measures of empathy, including both cognitive and affective empathy (Christov-Moore et al., 2014). Some studies have also proposed that the gender differences in empathy that are seen may come from males not wanting to admit their empathy rather than a difference in skill (Rueckert et al., 2011). It's worth noting that these gender differences may not be entirely due to biology. Socialization and cultural factors may also play a role in shaping empathy levels.

**Cyber victimization**

There is no denying that we live in a technologically connected world. In many areas of our lives, including banking, schooling, buying household products, and other activities, we rely on computers. The World Wide Web has made it possible for us to communicate with people all over the world, exchange information, work together on projects, and keep in contact. In the digitalized era, people communicate through different online platforms, make friends and share their thoughts. This has altered the communication mode from face to face to digitalization. In the era where people are not physically present, this mode has some potential harms. The possible negative effects of the contemporary phenomena of cyberbullying (CB) and cybervictimization (CV) have received attention on a global scale becoming one of the significant research topics (Hemphill et al., 2015). Unfortunately, the same technologies and infrastructures that allows people to connect, create, and innovate are also the ones that criminals exploit to harm innocent people (Ngo et al., 2020).

Cyber victimization is when someone is attacked by aggressive behavior through information and communication technology, such as the internet, game consoles, and mobile phones (Kowalski et al., 2019). Cybervictimization is characterized as bullying involving threats, insults, and other demeaning actions that occur in virtual contexts (Smith et al., 2019). A few examples of cybervictimization are stalking, assault, flaming, harassment and hostility (Wright & Wachs, 2020). According to literature, cyber victimization includes I) cyber relational aggression i.e., gossiping and spreading rumors about some, ii) cyber verbal aggression i.e., giving derogatory remarks, mocking, or insulting and iii) hacking (Wright & Wachs, 2020).

Values are the situations and behaviors that people in a certain society should be engaging in when they are being good, right, acceptable, and desirable. Values are derived from the three fundamental needs that people and societies must satisfy. These are enumerated as: the requirements of individuals, the fundamentals of well-organized social interaction, and the success and survival of groups (Yildiz Durak, 2019). Information technology developments and changes include these three elements, which have a significant impact on how values change. These advancements have led to virtual surroundings serving as people's second homes. Cyber human principles are crucial in this case since the internet can be considered as an interindividual network. Cyberbullying and online victimization have a close association (Leung et al., 2018). It has been claimed that some victims of cyberbullying exhibit cyberbullying activities, which makes it challenging to discern between bullies and victims (Ballard & Welch, 2017).

Online peer victimization and its negative effects have emerged as a serious public health issue. Numerous detrimental psychological effects, including depression, anxiety, and poorer life satisfaction, have been linked to cybervictimization (Cook et al., 2010). According to Federal Bureau of Investigation's Internet Crime Complaint Center (Federal Bureau of Investigation, 2019) the organization has received complaints about consumer online crime from approximately 2 million people. Undoubtedly, many more people were victimized, but they may not have disclosed it or may not have been aware of it. In the upcoming years, it is anticipated that there will be an increase in the number of cybercrime victims as criminals grow more skilled and develop new methods of committing crimes online (Council, 2018).

Young people are among the first generations to more readily access modern cell phones, and studies show that they are the most regular users of the internet and communication technologies (Smith, 2016). Students who use the internet more frequently and for longer periods of time are more likely to become online victims. According to a study done in Malaysia, kids who use the internet for two to five hours per day are more likely to be victimized than those who just use it for one hour per day (Balakrishnan, 2015). Researchers have also found evidence supporting the link between frequent internet use and cybervictimization (Englander, 2019; Sorrentino et al., 2019).

Previous research on gender differences in cyber victimization has produced mixed finding. No statistically significant gender disparities for cyber victimization were found, according to several researches (Hinduja & Patchin, 2008; Slonje & Smith, 2008). However, several other studies depict that men were less likely to become cyber victims than women (Kowalski & Limber, 2007), while a small number of studies suggested that women were less likely to become cyber victims than men (Erdur-Baker, 2010). Among teenage boys and females, victimization is linked to feminine qualities (Navarro et al., 2011). One reason of this is due to sociocultural influences, it is less acceptable for females than males to express their thoughts and emotions through aggressive conduct (İçellioğlu & Özden, 2014).

The majority of earlier research on this topic took place in western nations, and research into this phenomenon in Asian nations has received less attention (Musharraf & Anis-ul-Haque, 2018). The majority of research, according to a review written in 2015, revealed that between 20 and 40% of students reported to be victims of cyberbullying (Aboujaoude et al., 2015). Similar to this, 15% of teenagers in nations like France, England, and Spain reported being victims of cyberbullying (Fahy et al., 2016; Kubiszewski et al., 2013; MacHimbarrena & Garaigordobil, 2018). Youngsters from the Chinese population have reported rates of cyber victimization is 18.4% while the ratio remains 11.9% in youngsters of Taiwan and Hong Kong (Chang et al., 2019).

In the area of education, Pakistan is developing quickly. As long as academic needs rose to the sky, there was an increase in demand for cyber technology. Cybercrimes are used by those who are skilled at using this technology to appeal to their egos and ids. The cybersphere is likewise dominated and misused, just like our

country, where domineering male chauvinism predominates (Sidrah et al., 2016). A qualitative study on females' students in Pakistan found that 45% of female students who encountered threats or blackmail on college campuses opted not to report it. They keep quiet about the tragedy because they are afraid of being judged as immoral by their families (Magsi et al., 2017). Another study indicated that while anxiety is highly linked to cyberbullying, stress has no significant relationship with it among Pakistani people (Sidrah et al., 2016).

The lifestyle-routine activities paradigm (LRAT) has been used in a significant number of recent studies on cybercrime victimization. According to the lifestyle theory, which was first put forth by Hindelang et al. (1978), particular individual traits (such age, sex, or marital status) are connected to specific regular behavioral patterns or lifestyles. Some behaviors will frequently put people in more dangerous situations, increasing their risk of victimization. The routine activities theory states that victimization happens when three factors coincide in a certain place and time: an offender who wants to commit a crime, a target that is easy to attack, and the lack of a guardian who can prevent or stop the crime (Cohen & Felson, 1979). This integrated lifestyle-routine activities approach suggests that a person's way of living and daily activities can expose them to situations where they are more likely to meet offenders who want to commit a crime and there are no guardians who can protect them, making them a more attractive target (Ngo et al., 2020). And those people who, due to their lifestyles, put themselves in more dangerous situations will be more likely to become victims. A more thorough victimization theory is also produced by combining routine activities theory and lifestyle theory, as the former focuses more on describing criminal events than the latter does on forecasting a person's likelihood of becoming a victim (Pratt & Turanovic, 2016).

According to sociocultural theory, bullying results from power imbalances toward social groups (Rigby, 2004). One research conducted on psychological predictors of cyber bullying in early adulthood in Pakistan revealed that empathy and cyberbullying had a substantial inverse link, whereas emotional-behavioral issues and cyberbullying had a significant positive relationship. Emotional instability and a lack of empathy were important predictors of cyberbullying (Sidrah et al., 2016).

In recent years, there has been a sharp rise in cyberbullying in the educational setting. Literature has investigated gender differences in cyber victimization, however the results are conflicting (Kowalski et al., 2019). In a study conducted in Pakistan, males reported larger levels of traditional and cyberbullying perpetration, but females reported higher levels of victimization (Qureshi et al., 2020). Whereases in another study small impact sizes were associated with significant disparities in socioeconomic level, internet access, and languages. Regarding gender, age, and location (urban vs. rural), no discernible difference was discovered (Saleem et al., 2021). Another research indicated that there is no discernible gender difference in cybervictimization (Wang et al., 2019). In contrast to these findings, a study from one of Pakistan's main cosmopolitan cities found that male students had a higher prevalence of cyberbullying than female pupils (Rafi, 2019).

**Social Intelligence**

Social intelligence is the skill of understanding and managing social situations effectively. It involves being conscious of your own emotions and those of others, as well as being able to communicate well and form relationships with others. The analytical definition of intelligence used in management literature in Western nations is more cognitive and incorporates information processing. In contrast, the integrative eastern approach to intelligence joins in various aspects of performance and human experience, including intuition, cognition, and emotion. A group of cognitive skills known as intelligence provide for the likelihood of knowledge attainment, learning, and problem-solving (Entesarfoumany & Danshdost, 2014). There are many kinds of intelligence that have been proposed in the classification of intelligence. Some examples are: intelligence related to nature, spirituality, cognition, artificiality, physicality, culture, organization, emotion, business, morality, competition, and multiplicity (Ebrahimpoor et al., 2013).

The creation and maintenance of social interactions depend heavily upon social intelligence. Research on the subject has constantly offered a generalized explanation of the idea of social intelligence and its inherent potential advantages to the society, despite the fact that the description and understanding of social intelligence have changed through time (Belton, 2020). Thorndike (1920) first identified social intelligence to be a component of general intelligence and described it as the capacity

to comprehend people and behave appropriately in social situations. Thorndike was the one who first presented the idea of social intelligence. However, Thorndike and his colleague were unable to use psychometric testing to confirm the presence of such an area of intelligence, and the idea was abandoned. There has been a resurgence of interest in social intelligence, with the majority of authors asserting that there is evidence to back the existence of this area (Boer, 1994; Cantor & Kihlstrom, 1987).

Thorndike's description was further elaborated upon by Snow (2009), who stated that social intelligence is the body of information, cognitive skills, and affective sensibilities that enable people to navigate their social environment (Snow, 2009). It has been further explained as the ability to understand relationships with others, create emotional connections, work together, and using social abilities (Gould, 2008). It is the capacity to read people and comprehend their goals and motivations. It can also be defined as the ability to successfully navigate challenging social dynamics and circumstances (Ganaie & Mudasir, 2015). As people interact with their family, friends, and others, and learn from their social successes and failures, their social intelligence develops over time (Ebrahimpoor et al., 2013). In general, interpersonal and intrapersonal skills that go beyond particular domains of prior knowledge, such as professional or technical skills and intelligence, are referred to as social intelligence. Social intelligence is a broad term that encompasses a wide range of personal characteristics and skills (Aslanargun, 2007).

Social intelligence, being the capability to comprehend and navigate social situations, is a critical skill in life that impacts relationships, communication, and social hierarchies. Recent research has highlighted the importance of social intelligence in various aspects of life. For example, individuals with higher levels of social intelligence are more likely to have successful romantic relationship (Kogan et al., 2014) perform better in jobs that require interpersonal skills such as leadership and teamwork (O'Boyle et al., 2011), and be more effective in managing conflicts and building relationships with subordinates in leadership positions (Sharma & Tiwari, 2022). Moreover, social intelligence plays a vital role in the regulation of emotions and memory which are essential in coping with daily stressors and challenges (Richards & Gross, 2000). Individuals who have high levels of social intelligence are well equipped to recognize, comprehend, and regulate their own emotions and those of others, which contributes to their overall well-being and success.

Social skills, social information processing, social awareness, and social desirability are the four facets of social intelligence. Recognizing one's strengths and weaknesses depends heavily on one's social skills. All the people having these skills look for constant feedback and rectify their mistakes. Processing social information reveals a person's capacity for controlling unpleasant feelings like worry or uneasiness and handling stressful circumstances. Social awareness is the ability to recognize paradoxical circumstances and use this knowledge to build positive relationships with others by becoming aware of their feelings, preferences, and needs. Social skill, also known as social desirability, is the capacity to communicate with people in emotionally charged settings (Ebrahimpoor et al., 2013).

The process of socialization and an individual's professional development in modern society both heavily depend on social intelligence (Yermentaeyeva et al., 2014). With the help of research on social intelligence, society now has a better knowledge of what is social intelligence and how it affects social aspects of life. This is because we now know more about the settings and environments in which social intelligence exists (Goleman & Boyatzis, 2008; Zautra et al., 2015), why it matters in particular circumstances and how it might have a good impact on individuals. Social intelligence is necessary for the creation and upkeep of social bonds, which are crucial for one's mental and physical well-being (Belton, 2020).

Although the precise impact of distance learning on social intelligence in undergraduate students is unknown, a study found that students regularly exhibited social intelligence traits in online course settings, including the ability to communicate clearly, care for others, and develop empathy (Meyer & Jones, 2012). According to Goleman and colleagues' research, people with high social intelligence are able to manage and channel both their own and other people's sentiments (Cherniss et al., 1998). Among that, emotional and social intelligence are frequently used synonymously and interchangeably, which is incorrect. Despite having similarities to other intelligences, social intelligence is more focused than emotional intelligence and has its own distinct features (Ebrahimpoor et al., 2013).

Digital socialization can facilitate social intelligence by providing a platform for people to interact with others and learn about different cultures and perspectives (Soldatova & Voiskounsky, 2021). Digital socialization can also help people develop

their social skills by providing opportunities to practice communication and collaboration (Smith et al., 2015). It's interesting that, compared to surfing the web or playing video games, the social intelligence abilities were more readily apparent or, in the online academic courses (Meyer & Jones, n.d.).

A recent study found that social intelligence affects how peer attachment, core self-evaluation, and proactive socialization behaviors are related. People with high social intelligence may benefit more from trusting and communicating with their peers, as this can boost their core self-evaluation and make them more proactive in socializing. On the other hand, people with high social intelligence may suffer less from feeling alienated from their peers, as this can lower their core self-evaluation and make them less proactive in socializing (Nie et al., 2022). Research has also shown that social intelligence is positively associated with empathy. For example, a study of university students found that social intelligence was a substantial predictor of empathy, even after controlling for demographic factors and personality traits (Mayer et al., 2008). Furthermore, social intelligence has been found to play a significant role in the developing leadership skills. A study of managers discovered that social intelligence was positively associated with transformational leadership, which emphasizes building relationships, motivating others, and fostering teamwork (Goleman, 2013).

Research has shown that social intelligence tends to increase with age, at least until middle adulthood. For example, a study by Lodi-Smith and Roberts, found that social intelligence tended to increase with age among a sample of adults ranging from 18 to 82 years old (Lodi-Smith & Roberts, 2007).

Mixed results regarding the relationship between gender and social intelligence have come forward. Some studies suggest that females tend to score higher on measures of social intelligence compared to males, while other studies report no significant gender differences. For example, a meta-analysis conducted by Joseph and Newman (2010) found a small but significant gender difference favoring females on measures of emotional intelligence, which is closely related to social intelligence (Joseph & Newman, 2010). However, another study found no significant gender differences in scores on a measure of social intelligence (Caruso et al., 2002).

**Theoretical Background**

Albert Bandura postulated the Social Learning Theory (SLT) in the 1960s, which later became the Social Cognitive Theory (SCT) in 1986. This theory says that people learn from their social environment, and that their learning is influenced by three factors: the person, the environment, and the behavior (Bandura, 1986). The personal factors include things like age, thoughts, previous experience with the behavior, etc. The environmental factors include social norms, resources, safety, support from family/friends, etc. The behavioral factors include how strong the behavior is, what outcomes the behavior leads to, how well the person can do the behavior, etc. All these factors interact with each other in a dynamic and reciprocal way to affect social learning (Mimiaga et al., 2009).

A person can develop a personal identity and learn the social standards, attitudes, and behaviors that are suitable for his or her social position through the ongoing process of socialization. While socializing, either face to face or digital/cyber/online/media socialization, we take cues from environment, learn from people around us, and seek support from family and friends. Socialization is a process of communication that involves both individual development and personal influences, mainly the personal reception and interpretation of all social messages. (Pescaru, 2018).

The reciprocity of environmental factors to personal factors/cognitive factors may lead towards the perspective taking. As cognitive processes are a core component in SCT, including knowledge, expectations and attitudes, it leads individuals to be empathetic cognitively and let them put themselves in others' shoe. People gain knowledge via watching others, and since development is influenced by a variety of elements, including the cognition, behavior and environment, SCT can be used to explain empathy by emphasizing the role of observational learning in shaping empathetic behavior. For example, children may learn how to be empathetic by observing their parents or peers being empathetic (Walter, 2012).

Behavioral factors in STC such as vigor of behavior, skills, practices and efficacy also play a role in determining one's behavior. If the socialization is better, it may lead to the behaviors which ultimately affect the quality of life positively. According to SCT, an individual's quality of life is influenced by their cognitive processes, their environment, and their behavior. SCT suggests that individuals can

improve their quality of life by changing their cognitive processes and behavior patterns. Bandura, the founder of SCT, has suggested that an individual's perception of their own efficacy (self-efficacy) can significantly impact their quality of life. An individual with high self-efficacy is more likely to take actions to improve their life and overcome obstacles, leading to a higher quality of life. Conversely, an individual with low self-efficacy may feel overwhelmed by obstacles and struggle to make positive changes. In addition to that, SCT also suggests that environmental factors can impact an individual's quality of life. For example, social support, access to resources, and physical environment can all influence an individual's ability to make positive changes and improve their quality of life.

Social cognitive theory can help us understand quality of life by giving us a theoretical framework to assess how interventions with cancer patients can improve their quality-of-life (QOL) outcomes (Graves, 2003). A study looked at how social cognitive factors affect life satisfaction. The study used key variables of social cognitive theory to create an integrative model of well-being, which was meant to be more useful for helping people change and improve their well-being than the main personality view of well-being (Lent et al., 2005). Another study examined how life reflection is a social–cognitive process that starts in adolescence and lasts throughout the life span. It has different purposes at different stages of life, but it always helps people understand themselves better and have a self-critical perspective (Staudinger, 2001).

Social cognitive theory focuses on the learning that happens in a social setting. According to this view, people are active agents who can both affect and be affected by their environment. Social intelligence is the ability to understand oneself and others. The connection between social cognitive theory and social intelligence is that social cognitive theory highlights the learning that happens in a social setting while social intelligence is learned and grows from interacting with people and learning from success and failures in social situations.

Both bullies and victims shape social interactions by communicating and understanding social messages, as bullying others is a social process (Salmivalli, 2010). How people receive social messages depends on their past experiences and their social-cognitive thinking style (Kellij et al., 2022). This explains internalization of cyber victimization in terms of cognitions as explained by SCT. The Social Cognitive Theory

is useful for identifying and explaining the characteristics of bullies. It focuses on the behavioral elements, signals, and cognitive processes that follow immediately. In order to grasp the phenomenon of cyberbullying cognition, his explanation of modelling and observational learning is crucial (Slavin, 2018). Cyber victims experience low quality of life.

Social cognitive theory has been used to explain cyberbullying victimization and its negative impacts on mental health (Sheanoda & Bussey, 2021). According to SCT, cyber victimization is a behavior that is learned through social learning, modeling, and reinforcement (Bandura, 2001). SCT suggests that individuals who are victims of cyberbullying may develop negative beliefs about themselves and their ability to cope with social situations. SCT also suggests that environmental factors can impact an individual's vulnerability to cyber victimization. For example, a lack of social support or exposure to negative online behaviors can increase an individual's likelihood of experiencing cyberbullying (Patchin & Hinduja, 2012). Whether it is a cause or an effect of victimization, having problems with social intelligence or social cognition may be related to victimization (Kellij et al., 2022). So, it can be assumed that people who process information positively and are socially intelligent may experience an improved quality of life.

In today's digitalized world, every field is benefitting from ICT's, education is no exception. Many educational institutions are offering education online, or in hybrid mode. There are some research evidences that support the use of social cognitive theory in digital and online learning. Social cognitive theory can explain how learners use self-regulation strategies to manage their cognitive load in digital and online learning. Cognitive load is the amount of mental effort required to process information. Interactive learning media, immersion, disfluency, realism, and redundant elements can induce extraneous cognitive load, which interferes with learning. However, learners can use self-regulation strategies such as goal setting, self-monitoring, self-evaluation, and self-reinforcement to reduce extraneous load and increase germane load, which facilitates learning (Skulmowski & Xu, 2021). Social cognitive theory can also account for how learners develop self-efficacy beliefs and outcome expectations in digital and online learning. Digital and online learning environments can provide learners with various sources of self-efficacy and outcome expectations, such as mastery experiences,

vicarious experiences, verbal persuasion, and physiological feedback (Schneider et al., 2022).

In the context of digital socialization, quality of life, empathy, cyber victimization, and social intelligence, personal factors such as individual differences in empathy and social intelligence, as well as environmental factors such as online social interactions, may influence behavior and outcomes such as quality of life. SCT also emphasizes the role of cognitive processes, such as self-efficacy, in shaping behavior and outcomes. For example, an individual's self-efficacy in navigating online social situations may influence their levels of digital socialization, which in turn may impact their quality of life.

**Relationship of study variables**

People have grown more conscious of their quality of life in the past few years across the globe, which is a multifaceted notion that is interpreted and defined differently by different people and fields (Haraldstad et al., 2019). Quality of life has many aspects and is influenced by many factors, and socialization is one of the most significant one. Socialization is the core of human life as human beings are social animals. High quality of life is favorably correlated with close friendships and family ties and leisure activity engagement (Duvdevany & Arar, 2004). Some research supports the notion that engaging in social activities improves the quality of life. Additionally, volunteering is strongly linked to a higher quality of life (Netuveli et al., 2006). It has been found that one of the key factors influencing individuals' quality of life is social capital. Boosting people's social capital is similar to other strong factors that can lead to a remarkable improvement in one's quality of life (Ohaeri et al., 2009; Skevington et al., 2004). Most of the previous studies found the relationships of different variables related to quality of life. Being socially isolated can cause problems such as anxiety, insomnia, stress, social dysfunction, and severe depression, which can harm a person's health and quality of life. (Yanos et al., 2001).

Because man is a social animal, society has a significant impact on him and influences his physical, psychological, behavioral, and attitudinal variables (Datta et al., 2015). To socialize is the essence of life but since the world is changing, the ways of how we socialize are also changing. Gradually face to face online is being replaced by online communication. Digital socialization offers a variety of networks and

contacts via which people can interact, which has influenced their accomplishments, outcomes, and mobility (Milenkova et al., 2018). Human conduct is mostly determined by how we interpret other people's actions, which reflects our adaptability in the social realm. Empathy is one of the most crucial strategies that social cognition depends on to retain this capacity for survival and adaptation (Reniers et al., 2011). The ability to communicate with others is a social skill that may have an impact on a person's ability to adjust to life, as well as their academic and professional achievement. Empathy is one of the most important human traits in social interactions and is essential for building relationships with others (Hall & Schwartz, 2019).

Parents socialize their children and adolescents to foster the development of empathy, compassion, and prosocial conduct, according to theorists and academics. Through specific socializing techniques, they support young people's prosocial growth (Şengönül, 2018). Empathy and socialization are closely related, and research has consistently demonstrated that socialization practices and experiences are strongly linked to the development of empathy in individuals. Parental warmth, responsiveness, and support have been found to be positively associated with empathy development in children (Eisenberg et al., 2001). Similarly, positive relationships with peers can also promote the development of empathy in children (Wang et al., 2019). One of the key mechanisms through which socialization promotes the development of empathy is through the learning of social norms and values related to empathy. As individuals are socialized, they learn what behaviors are expected in social situations and how to respond to the emotions and needs of others. This learning process involves not only explicit instruction but also observation and modeling of others' behavior (Bandura, 1986). The relationship between empathy and socialization is bidirectional which means that empathy can also shape socialization experiences. The relationship between empathy and socialization is complex and multi-dimensional. Empathy has been found to be mediating of the relations between parent and peer attachment and prosocial and physically aggressive behaviors in Mexican American college students (Carlo et al., 2011)

Digital socialization may provide opportunities for individuals to engage in prosocial behaviors and empathic expression. For example, social media platforms can facilitate emotional expression and support among individuals who may otherwise be socially isolated or stigmatized (Oh et al., 2014). Empathy is essential for adolescents'

social development and is often referred to as the "social glue" in realm of peer interactions (Baron-Cohen & Wheelwright, 2004). Empathy is mostly learned throughout childhood through experiences with social interactions. The Perception Action Model (PAM) of empathy postulates that social interactions aid in forming and perfecting mental representations of emotions, which are necessary to identify and communicate other people's feelings (Preston & de Waal, 2002). As we interact with others, we form more mental images of how they feel and we can access them more easily. This makes us more naturally empathetic (Vossen & Valkenburg, 2016). Being able to grow more empathetic as we evolve and engage with others is a crucial feature of empathy (Lithoxoidou et al., 2017).

People who use social media can benefit from various things, such as being more aware of what is happening in the world, building relationships with others, and having networks of social support. However, there are also growing concerns about the potential negative effects of using social media (Hill et al., 2016). As social trends toward digitalization have grown, numerous internet hazards have surfaced that significantly impair people's ability to perform well. The phenomenon of cyber-victimization is one example. Bullying or other deliberate harm from a stronger person can alter how kids view their social surroundings and their usual social thinking habits. This can have long-term effects that last even into adulthood, as victims suffer from more mental health troubles, poorer academic performance, and deteriorating social relationships (Arseneault, 2018) which may strongly impact their quality of life negatively.

Cyber victimization may moderate the relationship between digital socialization and quality of life by increasing negative affect and reducing social support. Individuals who experience cyber victimization may feel more negative emotions, such as anxiety or depression, which can lead to a lower quality of life. Additionally, cyber victimization may reduce social support, as individuals may be less likely to seek social support after experiencing negative interactions online (Kowalski & Limber, 2013).

As a result of interactions with family, friends, and other people as well as from seeing successes and failures in social situations, social intelligence develops over time (Reniers et al., 2011). Pro-social behavior requires empathy, whereas lack of empathy leads to offensive and violent tendencies. There is some evidence that social

intelligence improves quality of life by enhancing one's ability to communicate, interact, and connect with others in various situations. Some studies suggest that social intelligence is related to higher levels of happiness, life satisfaction, and well-being (Morin, 2020). It also leads to better mental health, lower stress as well as less depression and anxiety (Riggio, 2014). Social intelligence also leads to greater social support, trust, and cooperation from others. It has been suggested that individuals with higher social intelligence may be better equipped to manage the potential negative effects of digital socialization on their quality of life (Nadkarni & Hofmann, 2012).

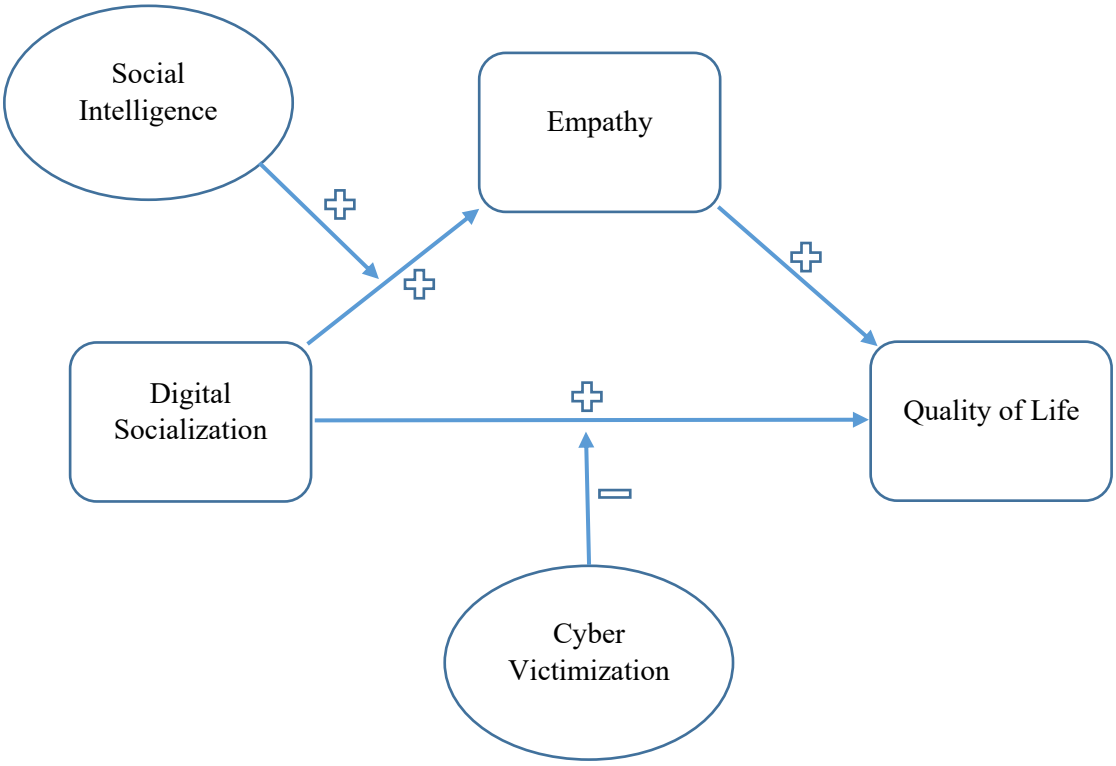
Research has shown that social intelligence can buffer the negative effects of technology use on empathy. For example, a study by Konrath et al. (2011) found that high social intelligence was associated with higher levels of empathy, even among individuals who reported high levels of digital media use. This suggests that social intelligence may help individuals to better navigate the complexities of digital socialization and maintain their ability to empathize with others (Konrath et al., 2011). However, it is important to note that the relationship between social intelligence, digital socialization, and empathy is complex and may be influenced by a range of individual and contextual factors. For example, a study by Sherman and colleagues (2020) found that the relationship between social media use and empathy was moderated by factors such as age, gender, and self-esteem (Sherman et al., 2020).

## Conceptual Framework

In this research digital socialization is predictor of quality of life among university students. Empathy acts a mediator between digital socialization and quality of life. Cyber victimization is considered as a moderator between digital socialization and quality of life which negatively moderates the relationship between the two. The relationship of digital socialization and empathy is positively moderated by social intelligence.

## Conceptual Model

*Figure 1: Conceptual Model*



**Rationale of the Study**

Today's mechanical and technological world has changed the ways of life throughout the world. The era of global digital boom has drastically changed in the ways we interact with each other. Even after the betterment in general circumstances after the pandemic, many continue to lead the same digital life as of the time of pandemic life. We are heavily dependent upon internet for various of our dealings, be it the banking, shopping, medical advice, romantic relationships, education, interaction with friends and family, lessening the boredom and combat with different stressors. Some researchers suggest that Americans, especially teens and young adults, now have less non-digital social interactions, which may affect their loneliness and well-being. (Twenge & Spitzberg, 2020).

The changes have ultimately affected the course of our lives as individuals specifically and as groups generally. Digital socialization is a less studied phenomenon as not much significant studies have explored it as an independent variable. With the drastic changes of digitalized ways, there are positive as well as negative effects on the quality of life. Moreover, the effects and ways of digital socialization may be different from face-to-face socialization. With this dynamism of life, where things change every second, its effects also change. So, people experience a varied line of effects on their lives with these geo-political changes.

With many benefits, digital world came with certain drawbacks which adversely affect the mental health and quality of life. Cyber victimization is one of the phenomena in digital socialization which can have a weaken effect on one's quality of life. Many researches posit that bullied and victimized people experience a low quality of life and experience more externalizing and internalizing symptoms.

Likewise, socially intelligent people may socialize better and experience better quality of life. Young people are the most regular users of the Internet and communication technologies (Smith, 2016). Young students go through a transition during their stay in college as they learn new skills, experience new things, expand their social networks, and acquire new knowledge. Being in college can be stressful since it forces students to change their routines, relationships, and environment (Ibrahim et al., 2013). This may have an influence on their quality of life.

Studies have shown that empathy and resilience affect how cyberbullying and cyber victimization are related. Empathy weakens the link between cyberbullying and cyber victimization and is a key factor for people to avoid cyberbullying (Batmaz et al., 2022). Empathy plays an important role in developing prosocial values, motives and behaviors in socialization processes (Şengönül, 2018)**.** Having empathy and social intelligence can help improve the quality of relationships, both in personal and professional settings. Social intelligence can also affect how employees see the social work environment, as well as their skills in behavior, social interaction and thinking. (Howe, 2017).

Online mode of education is becoming more popular and accessible in the recent years, especially due to the COVID-19 pandemic that forced many schools and universities to shift to online platforms. However, whether online mode of education is over powering the traditional mode of education is a matter of debate and research. There are many factors that can influence the effectiveness and preference of online vs. traditional education, such as the quality of instruction, the availability of resources, the cost of tuition, the flexibility of schedule, the interaction with peers and instructors, the motivation and self-regulation of learners, and the learning outcomes and satisfaction of students.

Hence, this study attempts to understand the relationship between digital socialization and quality of life and how cyber victimization moderates this relationship. This study also focuses upon finding how empathy may lead to improved quality of life. Moreover, it also aims to explore how social intelligence may moderate the relationship between digital socialization and empathy. This may lay a path for general population to introspect for changing for better with refence to improving their own qualities of life.

# METHOD

# Chapter 2

# METHOD

## Objectives

The objectives of this current study are as follows:

1. To measure the digital socialization, empathy, cyber victimization, quality of life and social intelligence of university students.
2. To assess the impact of digital socialization on quality of life of university students.
3. To determine the role of empathy in relationship between digital socialization and quality of life.
4. To find out the role of cyber victimization in relationship between digital socialization and quality of life.
5. To determine the role of social intelligence in relationship of digital socialization and empathy.
6. To explore the differences on study variables based on demographic variables (e.g., gender, education, age, family system, mode of education, employment status etc.).

## Hypotheses

1. Digital socialization, social intelligence and empathy are positively associated with quality of life.
2. More engagement in digital socialization leads to higher likelihood of experiencing cyber victimization.
3. Digital socialization positively predicts empathy and social intelligence.
4. Digital socialization and social intelligence positively predict quality of life.
5. Cyber victimization negatively predicts quality of life.
6. Cyber victimization moderates the relationship of digital socialization and quality of life.
7. Empathy mediates the relationship of digital socialization and quality of life.
8. Social Intelligence moderates the relationship between digital socialization and empathy.
9. As individuals grow older, their quality of life tends to improve.

10. Students of online mode of studies better socialize digitally as compared to those of traditional mode of studies.
11. Students with jobs better digitally socialize as compared to students with no jobs.
12. Students with no jobs tend to be more cyber victimized as compared to their counterparts.
13. Male students tend to be more cyber victimized as compared to female students.
14. Students of Natural Sciences less digitally socialize as compared to students of other academic domains.

## Operational Definition of the Variables

### Digital socialization

Digital socialization is the extent to which an individual actively engages in various online activities and interactions across social networking platforms and the internet. It includes participation in multiple social groups, using the internet to mitigate loneliness and establish relationships, seeking and disseminating information, enhancing professional and academic networks, entertaining others through creative ideas, connecting with friends and relatives, engaging in discussions, respecting others' beliefs and opinions, and exploring diverse cultures and languages through online interactions. It is measured through Cyber socialization Scale (Santhosh & Thiyagu, 2022). On the basis of scores, high scores indicate high digital socialization and low score indicates low digital socialization in university students.

### Empathy

Empathy involves comprehending, being attentive to, being perceptive about, and indirectly sharing the emotions, thoughts, and encounters of another person, whether from the past or present, even when these aren't directly and fully conveyed in an objective way. Cognitive empathy entails constructing a mental understanding of others' emotional states, while affective empathy involves being attuned to and vicariously feeling others' emotions. (Reniers et al., 2011). It is measured through The QCAE: a Questionnaire of Cognitive and Affective Empathy (Reniers et al., 2011) where higher scores indicate the higher levels of empathy while low scores show the low levels of empathy.

**Quality of life**

An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (World Health Organization [WHO], 2022). It is measured through WHO Quality of life-BREF (The WHOQOL Group, 1998). High scores indicate a better quality of life whereas low levels indicate depict a low quality of life.

**Social intelligence**

Social intelligence is operationally defined as the ability to accurately predict and understand other people's behavior, feelings, and intentions. It involves adeptly interpreting social cues, expressions, and body language to comprehend others' wishes and reactions. Additionally, it entails effectively navigating social situations, establishing rapport with new people, and exhibiting sensitivity towards others' emotions. It is measured through The Tromso Social Intelligence Scale (Silvera et al., 2001) English version. Higher scores reflect higher social intelligence in students while low scores indicate lower levels of social intelligence.

**Cyber victimization**

Cyber victimization is defined as the experience of being subjected to negative and hurtful actions through digital platforms, including cyberbullying, hurtful comments, pictures, videos, webpages, rumors, threats via cellphones or text messages, and impersonation. It is measured through Cyberbullying Victimization Scale (Hinduja & Patchin, 2015) where higher scores indicate higher levels of victimization.

**Instruments**

Following five instruments were employed in the present research study.

**Cyber Socialization Scale**

Cyber socialization scale (Santhosh & Thiyagu, 2022) is a 24-item scale on a four-point Likert type scale (1=Strongly disagree, 2= Slightly disagree, 3 Slightly agree, 4 strongly agree). Score ranges from 4-96, where higher scores higher digital socialization. It aims at measuring the cyber socialization level of adult learners. The Cronbach α of the scale is 0.89.

**Questionnaire of Cognitive and Affective Empathy (QCAE)**

The Questionnaire of Cognitive and Affective Empathy (QCAE) (Reniers et al., 2011) is a self-report assessment that gauges both cognitive and affective empathy. Derived from established empathy measures, it encompasses two empathy types: cognitive empathy, involving constructing emotional models of others, and affective empathy, entailing sensitivity to and shared feelings with others. The scale comprises of five components measuring both cognitive and affective empathy. "Perspective taking" (items 25, 26, 24, 19, 27, 20, 16, 22, 15, 21) involves intuitively understanding others' viewpoints. "Online simulation" (items 3, 6,5, 30, 4, 28, 1, 31, 18) entails imagining another's emotions, often used for future understanding. "Emotion contagion" (items 13, 14, 9, 8) mirrors others' feelings automatically. "Proximal responsivity" (items 7, 23, 10, 12) reflects emotional responses in close social contexts, while "Peripheral responsivity" (items 29, 2, 11, 17) involves detached social context emotional reactions. It consists of 31 items in total. Reliabilities of the five subscales of empathy are: Perspective taking CE (α =.85), Emotion Contagion AE (α =.72), Online simulation CE (α =.83), Peripheral Responsivity AE (α =.65) and Proximal Responsivity AE (α =.70).

**Cyber-Offending and Cyber Victimization Scale**

Cyber offending and victimization scale (Hinduja & Patchin, 2015) in an eighteen items scales with two subscale, i.e. Cyber offending scale and Cyber victimization scale. Response options are based upon 4-point Likert scale (Never=0, Once=1, A fee times = 2 and many times=3) and the possible score range is 0-40. 9 questions are related to offending and 9 questions are related to offending. Cronbach's alpha reliability is found to be .87.

**The Tromsø Social Intelligence Scale**

The Tromso Social Intelligence Scale (TSIS) (Silvera et al., 2001) is a self-report measure to assess three aspects of social intelligence: social information processing (SIP), social skills (SS), and social awareness (SA). The SIP subscale (items 1, 3, 6, 9, 14, 17, 19) evaluates the ability to comprehend verbal and non-verbal cues in human interactions, empathize, and interpret explicit and implicit messages. The SS subscale (items 4, 7, 10, 12, 15, 18, 20) measures the basic communication skills, such as active listening, acting confidently, and forming, maintaining, and ending a

relationship. The SA subscale (items 2, 5, 8, 11, 13, 16, 21) assesses the ability to behave appropriately according to the situation, place, and time. The scale uses a 5-point Likert-type scale with a range of 21 to 105. Higher scores indicate a higher level of social intelligence. The SIP subscale has a range of 8 to 40, the SS subscale has a range of 6 to 30, and the SA subscale has a range of 7 to 35. The reliabilities of the three subscales are: Social information Processing (α = .81), Social Skills SS (α = .86) and Social Awareness (α = .79).

### WHO Quality of Life (BREF)

The QOL Brief encompasses four domains: Physical health, psychological well-being, social interactions, and environmental factors. The WHOQOL-100 and WHOQOL-BREF serve various purposes, including medical practice, research, policy-making, and assessing treatment effectiveness. They gauge quality of life differences across cultures, within subgroups, and over time due to life changes. WHOQOL-BREF, a generic tool, measures subjective quality of life. Initiated by the World Health Organization in 1991, this instrument was finalized based on research from 15 countries. With 26 questions, compared to the 100-question version, WHOQOL-BREF covers four domains: Physical (items 3, 4, 10, 15, 16, 17, 18), Psychological (items 5, 6, 7, 11, 19, 26), Social relationships (20, 21, 22) and Environmental (items 8, 9, 12, 13, 14, 23, 24, 25). The remaining two items (1, 2) concern general health and overall quality of life. Each item is scored on a Likert scale from 1 (very dissatisfied/very poor) to 5 (very satisfied). The reliabilities of four dimensions are: Physical health (α =.80), Psychological (α = .76), Social Relationships (α=.66), Environment (α = .80).

### Research Design

The current study employed a correlational and cross-sectional research design. It was conducted two different phases, details of which are given below:

### Phase 1

### Pre-testing

**Objectives.** Following were the objectives of the pre-testing

1. To check the understanding of the scales by participants
2. To check the study protocol and to point out any issues that may arise during administration of the questionnaire.

In the pre-testing phase, ten students from a local university were selected by convenient sampling technique. After ensuring that the questionnaires are easy to understand to the sample, nextphase of Pilot study was conducted.

## Pilot study

**Objectives**: Following were the objectives of the pilot study:

1. To determine preliminary statistics, reliability estimates and to determine psychometric properties of the scale being used in this study.
2. To test the correlation estimates of hypothesized relationships between study variables.

## Sample

The data was collected from 100 university students, with the age ranging from 19-50 years ($M$ = 24.78, $SD$ = 4.63). The sample consisted of university students from both conventional and online universities of Pakistan. Convenient sampling technique was used for the data collection. The demographic details of the sample are shown in Table 1.

Table 1 indicates the distribution of the sample on the basis of time spent online daily, most used devices, number of social media profiles, digital socialization duration, age, gender, number of siblings, birth order, family system, program enrolled in, discipline, study mode, employment status, and geographical area. The sample for pilot study consists of 40 male and 60 female students. Most of the participants are currently from Bachelors programs and are from Social Sciences. Majority of the sample belong to nuclear family system. Students belonged to both online and conventional mode of studies and most of them are unemployed.

**Table 1**

*Demographic Variables of the Pilot Study (N = 100)*

| Demographics | Categories | *F* | % | *M* | *SD* |
|---|---|---|---|---|---|
| Time spent online | | | | 5.41 | 3.06 |
| Number of social media profiles | | | | 2.27 | 1.70 |
| Duration of socialization | | | | 6.91 | 2.92 |
| Age (in years) | | | | 24.78 | 4.63 |
| Gender | | | | | |
| | Male | 40 | 40 | - | - |
| | Female | 60 | 60 | - | - |
| Family system | | | | | |
| | Joint | 33 | 33 | - | - |
| | Nuclear | 67 | 67 | - | - |
| Program enrolled in | | | | | |
| | Bachelor | 66 | 66 | - | - |
| | MPhil | 19 | 19 | - | - |
| | PhD | 1 | 1 | - | - |
| | Others | 14 | 14 | - | - |
| Discipline | | | | | |
| | Natural Sciences | 36 | 36 | - | - |
| | Social Sciences | 42 | 42 | - | - |
| | Art & humanities | 7 | 7 | - | - |
| | Others | 15 | 15 | - | - |
| Study Mode | | | | | |
| | Conventional | 52 | 52 | - | - |
| | Online | 48 | 48 | - | - |
| Employment status | | | | | |
| | Employed | 37 | 37.4 | - | - |
| | Unemployed | 62 | 62.6 | - | - |

Table 1 contains details of demographic variables. Among 100 people 60 students were females and 40 were males. Most of them were enrolled in beholders

program, from social sciences department and a larger number of students were without jobs.

**Instruments.**

The instruments that were used in the study are given below.

1. Cyber socialization scale (Santosh & Thiyagu, 2022)
2. Questionnaire of Cognitive and Affective Empathy (QCAE) (Reniers et al., 2011)
3. Cyber-offending and cyber victimization scale (Hinduja & Patchin, 2015)
4. The Tromsø Social Intelligence Scale (Silvera et al., 2001)
5. WHO Quality of Life (BREF) (The WHOQOL Group, 1998)
6. Demographic information sheet

**Procedure**

The research plan was first approved by the ethics committee of National Institute of Psychology, Quaid-i-Azam University, Islamabad. Permission, to adopt and use the instruments, was taken from the authors of the respective questionnaires after which data collection was initiated. Permission to collect data from the sample was obtained from the pertinent personals. Participants were informed that participation was completely voluntary, and that they could withdraw from the study at any time, even after providing the consent, without any consequences. They were ensured anonymity and confidentiality of data. Instructions were given on how to attempt questionnaires prior their filling. As in online mode of studies, students are from dispersed geographical regions, they were contacted via different digital modes such as emails or the other mediums used for studying. After the participants had responded, they were thanked for the participation and cooperation.

**Results**

The data was entered into SPSS-24, and the description statistics, alpha coefficients of targeted sample was calculated along with Item-total correlation.

**Item-Total Correlation of Study Measures**

**Table 2**

*Item-Total Correlation of Cyber Socialization Scale (N = 100)*

| Item No. | *r* | Item No. | *r* |
|---|---|---|---|
| 1 | .44** | 13 | .54** |
| 2 | .42** | 14 | .47** |
| 3 | .47** | 15 | .50** |
| 4 | .51** | 16 | .61** |
| 5 | .44** | 17 | .53** |
| 6 | .45** | 18 | .54** |
| 7 | .45** | 19 | .61** |
| 8 | .54** | 20 | .62** |
| 9 | .49** | 21 | .61** |
| 10 | .53** | 22 | .40** |
| 11 | .63** | 23 | .67** |
| 12 | .41** | 24 | .57** |

*Note.* $**p < .01$. $*p < .05$

Table 2 illustrates the item-total correlation of Cyber Socialization Scale. It has total 24 items. Results indicate that every item of the scale shows significantly positive correlation with the overall scale (above 0.4) which fairly indicates the interrelatedness of the scale.

**Table 3**

*Item-Total Correlation of Questionnaire of Cognitive and Affective Empathy (N = 100)*

| Perspective taking | | Emotion Contagion | | Online Simulation | | Peripheral Responsivity | | Proximal Responsivity | |
|---|---|---|---|---|---|---|---|---|---|
| Item No. | *r* | Item No. | *r* | Item No. | *r* | Item No. | *r* | Item No | *r* |
| 25 | .59** | 13 | .66** | 3 | .51** | 29 | .66** | 7 | .64** |
| 26 | .32** | 14 | .57** | 6 | .51** | 2 | .65** | 23 | .51** |
| 24 | .56** | 9 | .51** | 5 | .36** | 11 | .49** | 10 | .59** |
| 19 | .67** | 8 | .46** | 30 | .66** | 17 | .41** | 12 | .57** |
| 27 | .51** | | | 4 | .50** | | | | |
| 20 | .63** | | | 28 | .36** | | | | |
| 16 | .50** | | | 1 | .49** | | | | |
| 22 | .59** | | | 31 | .58** | | | | |
| 15 | .43** | | | 18 | .56** | | | | |
| 21 | .55** | | | | | | | | |

*Note.* $^{**}p < .01$. $^{*}p < .05$.

Table 3 demonstrates the item-total correlation of Questionnaire of Cognitive and Affective Empathy. It has five subscales in total i.e., Perspective taking, Emotion Contagion, Online Simulation, Peripheral Responsivity and Proximal. Item of each sub-scales has been presented in each column of the above-mentioned table. Results indicates that all item of the scale, and sub-scales, shows significantly positive correlation with the overall scale (above 0.4) which shows the interrelatedness of the scale.

**Table 4**

*Item-Total Correlation of Tromso Social intelligence Scale (N = 100)*

| Social Information Processing | | Social Skills | | Social Awareness | |
|---|---|---|---|---|---|
| Item No. | *r* | Item No. | *r* | Item No. | *r* |
| 1 | .52** | 4 | .53** | 2 | .41** |
| 3 | .47** | 7 | .42** | 5 | .42** |
| 6 | .32* | 10 | .32** | 8 | .43** |
| 9 | .43** | 12 | .41** | 11 | .57** |
| 14 | .33** | 15 | .53** | 13 | .53** |
| 17 | .47** | 18 | .51** | 16 | .43** |
| 19 | .41** | 20 | .50** | 21 | .43** |

*Note.* $^{**}p < .01$. $^{*}p < .05$.

Table 4 illustrates the item-total correlation of Tromso Social intelligence Scale. The scale has three subscales i.e., social information processing, social skills and social awareness and 21 items in total. Item of each subscale has been presented in each column of the above-mentioned table. All of the items scored higher than 0.4 correlation while item 6, 10 and 14 scored 0.3 which also comes under acceptable range of correlation. Results indicates that every item of the scale shows significantly positive correlation with the overall scale which indicates the interrelatedness of the scale.

**Table 5**

*Item-Total Correlation of Cyber victimization Scale (N = 100)*

| Item No. | *r* |
|---|---|
| 1 | .81** |
| 2 | .73** |
| 3 | .85* |
| 4 | .86** |
| 5 | .78** |
| 6 | .75** |
| 7 | .84** |
| 8 | .81** |
| 9 | .84** |

*Note.* $^{**}p < .01$. $^{*}p < .05$.

Table 5 demonstrates the item-total correlation of Cyber Victimization Scale. Total items of this sub scales are 9 and results indicate that every item of the scale shows significantly positive correlation with the overall scale i.e., above 0.7 which indicates the interrelatedness of the scale.

**Table 6**

*Item-Total Correlation of WHO Quality of Life- BREF Scale (N = 100)*

| Physical Health | | Psychological Health | | Social Relationships | | Environmental Health | | Overall | |
|---|---|---|---|---|---|---|---|---|---|
| Item No. | *r* | Item No. | *r* | Item No. | *r* | Item No. | *r* | Item No | *r* |
| 3 | .68** | 5 | .71** | 20 | .69** | 8 | .66** | 1 | .48** |
| 4 | .58* | 6 | .68** | 21 | .61** | 9 | .71** | 2 | .68** |
| 10 | .69** | 7 | .71** | 22 | .53** | 12 | .63** | | |
| 15 | .65** | 11 | .69** | | | 13 | .51** | | |
| 16 | .56** | 19 | .48** | | | 14 | .46** | | |
| 17 | .65** | 26 | .52** | | | 23 | .74** | | |
| 18 | .55** | | | | | 24 | .54** | | |
| | | | | | | 25 | .64** | | |

*Note.* $^{**}p < .01$. $^{*}p < .05$.

Table 6 demonstrates the item-total correlation of Quality of Life-BREF scale. It has four domains i.e., physical health, psychological health, social relationships environmental health. There is a fifth domain of overall health Total items of Quality of Life-BREF scale are 26.

Results indicates that every item of the scale (or of sub-scales) shows significantly positive correlation with the overall scale (above 0.5) which indicate the interrelatedness of the scale.

**Table 7**

*Cronbach's Alpha and Descriptive Statistics of the Study Variables (N = 100)*

| Variables | *k* | *α* | *M* | *SD* | Range | | *Skew* | *Kurt* |
|---|---|---|---|---|---|---|---|---|
| | | | | | Actual | Potential | | |
| Digital Socialization | 24 | .88 | 67.48 | 11.57 | 36-96 | 24-96 | .11 | .12 |
| Empathy | 31 | .84 | 85.87 | 12.04 | 53-112 | 31-124 | -.01 | .26 |
| Perspective Taking | 10 | .83 | 11.33 | 2.60 | 4-16 | 10-40 | -.16 | .09 |
| Emotion Contagion | 4 | .66 | 24.88 | 4.14 | 14-34 | 4-16 | .12 | -.00 |
| Online simulation | 9 | .61 | 12.06 | 2.45 | 6-16 | 9-36 | -.19 | -.47 |
| Proximal Responsivity | 4 | .74 | 9.72 | 1.93 | 4-16 | 4-16 | .28 | .78 |
| Peripheral Responsivity | 4 | .60 | 24.89 | 4.76 | 11-36 | 4-16 | -.02 | .27 |
| Social Intelligence | 21 | .75 | 86.41 | 13.91 | 51-126 | 21-147 | .21 | .62 |
| Social Information Processing | 7 | .65 | 31.22 | 5.26 | 18-43 | 7-49 | -.45 | -.04 |
| Social Skills | 7 | .62 | 28.90 | 5.98 | 13-46 | 7-49 | .24 | .32 |
| Social Awareness | 7 | .61 | 26.27 | 6.47 | 10-42 | 7-49 | .21 | .00 |
| Cyber Victimization | 9 | .93 | 21.22 | 6.71 | 00-27 | 00-27 | -1.0 | .34 |
| Quality Of life | 26 | .91 | 90.80 | 16.01 | 38-124 | 26-130 | -.33 | .22 |
| Physical Health | 7 | .66 | 13.85 | 2.58 | 5-18 | 7-20 | -.27 | .19 |
| Psychological Health | 6 | .75 | 13.64 | 2.77 | 6-20 | 6-30 | -.21 | -.18 |
| Social Relationships | 3 | .64 | 13.76 | 3.51 | 4-15 | 3-15 | -.44 | -.28 |
| Environmental Health | 8 | .84 | 14.27 | 3.02 | 4-20 | 8-40 | -.36 | .56 |
| Overall | 2 | - | 4.52 | 3.59 | 2-10 | 2-10 | -.56 | .15 |

*Note.* *k* = no. of items; *α* = Cronbach's alpha; *M* = Mean; *SD* = Standard deviation; *Skew* = Skewness; *Kurt* = Kurtosis

Table 7 shows detailed statistics including mean, standard deviation, skewness and kurtosis. It also shows the reliability coefficients, of all scales and subscales respectively. All the scales and sub-scales are showing acceptable to high internal reliabilities. As per the criteria of Field (2009) the acceptable range of skewness and kurtosis is between -2.96 to +2.96. Result is showing that in pilot study all the scales and the sub-scales are showing the values of skewness and kurtosis in acceptable range. Values of SD ranges from low to high which reveals that responses are scattered from mean of each variable.

**Correlation Analysis**

To study the relationship among study variables including Digital socialization, Empathy, quality of life, cyber victimization and social intelligence Pearson Product Moment Correlation was computed.

**Table 8**

*Correlation among Study Variables (N = 100)*

| | VARS | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DS | 67.48 | 11.57 | - | | | | | | | | | | | | | | | | | |
| 2 | EM | 85.87 | 12.04 | .55** | - | | | | | | | | | | | | | | | | |
| 3 | PT | 11.33 | 2.60 | .09 | .14 | - | | | | | | | | | | | | | | | |
| 4 | EC | 24.88 | 4.14 | .44** | .76** | .09 | - | | | | | | | | | | | | | | |
| 5 | OS | 12.06 | 2.45 | .48** | .81** | .16 | .45** | - | | | | | | | | | | | | | |
| 6 | Pro R | 9.72 | 1.93 | .36** | .79** | .13 | .58** | .56** | - | | | | | | | | | | | | |
| 7 | Per R | 86.41 | 13.91 | .26** | -.08 | .07 | .07 | .23* | .12 | - | | | | | | | | | | | |
| 8 | SI | 31.22 | 5.26 | .07 | .19 | .00 | .11 | .13 | .18 | .08 | - | | | | | | | | | | |
| 9 | SP | 28.90 | 5.98 | .08 | .11 | .02 | .07 | .15 | .12 | .15 | .67** | - | | | | | | | | | |
| 10 | SS | 26.27 | 6.47 | .03 | .13 | .03 | .12 | .04 | .12 | .07 | .81** | .30** | - | | | | | | | | |
| 11 | SA | 21.22 | 6.71 | .08 | .20* | .04 | .07 | .12 | .17 | .02 | .84** | .35** | .58** | - | | | | | | | |
| 12 | CV | 90.80 | 16.01 | .20** | -.23* | -.03 | -.22* | -.16 | -.36** | -.06 | -.14 | -.15 | -.17 | -.01 | - | | | | | | |
| 13 | QOL | 13.85 | 2.58 | .15 | .00 | .20* | .06 | .08 | .10 | .20* | .07 | .15 | .02 | .05 | -.28** | - | | | | | |
| 14 | Ph-H | 13.64 | 2.77 | .17 | .07 | .26** | .03 | .04 | .17 | .14 | .03 | .08 | .09 | .05 | -.39** | .81** | - | | | | |
| 15 | Psy-H | 13.76 | 3.51 | .04 | .08 | .19 | .16 | .03 | .06 | .28** | .05 | .08 | .07 | .01 | -.30** | .88** | .67** | - | | | |
| 16 | SR | 14.27 | 3.02 | .18 | .02 | .12 | .09 | .16 | .04 | .24* | .17 | .18 | .03 | .19 | -.09 | .73** | .41** | .64** | - | | |
| 17 | EN-H | 14.52 | 3.59 | .16 | .06 | .13 | .09 | .11 | .10 | .08 | .10 | .16 | .02 | .08 | -.18 | .89** | .60** | .69** | .62** | - | |
| 18 | Overall | 67.48 | 11.57 | .06 | .18 | .06 | .19 | .10 | .08 | .13 | .09 | .16 | .03 | -.03 | -.04 | .70** | .52** | .62** | .45** | .54** | - |

Note: DS = Digital Socialization, EM = Empathy, PT = Perspective taking EC= Emotion Contagion OS = Online simulation, PreR = Peripheral Responsivity, ProR = Proximal Responsivity, SI = Social Intelligence, SP = Social Information, SS = Social Skills, SA = Social Awareness, CV = Cyber Victimization, Phy-H = Physical health, Psy-H, Psychological health, SR = Social Relationships, En-H, Environmental Health, Overall

*Note.* $^{**}p < .01$. $^{*}p < .05$

Table 8 shows coefficients of correlation among study variables. Results show that digital socialization is significantly positively associated with cybervictimization and empathy (and all its subscales except perspective taking). Moreover, cybervictimization is significantly negatively associated with quality of life (and two of its subscales i.e., physical and psychological health) and empathy (and two of its subscales i.e., emotional contagion and proximal responsivity). Despite no significance, the relationship among all study variables are in the desired direction. Nonsignificant relationships may be due to small sample size as correlation gets effected by inflation of range (Feng et al., 2022).

## Discussion

The outcomes of the pilot study provide a solid foundation for the subsequent main study. Notably, all scales and their respective subscales exhibited satisfactory values for the alpha coefficient, indicating a high degree of internal consistency and reliability. This suggests that the measurement tools employed in the study effectively captured the constructs of interest. The observed correlations between research variables further substantiate the hypothesized connections, supporting the initial framework of the research. It is worth noting that some correlations were relatively lower, which can be attributed to the pilot study's limited sample size. Despite this, the scale items were well comprehended by the participants, underscoring the clarity and appropriateness of the survey instruments. Importantly, there were no issues reported concerning the administration of the scales or the overall study design, affirming the robustness of the research methodology. Given the positive outcomes of the pilot study, the scales were deemed suitable for application with the intended sample, leading to the decision to advance to the main study with confidence in the reliability and validity of the measurement tools.

## Phase 2: Main Study

### Objective

The objective of the main study aimed testing of hypotheses as well as to achieve further objectives of the study i.e., the study aims to comprehensively measure various aspects of university students' experiences, including digital socialization, empathy, cyber victimization, quality of life, and social intelligence. It seeks to evaluate how digital socialization influences the overall quality of life among university

students. Additionally, the research aims to understand the mediating role of empathy in the relationship between digital socialization and quality of life, as well as the moderating influence of cyber victimization on this relationship. Furthermore, the study explores the impact of social intelligence on the relationship between digital socialization and empathy. Lastly, the research aims to uncover potential differences in these variables based on demographic factors such as gender, education, age, family system, mode of education, and employment status.

**Sample**

Sample of the study consisted of 541 university students (241 males, 300 females) with age ranging from 18 years to 50 years of age (M = 24.58, SD = 4.88). The sample included students from both universities, i.e., online mode of studies and conventional mode of studies. Convenience sampling was used to approach university students from universities of different provinces of Pakistan. Table 9 shows the frequencies, percentages, mean and standard deviation along the demographic variables of the main study.

The sample of students from online mode of studies consisted of 227 students (78 males, 148 females) with age ranging from 18 years to 50 years of age (M = 24.591, SD = 5.09). Table 10 shows the frequencies, percentages, mean and standard deviation along the demographic variables of the said sample.

Moreover, the sample of students from traditional mode of studies consisted of 314 students (161 males, 153 females) with age ranging from 19 years to 47 years of age (M = 24.35, SD = 4.71). Table 11 shows the frequencies, percentages, mean and standard deviation along the demographic variables of the said sample.

**Table 9**

*Demographic Details of Sample in the Main Study (N=541)*

| Demographics | Categories | *n* | % | *Range* | *Mode* | *M* | *SD* |
|---|---|---|---|---|---|---|---|
| Time spent online | | | | 1-24 | 4 | 5.48 | 3.25 |
| Social media profiles | | | | 0-10 | 3 | 3.03 | 1.63 |
| Duration of socialization | | | | 2-16 | 5 | 7.34 | 3.02 |
| Age (in years) | | | | 18-50 | 22 | 24.58 | 4.88 |
| No of siblings | | | | 1-11 | 4 | 4.18 | 1.72 |
| Birth order | | | | 1-9 | 1 | - | - |
| Gender | | | | | | | |
| | Male | 239 | 44.2 | - | - | - | - |
| | Female | 300 | 55.5 | - | - | - | - |
| Family system | | | | | | | |
| | Joint | 184 | 34 | - | - | - | - |
| | Nuclear | 357 | 66 | - | - | - | - |
| Program enrolled in | | | | | | | |
| | Bachelor | 390 | 72 | - | - | - | - |
| | MPhil | 79 | 14.6 | - | - | - | - |
| | PhD | 13 | 2.4 | - | - | - | - |
| | Others | 59 | 11 | - | - | - | - |
| Discipline | | | | | | | |
| | Natural Sciences | 184 | 34 | - | - | - | - |
| | Social Sciences | 223 | 41 | - | - | - | - |
| | Art & humanities | 46 | 8.5 | - | - | - | - |
| | Others | 88 | 16.3 | - | - | - | - |
| Study Mode | | | | | | | |
| | Conventional | 314 | 58 | - | - | - | - |
| | Online | 227 | 42 | - | - | - | - |
| Employment status | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Employed | 204 | 38 | - | - | - | - |
| Unemployed | 336 | 62 | - | - | - | - |

Table 9 indicates the distribution of the sample on the basis of time spent online daily, number of social media profiles, that duration on digital socialization, number of siblings, birth order, age, gender, family system, currently enrolled study program, studying in, discipline of study, study mode, and employment status. The sample of main study consists of 239 males and 300 female students. Most of the respondents belonged to nuclear family system. Maximum number of students was those who were enrolled in bachelors' program and from social sciences domain. Larger number of students from conventional mode of studies were part of sample and most of them reported to be unemployed. Most of the people use WhatsApp and face book (see appendices A), while the most used device is smartphone (see appendices B), and most of the people in the sample belonged to Islamabad and Rawalpindi (see appendices C).

**Table 10**

*Demographic Variables of the Students in Online Mode of Study (N = 227)*

| Demographics | Categories | *n* | % | *Range* | *Mode* | *M* | *SD* |
|---|---|---|---|---|---|---|---|
| Time spent online | | | | 1-24 | 4 | 5.45 | 5.52 |
| Social media profiles | | | | 0-10 | 3 | 3.15 | 0.73 |
| Duration of socialization | | | | 2-16 | 6 | 7.14 | 2.84 |
| Age (in years) | | | | 18-50 | 22 | 24.91 | 5.09 |
| No of siblings | | | | 1-9 | 4 | 4.38 | 1.67 |
| Birth order | | | | 1-9 | 1 | - | - |
| Gender | | | | | | | |
| | Male | 78 | 34 | - | - | - | - |
| | Female | 148 | 66 | - | - | - | - |
| Family system | | | | | | | |
| | Joint | 79 | 35 | - | - | - | - |
| | Nuclear | 148 | 65 | - | - | - | - |
| Program enrolled in | | | | | | | |
| | Bachelor | 165 | 73 | - | - | - | - |
| | MPhil | 17 | 8 | - | - | - | - |
| | PhD | 2 | 1 | - | - | - | - |
| | Others | 43 | 18 | - | - | - | - |
| Discipline | | | | | | | |
| | Natural Sciences | 68 | 30 | - | - | - | - |
| | Social Sciences | 92 | 40.5 | - | - | - | - |
| | Art & humanities | 25 | 11 | - | - | - | - |
| | Others | 42 | 18.5 | - | - | - | - |
| Employment status | | | | | | | |
| | Employed | 73 | 33 | - | - | - | - |
| | Unemployed | 154 | 67 | - | - | - | - |

Table 10 indicates the distribution of the sample on the basis of time spent online daily, number of social media profiles, that duration on digital socialization,

number of siblings, birth order, age, gender, family system, currently enrolled study program, studying in, discipline of study and employment status. The sample of online mode of study consists of 78 males and 148 female students. Most of the respondents belonged to nuclear family system. Maximum number of students was those who were enrolled in bachelors' program and from social sciences domain. Larger number reported to be without jobs.

**Table 11**

*Demographic Variables of the Students in Conventional Mode of Study (N = 314)*

| Demographics | Categories | *n* | % | *Range* | *Mode* | *M* | *SD* |
|---|---|---|---|---|---|---|---|
| Time spent online | | | | 1-18 | 4 | 5.45 | 3.20 |
| Social media profiles | | | | 1-10 | 3 | 3.05 | 0.57 |
| Duration of socialization | | | | 2-16 | 5 | 7.49 | 3.14 |
| Age (in years) | | | | 19-47 | 22 | 24.35 | 4.71 |
| No of siblings | | | | 1-11 | 4 | 4.03 | 1.74 |
| Birth order | | | | 1-8 | 1 | - | - |
| Gender | | | | | | | |
| | Male | 161 | 51.3 | - | - | - | - |
| | Female | 153 | 48.4 | - | - | - | - |
| Family system | | | | | | | |
| | Joint | 105 | 33.4 | - | - | - | - |
| | Nuclear | 209 | 66.6 | - | - | - | - |
| Program enrolled in | | | | | | | |
| | Bachelor | 225 | 71.7 | - | - | - | - |
| | MPhil | 62 | 19.7 | - | - | - | - |
| | PhD | 11 | 3.5 | - | - | - | - |
| | Others | 16 | 5.1 | - | - | - | - |
| Discipline | | | | | | | |
| | Natural Sciences | 116 | 36.9 | - | - | - | - |
| | Social Sciences | 131 | 41.7 | - | - | - | - |
| | Art & humanities | 21 | 6.7 | - | - | - | - |
| | Others | 46 | 14.6 | - | - | - | - |
| Employment status | | | | | | | |
| | Employed | 132 | 42 | - | - | - | - |
| | Unemployed | 182 | 58 | - | - | - | - |

Table 11 indicates the distribution of the sample on the basis of time spent online daily, number of social media profiles, that duration on digital socialization, number of siblings, birth order, age, gender, family system, currently enrolled study program, studying in, discipline of study and employment status. The sample of conventional mode of study consists of 161 males and 153 female students. Most of the respondents belonged to nuclear family system. Maximum number of students was those who were enrolled in bachelors' program and from social sciences domain. Students who reported to be without job were greater in number.

**Instruments**

The instruments used in the main study are same as used in pilot study. Cyber socialization scale (Santhosh & Thiyagu, 2022), Questionnaire of Cognitive and Affective Empathy (QCAE) (Reniers et al., 2011), Cyber-offending and cyber victimization scale (Hinduja & Patchin, 2015), The Tromsø Social Intelligence Scale (Silvera et al., 2001), WHO Quality of Life (Brief) (The WHOQOL Group, 1998) and Demographic Information Sheet (see details, page 128).

**Procedure**

The main study followed the same procedure as the pilot study, and in order to diversify the sample, several universities in Pakistan were approached. Students from both traditional and distance learning universities were selected to participate in the study. The prospective participants were given information about the research and asked to take part voluntarily. They were also informed about the confidentiality and anonymity of their data, as well as their right to withdraw from the study at any time. Some participants shoed concerns regarding the length of the questionnaires but they were somehow satisfied after the briefing of the purpose of the study; however, most of the participants were cooperative. Data collection was done using both conventional and online methods. This was done to ensure that the data collected was cohesive and rich enough to meet the purpose of the research. For online data collection, a form was generated. The second part of data collection was through booklets. After the data collection, the data was entered in SPSS-26 for performing analysis and the results calculated were tabulated.

## Results

Descriptive analysis was run for demographic variables. SPSS-26 was used to analyses the preliminary data; regression analysis was used for hypothesis testing whereas for moderation Preacher & Hayse macro (2014) was employed.

# RESULTS

# Chapter 3

## RESULTS

The current study was conducted to see the predictive role of digital socialization on quality of life. Empathy was studied as a mediator between the two, while cyber victimization moderated the relationship. Along with that the moderating role of social intelligence between digital socialization and empathy was also explored. Through the use of descriptive and inferential statistics, data was examined using SPSS-26. The normality of data was checked using descriptive statistics. The alpha reliability coefficients were calculated to determine the internal consistency of the scales employed in the current study.

Describing statistics was used to examine the normality of the data. The Pearson Product bivariate analysis and multiple linear regression analysis, respectively, were used to determine the correlations between the study variables and predictions. To evaluate mean differences among research variables, independent sample t-test and Analysis of Variance (ANOVA) were employed. Process Macro (Model 1 & 4) was used to test the proposed mediation and moderation analysis. (Hayes, 2013).

### Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) serves as a statistical approach for evaluating the precision and dependability of a measurement tool. It determines the extent to which accurately measured variables aptly reflect the core concepts (Boelen et al., 2008), thereby ensuring construct validity. Employing this method bolsters the evaluation of instrument reliability and validity (Said et al., 2011). This technique has demonstrated statistical consistency and can be employed in the creation and validation of shorter or alternative tools (Atkinson et al., 2010). The Analysis of Moment Structure (AMOS Graphic 26) Statistical Package Version 26 was used for carrying out the CFA.

This study used various global fit indices to evaluate overall validity of the construct wise models as Chi-square ($\chi^2$), Normed Chi-square, CFI, TLI, and RMSEA. The extent to which "the model holds *exactly* in the population" is known as Chi-Square (Brown, 2015, p. 71). Smaller values of Chi-square ($\chi^2$) indicate greater fit between implied and observed covariance matrices (Hair et al., 2019). Normed Chi-square ($\chi^2$) is determined by dividing Chi-square ($\chi^2$) with degrees of freedom (df) (Hair et al.,

2019). Lower than 3 value of normed Chi-square indicates a good fitting model (Hair et al., 2019). Evaluation of "proportionate improvement in model fit by comparing the hypothesized model in which structure is imposed with the less restricted nested baseline model" (Byrne, 2012, P. 70) is carried out with the help of comparative fit index (Bentler, 1990) and Tucker Lewis non-normed fit index (Tucker & Lewis, 1973) . Greater than 0.92 values of CFI and TLI indicate a good fitting model (Hair et al., 2019). Root mean square error of approximation (Steiger & Lind, 1980) is used to evaluate the degree to which "a model fits *reasonably* well in the population" (Brown, 2015, p. 71). Lower than .07 values of RMSEA indicate a well-fitting model.

This study carried out confirmatory factor analysis (CFA) to determine the construct validity in indigenous culture, and appraise their factor structure. The CFA results are explained for each dimension below.

**Table 12**

*Model Fit Indices for Confirmatory Factor Analysis of the Cyber Socialization Scale (N = 541)*

| **FIT INDICES** Expected Values | $\chi^2$ Significant p value | ***Normed*$\chi^2$** < 3 | ***CFI*** > .92 | ***TLI*** > .92 | ***RMSEA*** < .07 |
|---|---|---|---|---|---|
| Model | 678.40 ($p$ = .000; df = 252) | 2.692 | .966 | .959 | .056 |

**Note:** $n$ = 541; $\chi^2$ = Chi-square; *CFI* = Comparative Fit Index; *TLI* = Tucker-Lewis Index; *RMSEA* = Root Mean Error of Approximation; $p$ = Statistical significance; *df* = Degree of freedom.

The above shows model fit indices of CFA for the Cyber socialization scale Results show that model fit indices are satisfactory including CFI = 0.96 and TLI = 0.95. The RMSEA values were also less than .07 indicating model fitness. Results finally confirmed the model with twenty-four items.

**Table 13**

*Factor Loading of CFA for Cyber Socialization Scale (N=541)*

| ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** |
|---|---|---|---|---|---|
| **1.** | .804*** | **9.** | .827*** | **17.** | .811*** |
| **2.** | .771*** | **10.** | .793*** | **18.** | .820*** |
| **3** | .833*** | **11.** | .816*** | **19.** | .843*** |
| **4.** | .803*** | **12.** | .841*** | **20.** | .840*** |
| **5.** | .810*** | **13.** | .806*** | **21.** | .806*** |
| **6.** | .814*** | **14.** | .817*** | **22.** | .804*** |
| **7.** | .827*** | **15.** | .811*** | **23.** | .807*** |
| **8.** | .825*** | **16.** | .814*** | **24.** | .815*** |

*Note*: *** $p < .001$.

**Figure 2**

*Confirmatory Factor Analysis for Cyber Socialization Scale (N=514)*

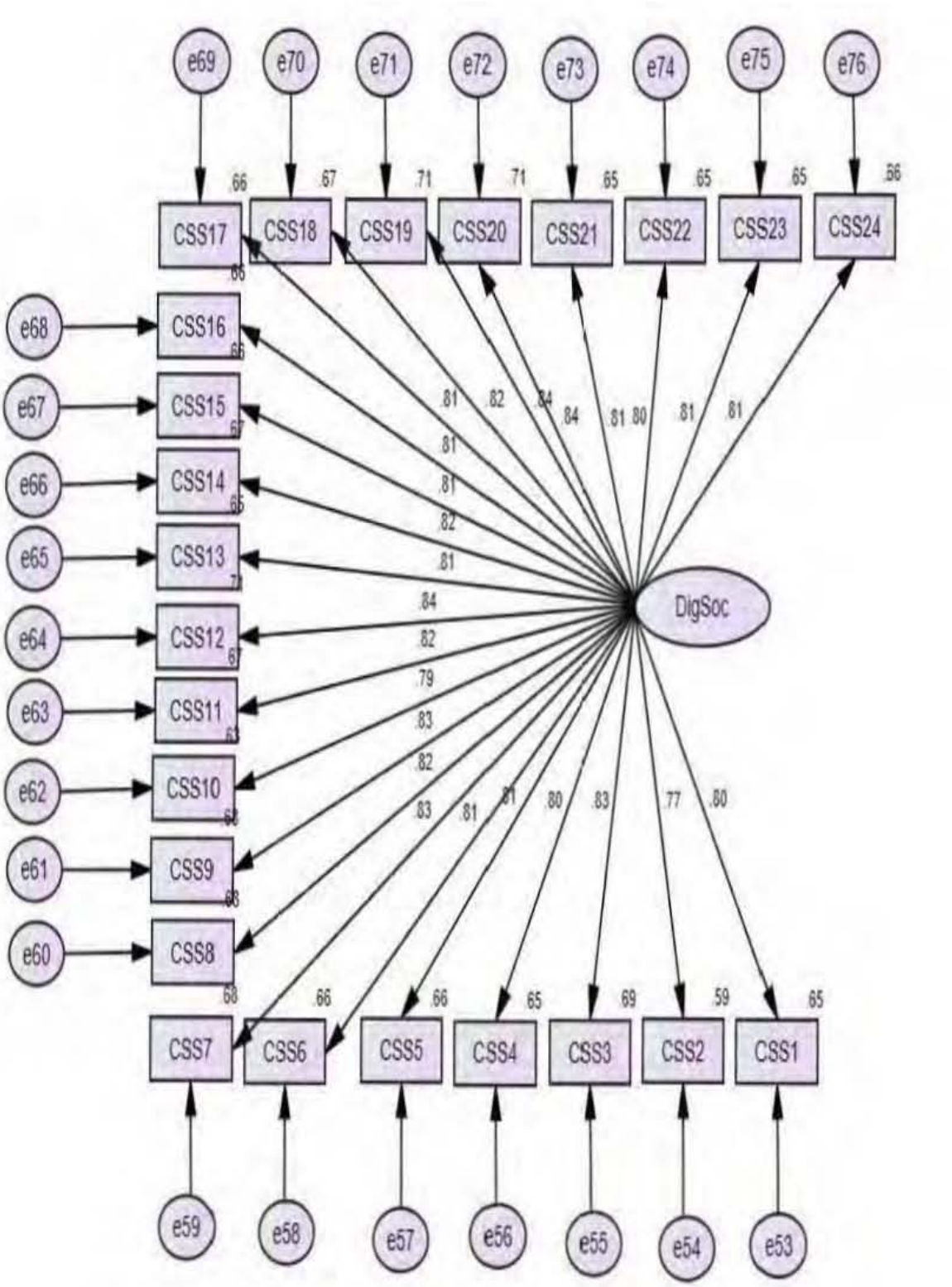


**Table 14**

*Model Fit Indices for Confirmatory Factor Analysis of the Cyber victimization Scale (N = 541)*

| FIT INDICES Expected Values | $\chi^2$ Significant p value | *Normed*$\chi^2$ < 3 | *CFI* > .92 | *TLI* > .92 | *RMSEA* < .07 |
|---|---|---|---|---|---|
| Model | 201.50 ($p$ = .000; df = 27) | 2.463 | .976 | .959 | .06 |

**Note:** $n$ = 541; $\chi^2$ = Chi-square; *CFI* = Comparative Fit Index; *TLI* = Tucker-Lewis Index; *RMSEA* = Root Mean Error of Approximation; $p$ = Statistical significance; *df* = Degree of freedom.

The above shows model fit indices of CFA for the Cyber Victimization Scale Results show that model fit indices are satisfactory including CFI = 0.97 and TLI = 0.95. The RMSEA values were also less than .07 indicating model fitness. Results finally confirmed the model with nine items.

**Table 15**

*Factor Loading of CFA for Cyber victimization Scale (N=541)*

| ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** |
|---|---|---|---|
| **1.** | .893*** | **6.** | .907*** |
| **2.** | .898*** | **7.** | .898*** |
| **3** | .941*** | **8.** | .920*** |
| **4.** | .945*** | **9.** | .909*** |
| **5.** | .949*** | | |

*Note*: *** $p$< .001.

**Figure 3**

*Confirmatory Factor Analysis for Cyber Victimization Scale (N=514)*

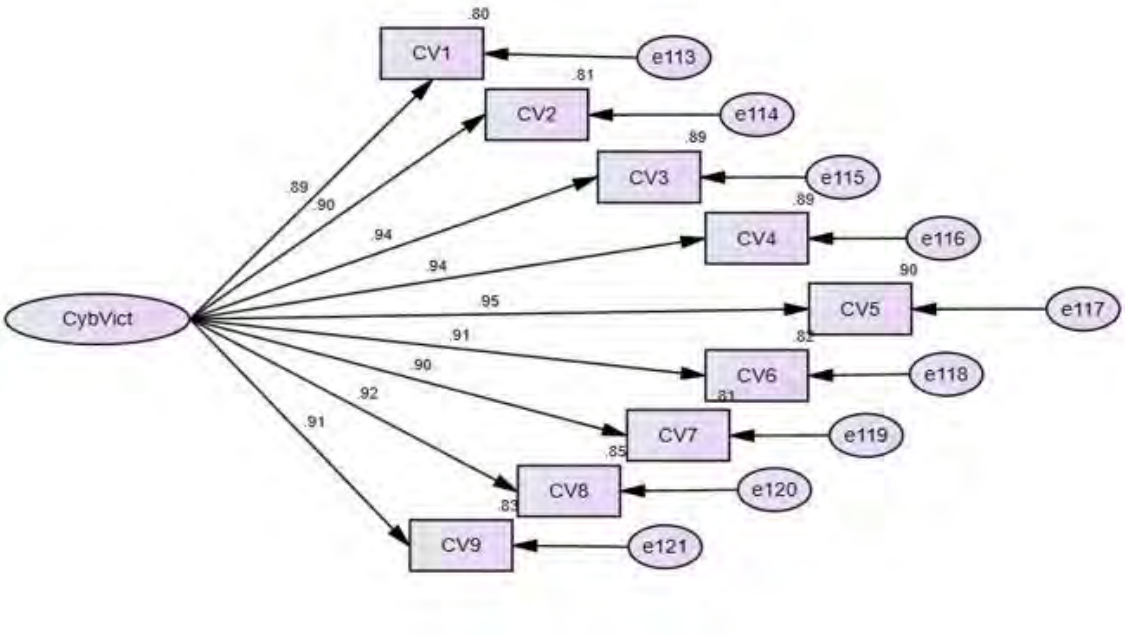



**Table 16**

*Model Fit Indices for Confirmatory Factor Analysis of Questionnaire of Affective and Cognitive Empathy (N = 541)*

| **FIT INDICES** Expected Values | $\chi^2$ Significant p value | ***Normed*$\chi^2$** < 3 | ***CFI*** > .92 | ***TLI*** > .92 | ***RMSEA*** < .07 |
|---|---|---|---|---|---|
| Model | 822.248 ($p$ = .000; df = 429) | 1.917 | .962 | .956 | .041 |

**Note:** $n$ = 541; $\chi^2$= Chi-square; *CFI* = Comparative Fit Index; *TLI* = Tucker-Lewis Index; *RMSEA* = Root Mean Error of Approximation; $p$ = Statistical significance; *df* = Degree of freedom.

The above shows model fit indices of CFA for the Cyber Victimization Scale Results show that model fit indices are satisfactory including CFI = 0.96 and TLI = 0.95. The RMSEA values were also less than .07 indicating model fitness. Results finally confirmed the model with thirty-one items.

**Table 17**

*Factor Loading of CFA for Questionnaire of Affective and Cognitive Empathy (N=541)*

| ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** |
|---|---|---|---|---|---|---|---|
| **1.** | .778*** | **9.** | .741*** | **17.** | .746*** | **25.** | .796*** |
| **2.** | .781*** | **10.** | .782*** | **18.** | .823*** | **26.** | .838*** |
| **3** | .832*** | **11.** | .732*** | **19.** | .823*** | **27.** | .781*** |
| **4.** | .791*** | **12.** | .721*** | **20.** | .810*** | **28.** | .819*** |
| **5.** | .815*** | **13.** | .762*** | **21.** | .799*** | **29.** | .663*** |
| **6.** | .801*** | **14.** | .781*** | **22.** | .803*** | **30.** | .821*** |
| **7.** | .741*** | **15.** | .762*** | **23.** | .642*** | **31.** | .712*** |
| **8.** | .732*** | **16.** | .782*** | **24.** | .754*** | | |

*Note*: *** $p < .001$.

**Figure 4**

*Confirmatory Factor Analysis for Questionnaire of Affective and Cognitive Empathy (N=541)*

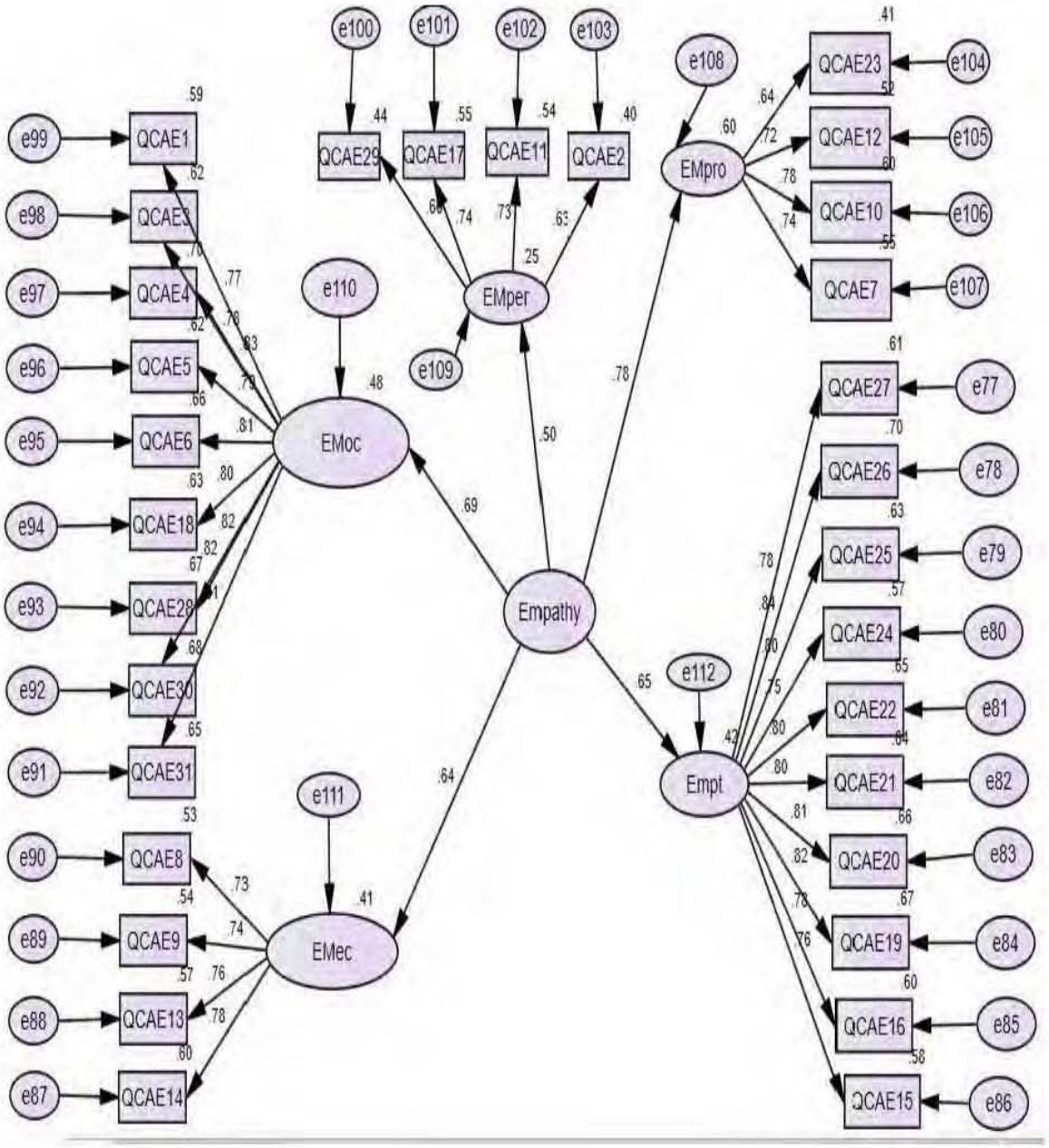


**Table 18**

*Model Fit Indices for Confirmatory Factor Analysis of The Tromso Social Intelligence Scale (N = 541)*

| **FIT INDICES** Expected Values | $\chi^2$ Significant p value | ***Normed*$\chi^2$** < 3 | ***CFI*** > .92 | ***TLI*** > .92 | ***RMSEA*** < .07 |
|---|---|---|---|---|---|
| Model | 539.608 ($p$ = .000; df = 186) | 2.901 | .953 | .942 | 0.59 |

**Note:** $n$ = 541; $\chi^2$ = Chi-square; *CFI* = Comparative Fit Index; *TLI* = Tucker-Lewis Index; *RMSEA* = Root Mean Error of Approximation; $p$ = Statistical significance; *df* = Degree of freedom.

The above shows model fit indices of CFA for the Cyber Victimization Scale Results show that model fit indices are satisfactory including CFI = 0.95 and TLI = 0.94. The RMSEA values were also less than .07 indicating model fitness. Results finally confirmed the model with thirty-one items.

**Table 19**

*Factor Loading of CFA for Cognitive Tromso social intelligence scale (N=541)*

| ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** |
|---|---|---|---|---|---|
| **1.** | .742*** | **8.** | .794*** | **15.** | .770*** |
| **2.** | .747*** | **9.** | .737*** | **16.** | .813*** |
| **3** | .775*** | **10.** | .814*** | **17.** | .803*** |
| **4.** | .769*** | **11.** | .798*** | **18.** | .824*** |
| **5.** | .793*** | **12.** | .791*** | **19** | .827*** |
| **6.** | .746*** | **13.** | .801*** | **20** | .810*** |
| **7.** | .801*** | **14.** | .749*** | **21** | .826*** |

*Note*: *** $p$< .001.

**Figure 5**

*Confirmatory Factor Analysis for The Tromso Social Intelligence Scale (N=514)*

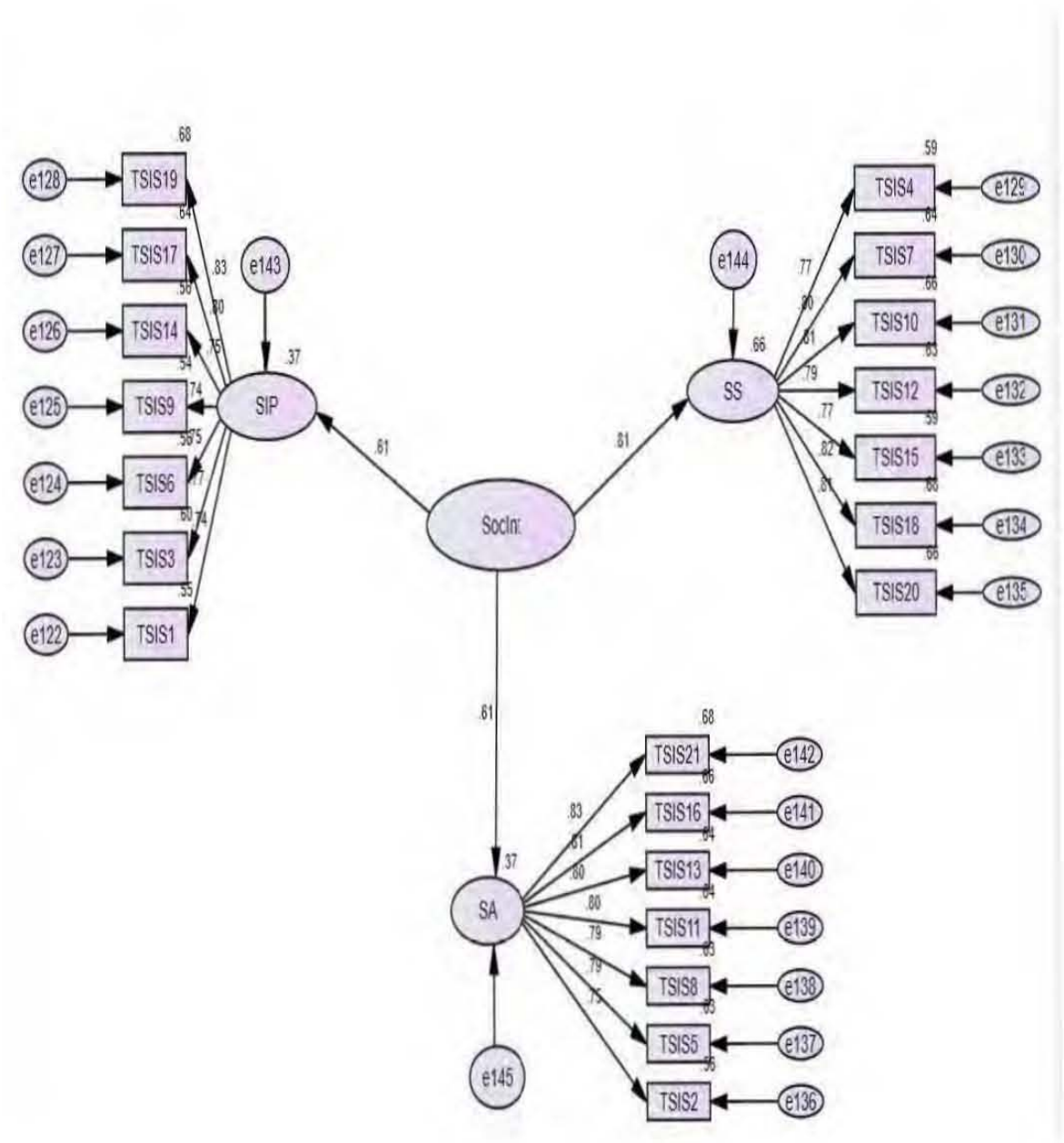


**Table 20**

*Model Fit Indices for Confirmatory Factor Analysis of WHO Quality of Life BREf Scale (N = 541)*

| **FIT INDICES** Expected Values | $\chi^2$ Significant p value | *Normed*$\chi^2$ < 3 | *CFI* > .92 | *TLI* > .92 | *RMSEA* < .07 |
|---|---|---|---|---|---|
| Model | 626.098 ($p$ = .000; df = 186) | 2.52 | .950 | .940 | 0.53 |

**Note:** $n$ = 541; $\chi^2$ = Chi-square; *CFI* = Comparative Fit Index; *TLI* = Tucker-Lewis Index; *RMSEA* = Root Mean Error of Approximation; $p$ = Statistical significance; *df* = Degree of freedom.

The above shows model fit indices of CFA for the Cyber Victimization Scale Results show that model fit indices are satisfactory including CFI = 0.95 and TLI = 0.94. The RMSEA values were also less than .07 indicating model fitness. Results finally confirmed the model with twenty-six items.

**Table 21**

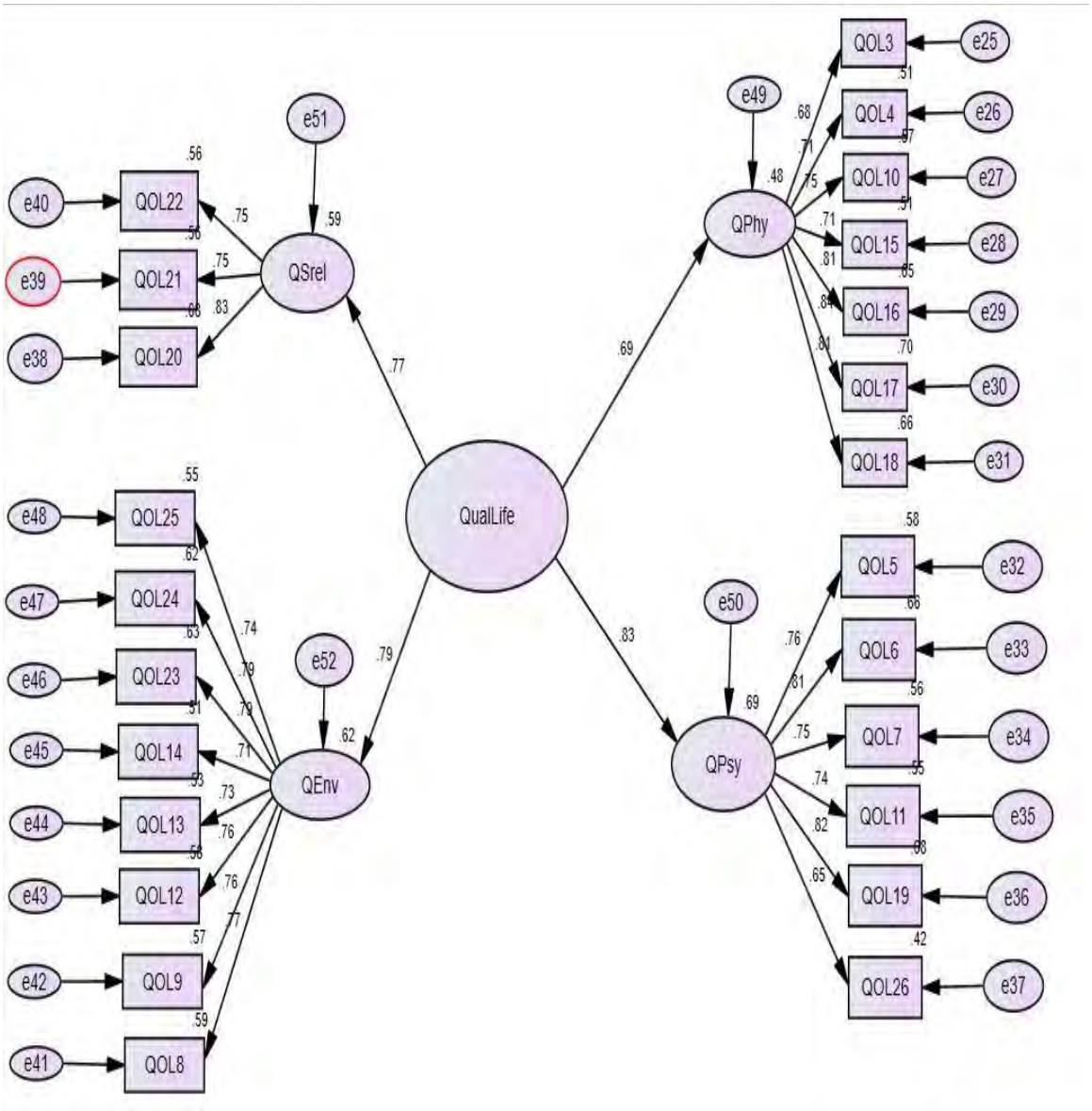
*Factor Loading of CFA for WHO Quality of Life BREF (N=541)*

| ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** | ***Item#*** | **Loadings (λ)** |
|---|---|---|---|---|---|
| **1.** | .761*** | **10.** | .753*** | **19.** | .822** |
| **2.** | .631*** | **11.** | .743*** | **20.** | .827*** |
| **3** | .684*** | **12.** | .762*** | **21.** | .746*** |
| **4.** | .714*** | **13.** | .729*** | **22.** | .751** |
| **5.** | .764*** | **14.** | .715*** | **23.** | .793*** |
| **6.** | .813*** | **15.** | .713*** | **24.** | .788*** |
| **7.** | .749*** | **16.** | .808*** | **25.** | .741*** |
| **8.** | .769*** | **17.** | .836*** | **26.** | .651*** |
| **9.** | .758*** | **18.** | .813*** | | |

*Note*: *** $p$< .001.

**Figure 6**

*Confirmatory Factor Analysis for WHO Quality of Life Bref (N=514)*




**Descriptive Statistics Across Online, Traditional and Combined Modes of Study**

The psychometric characteristics of each measure employed in the current study are displayed in Table 22. To calculate reliabilities, Cronbach's alpha reliability was utilized. The distribution of scores was examined using descriptive analysis, which included mean, standard deviation, ranges, skewness, and kurtosis. In order to interpret mean and standard deviation in a meaningful way, average scores on all scales and subscales were also computed. The descriptive statistics were computed separately across traditional, combined and online modes of study.

**Table 22**

*Descriptive Statistics of the Study Variables Across Combined Mode of Study (N = 541)*

| Variables | *k* | *α* | *M* | *SD* | Range | | *Skew* | *Kurt* |
|---|---|---|---|---|---|---|---|---|
| | | | | | Actual | Potential | | |
| Digital Socialization | 24 | .85 | 68.84 | 10.40 | 36-96 | 24-96 | -.06 | .13 |
| Empathy | 31 | .84 | 91.66 | 10.91 | 54-118 | 31-124 | -.26 | .06 |
| Perspective Taking | 10 | .83 | 27.69 | 4.63 | 11-36 | 10-40 | -.27 | -.29 |
| Online Simulation | 9 | .66 | 26.49 | 3.98 | 12-36 | 9-36 | -.25 | .11 |
| Emotional Contagion | 4 | .64 | 11.80 | 2.44 | 4-16 | 4-16 | -.35 | .09 |
| Peripheral Responsivity | 4 | .65 | 9.66 | 1.93 | 4-16 | 4-16 | .32 | .28 |
| Proximal Responsivity | 4 | .66 | 12.83 | 2.27 | 6-16 | 4-16 | -.53 | -.24 |
| Social Intelligence | 21 | .70 | 78.43 | 13.93 | 28-127 | 21-147 | -.05 | .74 |
| Social Information Processing | 7 | .63 | 28.65 | 5.86 | 11-47 | 7-49 | -.19 | -.10 |
| Social Skills | 7 | .69 | 26.11 | 6.25 | 7-46 | 7-49 | .01 | .59 |
| Social Awareness | 7 | .60 | 23.66 | 6.19 | 8-45 | 7-49 | .29 | .19 |
| Cybervictimization | 9 | .89 | 21.59 | 5.98 | 0-27 | 00-27 | -1.05 | .38 |
| Quality of Life | 26 | .90 | 92.74 | 15.05 | 34-129 | 26-130 | -.38 | .51 |
| Physical Health | 7 | .68 | 13.93 | 2.59 | 5-20 | 7-35 | -.10 | -.01 |
| Psychological Health | 6 | .68 | 14.04 | 2.59 | 4-20 | 6-30 | -.31 | .26 |
| Social Relationships | 3 | .67 | 14.39 | 3.64 | 4-20 | 3-15 | -.63 | .16 |
| Environmental Health | 8 | .81 | 14.49 | 2.83 | 4-20 | 8-40 | -.50 | .65 |
| Overall Quality of Life | 2 | .60 | 5.05 | 3.46 | 2-10 | 2-10 | -.71 | .53 |

*Note.* *k* = no. of items; *α* = Cronbach's Alpha; *Skew* = Skewness; *Kurt* = Kurtosis.

Table 22 demonstrates the descriptive statistics of all the scales and their respective subscales used in the present study. In the light of criteria given by Loewenthal (2001), the acceptable range of reliabilities lies above .60. The alpha values for all the scales and subscales used in the study fall within the acceptable range (α = .60-.90) showing that all the selected instruments are internally consistent and validates the operationalization of the study constructs. Indices of skewness and kurtosis show normal distribution of the data which is within the range +1 & -1 as per the criteria given by Pallant (2013).

**Table 23**

*Cronbach's Alpha and Descriptive Statistics of the Study Variables Across Traditional Mode of Study (N = 314)*

| Variables | *k* | *α* | *M* | *SD* | Range | | *Skew* | *Kurt* |
|---|---|---|---|---|---|---|---|---|
| | | | | | Actual | Potential | | |
| Digital Socialization | 24 | .82 | 67.15 | 9.85 | 36-96 | 24-96 | -.15 | .15 |
| Empathy | 31 | .86 | 89.68 | 10.55 | 53-112 | 31-124 | -.20 | .09 |
| Perspective Taking | 10 | .75 | 26.93 | 4.71 | 4-16 | 10-40 | -.19 | -.28 |
| Emotion Contagion | 4 | .72 | 11.48 | 2.37 | 14-34 | 9-36 | -.22 | -.25 |
| Online simulation | 9 | .69 | 26.07 | 3.82 | 6-16 | 4-16 | -.34 | .47 |
| Proximal Responsivity | 4 | .70 | 9.78 | 1.88 | 4-16 | 4-16 | .20 | .26 |
| Peripheral Responsivity | 4 | .71 | 12.44 | 2.32 | 11-36 | 4-16 | -.45 | -.24 |
| Social Intelligence | 21 | .73 | 77.44 | 13.96 | 51-126 | 21-147 | -.01 | .75 |
| Social Information Processing | 7 | .70 | 28.81 | 5.68 | 18-43 | 7-49 | -.23 | -.13 |
| Social Skills | 7 | .71 | 25.64 | 6.30 | 13-46 | 7-49 | .00 | .70 |
| Social Awareness | 7 | .72 | 22.97 | 6.03 | 10-42 | 7-49 | .17 | .01 |
| Cyber Victimization | 9 | .89 | 20.93 | 6.21 | 00-27 | 00-27 | -.86 | .02 |
| Quality Of life | 26 | .90 | 90.78 | 14.04 | 38-124 | 26-130 | -.29 | 1.01 |
| Physical Health | 7 | .72 | 13.62 | 2.42 | 5-18 | 7-35 | .01 | .12 |
| Psychological Health | 6 | .70 | 13.80 | 2.44 | 6-20 | 6-30 | -.16 | .42 |
| Social Relationships | 3 | .69 | 14.18 | 3.47 | 4-15 | 3-15 | -.48 | .24 |
| Environmental Health | 8 | .82 | 14.08 | 2.69 | 4-20 | 8-40 | -.38 | 1.04 |
| Overall | 2 | - | 14.84 | 3.41 | 2-10 | 2-10 | -.78 | .71 |

*Note.* *k* = no. of items; *α* = Cronbach's Alpha; *Skew* = Skewness; *Kurt* = Kurtosis.

Table 23 demonstrates the descriptive statistics of all the scales and their respective subscales used in the present study across traditional mode of study. The alpha values for all the scales and subscales used in the study fall within the acceptable range (α = .60-.90) showing that all the selected instruments are internally consistent and validates the operationalization of the study constructs. Indices of skewness and

kurtosis show normal distribution of the data which is within the range +1 & -1 as per the criteria given by Pallant (2013).

**Table 24**

*Cronbach's Alpha and Descriptive Statistics of the Study Variables Across Online Mode of Study (N = 227)*

| Variables | *k* | *α* | *M* | *SD* | Range | | *Skew* | *Kurt* |
|---|---|---|---|---|---|---|---|---|
| | | | | | Actual | Potential | | |
| Digital Socialization | 24 | .87 | 71.18 | 10.69 | 36-96 | 24-96 | -.05 | .05 |
| Empathy | 31 | .85 | 94.39 | 10.82 | 53-112 | 31-124 | -.42 | .28 |
| Perspective Taking | 10 | .82 | 28.85 | 4.19 | 4-16 | 10-40 | -.23 | -.38 |
| Emotion Contagion | 4 | .70 | 12.24 | 2.47 | 14-34 | 9-36 | -.57 | .79 |
| Online simulation | 9 | .68 | 27.08 | 4.13 | 6-16 | 4-16 | -.22 | -.29 |
| Proximal Responsivity | 4 | .73 | 9.49 | 1.97 | 4-16 | 4-16 | .48 | .41 |
| Peripheral Responsivity | 4 | .70 | 13.36 | 2.08 | 11-36 | 4-16 | -.58 | -.37 |
| Social Intelligence | 21 | .72 | 79.79 | 13.79 | 51-126 | 21-147 | -.08 | .82 |
| Social Information Processing | 7 | .69 | 28.41 | 6.09 | 18-43 | 7-49 | -.12 | -.07 |
| Social Skills | 7 | .72 | 26.75 | 6.13 | 13-46 | 7-49 | .03 | .49 |
| Social Awareness | 7 | .71 | 24.62 | 6.28 | 10-42 | 7-49 | .41 | .26 |
| Cyber Victimization | 9 | .90 | 22.51 | 5.53 | 00-27 | 00-27 | -.34 | 1.2 |
| Quality Of life | 26 | .92 | 95.44 | 15.97 | 38-124 | 26-130 | -.59 | .32 |
| Physical Health | 7 | .73 | 14.35 | 2.76 | 5-18 | 7-35 | -.31 | .01 |
| Psychological Health | 6 | .71 | 14.36 | 2.74 | 6-20 | 6-30 | -.53 | .26 |
| Social Relationships | 3 | .68 | 14.69 | 3.83 | 4-15 | 3-15 | -.83 | .19 |
| Environmental Health | 8 | .83 | 15.04 | 2.91 | 4-20 | 8-40 | -.76 | .66 |
| Overall | 2 | - | 15.33 | 3.50 | 2-10 | 2-10 | -.71 | .32 |

*Note. k = no. of items; α = Cronbach's Alpha; Skew = Skewness; Kurt = Kurtosis.*

Table 23 demonstrates the descriptive statistics of all the scales and their respective subscales used in the present study across online mode of study. The alpha values for all the scales and subscales used in the study fall within the acceptable range (α = .60-.90) showing that all the selected instruments are internally consistent and

validates the operationalization of the study constructs. Indices of skewness and kurtosis show normal distribution of the data which is within the range +1 & -1 as per the criteria given by Pallant (2013).

**Correlation Among Study Variables: Comparing Associations Online, Traditional and Combined Modes of Study**

Pearson Product Moment Correlation was tabulated in order to gauge the data trends and outline of interactions among the major variables of the current study. The strength of association between study variables was tested separately across online, traditional modes of study, and online and traditional mode combined. Detailed results are presented below.

**Table 25**

*Correlation Among Study Variables Across Combined Mode of Study (N = 541)*

| | VARS | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Age | 24.58 | 4.88 | - | -.13** | -.06 | -.06 | .06 | -.02 | .00 | .07 | -.06 | -.07 | -.06 | .04 | -.03 | .05 | .06 | .08 | .11** | .10* | .09* | .11* | .07 | .12** |
| 2 | TSO | 5.48 | 3.25 | | - | .18** | -.00 | .10* | 0.02 | .04 | -.03 | .04 | -.03 | .01 | -.06 | .02 | -.04 | -.12** | -.10* | .03 | .03 | .08 | -.03 | .02 | -.02 |
| 3 | SMA | 4.56 | 3.18 | | | - | -.01 | .11** | .01 | .02 | -.00 | -.01 | .02 | -.00 | -.11** | -.01 | -.10* | -.15** | -.03 | -.02 | -.02 | -.00 | -.02 | -.02 | 0.02 |
| 4 | NoS | 4.18 | 1.72 | | | | - | -.03 | .03 | .02 | -.01 | .05 | -.07 | .06 | -.00 | .00 | .00 | -.01 | .06 | .08 | .10* | .11* | .07 | .01 | .03 |
| 5 | DS | 68.84 | 10.40 | | | | | - | .39** | .35** | .31** | .34** | .21** | .27** | .26** | .16** | .23** | .21** | .15** | .10* | .02 | .08 | .12** | .10* | .08* |
| 6 | EM | 91.66 | 10.91 | | | | | | - | .82** | .79** | .66** | .03 | .75** | .33** | .31** | .25** | .20** | -.12** | .13** | .10* | .08 | .14** | .15** | .03 |
| 7 | PT | 27.69 | 4.63 | | | | | | | - | .59** | .33** | -.14** | .54** | .33** | .33** | .25** | .19** | .10* | .18** | .14** | .14** | .13** | .17** | .09* |
| 8 | OS | 26.49 | 3.98 | | | | | | | | - | .34** | -.08 | .48** | .21** | .27** | .14** | .08 | .13* | .15** | .11** | .12** | .17** | .14** | .01 |
| 9 | EC | 11.80 | 2.44 | | | | | | | | | - | .52** | .34** | .24** | .04 | .10* | .22** | -.22** | -.04 | .08 | .10* | .04 | .02 | -.01 |
| 10 | PerR | 9.66 | 1.93 | | | | | | | | | | - | -.08 | .33** | .33** | .25** | .19** | -.01 | -.07 | .01 | .10* | .12** | .02 | .09* |
| 11 | ProR | 12.83 | 2.27 | | | | | | | | | | | - | -.31** | -.25** | -.24** | -.22** | .16** | .12** | .10* | .10* | .15** | .11* | .01 |
| 12 | SI | 78.43 | 13.93 | | | | | | | | | | | | - | .66** | .85** | .78** | .07 | .12** | .04 | .10* | .15** | .11* | .12** |
| 13 | SIP | 28.65 | 5.86 | | | | | | | | | | | | | - | .34** | .18** | -.04 | .26** | .21** | .26** | .18** | .21** | .17** |
| 14 | SS | 26.11 | 6.25 | | | | | | | | | | | | | | - | .57** | .08 | .06 | .02 | .03 | .10* | .07 | .07 |
| 15 | SA | 23.66 | 6.19 | | | | | | | | | | | | | | | - | .11** | .04 | .10* | .04 | .05 | .02 | .03 |
| 16 | CV | 21.59 | 5.98 | | | | | | | | | | | | | | | | - | -.28** | -.26** | -.24** | -.13** | -.27** | -.16** |
| 17 | QoL | 92.74 | 15.05 | | | | | | | | | | | | | | | | | - | .81** | .85** | .71** | .89** | .64** |
| 18 | PH | 13.93 | 2.59 | | | | | | | | | | | | | | | | | | - | .62** | .40** | .59** | .47** |
| 19 | PsyH | 14.04 | 2.59 | | | | | | | | | | | | | | | | | | | - | .54** | .66** | .53** |
| 20 | SR | 14.39 | 3.64 | | | | | | | | | | | | | | | | | | | | - | .59** | .38** |
| 21 | EH | 14.49 | 2.83 | | | | | | | | | | | | | | | | | | | | | - | .48** |
| 22 | OQoL | 5.05 | 3.46 | | | | | | | | | | | | | | | | | | | | | | - |

*Note. TSO* = Time Spent Online*; SMA* = Social Media Accounts*; NoS* = Number of Siblings*; DS*= Digital Socialization*; CE* = Cognitive Empathy; *PT* = Perspective Taking; *OS* = Online Simulation; *AE* = Affective Empathy; *EC* = Emotion Contagion; *PerR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing; *SS* = Social Skills; *SA* = Social Awareness; *CV* = Cybervictimization; *QoL* = Quality of Life; *PH*= Physical Health; *PsyH* = Psychological Health; *SR* = Social Relationships; *EH* = Environmental Health; *OQoL*= Overall Quality of Life

**p*<.05, ***p*<.01

Table 25 presents the coefficients of correlation among study variables. Results show that digital socialization is significantly positively associated empathy (empathy and all its dimensions i.e., perspective taking, online simulation, emotional contagion, peripheral and proximal responsivity), social intelligence (and all its subscales i.e., social information processing, social awareness and social skills), cybervictimization, and quality of life (and three of its subscales i.e., social relationships, environmental health, and overall quality of life). Findings further reveal that empathy (and all its subscales) are significantly positively associated with social intelligence (and all its subscales) and quality of life (and three of its subscales i.e., physical health, social relationships and environmental health). Contrarily, empathy is significantly negatively associated with cybervictimization.

Results also demonstrate that social intelligence is significantly positively associated with quality of life, and one if its subscales i.e., social awareness is significantly positively associated with cybervictimization. Furthermore, cybervictimization is found to be significantly negatively associated with quality of life (and all its subscales). Results further show that age is significantly positively associated with quality of life (and all its subscales except environmental health). Time spent online, on the other hand, is significantly positively associated with digital socialization and cybervictimization but significantly negatively associated with social awareness facet of social intelligence. Moreover, number of social media profiles are significantly positively associated with digital socialization but negatively associated with social intelligence (and its subscale i.e., social skills and social awareness).

**Table 26**

*Correlation Among Study Variables Across Traditional Mode of Study (N = 314)*

| | VARS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DS | - | | | | | | | | | | | | | | | | | |
| 2 | EM | .39** | - | | | | | | | | | | | | | | | | |
| 3 | PT | .36** | .82** | - | | | | | | | | | | | | | | | |
| 4 | EC | .30** | .62** | .28** | - | | | | | | | | | | | | | | |
| 5 | OS | .34** | .77** | .56** | .32** | - | | | | | | | | | | | | | |
| 6 | ProR | .19** | -.02 | .19** | .16** | .11* | - | | | | | | | | | | | | |
| 7 | PerR | .23** | .72** | .51** | .46** | .42** | .12* | - | | | | | | | | | | | |
| 8 | SI | .31** | .46** | .46** | .33** | .28** | .21** | .41** | - | | | | | | | | | | |
| 9 | SIP | .16** | .36** | .34** | .15** | .27** | .033 | .27** | .66** | - | | | | | | | | | |
| 10 | SS | .27** | .40** | .38** | .32** | .25** | .22** | .36** | .85** | .34** | - | | | | | | | | |
| 11 | SA | .28** | .31** | .33** | .27** | .14** | .22** | .31** | .79** | .23** | .60** | - | | | | | | | |
| 12 | CV | .17** | -.10* | .04 | .01 | -.12* | -.01 | -.14* | .03 | -.05 | .03 | .09 | - | | | | | | |
| 13 | QOL | .13* | .11* | .18** | -.09 | .13* | .04 | .07 | .19* | .22** | -.03 | .02 | -.24** | - | | | | | |
| 14 | Ph-H | .05 | .04 | .12* | .13* | .08 | .01 | .02 | .13* | .20** | .04 | .07 | -.22** | .78** | - | | | | |
| 15 | Psy-H | .12* | .11* | .19** | .11* | .15** | .06 | .07 | .10* | .24** | .02 | .00 | -.23** | .85** | .59** | - | | | |
| 16 | SR | .11 | .15** | .13* | .01 | .16** | .04 | .18** | .06 | -.08 | .05 | -.01 | .09 | .67** | .35** | .51** | - | | |
| 17 | EN-H | .12* | .11 | .17** | .04 | .11* | .03 | .03 | .18* | .18** | -.04 | .03 | -.21** | .88** | .55** | .68** | .55** | - | |
| 18 | Overall | .10 | -.01 | .04 | .013 | -.06 | .05 | -.02 | -.07 | .06 | -.06 | -.03 | -.09 | .58** | .41** | .48** | .30** | .41** | - |

*Note: DS* = Digital Socialization; *EM* = Empathy; *PT* = Perspective taking; *EC* = Emotion Contagion; *OS* = Online simulation; *PreR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing, *SS* = Social Skills, *SA* = Social Awareness, *CV* = Cyber Victimization, *Phy-H* = Physical health, *Psy-H*, Psychological health, *SR* = Social Relationships, *En-H*, Environmental Health. $^{**}p < .01$. $^{*}p < .05$

Table 26 indicates the coefficients of correlation between study variables among students enrolled in traditional mode of study. Findings show that digital socialization is significantly positively associated with empathy (and all its subscales), social intelligence (and all its subscales), cybervictimization and quality of life (and all subscales including psychological and environmental health). On the other hand, empathy is significantly positively associated with quality of life and social intelligence. Contrastingly, empathy is significantly negatively associated with cybervictimization. Social intelligence is positively significantly related with quality of life and its two facets.

Furthermore, results show that cybervictimization is significantly negatively associated with quality of life (and all its subscales except social relationships and overall quality of life subscales).

**Table 27**

*Correlation Among Study Variables Across Online Mode of Study (N = 227)*

| | VARS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DS | - | | | | | | | | | | | | | | | | | |
| 2 | EM | .32** | - | | | | | | | | | | | | | | | | |
| 3 | PT | .28** | .81** | - | | | | | | | | | | | | | | | |
| 4 | EC | .33** | .67** | .34** | - | | | | | | | | | | | | | | |
| 5 | OS | .22** | .79** | .60** | .33** | - | | | | | | | | | | | | | |
| 6 | Pro R | .20** | .14* | -.03 | -.00 | -.02 | - | | | | | | | | | | | | |
| 7 | Per R | .24** | .75** | .51** | .54** | .52** | .01 | - | | | | | | | | | | | |
| 8 | SI | .25** | .20** | .22** | .15* | .13* | .12 | .21** | - | | | | | | | | | | |
| 9 | SIP | .15* | .24** | .30** | -.02 | .25** | .09 | .21** | .66** | - | | | | | | | | | |
| 10 | SS | .21** | .08 | .10 | .10 | .01 | .12 | .10 | .82** | .34** | - | | | | | | | | |
| 11 | SA | .20** | .13* | .08 | .20** | .04 | .06 | .17* | .74** | .14* | .50** | - | | | | | | | |
| 12 | CV | .18** | -.08 | .06 | .00 | .09 | .02 | .11 | .09 | .01 | .12 | .09 | - | | | | | | |
| 13 | QOL | .12* | .09 | .10 | -.02 | .13* | .06 | .13 | .18** | .30** | .11 | .00 | -.31** | - | | | | | |
| 14 | Ph-H | .06 | .08 | .10 | .06 | .11 | .02 | .12 | .06 | .19** | .03 | .08 | -.29** | .82** | - | | | | |
| 15 | Psy-H | .01 | .01 | .03 | -.12 | .04 | .12 | .09 | .12 | .28** | .04 | .06 | -.21** | .84** | .65** | - | | | |
| 16 | SR | .10 | .10 | .08 | .08 | .16* | .19** | .07 | .26** | .29** | .16* | -.12 | -.17** | .74** | .43** | .56** | - | | |
| 17 | EN-H | .02 | .12 | .08 | .04 | .12 | .02 | .13* | .18** | .23** | .14* | -.04 | -.29** | .88** | .59** | .61** | .64** | - | |
| 18 | Overall | .03 | .04 | .11 | .03 | .08 | -.12 | .03 | .19** | .30** | .10 | -.03 | -.23** | .70** | .53** | .57** | .46** | .54** | - |

*Note: DS* = Digital Socialization; *EM* = Empathy; *PT* = Perspective taking; *EC* = Emotion Contagion; *OS* = Online simulation; *PreR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing, *SS* = Social Skills, *SA* = Social Awareness, *CV* = Cyber Victimization, *Phy-H* = Physical health, *Psy-H*, Psychological health, *SR* = Social Relationships, *En-H*, Environmental Health. $^{**}p < .01$. $^{*}p < .05$

Table 27 shows coefficients of correlation between study variables among students enrolled in online mode of study. Results indicate that digital socialization is significantly positively associated with empathy (and all its subscales), social intelligence (and all its subscales), cybervictimization and quality of life. Empathy, on the other hand, is significantly positively associated with social intelligence (and all its subscales except social skills). Contrarily, empathy has a nonsignificant positive association with quality of life, and a nonsignificant negative association with cybervictimization.

Findings further reveal that social intelligence is significantly positively associated with quality of life (and all its subscales except physical and psychological health). Moreover, social intelligence has a nonsignificant positive association with cybervictimization.

**Regression Analysis**

To explain the variance explained by study variables for quality of life across online, traditional and combined modes of study, multiple linear regression analyses were conducted.

***Prediction of Quality of Life from Study Variables Across Online, Traditional and Combined Modes of Study***

**Table 28**

*Multiple Regression Analysis Predicting Quality of Life from Study Variables Across Combined Mode of Study (N = 541)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 73.83** | 63.42** | 43.43 | 83.41 |
| Age | .36* | .35* | .07 | .63 |
| Gender | -.63 | -1.27 | -3.85 | 1.30 |
| Number of Siblings | .22 | .07 | -.86 | 1.00 |
| Birth Order | .52 | .54 | -.44 | 1.52 |
| Family System | -.22 | .12 | -2.47 | 2.69 |
| Time Spent Online | .18 | .25 | -.14 | .63 |
| Number of Social Media Profiles | .08 | -.13 | -.90 | .65 |
| Employment Status | 1.14 | .68 | -2.16 | 3.52 |
| Digital Socialization | | .083 | -.05 | .22 |
| Empathy | | .043 | -.09 | .17 |
| Social Intelligence | | .13** | -.23 | -.03 |
| Cybervictimization | | -.70** | .49 | .91 |
| $R^2$ | .04 | | .14 | |
| *F* | 2.46** | | 6.22** | |
| $\Delta R^2$ | | | .10 | |
| $\Delta F$ | | | 14.11** | |

**p < .05, **p < .01.* (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 28 shows the results of multiple regression analysis predicting quality of life from study variables. According to the results, the demographic variables alone explain 4% variance in quality of life. As presented in Model 2, the demographic variables along with study variables explain 14% variance in the outcome variable. The change is explained variance from Model 1 to Model 2 specifies that study variables

uniquely explain 10% variance in quality of life. Results also show that social intelligence positively predicts quality of life while cybervictimization is its negative predictor.

**Table 29**

*Multiple Regression Analysis Predicting Quality of Life from Study Variables Across Traditional Mode of Study (N = 314)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 84.72** | 61.1 | 32.98 | 89.30 |
| Age | .28 | .30 | -.07 | .68 |
| Gender | -.83 | -1.20 | -4.38 | 1.97 |
| Number of Siblings | .073 | .06 | -1.10 | 1.22 |
| Birth Order | .19 | .18 | -1.13 | 1.51 |
| Family System | -2.0 | -1.23 | -4.50 | 2.03 |
| Time Spent Online | .187 | .22 | -.28 | .73 |
| Number of Social Media Profiles | -.07 | -.33 | -1.34 | .67 |
| Employment Status | 1.02 | 1.07 | -2.44 | 4.60 |
| Digital Socialization | | .21 | .02 | .39 |
| Empathy | | .00 | -.17 | .17 |
| Social Intelligence | | .05 | -.18 | .07 |
| Cybervictimization | | -.63** | .37 | .88 |
| $R^2$ | .01 | | .10 | |
| *F* | .54 | | 2.90* | |
| $\Delta R^2$ | | | .09 | |
| $\Delta F$ | | | 7.52** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 29 shows results of multiple linear regression analysis predicting quality of life from study variables across traditional mode of study. The effect of demographic variables was controlled in Mode-1. Findings indicate that the demographic variables along with study variables explain 10% variance in quality of life across traditional

mode of study. The change in explained variance from Model 1 to Model 2 shows that the study variables explain 9% unique variance in quality of life. Furthermore, results show that only cybervictimization significantly negatively predicts quality of life among students enrolled in traditional mode of study.

**Table 30**

*Multiple Regression Analysis Predicting Quality of Life from Study Variables Across Online Mode of Study (N = 227)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 71.92** | 77.01** | 44.27 | 109.75 |
| Age | .49* | .38 | -.04 | .81 |
| Gender | .17 | -1.27 | -5.78 | 3.40 |
| Number of Siblings | .49 | .30 | -1.30 | 1.91 |
| Birth Order | .78 | .54 | -.79 | 2.26 |
| Family System | 2.05 | 1.24 | -3.27 | 5.75 |
| Time Spent Online | .22 | .23 | -.38 | .86 |
| Number of Social Media Profiles | .10 | -.09 | -1.36 | 1.18 |
| Employment Status | 1.33 | .01 | -4.99 | 5.01 |
| Digital Socialization | | .06 | -.27 | .14 |
| Empathy | | .11 | -.09 | .31 |
| Social Intelligence | | .24** | -.39 | -.08 |
| Cybervictimization | | -.80** | .41 | 1.18 |
| $R^2$ | .04 | | .17 | |
| *F* | 1.16 | | 3.44** | |
| $\Delta R^2$ | | | .13 | |
| $\Delta F$ | | | 7.69** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 30 shows the results of multiple regression analysis predicting quality of life from study variables across online mode of study. According to the results, the demographic variables alone explain 4% variance in quality of life. As presented in

Model 2, the demographic variables along with study variables explain 17% variance in quality of life. The change is explained variance from Model 1 to Model 2 specifies that study variables uniquely explain 13% variance in quality of life. Results also show that social intelligence positively predicts quality of life while cybervictimization is its negative predictor.

***Predicting Empathy from Digital Socialization Across Online, Traditional and Combined Modes of Study***

**Table 31**

*Multiple Regression Analysis Predicting Empathy from Digital Socialization Across Combined Mode of Study (N = 541)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 83.01** | 56.57** | 46.41 | 66.72 |
| Age | .00 | -.01 | -.20 | .19 |
| Gender | .77 | 1.37 | -.43 | 3.18 |
| Number of Siblings | -.06 | .10 | -.56 | .76 |
| Birth Order | .29 | .19 | -.51 | .88 |
| Family System | -1.12 | -1.34 | -3.17 | .48 |
| Time Spent Online | .02 | -.08 | -.35 | .19 |
| Number of Social Media Profiles | .23 | -.00 | -.58 | .52 |
| Study Mode | 4.42** | 2.58 | .74 | 4.42 |
| Employment Status | .73 | 1.73 | -.28 | 3.74 |
| Digital Socialization | | .41** | .32 | .49 |
| $R^2$ | .05 | | .19 | |
| *F* | 3.01** | | 11.75** | |
| $\Delta R^2$ | | | .14 | |
| $\Delta F$ | | | 85.92** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 31 shows multiple regression analysis predicting empathy from digital socialization. Results depict that the demographic variables uniquely explain 5% variance in empathy while the demographic variables along with digital socialization

explain 19% variance in it. The change is explained variance from Model 1 to Model 2 also illustrates that digital socialization alone explains 14% variance in empathy. Findings also show that digital socialization significantly positively predicts empathy.

**Table 32**

*Multiple Linear Regression Analysis Predicting Empathy from Digital Socialization Across Traditional Mode of Study (N = 314)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 93.20** | 63.57** | 50.19 | 76.96 |
| Age | -.11 | -.18 | -.45 | .08 |
| Gender | -.30 | .12 | -2.13 | 2.38 |
| Number of Siblings | -.02 | .20 | -.62 | 1.03 |
| Birth Order | .24 | .10 | -.84 | 1.04 |
| Family System | -.65 | -.86 | -3.19 | 1.46 |
| Time Spent Online | .15 | -.10 | -.45 | .26 |
| Number of Social Media Profiles | -.25 | -.55 | -1.27 | .15 |
| Employment Status | .03 | .80 | -1.72 | 3.32 |
| Digital Socialization | | .46** | .35 | .58 |
| $R^2$ | .01 | | .18 | |
| *F* | .26 | | 7.41** | |
| $\Delta R^2$ | | | .17 | |
| $\Delta F$ | | | 64.18** | |

**p < .05, **p < .01.* (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 32 demonstrates results of multiple regression analysis predicting empathy from digital socialization across traditional mode of study. Results show that the demographic variables uniquely explain 1% variance in empathy while the demographic variables along with digital socialization explain 18% variance in it. The change is explained variance from Model 1 to Model 2 also illustrates that digital socialization alone explains 17% variance in empathy. Findings also show that digital socialization significantly positively predicts empathy across traditional mode of study.

**Table 33**

*Multiple Regression Analysis Predicting Empathy from Digital Socialization Across Online Mode of Study (N = 227)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 86.27** | 58.95** | 41.65 | 76.26 |
| Age | .11 | .13 | -.15 | .43 |
| Gender | 2.1 | 2.59 | -.52 | 5.71 |
| Number of Siblings | .06 | .16 | -.94 | 1.27 |
| Birth Order | .36 | .29 | -.76 | 1.35 |
| Family System | -2.23 | -2.21 | -5.32 | .89 |
| Time Spent Online | -.23 | -.19 | -.62 | .23 |
| Number of Social Media Profiles | .82 | .58 | -.29 | 1.46 |
| Employment Status | .13 | 2.53 | -.92 | 5.99 |
| Digital Socialization | | .34** | .20 | .47 |
| $R^2$ | .04 | | .14 | |
| *F* | 1.10 | | 3.89** | |
| $\Delta R^2$ | | | .10 | |
| $\Delta F$ | | | 25.17** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 33 shows multiple regression analysis predicting empathy from digital socialization across online mode of study. Results depict that the demographic variables uniquely explain 4% variance in empathy while the demographic variables along with digital socialization explain 10% variance in it. The change is explained variance from Model 1 to Model 2 also illustrates that digital socialization alone explains 10% variance in empathy. Findings also show that digital socialization significantly positively predicts empathy across online mode of study.

***Predicting Social Intelligence from Digital Socialization Across Online, Traditional and Combined Modes of Study***

**Table 34**

*Multiple Regression Analysis Predicting Social Intelligence from Digital Socialization Across Combined Mode of Study (N = 541)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 73.04** | 99.40** | 85.78 | 113.02 |
| Age | .10 | .11 | -.15 | .37 |
| Gender | 2.72* | 2.12 | -.30 | 4.54 |
| Number of Siblings | .12 | -.04 | -.93 | .84 |
| Birth Order | -.38 | -.27 | -1.21 | .66 |
| Family System | .28 | .51 | -1.94 | 2.96 |
| Time Spent Online | -.18 | -.08 | -.44 | .28 |
| Number of Social Media Profiles | -.65 | -.39 | -1.12 | .35 |
| Study Mode | 1.59 | 3.43** | .96 | 5.89 |
| Employment Status | -.31 | -1.31 | -4.01 | 1.39 |
| Digital Socialization | | .41** | .52 | .29 |
| $R^2$ | .03 | | .11 | |
| *F* | 1.66 | | 6.38** | |
| $\Delta R^2$ | | | .08 | |
| $\Delta F$ | | | 47.48** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 34 demonstrates multiple regression analysis predicting social intelligence from digital socialization. Results show that the demographic variables do not explain any significant variance in social intelligence while digital socialization explains 8% variance in it. Findings also show that digital socialization significantly positively predicts social intelligence.

**Table 35**

*Multiple Regression Analysis Predicting Social Intelligence from Digital Socialization Across Traditional Mode of Study (N = 314)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 78.44** | 107.10 | 88.68 | 125.52 |
| Age | .01 | .08 | -.28 | .45 |
| Gender | 2.29 | 1.86 | -1.24 | 4.97 |
| Number of Siblings | -.38 | -.60 | -1.74 | .53 |
| Birth Order | -.04 | .09 | -1.20 | 1.39 |
| Family System | .97 | 1.18 | -2.02 | 4.38 |
| Time Spent Online | -.36 | -.11 | -.61 | .37 |
| Number of Social Media Profiles | -.19 | .09 | -.89 | 1.07 |
| Employment Status | -1.19 | -1.94 | -5.40 | 1.52 |
| Digital Socialization | | .45** | -.61 | -.29 |
| $R^2$ | .02 | | .11 | |
| *F* | .79 | | 4.30** | |
| $\Delta R^2$ | | | .09 | |
| $\Delta F$ | | | 31.73** | |

**p < .05, **p < .01.* (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 35 demonstrates multiple regression analysis predicting social intelligence from digital socialization across traditional mode of study. Results show that the demographic variables do not explain any significant variance in social intelligence while digital socialization explains 9% variance in it. Findings also show that digital socialization significantly positively predicts social intelligence across traditional mode of study.

**Table 36**

*Multiple Regression Analysis Predicting Social Intelligence from Digital Socialization Across Online Mode of Study (N = 227)*

| Variables | Model 1-*B* | Model 2 | | |
|---|---|---|---|---|
| | | | 95% *CI* | |
| | | *B* | *LL* | *UL* |
| Constant | 70.58** | 98.90 | 76.23 | 121.56 |
| Age | .20 | .17 | -.21 | .56 |
| Gender | 3.12 | 2.71 | -1.37 | 6.79 |
| Number of Siblings | .98 | .87 | -.57 | 2.33 |
| Birth Order | -.79 | -.71 | -2.09 | .67 |
| Family System | -.35 | -.37 | -4.44 | 3.69 |
| Time Spent Online | -.01 | -.04 | -.61 | .51 |
| Number of Social Media Profiles | -1.23 | -.99 | -2.14 | .16 |
| Employment Status | .36 | -.89 | -5.42 | 3.63 |
| Digital Socialization | | .35** | -.52 | -.17 |
| $R^2$ | .04 | | .11 | |
| *F* | 1.25 | | 2.95* | |
| $\Delta R^2$ | | | .07 | |
| $\Delta F$ | | | 15.72** | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 36 illustrates results of multiple regression analysis predicting social intelligence from digital socialization across online mode of study. Findings indicate that the demographic variables do not explain any significant variance in social intelligence while digital socialization explains 7% variance in it. Findings also show that digital socialization significantly positively predicts social intelligence across online mode of study.

**Mediation analysis**

To identify indirect pathways, the suggested conceptual model was put to the test using empirical data. The bias-corrected bootstrap method offers the most precise Confidence Interval (CI) calculation and has the highest statistical efficacy for

investigating mediating effects (Fang et al., 2012). In order to evaluate the mediation model and determine the 95% CIs, a bootstrapping analysis was performed in the current investigation using the SPSS Macro PROCESS Model 4 with 10,000 resamples. The mediating role of empathy was tested separately across combined, traditional and online modes of study.

**Table 37**

*Mediating Effect of Empathy for the Relationship between Digital Socialization and Quality of Life Across Combined Mode of Study (N = 541)*

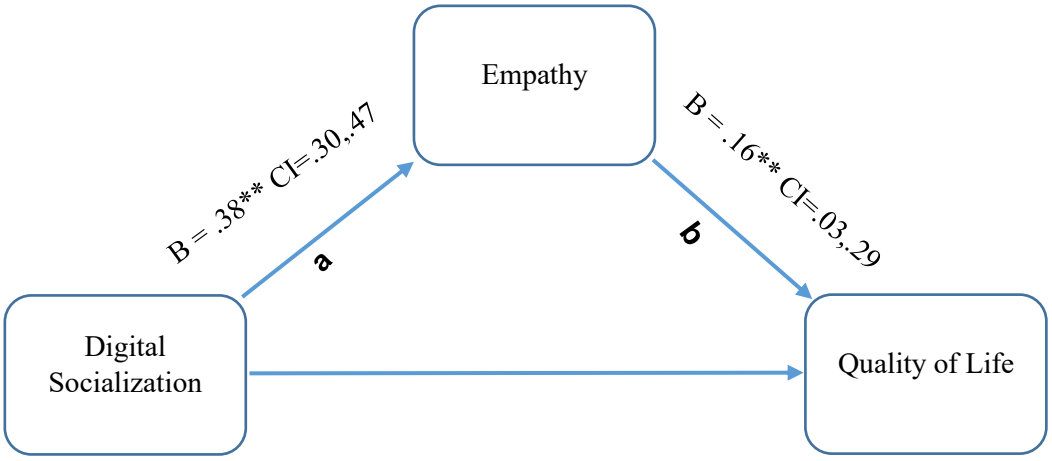
| | Quality of Life | | |
|---|---|---|---|
| | | 95% *CI* | |
| Variables | *B* | *LL* | *UL* |
| Constant | 62.51** | 48.09 | 76.92 |
| Age | .31* | .05 | .57 |
| Gender | -.61 | -3.17 | 1.97 |
| Family System | -.08 | -2.76 | 2.59 |
| Number of Siblings | .22 | -.75 | 1.18 |
| Birth Order | .47 | -.54 | 1.49 |
| Digital Socialization | .02 | -.11 | 1.56 |
| Empathy | .16* | .04 | .29 |
| **Indirect Effect** | | | |
| Digital Socialization ⟶ Empathy | .06 | .07 | .12 |
| $R^2$ | .06 | | |
| *F* | 3.76** | | |
| $\Delta R^2$ | .01 | | |
| $\Delta F$ | .43** | | |

**p < .05, **p < .01.* (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint; *Employment Status* = Employed and unemployed)

Table 37 presents the mediating effect of empathy for the association between digital socialization and quality of life. Results show that the predictor variable along with the mediator variable explains 6% variance in quality of life. However, the change is explained variance shows that only 1% variance in the outcome variable i.e., quality of life is attributable to the indirect effect of empathy through digital socialization across combined mode of study.

**Figure 7**

*The Relationship of Digital Socialization with Quality of Life Mediated by Empathy Across Combined Mode of Study (N = 541)*




Direct Effect C' = .01

Total effect C = .05

**Table 38**

*Mediating Effect of Empathy for the Relationship between Digital Socialization and Quality of Life Across Traditional Mode of Study (N = 314)*

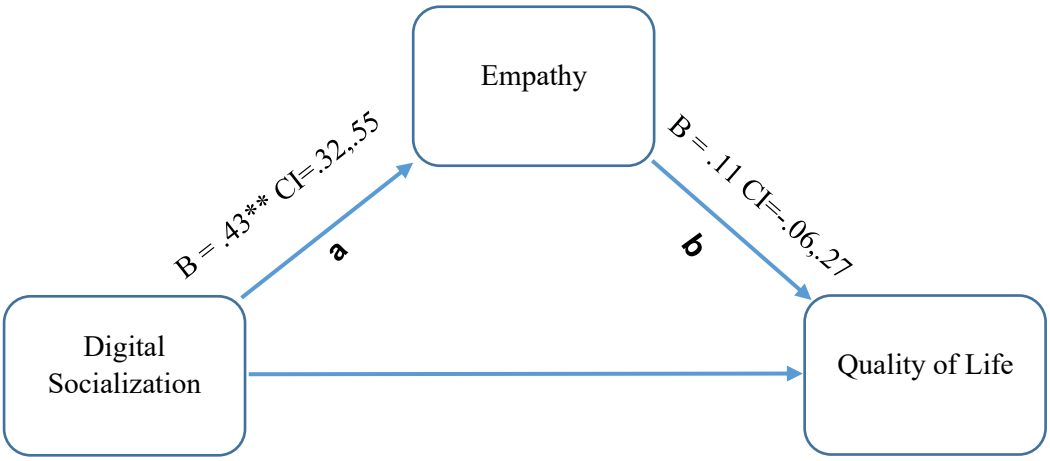
| | Quality of Life | | |
|---|---|---|---|
| | | 95% *CI* | |
| Variables | *B* | *LL* | *UL* |
| Constant | 70.03** | 51.58 | 88.47 |
| Age | .22 | -.12 | .55 |
| Gender | -.56 | -.3.69 | 2.56 |
| Family System | -.08 | -2.76 | 2.59 |
| Birth Order | .12 | -1.23 | 1.47 |
| Number of Siblings | .13 | -1.06 | 1.31 |
| Digital Socialization | .13 | -.05 | .30 |
| Empathy | .11 | -.06 | .27 |
| **Indirect Effect** | | | |
| Digital Socialization $\longrightarrow$ Empathy | .05 | -.04 | .13 |
| $R^2$ | .03 | | |
| $F$ | 1.44 | | |
| $\Delta R^2$ | .00 | | |
| $\Delta F$ | .04 | | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint)

Table 38 presents the mediating effect of empathy for the association between digital socialization and quality of life across traditional mode of study. Results show that the predictor variable along with the mediator variable explains 3% variance in quality of life. However, the change is explained variance shows that empathy variable doesn't mediate the relationship between digital socialization and quality of life across traditional mode of study.

**Figure 8**

*The Relationship of Digital Socialization with Quality of Life Mediated by Empathy Across Traditional Mode of Study (N = 314)*




Direct Effect C' = .09

Total effect C = .12

**Table 39**

*Mediating Effect of Empathy for the Relationship between Digital Socialization and Quality of Life Across Online Mode of Study (N = 227)*

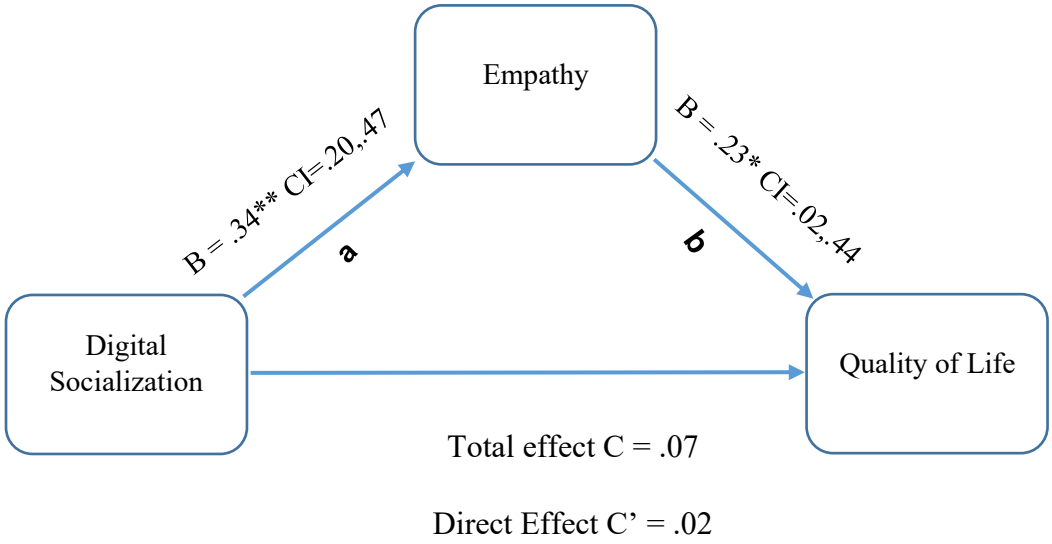
| | Quality of Life | | |
|---|---|---|---|
| | | 95% *CI* | |
| Variables | *B* | *LL* | *UL* |
| Constant | 63.39** | 37.89 | 88.90 |
| Age | .43* | .01 | .85 |
| Gender | -.13 | -4.64 | 4.38 |
| Family System | 2.34 | -2.26 | 6.95 |
| Number of Siblings | .39 | -1.27 | 2.06 |
| Birth Order | .79 | -.79 | 2.37 |
| Digital Socialization | .10 | -.31 | .11 |
| Empathy | .23* | .02 | .44 |
| **Indirect Effect** | | | |
| Digital Socialization ⟶ Empathy | .08 | .01 | .16 |
| $R^2$ | .06 | | |
| $F$ | 1.98 | | |
| $\Delta R^2$ | .02 | | |
| $\Delta F$ | .39* | | |

*$p < .05$, **$p < .01$. (Groups. *Gender* = Male and female; *Family System* = Nuclear and joint)

Table 39 presents the mediating effect of empathy for the association between digital socialization and quality of life across online mode of study. Results show that the predictor variable along with the mediator variable explains 6% variance in quality of life. However, the change is explained variance shows that only 2% variance in the outcome variable i.e., quality of life is attributable to the indirect effect of empathy through digital socialization across online mode of study.

**Figure 9**

*The Relationship of Digital Socialization with Quality of Life Mediated by Empathy Across Online Mode of Study (N = 227)*




**Moderation analysis**

To attain one of the foremost objectives of the present study, moderation analyses were conducted to examine the moderating role of cyber victimization in relationships between digital socialization and quality of life. Furthermore, the moderating roles social intelligence was also tested in relationship of digital socialization and quality of life. The proposed moderation models were tested using Process *Macro* Model 1 (Hayes, 2013). The moderating effects were separately tested across combined, traditional, and online modes of study.

***Moderating Effect of Cybervictimization Across Combined, Traditional and Online Modes of Study***

**Table 40**

*Moderating Effect of Cybervictimization on the Relationship between Digital Socialization and Quality of Life Across Combined Mode of Study (N = 541)*

| Predictors | Quality of Life | | |
|---|---|---|---|
| | *B* | 95% *CI* | |
| | | *LL* | *UL* |
| Constant | 92.46** | 91.25 | 93.67 |
| Digital Socialization | .21** | .09 | .33 |
| Cybervictimization | -.79* | -.59 | -1.00 |
| Digital Socialization * Cybervictimization | -.03** | -.05 | -.01 |
| $R^2$ | .11 | | |
| *F* | 23.22** | | |
| $\Delta R^2$ | .02 | | |

**p < .05, **p < .01.*

Table 40 shows the moderating effect of cybervictimization on the association between digital socialization and quality of life across combined mode of study. The interaction term suggests that cybervictimization significantly moderates the association between digital socialization and quality of life while cybervictimization and digital socialization interactively produce 11% variance in quality of life. The moderating effect at different levels of cybervictimization is explained through a follow up mod graph.

**Figure 10**

*Mod Graph for Moderating Effect of Cybervictimization on the Relationship between Digital Socialization and Quality of Life (N = 541)*

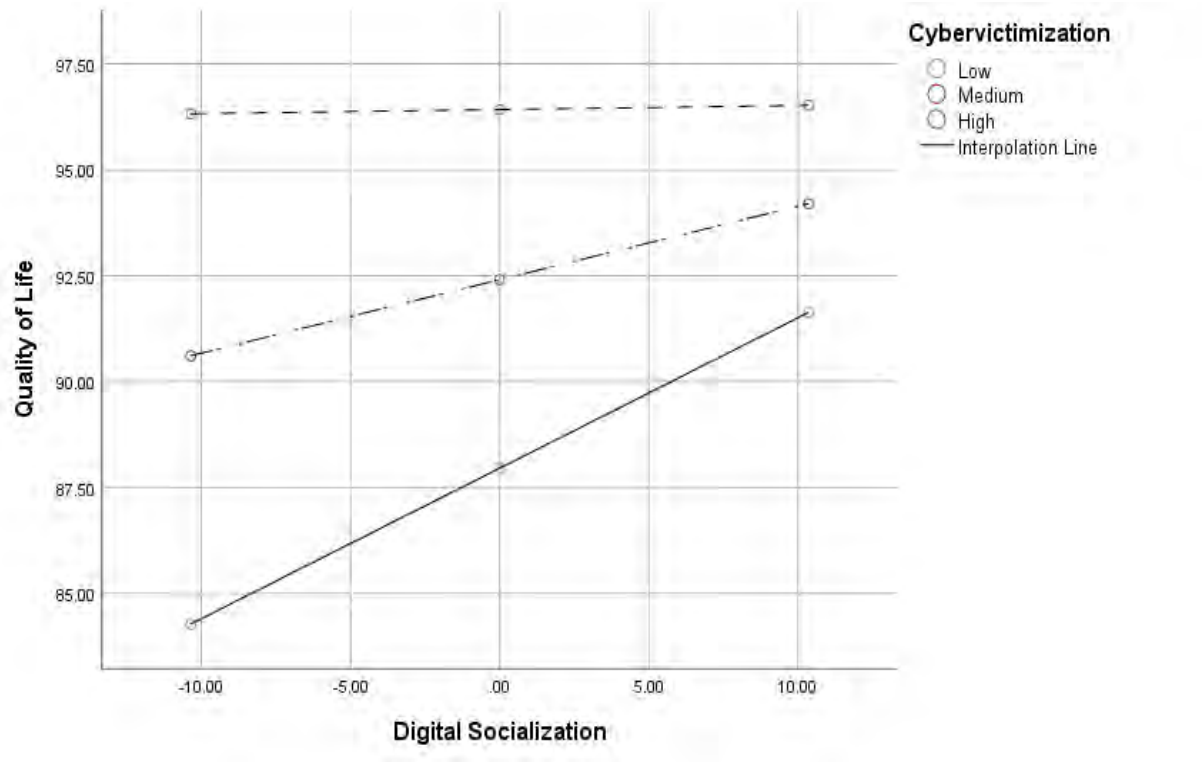



Figure 4 graphically explains the moderating effect of cybervictimization on the relationship between digital socialization and quality of life across combined mode of study. Figure illustrates that the positive association between digital socialization and quality of life is the strongest at the lowest level of cybervictimization ($B$ = .35, $p$<.01); however, the strength of positive association attenuates with the increase in levels of cybervictimization. Moreover, the moderating effect is only significant at low and medium levels of cybervictimization.

**Table 41**

*Moderating Effect of Cybervictimization on the Relationship between Digital Socialization and Quality of Life Across Traditional Mode of Study (N = 314)*

| Predictors | Quality of Life | | |
|---|---|---|---|
| | *B* | 95% *CI* | |
| | | *LL* | *UL* |
| Constant | 90.30** | 88.75 | 91.86 |
| Digital Socialization | .26** | .11 | .42 |
| Cybervictimization | -.67* | -.42 | -.92 |
| Digital Socialization * Cybervictimization | -.04** | -.06 | -.01 |
| $R^2$ | .13 | | |
| *F* | 14.20** | | |
| $\Delta R^2$ | .03 | | |

**p < .05, **p < .01.*

Table 41 shows the moderating effect of cybervictimization on the association between digital socialization and quality of life across traditional mode of study. The interaction term suggests that cybervictimization significantly moderates the association between digital socialization and quality of life while cybervictimization and digital socialization interactively produce 13% variance in quality of life. The moderating effect at different levels of cybervictimization is explained through a follow up mod graph.

**Figure 11**

*Mod Graph for Moderating Effect of Cybervictimization on the Relationship between Digital Socialization and Quality of Life Across Traditional Mode of Study (N = 314)*

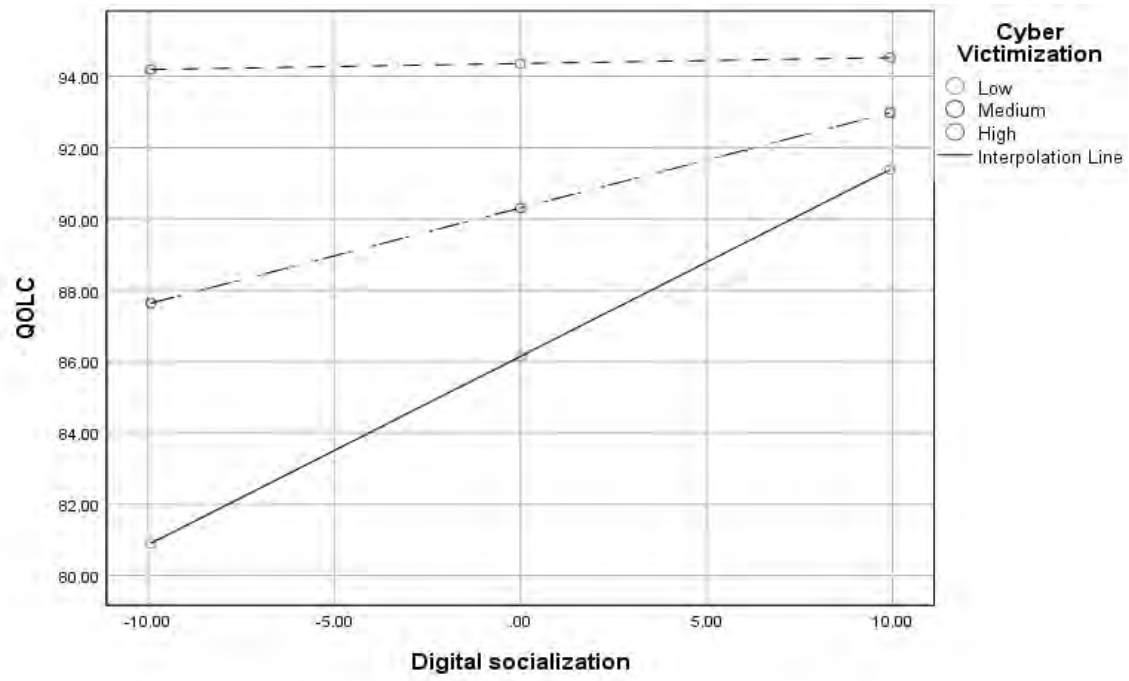



Figure 5 graphically explains the moderating effect of cybervictimization on the relationship between digital socialization and quality of life across traditional mode of study. Figure illustrates that the positive association between digital socialization and quality of life is the strongest at the lowest level of cybervictimization however, the strength of positive association attenuates with the increase in levels of cybervictimization. Moreover, the moderating effect is only significant at low and medium levels of cybervictimization.

**Table 42**

*Moderating Effect of Cybervictimization on the Relationship between Digital Socialization and Quality of Life Across Online Mode of Study (N=227)*

| | Quality of Life | | |
|---|---|---|---|
| | | 95% *CI* | |
| Variables | *B* | *LL* | *UL* |
| Constant | 71.50** | 70.04 | 72.96 |
| Digital socialization | .03 | .05 | .12 |
| cyber victimization | -.40** | -.67 | -.13 |
| Digital socialization * cybervictimization | -.00 | -.02 | -.00 |
| $R^2$ | .03 | | |
| F | 2.97 | | |
| $\Delta R^2$ | .00 | | |

**p < .05, **p < .01.*

Table 42 presents the moderating effect of cybervictimization on the association between digital socialization and quality of life. The interaction term (*B* = -.00, p>.05) suggests that the cybervictimization doesn't significantly moderate the association between digital socialization and quality of life.

***Moderating Effect of Social Intelligence Across Combined, Traditional and Online Modes of Study***

**Table 43**

*Moderating Effect of Social Intelligence on the Relationship between Digital Socialization and Empathy Across Combined Mode of Study (N = 541)*

| Predictors | Empathy | | |
|---|---|---|---|
| | *B* | 95% *CI* | |
| | | *LL* | *UL* |
| Constant | 92.00** | 91.16 | 92.84 |
| Digital Socialization | .34** | .26 | .42 |
| Social Intelligence | .20** | .26 | .14 |
| Digital Socialization * Social Intelligence | .01** | .00 | .01 |
| $R^2$ | .22 | | |
| *F* | 50.68** | | |
| $\Delta R^2$ | .02 | | |

**p < .05, **p < .01.*

Table 43 presents the moderating effect of social intelligence on the association between digital socialization and empathy. Results demonstrate that digital socialization and social intelligence interactively produce 22% variance in empathy (*B* interaction = .01; $p<.01$). Social intelligence enhances the strength of positive association between digital socialization and empathy. The follow up mod graph further explains this relationship at different levels (i.e., high, medium, and low) of social intelligence.

**Figure 12**

*Mod Graph for Moderating Effect of Social Intelligence on the Relationship between Digital Socialization and Empathy Across Combined Mode of Study (N = 541)*

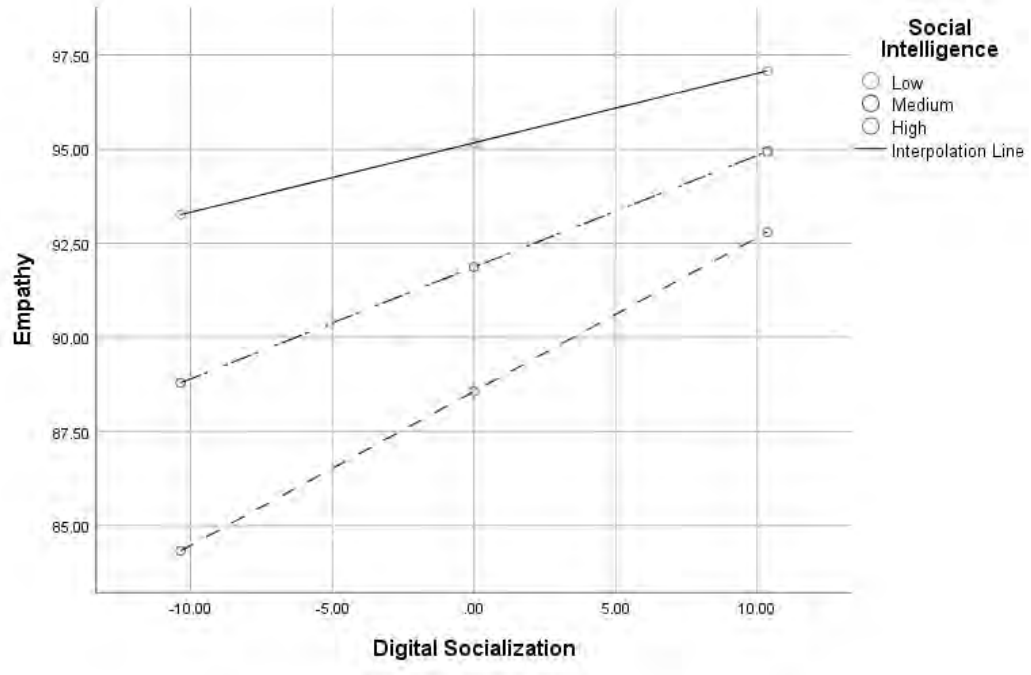



Figure 6 illustrates the moderating effect of social intelligence on the association between digital socialization and empathy. Figure demonstrates that the moderating effect is significantly positive at all levels of social intelligence (i.e., low, medium, and high). However, the strength of positive association enhances with the increase in the level of social intelligence.

**Table 44**

*Moderating Effect of Social Intelligence on the Relationship between Digital Socialization and Empathy Across Traditional Mode of Study (N = 314)*

| Predictors | Empathy | | |
|---|---|---|---|
| | *B* | 95% *CI* | |
| | | *LL* | *UL* |
| Constant | 89.78** | 88.70 | 91.07 |
| Digital Socialization | .30** | .19 | .41 |
| Social Intelligence | .27** | .34 | .19 |
| Digital Socialization * Social Intelligence | .00 | .00 | .01 |
| $R^2$ | .28 | | |
| *F* | 36.98** | | |
| $\Delta R^2$ | .00 | | |

**p < .05, **p < .01.*

Table 44 presents the moderating effect of social intelligence on the association between digital socialization and empathy across traditional mode of. The interaction term (*B* = -.00, p>.05) suggests that the social intelligence doesn't significantly moderate the association between digital socialization and empathy across traditional mode of study.

**Table 45**

*Moderating Effect of social intelligence on the Relationship between Digital Socialization and Empathy Across Online Mode of Study (N=227)*

| | Quality of Life | | |
|---|---|---|---|
| | | 95% *CL* | |
| Variables | *B* | *LL* | *UL* |
| Constant | 94.63** | 93.26 | 96.00 |
| Digital Socialization | .27** | .14 | .40 |
| social intelligence | .13* | -.24 | -.03 |
| Digital Socialization * Social Intelligence | .09* | .00 | .01 |
| $R^2$ | .12 | | |
| F | 10.56 | | |
| $\Delta R^2$ | .01 | | |

***p<.01, *p<.05*

Table 45 presents the moderating effect of social intelligence on the association between digital socialization and empathy across online mode of study. Results demonstrate that digital socialization and social intelligence interactively produce 12% variance in empathy (*B* interaction = .09; *p*<.01). Social intelligence enhances the strength of positive association between digital socialization and empathy. The follow up mod graph further explains this relationship at different levels (i.e., high, medium, and low) of social intelligence.

**Figure 13**

*Mod Graph for Moderating Effect of Social Intelligence on the Relationship between Digital Socialization and Empathy Across Online Mode of Study (N = 227)*

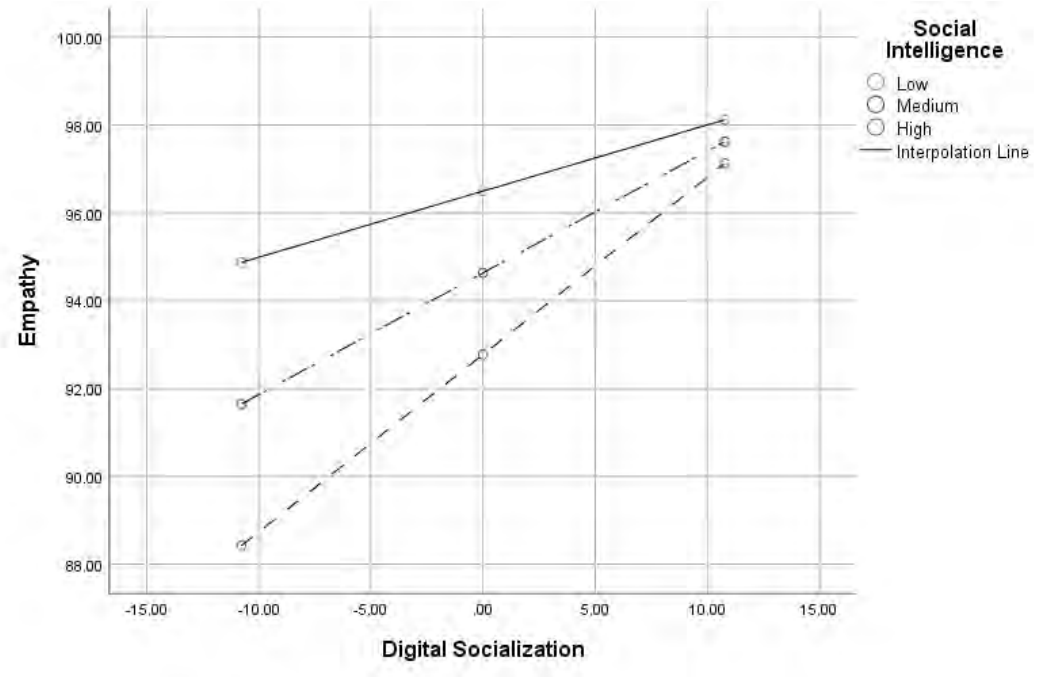



Figure 7 illustrates the moderating effect of social intelligence on the association between digital socialization and empathy. Figure demonstrates that the moderating effect is significantly positive at all levels of social intelligence (i.e., low, medium, and high). However, the strength of positive association enhances with the increase in the level of social intelligence.

**Mean differences**

Independent sample t-tests were carried out to assess the group differences and test the hypotheses formulated in the current study across diverse demographics on all the study variables. The following three ranges are used, based on Cohen's (2003) suggested guiding principle for interpreting effect size in social sciences: small effect size =.1–.30; medium =.30–.37; and large =.38 or larger. One-way analyses of variance (ANOVA) were used for groups of more than two to evaluate group differences across research variables. A second Post Hoc analysis (based on pair-wise comparisons) was further tabulated to control type 1 error in the event of a significant effect.

**Table 46**

*Mean Differences on Gender Across Study Variables (N = 541)*

| Variables | Males ($n$ = 239) | | Females ($n$ = 300) | | | | 95% CI | | |
|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* | *LL* | *UL* | *Cohen's d* |
| DS | 69.66 | 10.27 | 68.15 | 10.49 | 1.67 | .10 | -.26 | 3.28 | .15 |
| EM | 90.64 | 10.44 | 92.45 | 11.25 | -1.91 | .06 | -3.66 | .05 | .17 |
| PT | 27.73 | 4.73 | 27.64 | 4.57 | .22 | .83 | -.70 | .88 | .02 |
| OS | 26.54 | 3.97 | 26.44 | 4.00 | .27 | .79 | -.59 | .77 | .03 |
| EC | 11.35 | 2.32 | 12.17 | 2.49 | -3.94 | .00 | -1.24 | -.41 | .34 |
| PerR | 9.55 | 1.89 | 9.77 | 1.95 | -1.31 | .19 | -.54 | .11 | .11 |
| ProR | 12.49 | 2.18 | 13.11 | 2.31 | -3.17 | .00 | -1.00 | -.23 | .28 |
| SI | 76.57 | 13.62 | 80.00 | 13.99 | -2.86 | .00 | -5.78 | -1.07 | .25 |
| SIP | 27.99 | 6.10 | 29.17 | 5.63 | -2.32 | .02 | -2.17 | -.18 | .20 |
| SS | 25.44 | 6.19 | 26.69 | 6.22 | -2.33 | .02 | -2.31 | -.19 | .20 |
| SA | 23.14 | 6.22 | 24.15 | 6.11 | -1.88 | .06 | -2.05 | .04 | .16 |
| CV | 20.54 | 6.25 | 22.46 | 5.63 | -3.75 | .00 | -2.93 | -.92 | .32 |
| QoL | 92.91 | 15.17 | 92.57 | 15.00 | .26 | .79 | -2.23 | 2.90 | .02 |
| PH | 13.99 | 2.53 | 13.87 | 2.65 | .54 | .59 | -.32 | .56 | .05 |
| PsyH | 14.15 | 2.68 | 13.95 | 2.52 | .91 | .36 | -.24 | .65 | .08 |
| SR | 14.38 | 3.74 | 14.40 | 3.56 | -.07 | .94 | -.64 | .59 | .01 |
| EH | 14.38 | 2.91 | 14.57 | 2.77 | -.75 | .45 | -.67 | .29 | .07 |
| OQoL | 5.27 | 3.64 | 4.87 | 3.32 | 1.35 | .18 | -.18 | .99 | .11 |

*Note. DS*= Digital Socialization*; CE* = Cognitive Empathy; *PT* = Perspective Taking; *OS* = Online Simulation; *AE* = Affective Empathy; *EC* = Emotion Contagion; *PerR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing; *SS* = Social Skills; *SA* = Social Awareness; *CV* = Cybervictimization; *QoL* = Quality of Life; *PH*= Physical Health; *PsyH* = Psychological Health; *SR* = Social Relationships; *EH* = Environmental Health, *OQoL* = Overall Quality of Life.

Table 46 shows mean differences on gender across study variables. Results illustrate that females score significantly higher on emotional contagion and proximal responsivity facets of empathy. Similarly, social intelligence, social information processing and social skills are significantly higher among females. At the same time, females tend to be more cyber-victimized.

**Table 47**

*Mean Differences on Mode of Study Across Study Variables (N = 541)*

| Variables | Conventional (*n* = 314) | | Online (*n* = 227) | | | | 95% CI | | |
|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* | *LL* | *UL* | *Cohen's d* |
| DS | 67.16 | 9.86 | 71.19 | 10.69 | -4.52 | .00 | -5.78 | -2.28 | .39 |
| EM | 89.68 | 10.55 | 94.39 | 10.83 | -5.07 | .00 | -6.54 | -2.89 | .44 |
| PT | 26.88 | 4.75 | 28.83 | 4.22 | -4.96 | .00 | -2.73 | -1.18 | .43 |
| OS | 26.07 | 3.82 | 27.08 | 4.14 | -2.94 | .00 | -1.69 | -.33 | .25 |
| EC | 11.49 | 2.38 | 12.24 | 2.48 | -3.58 | .00 | -1.17 | -.34 | .31 |
| PerR | 9.79 | 1.89 | 9.49 | 1.97 | 1.76 | .08 | -.03 | .62 | .16 |
| ProR | 12.45 | 2.32 | 13.37 | 2.09 | -4.73 | .00 | -1.29 | -.54 | .42 |
| SI | 77.44 | 13.97 | 79.79 | 13.79 | -1.94 | .05 | -4.73 | .03 | .17 |
| SIP | 28.82 | 5.68 | 28.41 | 6.10 | .79 | .43 | -.59 | 1.41 | .07 |
| SS | 25.65 | 6.30 | 26.75 | 6.13 | -2.04 | .04 | -2.17 | -.04 | .18 |
| SA | 22.97 | 6.04 | 24.62 | 6.28 | -3.08 | .00 | -2.69 | -.59 | .27 |
| CV | 20.93 | 6.21 | 22.51 | 5.53 | -3.06 | .00 | -2.59 | -.56 | .27 |
| QoL | 90.77 | 14.04 | 95.45 | 15.97 | -3.59 | .00 | -7.21 | -2.11 | .31 |
| PH | 13.63 | 2.42 | 14.36 | 2.76 | -3.25 | .00 | -1.17 | -.29 | .31 |
| PsyH | 13.81 | 2.45 | 14.36 | 2.75 | -2.47 | .01 | -.99 | -.11 | .21 |
| SR | 14.19 | 3.48 | 14.69 | 3.83 | -1.59 | .11 | -1.12 | .12 | .14 |
| EH | 14.09 | 2.69 | 15.04 | 2.91 | -3.93 | .00 | -1.43 | -.48 | .34 |
| OQoL | 4.85 | 3.42 | 5.33 | 3.51 | -1.61 | .11 | -1.07 | .11 | .14 |

*Note*. *DS*= Digital Socialization*; CE* = Cognitive Empathy; *PT* = Perspective Taking; *OS* = Online Simulation; *AE* = Affective Empathy; *EC* = Emotion Contagion; *PerR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing; *SS* = Social Skills; *SA* = Social Awareness; *CV* = Cybervictimization; *QoL* = Quality of Life; *PH*= Physical Health; *PsyH* = Psychological Health; *SR* = Social Relationships; *EH* = Environmental Health, *OQoL* = Overall Quality of Life.

Table 47 shows mean differences across mode of study along study variables. Results show significant differences across digital socialization, empathy (and all its subscales except peripheral responsivity), social intelligence (and its subscales except social information processing), cybervictimization, and quality of life (and its subscales i.e., physical, psychological and environmental health) suggesting that participants studying in online more tend to be digitally socialized, empathetic, and have better quality of life. At the same time, cybervictimization is also significantly higher among such students.

**Table 48**

*Mean Differences on Employment Status Across Study Variables (N = 541)*

| Variables | Employed (*n* = 204) | | Unemployed (*n* = 336) | | | | 95% CI | | |
|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* | *LL* | *UL* | *Cohen's d* |
| DS | 70.29 | 10.68 | 67.99 | 10.16 | 2.51 | .01 | .49 | 4.11 | .22 |
| EM | 90.86 | 11.14 | 92.15 | 10.77 | -1.33 | .18 | -3.19 | .62 | .12 |
| PT | 27.72 | 4.66 | 27.69 | 4.63 | .06 | .95 | -.78 | .84 | .01 |
| OS | 26.77 | 4.12 | 26.33 | 3.90 | 1.24 | .21 | -.26 | 1.13 | .11 |
| EC | 11.39 | 2.52 | 12.05 | 2.36 | -3.06 | .00 | -1.08 | -.24 | .27 |
| PerR | 9.43 | 1.77 | 9.81 | 2.01 | -2.23 | .03 | -.71 | -.05 | .20 |
| ProR | 12.52 | 2.34 | 13.03 | 2.21 | -2.52 | .01 | -.90 | -.11 | .22 |
| SI | 78.46 | 14.93 | 78.44 | 13.33 | .02 | .99 | -2.41 | 2.45 | .00 |
| SIP | 28.70 | 6.08 | 28.64 | 5.73 | .11 | .92 | -.97 | 1.08 | .18 |
| SS | 26.19 | 6.45 | 26.07 | 6.14 | .21 | .84 | -.98 | 1.21 | .02 |
| SA | 23.57 | 6.46 | 23.72 | 6.04 | -.26 | .79 | -1.22 | .94 | .02 |
| CV | 20.83 | 6.38 | 22.05 | 5.69 | -2.31 | .02 | -2.26 | -.18 | .20 |
| QoL | 92.77 | 15.63 | 92.69 | 14.71 | .06 | .95 | -2.54 | 2.71 | .01 |
| PH | 14.06 | 2.62 | 13.86 | 2.58 | .89 | .37 | -.25 | .66 | .08 |
| PsyH | 14.26 | 2.49 | 13.89 | 2.64 | 1.59 | .11 | -.09 | .82 | .14 |
| SR | 14.40 | 3.87 | 14.39 | 3.49 | .03 | .97 | -.62 | .65 | .00 |
| EH | 14.20 | 2.89 | 14.65 | 2.77 | -1.78 | .08 | -.94 | .05 | .16 |
| OQoL | 5.12 | 3.61 | 4.99 | 3.37 | .40 | .69 | -.48 | .73 | .04 |

*Note. DS*= Digital Socialization*; CE* = Cognitive Empathy; *PT* = Perspective Taking; *OS* = Online Simulation; *AE* = Affective Empathy; *EC* = Emotion Contagion; *PerR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing; *SS* = Social Skills; *SA* = Social Awareness; *CV* = Cybervictimization; *QoL* = Quality of Life; *PH*= Physical Health; *PsyH* = Psychological Health; *SR* = Social Relationships; *EH* = Environmental Health, *OQoL* = Overall Quality of Life.

Results presented in Table 48 show mean differences across employment status. Findings show that digital socialization, emotional contagion and proximal responsivity

tends to be significantly higher among employed participants while cybervictimization is significantly higher among those who are unemployed.

**Table 49**

*Mean Differences Across Discipline of Study (N = 541)*

| Variables | Social Sciences ($n$ = 223) | | Natural Sciences ($n$ = 184) | | Arts and Humanities ($n$ = 46) | | Others ($n$ = 88) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *F* | *p* | $\eta^2$ |
| DS | 69.53 | 9.46 | 66.52 | 10.97 | 71.15 | 10.69 | 70.78 | 10.58 | 5.29 | .00 | .03 |
| EM | 90.57 | 10.76 | 90.72 | 10.91 | 95.49 | 11.91 | 94.38 | 9.99 | 5.02 | .00 | .03 |
| PT | 27.65 | 4.39 | 26.88 | 4.81 | 28.91 | 5.36 | 28.89 | 4.11 | 5.05 | .00 | .03 |
| OS | 26.2 | 4.09 | 26.37 | 3.86 | 27.33 | 4.32 | 27.02 | 3.72 | 1.59 | .19 | .01 |
| EC | 11.39 | 2.43 | 11.91 | 2.44 | 12.52 | 2.26 | 12.24 | 2.44 | 4.50 | .00 | .02 |
| PerR | 9.63 | 1.85 | 9.67 | 2.05 | 9.72 | 2.07 | 9.66 | 1.92 | .04 | .99 | .00 |
| ProR | 12.56 | 2.19 | 12.73 | 2.34 | 13.41 | 2.48 | 13.17 | 2.16 | 2.20 | .09 | .01 |
| SI | 79.05 | 14.43 | 77.97 | 13.97 | 77.89 | 13.26 | 78.09 | 13.06 | .25 | .86 | .00 |
| SIP | 28.62 | 6.03 | 28.91 | 5.99 | 27.24 | 5.34 | 28.93 | 5.35 | 1.08 | .36 | .01 |
| SS | 26.33 | 6.69 | 25.77 | 5.80 | 27.37 | 7.14 | 25.61 | 5.44 | 1.09 | .36 | .12 |
| SA | 24.10 | 6.35 | 23.29 | 5.91 | 23.28 | 6.13 | 23.55 | 6.40 | .66 | .58 | .00 |
| CV | 21.27 | 6.08 | 22.19 | 5.59 | 21.07 | 7.06 | 21.45 | 5.90 | .95 | .41 | .01 |
| QoL | 94.18 | 15.45 | 91.133 | 13.88 | 92.30 | 16.59 | 92.69 | 15.43 | 1.39 | .24 | .01 |
| PH | 14.30 | 2.60 | 13.57 | 2.46 | 13.78 | 2.88 | 13.85 | 2.62 | 2.84 | .04 | .02 |
| PsyH | 14.17 | 2.70 | 13.82 | 2.47 | 14.46 | 2.37 | 13.96 | 2.64 | 1.05 | .37 | .01 |
| SR | 14.40 | 3.54 | 14.24 | 3.52 | 14.38 | 4.18 | 14.74 | 3.84 | .39 | .76 | .00 |
| EH | 14.72 | 2.92 | 14.31 | 2.71 | 14.05 | 2.84 | 14.49 | 2.82 | 1.13 | .34 | .01 |
| OQoL | 15.33 | 3.41 | 14.72 | 3.28 | 15.22 | 3.78 | 14.95 | 3.76 | 1.10 | .35 | .01 |

*Note. DS*= Digital Socialization*; CE* = Cognitive Empathy; *PT* = Perspective Taking; *OS* = Online Simulation; *AE* = Affective Empathy; *EC* = Emotion Contagion; *PerR* = Peripheral Responsivity; *ProR* = Proximal Responsivity; *SI* = Social Intelligence; *SIP* = Social Information Processing; *SS* = Social Skills; *SA* = Social Awareness; *CV* = Cybervictimization; *QoL* = Quality of Life; *PH*= Physical Health; *PsyH* = Psychological Health; *SR* = Social Relationships; *EH* = Environmental Health, *OQoL* = Overall Quality of Life.

Table 49 depicts mean differences across discipline of study. Findings show significant differences across digital socialization, empathy (and its subscales i.e.,

perspective taking and emotional contagion), and physical health related quality of life. The differences are further tested through post hoc analysis presented in Table 49.1.

**Table 49.1**

*Post-Hoc Differences Across Discipline of Study (N = 541)*

| Variables | Groups | | | *95% CI* | |
|---|---|---|---|---|---|
| | *I* | *J* | *MD (I-J)* | *LL* | *UL* |
| DS | Natural Sciences | Social Sciences | -3.02* | -5.73 | -.31 |
| | Natural Sciences | Arts & Humanities | -4.64* | -9.12 | -.15 |
| | Natural Sciences | Others | -4.27* | -7.79 | -.74 |
| EM | Natural Sciences | Arts & Humanities | -4.78* | -9.49 | -.08 |
| | Social Sciences | Arts & Humanities | -4.93* | -9.55 | -.29 |
| | Social Sciences | Others | -3.80* | -7.40 | -.21 |
| PT | Natural Sciences | Arts & Humanities | -2.03* | -4.03 | -.03 |
| | Natural Sciences | Others | -2.01* | -3.59 | -.44 |
| EC | Social Science | Arts & Humanities | -1.12* | -2.16 | -.09 |
| | Social Sciences | Others | -.84* | -1.65 | -.03 |
| PH | Natural Sciences | Social Sciences | -.74* | -1.42 | -.05 |

Note. *DS* = Digital Socialization; *EM* = Empathy; *PT* = Perspective Taking; *EC* = Emotional Contagion; *PH* = Physical Health.

Table 49.1 shows results of post hoc analysis across discipline of study. Results demonstrate that digital socialization, empathy and perspective taking are significantly lower among students from natural sciences disciplines compared to participants enrolled in other disciplines. Furthermore, emotional contagion is significantly higher among students enrolled in the arts and humanities and other disciplines. Physical health related quality of life, on the other hand, is significantly higher among students from social sciences disciplines.

# DISCUSSION

# Chapter 4

## DICUSSION

Digital socialization is a phenomenon of core importance in this digitalized world. It has been found that social networking platforms have an impact on how Pakistani youngsters interact with each other (Saleem et al., 2014). Research on the effects of social networking sites on face-to-face socialization, participation in online relationships and activities, and patterns of virtual socialization reveals a decline in face-to-face and traditional postal communication (Saleem, 2016). Access to internet has impacted the young people in urban Pakistan. It has physically distanced them from their social capital while growing closer online (Muzaffar, 2019; Siraj, 2018). Thus, there remained a need to study how the lives of youngsters may be affected by this dominating medium of online modes in their socialization. Different other variables related to this online media i.e., cyber victimization and socialization, empathy and social intelligence were also explored. Additionally, the relationship between the research variables and several demographic factors, such as gender, mode of education, devices, number of social media profiles, different social media platforms, employment status, family system, and the ethnic background etc. were also examined.

The current research aimed at finding out the impact of digital socialization and empathy on quality of life of university students and exploring the role of social intelligence and cyber victimization. Phase-I of the current investigation consisted of the pre-testing phase and the pilot trial. To ensure that participants understood the scales, pre-testing was done on a sample of 10 students. The objective of the pilot study, which involved 100 university students, was to examine the psychometric properties of the scales, the direction of relationships between study variables, the study protocol, and any potential problems that might arise during the administration of the questionnaire. In order to satisfy the ethical requirement, authors' consent was obtained. The scales were then provided to those 100 students in order to determine whether or not they were valid and reliable in the sample. The validity of the scale and each item's connection with the total were examined using the item-total correlation method. The results of the pilot study showed that all scales and subscales had acceptable values for the alpha coefficient. The results also demonstrated that there is a desired link between the research variables. The scales were found to be suitable for use with the intended sample, and it was decided to move forward with the main study.

Phase II involved conducting the main study. Testing the research hypotheses and achieving additional study goals were the objective of the main study. Using the same methodology as the pilot study, it was done on a sample of 541 university students from both traditional and online universities of Pakistan. As online student belonged to dispersed geographical areas of different provinces of Pakistan, an online form for data collection was generated. Before enrolling participants for the research study, they were informed about the study's purpose and provided with an invitation to participate. Each potential participant was given clear details about the voluntary nature of their participation, the confidentiality and anonymity of their information, and their right to withdraw from the study at any time. These steps were taken to ensure that participants were fully informed about the study's procedures and their rights as participants, promoting ethical research practices and safeguarding their well-being. During the study, some participants expressed concern about the length of the questionnaires, but were reassured after being briefed on the study's purpose. The majority of participants were cooperative throughout the data collection process. Once the data had been collected, it was entered into SPSS-26 for analysis and the resulting data was presented in tabulated format.

Confirmatory factors analysis for all five scales was done. The mean, standard deviation, range of scores, skewness, and kurtosis were calculated and tabulated for each scale. The score ranges provide an estimate of the accuracy of the sample's responses. The Cronbach's alpha reliability for each scale indicated satisfactory and acceptable reliability. Additionally, the skewness and kurtosis values demonstrated the normal distribution of data for all scales.

Bivariate correlation was performed to determine how the study variables related to one another. Digital socialization has been found to be positively correlated with quality of life. The results demonstrate that digital socialization is significantly positively correlated to empathy, cyber victimization, quality of life and social intelligence. Empathy is significantly positively correlated to digital socialization, quality of life, and social intelligence while it has a significant negative correlation with cyber victimization. Cyber victimization is significantly negatively correlated with quality of life while no significant relationship was found between cyber victimization and social intelligence.

The first hypothesis postulated that digital socialization, social intelligence and empathy are positively associated with quality of life. The result of bivariate correlation

signifies the same results to support the hypothesis. It was found that digital socialization was positively associated with quality of life, suggesting that individuals who engaged in more digital socialization reported a higher quality of life. This finding is consistent with previous research which has suggested that digital socialization can have positive effects on mental health and well-being (Oh et al., 2014). The positive association between digital socialization and quality of life can be attributed to the fact that digital communication has become an integral part of modern social life. Digital socialization provides individuals with opportunities to build and maintain social connections, which can lead to increased social support and reduced feelings of isolation (Kim & Lee, 2011). Social intelligence was also positively associated with quality of life. This finding suggests that individuals who are more socially intelligent, and are able to navigate complex social situations, report a higher quality of life. This is consistent with previous research which has suggested that social intelligence is an important predictor of well-being (Ramos-Díaz et al., 2019)  Empathy was also found to be positively associated with quality of life. This finding suggests that individuals who are more empathetic, and are able to understand and connect with others, report a higher quality of life. The idea of empathy is widely accepted by researchers, and this illustrates the critical importance that is thought to be associated with it in terms of social interaction and overall welfare (Hall & Schwartz, 2019).

It was hypothesized that digital socialization and cyber victimization are positively associated. The results are consistent with the premise that both variables are positively associated. Research has shown that digital socialization, particularly through social media platforms, increases the likelihood of cyber victimization, which includes behaviors such as cyberbullying, online harassment, and cyberstalking. A previous research has found that adolescents who reported high levels of digital socialization were more likely to be cyberbullied (Besag, 2010). Similarly, a study by Hinduja and Patchin (2008) found that adolescents who spent more time on social media were at higher risk for cyberbullying and cyber victimization (Hinduja & Patchin, 2008). One possible explanation for the positive association between digital socialization and cyber victimization is that digital technology provides more opportunities for interpersonal conflicts and misunderstandings to occur, which may increase the likelihood of experiencing cyber victimization. Additionally, individuals who are more socially engaged online may be more likely to encounter online

aggressors who seek out and target individuals who are perceived as vulnerable. As it has been previously suggested that engaging in online interactions with others increases the risk of being exposed to various forms of cyberviolence, such as cyberstalking, online sexual exploitation, cyber-harassment and bullying, threats of violence, and online violent extremism (Hawdon, 2021).

The next hypothesis stated that digital socialization positively predicts empathy and social intelligence. The regression analysis gave the favorable results by postulating that digital socialization actually predicts empathy and social intelligence. Same results were found in the students of both modes of studies. Previous studies have indicated that digital media use can affect empathy in different ways. Digital media use can enhance empathy by exposing users to diverse experiences and emotions of others, stimulating emotional contagion and perspective-taking (Roswell et al., 2020). Studies have found that digital socialization can facilitate the development of empathy by exposing individuals to a wider range of perspectives and experiences (Nurannisaa et al., 2020). Similarly, some studies have found that digital socialization can enhance social intelligence by providing opportunities for social learning and practice (Che et al., 2017). Digital media use can provide opportunities for learning and practicing social skills through online interactions with diverse people and perspectives (Friesem, 2016). Further research is needed to better understand the mechanisms underlying the relationship between digital socialization and empathy and social intelligence, and to identify the conditions under which digital socialization can enhance social skills and emotional intelligence.

It was hypothesized that digital socialization and empathy have a positive impact on an individual's quality of life. The results suggested the same that empathy casts positive, cyber victimization casts negative impact on quality of life whereas digital socialization does not predict quality of life. Though it has been found that digital socialization can enable access to information, support, and resources that may otherwise be unavailable or inaccessible (James et al., 2017), it may vary in its impact depending on various factors, such as the type, frequency, duration, and context of use, as well as the individual's personality, motivation, and coping skills (Allen, 2019). Moreover, digital socialization may reflect rather than cause low quality of life, as people who are unhappy or dissatisfied with their lives may seek more digital

socialization as a form of escape or compensation (Allen, 2019). Digital socialization may interact with other variables that affect quality of life, such as socioeconomic status, education level, health condition, or social support (Smith et al., 2015). These variables may confound or influence the association between digital socialization and quality of life. Along with that, Displacement theory suggests that time spent on social media reduces time spent on face-to-face interaction, especially with close friends and family, and therefore lowers well-being (Glover, 2020). This theory assumes that face-to-face communication is more valuable and beneficial for our well-being than social media communication, and that social media use is a less satisfying substitute for face-to-face interaction (Hall & Liu, 2022).

Digital socialization is also said to be fostering digital empathy. It was found that digital socialization and empathy were positively associated with well-being and quality of life, while cyberbullying was negatively associated with these outcomes (Arnarsson et al., 2020). Some researchers have argued that digital socialization can foster empathy by exposing people to diverse perspectives and experiences, and by creating opportunities for meaningful interactions and support. Virtual reality can help people experience what it is like to be in someone else's shoes, and increase their empathy for stigmatized groups or people in distress (Shashkevich, 2018).

It was posited that cyber victimization has a negative impact on quality of life. Result showed the same directions. Other studies have also found a negative relationship between cyber victimization and quality of life. For example, a study by Nesi et al. (2018) found that cyberbullying was associated with decreased well-being and increased depressive symptoms among adolescents (Nesi et al., 2018). Similarly, it was found that cyberbullying was associated with lower levels of life satisfaction and higher levels of psychological distress among young adults (Arnarsson et al., 2020).

It was postulated that cyber victimization moderates the relationship of digital socialization and quality of life. Moderation analysis was done to check the effect of cyber victimization on the relationship between digital socialization and quality of life. The result supported the hypothesis in the combined as well as conventional mode of study that cyber victimization negatively moderates the relationship of digital socialization and quality of life. Some evidence suggests that cyber victimization may moderate the relationship between digital socialization and quality of life, meaning that it may influence how digital socialization affects one's well-being. For example, a study by Hamby et al. (2021) found that cyber victimization

was associated with lower quality of life, and that digital socialization was associated with higher quality of life only for those who experienced low levels of cyber victimization (Hamby et al., 2021). This suggests that cyber victimization may reduce the benefits of digital socialization for one's well-being. Another study by Ho et al. (2018) found that different types of cyber victimization had different effects on the relationship between digital socialization and quality of life. They found that cyberbullying and victimization was negatively associated with quality of life, and that it weakened the positive association between digital socialization and quality of life. However, they also found that online sexual solicitation victimization was positively associated with quality of life, and that it strengthened the positive association between digital socialization and quality of life (Bradbury et al., 2018). This suggests that cyber victimization may have different moderating effects depending on the type of harm involved. Though the hypothesis is supported by empirical evidence, indicating that cyber victimization can undermine the positive effects of digital socialization on quality of life, more research is needed to fully understand the mechanisms and boundary conditions of these relationships, as well as the potential interventions and prevention strategies that can promote positive outcomes for individuals who experience cyber victimization. Cybervictimization however did not moderate the relationship of digital socialization and quality of life in students of online mode of studies. Students studying in traditional universities may have more exposure to social media platforms, where cyber-victimization often occurs. They may also use social media more frequently and intensively to communicate with their friends, classmates, or groups, which could make them more visible and accessible to potential cyberbullies (Donat et. al., 2023).

Another hypothesis postulated that social intelligence moderates the relationship between digital socialization and empathy. The findings provided evidence in favor of the proposed hypothesis in combined and online mode of study. The relationship between social intelligence, digital socialization, and empathy is complex and may depend on various factors, such as the type, frequency, and quality of online interactions; the nature and purpose of online communication; the individual characteristics and preferences of the user; and the context and content of the message (Pashevich, 2022). It has been found that social intelligence has a moderating mediating role between peer attachment, core self-evaluation, and proactive socialization behavior (Nie et al., 2022). Some evidence suggests that social intelligence may moderate the

relationship between digital socialization and empathy, meaning that it may influence how digital socialization affects one's empathy. A study by Walker and Weidenbenner (2019) found that social intelligence was positively associated with empathy development in children who used virtual reality to experience different perspectives (Walker & Venker Weidenbenner, 2019). It was also found that social intelligence was negatively associated with cyberbullying victimization and perpetration among adolescents who used online social networks. They suggested that social intelligence helped adolescents to avoid or cope with online conflicts, and to regulate their emotions and behaviors online. (Méndez et al., 2019). Social intelligence did not moderate the relationship between digital socialization and empathy in conventional mode of study. Digital socialization may not provide enough cues and feedback for empathic communication, such as facial expressions, body language, tone of voice, or physical contact. These cues and feedback are important for developing empathy, as they help people to recognize and respond to the emotions of other (Pashevich, 2022).

Next hypothesis postulated that empathy mediates the relationship of digital socialization and quality of life. This stance has been supported by the results in both, combined mode of study and online mode of study. The results are in line with a few previous studies. A study investigated the relationship between empathy and internet altruistic behavior among college students, and found that empathy partially mediated the effect of internet altruistic motivation on internet altruistic behavior (Zheng et al., 2022). James et al. (2017) reviewed the literature on digital life and youth well-being, social connectedness, empathy, and narcissism, and found that digital media can have positive or negative effects on these outcomes depending on individual and contextual factors. They argued that empathy is a key factor that can moderate the impact of digital media on well-being and social connectedness (James et al., 2017). The hypothesis is not without limitations or challenges. One limitation is that empathy is a multifaceted construct that may not be easily measured or manipulated by digital media. Different aspects of empathy may have different effects on quality of life, and different types of digital media may have different effects on different aspects of empathy. Similarly, quality of life is a subjective construct that may not be fully captured by existing scales or indicators. Quality of life may depend on various factors beyond digital socialization and empathy, such as personal values, goals, expectations, and resources. Digital media use is influenced by various individual and contextual factors that may confound or

moderate its effects on empathy and quality of life. For example, age, gender, personality, motivation, culture, family, peers, education, and environment may affect how people use and respond to digital media. Therefore, more research is needed to explore how these factors interact with digital media use and its outcomes. Empathy however, did not mediate the relationship between digital socialization and quality of life in traditional mode of study. Digital socialization may not foster genuine empathy, but rather superficial or selective empathy. Some studies have suggested that online interactions may lack the emotional depth and richness of face-to-face interactions, and that people may be more prone to express or receive empathy only from those who share their views or interests (Kryshtanovskaya et al.,2022).

It was hypothesized assumed that quality of life improves with age. Results of the current study also showed the same. The hypothesis stated that QoL increases with age because older adults have more positive attitudes, lower expectations, wisdom, coping skills and meaningful relationships than younger adults. This hypothesis is supported by some empirical evidence showing that older adults tend to report higher levels of life satisfaction, happiness and optimism than younger adults (Deshpande, 2013). Moreover, older adults may benefit from the accumulation of life experiences, the development of personal identity and the achievement of life goals that enhance their sense of purpose and fulfillment (Netuveli & Blane, 2008). Vanleerberghe et al. (2018) conducted a literature review on the quality of life of older people and found that it was influenced by various factors, such as health care, social support, living arrangements, and environmental factors (Vanleerberghe et al., 2017). It may also depend on the culture they live in. Individuals living in collectivistic cultures experience higher well-being and overall satisfaction with life due to factors such as social support, interdependence, sense of identity and belonging, social cohesion, cooperation, and prosocial behavior (Aknin et al., 2013; Oishi et al., 2007). Moreover, older adults may use various strategies such as selection, optimization and compensation to optimize their strengths and minimize their weaknesses in different domains of QoL (Brett et al., 2019).

Next hypothesis assumed that students of online mode better socialize digitally as compared to those of conventional mode of studies. Online students can also choose the time, place and frequency of their communication according to their preferences and availability (Hong et al., 2020). Online students can communicate with their peers

and teachers through various platforms such as live video chats, discussion forums, social media and email. These platforms allow them to exchange ideas, share feedback, collaborate on projects and build rapport (Ababneh et al., 2023). Online courses foster more frequent and diverse interactions among students, including online discussions, collaborative projects, and multimedia sharing (Richardson & Swan, 2003). This exposure to various digital communication channels allows online learners to practice and refine their digital socialization skills. Online learners often have more flexibility and autonomy in managing their learning schedules. They can choose when and how to participate in digital socialization activities. Research suggests that this autonomy enables students to engage in online communities, develop virtual networks, and cultivate meaningful relationships at their own pace, contributing to enhanced digital socialization (Akyol & Garrison, 2011).

Results of mean differences also showed that students of online mode of studies tend to be more cyber victimized. Students of online mode of studies may spend more time and engage in more activities on the internet, such as social media, gaming, or online learning platforms. This may increase their exposure and vulnerability to cyber threats, such as harassment, bullying, fraud, or hacking (Macaulay et al., 2020) . Students of online mode of studies may have less social support and supervision from their teachers, peers, or parents. This may make them more isolated and lonelier, which may affect their self-esteem and coping skills. They may also have less access to resources or help when they face cyber victimization (Zimmer-Gembeck et al., 2021). Students of online mode of studies may have more difficulties in identifying and reporting cyber victimization. They may not be aware of the signs and consequences of cyber victimization, or they may not know how to protect themselves and seek help. They may also fear retaliation and blame from the perpetrators or others (Macaulay et al., 2020).

The next hypothesis posited that employed students better digitally socialize as compared to unemployed students, while unemployed students tend to be more cyber victimized as compared to employed students. Results indicated the same. It has been evident from the previous studies that Employed individuals can use digital platforms to enhance their work performance and career development. They can use online tools to communicate with their colleagues, clients and managers, to access and share information and resources, to collaborate on projects and tasks, and to learn new skills

and knowledge (Bertani et al., 2020). Individuals with higher socioeconomic status, including employment status, had better access to digital technologies. This access enables employed individuals to engage more actively in digital socialization activities (Obar et al., 2012). They can also use online platforms to showcase their achievements, receive feedback and recognition, and network with other professionals (Smith et al., 2015). Employed individuals can benefit from the positive outcomes of digital socialization for their well-being and happiness. They can enjoy the social support, companionship and belonging that online interactions can provide. They can also experience the satisfaction, fulfillment and meaning that online interactions can generate.

Based on the literature, it was hypothesized that male students tend to be more cyber victimized as compared to female students. Females are more likely to experience cyberbullying that involves relational aggression, such as gossiping, spreading rumors, excluding and isolating someone from a group, which can cause psychological harm and damage their social reputation (Marr & Duell, 2021; Zsila et al., 2019). Females are also more likely to be targeted by cyberstalking, cyber-harassment and sextortion, which can involve threats, coercion, blackmail and unwanted sexual advances. Females are more vulnerable to cyber victimization due to gender stereotypes, sexism and misogyny that pervade online spaces. Females may face discrimination, objectification, harassment and violence based on their appearance, behavior, opinions and identity (Santre, 2022).

Another hypothesis posited that students of natural sciences digitally socialize less as compared to students of other academic domains. It has been proved by the results and there are multiple arguments to support that. Students of natural sciences may have less interest and motivation to engage in digital socialization than students of other domains. They may prefer to focus on their studies and research, which often require intensive and independent work, rather than spending time on online platforms and activities (Fenstad, 2018). They may also value face-to-face interactions more than online ones, especially when it involves laboratory work, field work or experiments (Barthel & Seidl, 2017). Students of natural sciences may have less opportunity and access to digital socialization than students of other fields of study. They may have fewer courses or programs that incorporate online learning or collaboration, as they may rely more on physical equipment, materials and facilities. The results of the present

study also reveal that empathy is significantly lower among students of natural sciences. Natural sciences students may have a higher preference for systemizing than empathizing, which means they are more interested in understanding and analyzing the rules and patterns of physical systems than the mental states and emotions of others (Sunassee et al., 2021; Zeyer & Dillon, 2019). Natural sciences students have a lower motivation or expectation to show empathy in their academic or professional contexts, which may influence their empathy, attitudes and behaviors. They may perceive empathy as less relevant or important for their learning outcomes or career goals, they may face more barriers or challenges to express empathy in their scientific culture (Numanee et al., 2020).

Independent t-test was used to compute mean differences among study variables for gender. Results showed that women scored higher on two subscales of empathy. It is evident from the previous researches that women are more empathetic than men because of their socialization and gender roles, which encourage them to be more nurturing and interpersonally oriented (Christov-Moore et al., 2014). It has been found that women scored significantly higher than men on measures of empathy, including both cognitive and affective empathy (Konrath et al., 2011). Women are better at recognizing emotions from facial expressions, a skill that is related to cognitive empathy (Löffler & Greitemeyer, 2023). Socialization and cultural factors contribute to gender differences in empathy. In Pakistani society, girls are often encouraged to be more nurturing, caring, and emotionally expressive, fostering the development of empathic abilities. Findings of this study also demonstrate gender differences in empathy but it is important to note that individual variations do exist, and empathy is a complex trait influenced by multiple factors, including biology, environment, and individual experiences.

Moreover, women scored high on all subscales of social intelligence. Social intelligence, social information processing and social skills are significantly higher among females. It has been posited by a longitudinal study that women showed higher levels of social competence, including better conflict resolution, more effective communication, and higher relationship satisfaction compared to men (Kenny & Acitelli, 2001). Genders tend to differ in emotional self-awareness, interpersonal relationships, self-regard, and empathy with females scoring high than males (Meshkat & Nejati, 2017). Women in Pakistan face many challenges and inequalities that may

require them to develop higher levels of social intelligence to cope and survive. For example, they may need to be more aware of their rights, more empathetic to others, more skilled in communication and negotiation, and more resilient in the face of violence and discrimination (Ahmed et al., 2021).

## Conclusion

The findings of the presented study revealed that digital socialization is significantly positively associated empathy, social intelligence, cyber victimization, and quality of life. Empathy is positively associated with social intelligence and quality of life while it is negatively associated with cyber victimization. Social intelligence is positively associated with quality of life and cyber victimization, while cyber victimization is negatively associated with quality of life. Digital socialization positively predicts empathy and social intelligence while it does not predict quality of life. The study indicated that cyber victimization negatively moderates the relationship of digital socialization and quality of life. While social intelligence positively moderates the relationship of digital socialization and empathy. This study found that empathy mediates the relationship between digital socialization and quality of life. Moreover, empathy social intelligence and cyber victimization is found to be higher among female students. Students of online mode of studies are found to be higher at social intelligence, digital socialization, empathy, quality of life and cyber victimization. Employed participants tend to be more digitally socialized while unemployed students experience more cyber victimization. Digital socialization and empathy are significantly lower among students from natural sciences disciplines.

In the individual who were involved in group studies, it was found that digital socialization is positively associated with empathy, social intelligence and quality of life, while if one is digitally socializing more; they are more prone to being cyber victimized. Correlations of all variables remained in the same direction except a few. Quality of life has been positively predicted by social intelligence and negatively predicted by cyber victimization in students of distant learning mode, but it is only negatively predicted by cyber victimization in students of traditional mode of studies. Empathy and social intelligence are both predicted by digital socialization in students studying in both modes of instruction. Empathy mediated the relationship between digital socialization and quality of life among students of online modes of studies while

it did not moderate the relationship of the said in the students of conventional mode of studies. Social intelligence moderated the relationship of digital socialization and empathy in students of online mode of education while it did not moderate the relationship of both in students studying in traditional universities. Cyber victimization moderated the relationship of digital socialization in both groups while that of social intelligence in students of conventional mode, but it did not moderate the relationship of digital socialization and quality of life in students of online mode.

## Implications of the Present Research

### Theoretical Implications

This study contributes to the literature on digital socialization, empathy, quality of life, cyber victimization, and social intelligence among university students. The study contributes to the theoretical understanding of digital socialization by exploring its impact on quality of life. It sheds light on how online interactions and connections can influence individuals' well-being and overall satisfaction with life. It also expands our theoretical understanding of the relationship between empathy and quality of life. By examining the role of empathy in the digital context, it provides insights into how empathic abilities affect individuals' well-being.

The study adds to the existing literature by investigating the impact of cyber victimization on quality of life. It helps to identify the negative consequences of online victimization experiences and their potential influence on individuals' overall life satisfaction. The research also explored the role of social intelligence in mediating the relationship between digital socialization, empathy, and quality of life. It contributes to the understanding of how individuals' ability to navigate social interactions and relationships in the digital realm can impact their well-being.

These findings support and extend the existing theories on social support, emotional intelligence, and cyber resilience. They also challenge the assumptions that digital socialization is detrimental to empathy and quality of life, or that cyber victimization is inevitable and unavoidable. This study highlights the need for more research on the complex and dynamic interactions among these variables in different online contexts and platforms.

**Practical implications**

The findings highlight the importance of fostering positive digital socialization experiences among university students. It suggests that university students can enhance their quality of life by engaging in digital socialization that fosters empathy and mutual support with their peers. Educators, parents, and policymakers can develop interventions and programs that encourage healthy and supportive online interactions, thereby enhancing students' quality of life.

The study emphasizes the significance of empathy in the digital realm. Interventions aimed at promoting empathy skills can be implemented to cultivate a more empathetic online culture among university students, fostering supportive and compassionate digital communities.

The research underscores the need to address cyber victimization among university students. Awareness campaigns, educational programs, and policies that target prevention, early detection, and intervention of cyber victimization can help mitigate its negative impact on students' quality of life.

Given the mediating role of social intelligence, interventions that enhance students' social intelligence skills in digital settings can be developed. Providing training and support in areas such as effective communication, conflict resolution, and online relationship building can empower students to navigate digital interactions more successfully, positively influencing their quality of life.

This study has practical implications for university students, educators, counselors, and policymakers. Educators and counselors can facilitate the development of these skills by providing online learning opportunities and interventions that promote digital citizenship, cyber ethics, and cyber safety. Policymakers can also support these efforts by creating and enforcing policies that prevent and address cyber victimization among university students. This research may support the interpersonal and intrapersonal relationships and facilitate improved communications, problem solving and knowledge exchange.

## Limitations and Suggestions

No research study can be conducted without imperfections and limitations. These gaps in knowledge create opportunities to delve deeper into the phenomenon while considering the limitations of previous research. Valuable insights and recommendations are provided to guide future studies in this area.

First, the study used a cross-sectional design that does not allow for causal inferences or temporal relationships among the variables. Therefore, it is possible that other factors may have influenced the observed associations between digital socialization, empathy, quality of life, cyber victimization, and social intelligence. A longitudinal or experimental design would be more appropriate to establish causality and directionality among these variables.

Second, the study relied on self-report measures that may be subject to social desirability bias, recall bias, or response bias. Therefore, it is possible that some participants may have over or under-reported their experiences or perceptions. Objective or behavioral measures would be more valid and reliable to assess these constructs.

Third, the study used a convenience sample of university students that may not be representative of the general population or other groups of online users. Therefore, it is possible that the findings may not be generalizable to other contexts or populations that may have different characteristics or experiences of digital socialization, empathy, quality of life, cyber victimization, and social intelligence. A random or stratified sample would be more diverse and representative to enhance the generalizability of the findings.

Fourth, the research has been conducted in Pakistan, so the findings and results may also have cultural influences (Lowry et al., 2011; Vroom & Von Solms, 2004) .

The study may not account for all potential confounding variables that could influence the relationship between digital socialization, empathy, cyber victimization, social intelligence, and quality of life. Factors such as socio-economic status, prior experiences, or personality traits might impact the observed associations. Moreover, many different phenomena associated with digital socialization may have an impact on the quality of life that could be further explored such as internet addiction, online impersonation and catfishing, online echo chambers and polarization, online privacy

and security concerns, social comparison and self-esteem issues, online disinhibition effect digital fatigue and information overload etc.

# REFERENCES

## References

Ababneh, I., Al-qdah, M., & Almutairi, A. (2023). Comparison of Academic Results during Conventional and Online Modes of Learning: A Case Study of Two Groups of Saudi University Students. *Sustainability (Switzerland)*, *15*(7). https://doi.org/10.3390/su15075799

Aboujaoude, E., Savage, M. W., Starcevic, V., & Salame, W. O. (2015). Cyberbullying: Review of an old problem gone viral. In *Journal of Adolescent Health*. https://doi.org/10.1016/j.jadohealth.2015.04.011

Ahmed, S., Bari, S., & Jabeen, R. (2021). WOMEN IN PAKISTAN- SOCIAL MOBILITY, HUMAN DEVELOPMENT AND EMPOWERMENT. *Journal of Social Sciences and Humanities*. https://doi.org/10.46568/jssh.v60i1.426

Aknin, L. B., Dunn, E. W., Helliwell, J. F., Biswas-Diener, R., Nyende, P., Barrington-Leigh, C. P., Burns, J., Kemeza, I., Ashton-James, C. E., & Norton, M. I. (2013). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/a0031578

Akyol, Z., & Garrison, D. R. (2011). Assessing metacognition in an online community of inquiry. *Internet and Higher Education*. https://doi.org/10.1016/j.iheduc.2011.01.005

Allen, S. (2019). Social media's growing impact on our lives. *New Media and Society*.

Amati, V., Meggiolaro, S., Rivellini, G., & Zaccarin, S. (2018). Social relations and life satisfaction: the role of friends. *Genus*, *74*(1). https://doi.org/10.1186/s41118-018-0032-z

American Psychological Association. (2010). *Fact Sheet: Age and Socioeconomic Status*. American Psychological Association.

Arnarsson, A., Nygren, J., Nyholm, M., Torsheim, T., Augustine, L., Bjereld, Y., Markkanen, I., Schnohr, C. w., Rasmussen, M., Nielsen, L., & Bendtsen, P. (2020). Cyberbullying and traditional bullying among Nordic adolescents and their impact on life satisfaction. *Scandinavian Journal of Public Health*. https://doi.org/10.1177/1403494818817411

Arseneault, L. (2018). Annual Research Review: The persistent and pervasive impact of being bullied in childhood and adolescence: implications for policy and practice. In *Journal of Child Psychology and Psychiatry and Allied Disciplines*. https://doi.org/10.1111/jcpp.12841

Aslanargun, E. (2007). Modern Eğitim Yönetimi Anlayışına Yönelik Eleştiriler ve Postmodern Eğitim Yönetimi. *Kuram ve Uygulamada Eğitim Yönetimi*.

Aysina, R. M., & Nesterova, A. A. (2019). Cyber socialization of youth in the information and communication space of the modern world: effects and risks. *Social Psychology and Society*, *10*(4), 42–57. https://doi.org/10.17759/sps.2019100404

Balakrishnan, V. (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Computers in Human Behavior*. https://doi.org/10.1016/j.chb.2015.01.021

Ballard, M. E., & Welch, K. M. (2017). Virtual Warfare: Cyberbullying and Cyber-Victimization in MMOG Play. *Games and Culture*. https://doi.org/10.1177/1555412015592473

Bandura, A. (1986). Social Foundations of Thought and Action. Englewood Cliffs, NJ: Prentice Hall. *Barney, J*.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. In *Annual Review of Psychology*. https://doi.org/10.1146/annurev.psych.52.1.1

Baron-Cohen, S., & Wheelwright, S. (2004). The empathy quotient: An investigation of adults with asperger syndrome or high functioning autism, and normal sex differences. In *Journal of Autism and Developmental Disorders*. https://doi.org/10.1023/B:JADD.0000022607.19833.00

Barthel, R., & Seidl, R. (2017). Interdisciplinary collaboration between natural and social sciences - Status and trends exemplified in groundwater research. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0170754

Batmaz, H., Türk, N., Kaya, A., & Yıldırım, M. (2022). Cyberbullying and Cyber victimization: examining mediating roles of Empathy and Resilience. *Current Psychology*. https://doi.org/10.1007/s12144-022-04134-3

Belton, D. (2020). Global Encyclopedia of Public Administration, Public Policy, and Governance. *Global Encyclopedia of Public Administration, Public Policy, and Governance*, *February 2018*. https://doi.org/10.1007/978-3-319-31816-5

Ben-Porat, A., & Itzhaky, H. (2015). Burnout among trauma social workers: The contribution of personal and environmental resources. *Journal of Social Work*. https://doi.org/10.1177/1468017314552158

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*. https://doi.org/10.1037/0033-2909.107.2.238

Berger, P., & Luckmann, T. (2016). The social construction of reality. *Social Theory Re-Wired: New Connections to Classical and Contemporary Perspectives: Second Edition*, 110–122. https://doi.org/10.4324/9781315775357

Bertani, F., Raberto, M., & Teglio, A. (2020). The productivity and unemployment effects of the digital transformation: an empirical and modelling assessment. *Review of Evolutionary Political Economy*. https://doi.org/10.1007/s43253-020-00022-3

Besag, V. (2010). Cyber Bullying: Bullying in the Digital Age. *Child and Adolescent Mental Health*. https://doi.org/10.1111/j.1475-3588.2010.00559_6.x

Blair, R. J. R. (2005). Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations. *Consciousness and Cognition*. https://doi.org/10.1016/j.concog.2005.06.004

Blanchard, M., Metcalf, A., Degney, J., Herrman, H., & Bums, J. (2008). Rethinking the digital divide: Findings from a study of marginalised young people's information communication technology (ICT) use. *Youth Studies Australia*.

Boer, F. (1994). Friendship and Peer Relations in Children. *Kind En Adolescent*. https://doi.org/10.1007/BF03060558

Bradbury, S. L., Dubow, E. F., & Domoff, S. E. (2018). How do Adolescents Learn Cyber-victimization Coping Skills? An Examination of Parent and Peer Coping Socialization. *Journal of Youth and Adolescence*. https://doi.org/10.1007/s10964-018-0812-y

Brett, C. E., Dykiert, D., Starr, J. M., & Deary, I. J. (2019). Predicting change in quality

of life from age 79 to 90 in the Lothian Birth Cohort 1921. *Quality of Life Research*. https://doi.org/10.1007/s11136-018-2056-4

Brown, T. (2015). Confirmatory Factor Analysis for Applied Research, Second Edition. In *Guilford Publications*.

Byrne, B. M. (2012). Structural Equation Modeling with Mplus. Basic Concepts, Applications n Programming. In *Structural Equation Modeling with Mplus*.

Cameron, C. D. (2018). Motivating empathy: Three methodological recommendations for mapping empathy. *Social and Personality Psychology Compass*. https://doi.org/10.1111/spc3.12418

Cañas, E., Estévez, E., León-Moreno, C., & Musitu, G. (2020). Loneliness, family communication, and school adjustment in a sample of cybervictimized adolescents. *International Journal of Environmental Research and Public Health*, *17*(1). https://doi.org/10.3390/ijerph17010335

Cantor, N., & Kihlstrom, J. F. (1987). Personality and Social Intelligence. In *Century Psychology Series*.

Caruso, D. R., Mayer, J. D., & Salovey, P. (2002). Relation of an ability measure of emotional intelligence to personality. *Journal of Personality Assessment*. https://doi.org/10.1207/S15327752JPA7902_12

Cela, K. L., Sicilia, M. Á., & Sánchez, S. (2015). Social Network Analysis in E-Learning Environments: A Preliminary Systematic Review. In *Educational Psychology Review*. https://doi.org/10.1007/s10648-014-9276-0

Chang, F. C., Lee, C. M., Chiu, C. H., Hsi, W. Y., Huang, T. F., & Pan, Y. C. (2013). Relationships Among Cyberbullying, School Bullying, and Mental Health in Taiwanese Adolescents. *Journal of School Health*. https://doi.org/10.1111/josh.12050

Chang, Q., Xing, J., Ho, R. T. H., & Yip, P. S. F. (2019). Cyberbullying and suicide ideation among Hong Kong adolescents: The mitigating effects of life satisfaction with family, classmates and academic results. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2019.02.054

Che, D., Hu, J., Zhen, S., Yu, C., Li, B., Chang, X., & Zhang, W. (2017). Dimensions

of emotional intelligence and online gaming addiction in adolescence: The indirect effects of two facets of perceived stress. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2017.01206

Cherniss, C., Goleman, D., Emmerling, R., Cowan, K., & Adler, M. (1998). Bringing emotional intelligence to the workplace. *New Brunswick, NJ: Consortium for Research on Emotional Intelligence in Organizations, Rutgers University*.

Chitosca, M. (2006). The Internet as socializing agent of the "M" generation. *Journal of Social Informatics*, *5*, 60–81. http://www.ris.uvt.ro/wp-content/uploads/2010/06/ris5-iunie-2005.pdf

Christov-Moore, L., Simpson, E. A., Coudé, G., Grigaityte, K., Iacoboni, M., & Ferrari, P. F. (2014). Empathy: Gender effects in brain and behavior. In *Neuroscience and Biobehavioral Reviews*. https://doi.org/10.1016/j.neubiorev.2014.09.001

Cohen, L. E., & Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*. https://doi.org/10.2307/2094589

Cohen, S. (2004). Social relationships and health. In *American Psychologist*. https://doi.org/10.1037/0003-066X.59.8.676

Coleman, S., & Rowe, C. (2004). Remixing citizenship: Democracy and Young People's Use of the Internet. In *Director*.

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*. https://doi.org/10.1037/a0020149

Council, N. R. (2018). Modernizing Crime Statistics: Report 2: New Systems for Measuring Crime. *CrimRxiv*. https://doi.org/10.21428/cb6ab371.10964d0e

Cuff, B. M. P., Brown, S. J., Taylor, L., & Howat, D. J. (2016). Empathy: A review of the concept. In *Emotion Review*. https://doi.org/10.1177/1754073914558466

D.V., L., A.B., S., & A.A., L. (2018). Helping relationship in the theory and practice of social work (based on foreign research). *National Psychological Journal*, *3*(2), 38–45. https://doi.org/10.11621/npj.2018.0205

Daniel Goleman. (2013). Primal Leadership Unleashing the Power of Emotional Intelligence - Daniel Goleman, Richard Boyatzis, Annie McKee - Google Books. In *Harvard Business Press*.

Datta, D., Datta, P. P., & Majumdar, K. K. (2015). Original Article Role of Social Interaction on Quality of Life. *National Journal of Medical Research*, *5*(4), 290–292.

Davis, E., Young, D., Waters, E., & Gold, L. (2016). Children and Adolescents, Measuring the Quality of Life of. In *International Encyclopedia of Public Health* (Second Edi, Vol. 1). Elsevier. https://doi.org/10.1016/B978-0-12-803678-5.00066-7

De', R., Pandey, N., & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice. *International Journal of Information Management*, *55*(June), 102171. https://doi.org/10.1016/j.ijinfomgt.2020.102171

De Waal, F. B. M., & Preston, S. D. (2017). Mammalian empathy: Behavioural manifestations and neural basis. In *Nature Reviews Neuroscience*. https://doi.org/10.1038/nrn.2017.72

De Wied, M., Branje, S. J. T., & Meeus, W. H. J. (2007). Empathy and conflict resolution in friendship relations among adolescents. *Aggressive Behavior*. https://doi.org/10.1002/ab.20166

Decety, J., & Jackson, P. L. (2004). The functional architecture of human empathy. In *Behavioral and cognitive neuroscience reviews*. https://doi.org/10.1177/1534582304267187

Decety, J., & Lamm, C. (2006). Human empathy through the lens of social neuroscience. In *TheScientificWorldJournal*. https://doi.org/10.1100/tsw.2006.221

Deshpande, S. (2013). No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title. *Journal of the American Chemical Society*, *123*(10), 2176–2181. https://shodhganga.inflibnet.ac.in/jspui/handle/10603/7385

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. In *Psychological Bulletin*. https://doi.org/10.1037/0033-2909.125.2.276

Duggan, M., & Brenner, J. (2013). The Demographics of Social Media Users-2012. *PewResearchCenter*.

Duvdevany, I., & Arar, E. (2004). Leisure activities, friendships, and quality of life of persons with intellectual disability: Foster homes vs community residential settings. *International Journal of Rehabilitation Research*. https://doi.org/10.1097/00004356-200412000-00006

Ebrahimpoor, H., Zahed, A., & Elyasi, A. (2013). the Study of Relationship Between Social Intelligence and Organizational Performance (Case Study: Ardabil Regional Water Companys Managers). *International Journal of Organizational Leadership*, *2*(1), 1–10. https://doi.org/10.33844/ijol.2013.60352

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., Murphy, B. C., Losoya, S. H., & Guthrie, I. K. (2001). The Relations of Regulation and Emotionality to Children's Externalizing and Internalizing Problem Behavior. *Child Development*. https://doi.org/10.1111/1467-8624.00337

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Englander, E. (2019). Childhood Access to Technology and Cyberbullying. *Journal of Pediatrics and Pediatric Medicine*. https://doi.org/10.29245/2578-2940/2019/2.1136

Entesarfoumany, G. H., & Danshdost, M. (2014). The Relationship of Spiritual Intelligence with Mental Health and Organizational Commitment among Nurses in Mashhad Hospitals. *Journal of Educational and Management Studies*.

Erdur-Baker, Ö. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media and Society*. https://doi.org/10.1177/1461444809341260

Eriksson, K., & Englander, M. (2017). Empathy in Social Work. *Journal of Social Work Education*. https://doi.org/10.1080/10437797.2017.1284629

Fahy, A. E., Stansfeld, S. A., Smuk, M., Smith, N. R., Cummins, S., & Clark, C. (2016). Longitudinal Associations Between Cyberbullying Involvement and Adolescent Mental Health. *Journal of Adolescent Health*. https://doi.org/10.1016/j.jadohealth.2016.06.006

Farquhar, M. (1995). Definitions of quality of life: a taxonomy. *Journal of Advanced Nursing*, *22*(3), 502–508. https://doi.org/10.1046/j.1365-2648.1995.22030502.x

Fayers, P. M., & Machin, D. (2016). Quality of Life: The assessment, analysis and reporting of patient-reported outcomes. *John Wiley & Sons Inc*.

Federal Bureau of Investigation. (2019). *Internet Crime Complaint Center (IC3) | Business Email Compromise The $26 Billion Scam*. Public Service Announcement.

FeldmanHall, O., Dalgleish, T., Evans, D., & Mobbs, D. (2015). Empathic concern drives costly altruism. *NeuroImage*. https://doi.org/10.1016/j.neuroimage.2014.10.043

Fenstad, J. E. (2018). Relationships Between the Social and the Natural Sciences. In *Logic, Argumentation and Reasoning*. https://doi.org/10.1007/978-3-319-72974-9_3

Ferreira, L. N., Ferreira, P. L., Pereira, L. N., & Oppe, M. (2014). The valuation of the EQ-5D in Portugal. *Quality of Life Research*. https://doi.org/10.1007/s11136-013-0448-z

Fleck, M. P. A., Louzada, S., Xavier, M., Chachamovich, E., Santos, L., Bø, K., Kvarstein, B., Nygaard, I., Skevington, S. M., Lotfy, M., & O'Connell, K. a. (2004). Aplicação da versão em portugues do instrumento abreviado da qualidade de vida "WHOQOL-bref." *Quality of Life Research*, *13*(2), 299–310. http://link.springer.com/10.1023/B:QURE.0000018486.91360.00%5Cnhttp://www.ncbi.nlm.nih.gov/pubmed/15863536

Frau-Meigs, D., & Lee, H. (2016). *Education 3.0 and Internet Governance: A New Global Alliance for Children and Young People's Sustainable Digital*

*Development*. *27*, 1–54. https://www.cigionline.org/sites/default/files/gcig_no27web_0.pdf

Friesem, Y. (2016). Empathy for the Digital Age. In *Emotions, Technology, and Behaviors*. https://doi.org/10.1016/b978-0-12-801873-6.00002-9

Ganaie, M. Y., & Mudasir, H. (2015). A study of social intelligence & academic achievement of college students of district Srinagar, J & K, India. *Journal of American Science*, *11*(3), 1–6.

Ganesh Kumar, S., Majumdar, A., & Pavithra, G. (2014). Quality of life and its associated factors using WHOQOL- BREF among elderly in Urban Puducherry, India. *Journal of Clinical and Diagnostic Research*. https://doi.org/10.7860/JCDR/2014/6996.3917

Garayev, S. (2020). Psychology, Performance, and Social Context of Laughter in Azerbaijan Folklore. *Journal of History Culture and Art Research*. https://doi.org/10.7596/taksad.v9i2.2621

Genner, S., & Süss, D. (2017). Socialization as Media Effect. *The International Encyclopedia of Media Effects*, 1–15. https://doi.org/10.1002/9781118783764.wbieme0138

Ghaus, S., Waheed, M. A., Khan, S. Z., Mustafa, L., Siddique, S., & Quershi, A. W. (2020). Effect of COVID-19 Pandemic on the Levels of Empathy among Undergraduate Dental Students in Pakistan. In *European Journal of Dentistry*. https://doi.org/10.1055/s-0040-1722091

Ghosh, A., Chakraborty, D., & Law, A. (2018). Artificial intelligence in Internet of things. In *CAAI Transactions on Intelligence Technology*. https://doi.org/10.1049/trit.2018.1008

Glover, S. G. (2020). Why Social Media Is Ruining Your Life. *Journal of Intellectual Freedom & Privacy*. https://doi.org/10.5860/jifp.v4i3.7198

Goleman, D., & Boyatzis, R. (2008). Social intelligence and the biology of leadership. *Harvard Business Review*.

Gould, A. E. (2008). Social Intelligence: The New Science of Success; Beyond IQ, Beyond EI, Applying Multiple Intelligence Theory to Human Interaction. *The*

*Social Science Journal*. https://doi.org/10.1016/j.soscij.2008.07.012

Graves, K. D. (2003). Social cognitive theory and cancer patients' quality of life: A meta-analysis of psychosocial intervention components. *Health Psychology*. https://doi.org/10.1037/0278-6133.22.2.210

Greeno, E. J., Ting, L., & Wade, K. (2018). Predicting empathy in helping professionals: comparison of social work and nursing students. *Social Work Education*. https://doi.org/10.1080/02615479.2017.1389879

Grosswiler, P. (2016). Cussing the buzz-saw, or, the medium is the morality of Peter-Paul Verbeek. *Explorations in Media Ecology*, *15*(2), 129–139. https://doi.org/10.1386/eme.15.2.129_1

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2019). Multivariate Data Analysis, Multivariate Data Analysis. In *Book*.

Hall, J. A., & Liu, D. (2022). Social media use, social displacement, and well-being. In *Current Opinion in Psychology*. https://doi.org/10.1016/j.copsyc.2022.101339

Hall, J. A., & Schwartz, R. (2019). Empathy present and future. *Journal of Social Psychology*, *159*(3), 225–243. https://doi.org/10.1080/00224545.2018.1477442

Hamby, S., Blount, Z., Taylor, E., Mitchell, K., & Jones, L. (2021). The Association of Different Cyber-Victimization Types With Current Psychological and Health Status in Southern Appalachian Communities. *Violence and Victims*. https://doi.org/10.1891/VV-D-18-00214

Hampton, K. N., Rainie, L., Lu, W., Shin, I., & Purcell, K. (2015). Social Media and the Cost of Caring. *Pew Research Center*.

Haraldstad, K., Wahl, A., Andenæs, R., Andersen, J. R., Andersen, M. H., Beisland, E., Borge, C. R., Engebretsen, E., Eisemann, M., Halvorsrud, L., Hanssen, T. A., Haugstvedt, A., Haugland, T., Johansen, V. A., Larsen, M. H., Løvereide, L., Løyland, B., Kvarme, L. G., Moons, P., … Helseth, S. (2019). A systematic review of quality of life research in medicine and health sciences. *Quality of Life Research*, *28*(10), 2641–2650. https://doi.org/10.1007/s11136-019-02214-9

Harris, J. (2007). The evolutionary neurobiology, emergence and facilitation of empathy. In *Empathy in Mental Illness*.

https://doi.org/10.1017/CBO9780511543753.011

Hawdon, J. (2021). Cybercrime: Victimization, Perpetration, and Techniques. In *American Journal of Criminal Justice*. https://doi.org/10.1007/s12103-021-09652-7

Hemphill, S. A., Kotevski, A., & Heerde, J. A. (2015). Longitudinal associations between cyber-bullying perpetration and victimization and problem behavior and mental health problems in young Australians. *International Journal of Public Health*, *60*(2), 227–237. https://doi.org/10.1007/s00038-014-0644-9

Hernández, R. L., Aranda, B. E., & Ramírez, M. T. G. (2009). Depression and quality of life for women in single-parent and nuclear families. *Spanish Journal of Psychology*. https://doi.org/10.1017/S113874160000158X

Hill, D., Ameenuddin, N., Chassiakos, Y. R., Cross, C., Radesky, J., Hutchinson, J., Boyd, R., Mendelson, R., Moreno, M. A., Smith, J., & Swanson, W. S. (2016). Media use in school-aged children and adolescents. *Pediatrics*, *138*(5), 1–6. https://doi.org/10.1542/peds.2016-2592

Hinduja, S., & Patchin, J. W. (2008). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior*. https://doi.org/10.1080/01639620701457816

Hinduja, S., & Patchin, J. W. (2015). Cyberbullying and Online Aggression Survey Instrument. *Bullying Beyond the Schoolyard: Preventing and Responding to Cyberbullying*, *42*(5), 711–722.

Hodges, S. D., Kiel, K. J., Kramer, A. D. I., Veach, D., & Villanueva, B. R. (2010). Giving birth to empathy: The effects of similar experience on empathic accuracy, empathic concern, and perceived empathy. *Personality and Social Psychology Bulletin*. https://doi.org/10.1177/0146167209350326

Hong, Y., Li, X., Lin, Y., Xie, J., Yan, X., & Lin, Z. (2020). A Comparative Study of Online Education and Traditional OOine Education During COVID-19. *Research Square*, 1–19. https://doi.org/10.21203/rs.3.rs-61593/v1

Howe, D. (2017). Empathy, social intelligence and relationship-based social work. *Zeszyty Pracy Socjalnej*. https://doi.org/10.4467/24496138zps.17.001.6536

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. In *Journal of Psychiatric Research*. https://doi.org/10.1016/j.jpsychires.2012.11.015

İçellioğlu, S., & Özden, M. S. (2014). Cyberbullying: A New Kind of Peer Bullying through Online Technology and its Relationship with Aggression and Social Anxiety. *Procedia - Social and Behavioral Sciences*. https://doi.org/10.1016/j.sbspro.2014.01.924

Islam, T., Ali, G., & Asad, H. (2019). Environmental CSR and pro-environmental behaviors to reduce environmental dilapidation: The moderating role of empathy. *Management Research Review*. https://doi.org/10.1108/MRR-12-2017-0408

James, C., Davis, K., Charmaraman, L., Konrath, S., Slovak, P., Weinstein, E., & Yarosh, L. (2017). Digital life and youth well-being, social connectedness, empathy, and narcissism. *Pediatrics*. https://doi.org/10.1542/peds.2016-1758F

Jeffrey, D. (2016). Empathy, sympathy and compassion in healthcare: Is there a problem? Is there a difference? Does it matter? *Journal of the Royal Society of Medicine*. https://doi.org/10.1177/0141076816680120

Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence*. https://doi.org/10.1016/j.adolescence.2005.08.010

Joseph, D. L., & Newman, D. A. (2010). Emotional Intelligence: An Integrative Meta-Analysis and Cascading Model. *Journal of Applied Psychology*. https://doi.org/10.1037/a0017286

Kandybovich, S. L., Razina, T. V., Solodukho, A. S., & Fofanova, G. A. (2021). Digital Socialization Agents in Adolescence. In *Studies in Systems, Decision and Control*. https://doi.org/10.1007/978-3-030-56433-9_59

Keles, R. (2012). The Quality of Life and the Environment. *Procedia - Social and Behavioral Sciences*, *35*(December 2011), 23–32. https://doi.org/10.1016/j.sbspro.2012.02.059

Kellij, S., Lodder, G. M. A., van den Bedem, N., Güroğlu, B., & Veenstra, R. (2022). The Social Cognitions of Victims of Bullying: A Systematic Review. In

*Adolescent Research Review* (Vol. 7, Issue 3). Springer International Publishing. https://doi.org/10.1007/s40894-022-00183-8

Kemp, S. (2023, February 13). Digital 2023: Pakistan - DataReportal – *global digital insights. DataReportal*. https://datareportal.com/reports/digital-2023-pakistan

Kenny, D. A., & Acitelli, L. K. (2001). Accuracy and bias in the perception of the partner in a close relationship. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/0022-3514.80.3.439

Kim, J., & Lee, J. E. R. (2011). The facebook paths to happiness: Effects of the number of Facebook friends and self-presentation on subjective well-being. *Cyberpsychology, Behavior, and Social Networking*. https://doi.org/10.1089/cyber.2010.0374

Kliszcz, J., Nowicka-Sauer, K., Trzeciak, B., Nowak, P., & Sadowska, A. (2006). Empathy in health care providers--validation study of the Polish version of the Jefferson Scale of Empathy. *Advances in Medical Sciences*.

Kogan, A., Oveis, C., Carr, E. W., Gruber, J., Mauss, I. B., Shallcross, A., Impett, E. A., van der Lowe, I., Hui, B., Cheng, C., & Keltner, D. (2014). Vagal activity is quadratically related to prosocial traits, prosocial emotions, and observer perceptions of prosociality. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/a0037509

Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in dispositional empathy in American college students over time: A meta-analysis. *Personality and Social Psychology Review*. https://doi.org/10.1177/1088868310377395

Kowalski, R. M., & Limber, S. P. (2007). Electronic Bullying Among Middle School Students. *Journal of Adolescent Health*. https://doi.org/10.1016/j.jadohealth.2007.08.017

Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health*. https://doi.org/10.1016/j.jadohealth.2012.09.018

Kowalski, R. M., Limber, S. P., & McCord, A. (2019). A developmental approach to cyberbullying: Prevalence and protective factors. *Aggression and Violent*

*Behavior*, *45*(2017), 20–32. https://doi.org/10.1016/j.avb.2018.02.009

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues*. https://doi.org/10.1111/1540-4560.00248

Kubiszewski, V., Fontaine, R., Huré, K., & Rusch, E. (2013). [Cyber-bullying in adolescents: associated psychosocial problems and comparison with school bullying]. *L'Encéphale*.

Kumar, B. (2019). Social Network, Facebook Use and Loneliness: A Comparative Analysis Between Public and Private University Students in Bangladesh. *International Journal of Psychological and Brain Sciences*. https://doi.org/10.11648/j.ijpbs.20190402.13

Lenkov, S., & Rubtsova, N. (2019). *Cyber Socialization of Russian Youth: Risks of Professional Self-determination*. *321*(073), 116–122. https://doi.org/10.2991/ispcpep-19.2019.28

Lent, R. W., Singley, H. D., Sheu, U. Bin, Gainor, K. A., Brenner, B. R., Treistman, D., & Ades, L. (2005). Social cognitive predictors of domain and life satisfaction: Exploring the theoretical precursors of subjective well-being. *Journal of Counseling Psychology*. https://doi.org/10.1037/0022-0167.52.3.429

Leung, A. N. M., Wong, N., & Farver, J. A. M. (2018). Cyberbullying in Hong Kong Chinese students: Life satisfaction, and the moderating role of friendship qualities on cyberbullying victimization and perpetration. *Personality and Individual Differences*. https://doi.org/10.1016/j.paid.2017.07.016

Lithoxoidou, L. S., Georgopoulos, A. D., Th Dimitriou, A., & Ch Xenitidou, S. (2017). "Trees have a soul too!" Developing Empathy and Environmental Values in Early Childhood. *The International Journal of Early Childhood Environmental Education*, *5*(1), 68–88.

Lodhi, F. S., Montazeri, A., Nedjat, S., Mahmoodi, M., Farooq, U., Yaseri, M., Kasaeian, A., & Holakouie-Naieni, K. (2019). Assessing the quality of life among Pakistani general population and their associated factors by using the World Health Organization's quality of life instrument (WHOQOL-BREF): A population

based cross-sectional study. *Health and Quality of Life Outcomes*, *17*(1), 1–17. https://doi.org/10.1186/s12955-018-1065-x

Lodi-Smith, J., & Roberts, B. W. (2007). Social investment and personality: A meta-analysis of the relationship of personality traits to investment in work, family, religion, and volunteerism. *Personality and Social Psychology Review*. https://doi.org/10.1177/1088868306294590

Löffler, C. S., & Greitemeyer, T. (2023). Are women the more empathetic gender? The effects of gender role expectations. *Current Psychology*. https://doi.org/10.1007/s12144-020-01260-8

Long, E., Patterson, S., Maxwell, K., Blake, C., Bosó Pérez, R., Lewis, R., McCann, M., Riddell, J., Skivington, K., Wilson-Lowe, R., & Mitchell, K. R. (2022). COVID-19 pandemic and its impact on social relationships and health. *Journal of Epidemiology and Community Health*, *76*(2), 128–132. https://doi.org/10.1136/jech-2021-216690

Loudin, J. L., Loukas, A., & Robinson, S. (2003). Relational Aggression in College Students: Examining the Roles of Social Anxiety and Empathy. *Aggressive Behavior*. https://doi.org/10.1002/ab.10039

Lowry, P. B., Cao, J., & Everard, A. (2011). Privacy concerns versus desire for interpersonal awareness in driving the use of self-disclosure technologies: The case of instant messaging in two cultures. *Journal of Management Information Systems*. https://doi.org/10.2753/MIS0742-1222270406

Luo, Y., & Waite, L. J. (2005). The impact of childhood and adult SES on physical, mental, and cognitive well-being in later life. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, *60*(2), 93–101. https://doi.org/10.1093/geronb/60.2.S93

Macaulay, P. J. R., Steer, O. L., & Betts, L. R. (2020). Factors leading to cyber victimization. In *Emerging Cyber Threats and Cognitive Vulnerabilities*. Elsevier Inc. https://doi.org/10.1016/b978-0-12-816203-3.00001-0

MacHimbarrena, J. M., & Garaigordobil, M. (2018). Prevalence of Bullying and Cyberbullying in the Last Stage of Primary Education in the Basque Country.

*Spanish Journal of Psychology*. https://doi.org/10.1017/sjp.2018.41

Magsi, H., Agha, N., & Magsi, I. (2017). Understanding Cyber bullying in Pakistani context: causes and effects on young Female university students in sindh Province. In *New Horizons*.

Malkina-Pykh, I. G., & Pykh, Y. A. (2008). Quality-of-life indicators at different scales: Theoretical background. *Ecological Indicators*, *8*(6), 854–862. https://doi.org/10.1016/j.ecolind.2007.01.008

Manczak, E. M., DeLongis, A., & Chen, E. (2016). Does empathy have a cost? Diverging psychological and physiological effects within families. *Health Psychology*. https://doi.org/10.1037/hea0000281

Mar, R. A. (2011). Deconstructing empathy. In *Emotion Review*. https://doi.org/10.1177/1754073910384158

Marr, K. L., & Duell, M. N. (2021). Cyberbullying and cybervictimization: Does gender matter? *Psychological Reports*. https://doi.org/10.1177/0033294120916868

Marsh, A. A. (2018). The neuroscience of empathy. In *Current Opinion in Behavioral Sciences*. https://doi.org/10.1016/j.cobeha.2017.12.016

Marshall, L. E., & Marshall, W. L. (2011). Empathy and antisocial behaviour. In *Journal of Forensic Psychiatry and Psychology*. https://doi.org/10.1080/14789949.2011.617544

Marston, H. R. (2016). Aging in digital places. In *Handbook of Smart Homes, Health Care and Well-Being*. https://doi.org/10.1007/978-3-319-01583-5_60

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology*. https://doi.org/10.1146/annurev.psych.59.103006.093646

Melchers, M., Li, M., Chen, Y., Zhang, W., & Montag, C. (2015). Low empathy is associated with problematic use of the Internet: Empirical evidence from China and Germany. *Asian Journal of Psychiatry*, *17*, 56–60. https://doi.org/10.1016/j.ajp.2015.06.019

Memon, F., Ahmed, A., Sagheer, S., Usmani, F., Naveed, M., & Ali, R. (2021). Effect of Age and Gender on Quality of Life in patients of Obstructive Jaundice. *Pakistan Journal of Medical and Health Sciences*. https://doi.org/10.53350/pjmhs2115123150

Méndez, I., Jorquera, A. B., Ruiz-Esteban, C., Martínez-Ramón, J. P., & Fernández-Sogorb, A. (2019). Emotional intelligence, bullying, and cyberbullying in adolescents. *International Journal of Environmental Research and Public Health*. https://doi.org/10.3390/ijerph16234837

Meshkat, M., & Nejati, R. (2017). Does Emotional Intelligence Depend on Gender? A Study on Undergraduate English Majors of Three Iranian Universities. *SAGE Open*. https://doi.org/10.1177/2158244017725796

Meyer, K. A., & Jones, S. J. (n.d.). *DO STUDENTS EXPERIEN CE " SOCIAL INTELLIGENCE ," LAUGH TER , AND OTHER EMOTIONS ONLINE ? 16*(4), 99–111.

Meyer, K. A., & Jones, S. J. (2012). Do students experience "social intelligence," laughter, and other emotions online? *Journal of Asynchronous Learning Network*. https://doi.org/10.24059/olj.v16i4.283

Milenkova, V., Peicheva, D., & Marinov, M. (2018). Towards defining media socialization as a basis for digital society. *International Journal of Cognitive Research in Science, Engineering and Education*, *6*(2), 21–31. https://doi.org/10.5937/ijcrsee1802021M

Mimiaga, M. J., Reisner, S. L., Reilly, L., Soroudi, N., & Safren, S. A. (2009). Individual interventions. *HIV Prevention*, *1997*, 203–239. https://doi.org/10.1016/B978-0-12-374235-3.00008-X

Morelli, S. A., Lieberman, M. D., & Zaki, J. (2015). The emerging study of positive empathy. *Social and Personality Psychology Compass*. https://doi.org/10.1111/spc3.12157

Morelli, S. A., Ong, D. C., Makati, R., Jackson, M. O., & Zaki, J. (2017). Empathy and well-being correlate with centrality in different social networks. *Proceedings of the National Academy of Sciences of the United States of America*.

https://doi.org/10.1073/pnas.1702155114

Morin, A. (2020). *How to Increase Your Social Intelligence*. Very Well Mind.

Musharraf, S., & Anis-ul-Haque, M. (2018). Impact of cyber aggression and cyber victimization on mental health and well-being of Pakistani young adults: The moderating role of gender. *Journal of Aggression, Maltreatment and Trauma*, *27*(9), 942–958. https://doi.org/10.1080/10926771.2017.1422838

Muzaffar, M. (2019). Social Media and Political Awareness in Pakistan: A Case Study of Youth. *Pakistan Social Sciences Review*, *3*(II), 141–153. https://doi.org/10.35484/pssr.2019(3-ii)01

Nadkarni, A., & Hofmann, S. G. (2012). Why do people use facebook? In *Personality and Individual Differences*. https://doi.org/10.1016/j.paid.2011.11.007

Navarro, R., Larrañaga, E., & Yubero, S. (2011). Bullying-victimization problems and aggressive tendencies in Spanish secondary schools students: The role of gender stereotypical traits. *Social Psychology of Education*. https://doi.org/10.1007/s11218-011-9163-1

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of Adolescent Peer Relations in the Social Media Context: Part 2—Application to Peer Group Processes and Future Directions for Research. In *Clinical Child and Family Psychology Review*. https://doi.org/10.1007/s10567-018-0262-9

Netuveli, G., & Blane, D. (2008). Quality of life in older ages. In *British Medical Bulletin*. https://doi.org/10.1093/bmb/ldn003

Netuveli, G., Wiggins, R. D., Hildon, Z., Montgomery, S. M., & Blane, D. (2006). Quality of life at older ages: Evidence from the English longitudinal study of aging (wave 1). *Journal of Epidemiology and Community Health*. https://doi.org/10.1136/jech.2005.040071

Neumann, M., Edelhäuser, F., Tauschel, D., Fischer, M. R., Wirtz, M., Woopen, C., Haramati, A., & Scheffer, C. (2011). Empathy decline and its reasons: A systematic review of studies with medical students and residents. In *Academic Medicine*. https://doi.org/10.1097/ACM.0b013e318221e615

Ngo, F. T., Piquero, A. R., LaPrade, J., & Duong, B. (2020). Victimization in

Cyberspace: Is It How Long We Spend Online, What We Do Online, or What We Post Online? *Criminal Justice Review*, *45*(4), 430–451. https://doi.org/10.1177/0734016820934175

Nie, T., Zheng, Y., & Huang, Y. (2022). Peer Attachment and Proactive Socialization Behavior: The Moderating Role of Social Intelligence. *Behavioral Sciences*. https://doi.org/10.3390/bs12090312

Numanee, I. Z., Zafar, N., Karim, A., & Ismail, S. A. M. M. (2020). Developing empathy among first-year university undergraduates through English language course: A phenomenological study. *Heliyon*. https://doi.org/10.1016/j.heliyon.2020.e04021

O'Boyle, E. H., Humphrey, R. H., Pollack, J. M., Hawver, T. H., & Story, P. A. (2011). The relation between emotional intelligence and job performance: A meta-analysis. *Journal of Organizational Behavior*. https://doi.org/10.1002/job.714

Obar, J. A., Zube, P., & Lampe, C. (2012). Advocacy 2.0: An Analysis of How Advocacy Groups in the United States Perceive and Use Social Media as Tools for Facilitating Civic Engagement and Collective Action. *Journal of Information Policy*. https://doi.org/10.5325/jinfopoli.2.2012.0001

Ogunseitan, O. A. (2019). Quality of life and environmental health assessment. In *Encyclopedia of Environmental Health*. https://doi.org/10.1016/B978-0-12-409548-9.11188-1

Oh, H. J., Ozkaya, E., & Larose, R. (2014). How does online social networking enhance life satisfaction? the relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior*. https://doi.org/10.1016/j.chb.2013.07.053

Ohaeri, J. U., Awadalla, A. W., & Gado, O. M. (2009). Subjective quality of life in a nationwide sample of Kuwaiti subjects using the short version of the WHO quality of life instrument. *Social Psychiatry and Psychiatric Epidemiology*. https://doi.org/10.1007/s00127-008-0477-z

Oishi, S., Diener, E., & Lucas, R. E. (2007). The Optimum Level of Well-Being: Can People Be Too Happy? *Perspectives on Psychological Science*.

https://doi.org/10.1111/j.1745-6916.2007.00048.x

Pakistan Telecommunication Authority. (2022). *Annual report*. www.pta.gov.pk

Palloff, R. M., & Pratt, K. (2013). Lessons from the Virtual Classroom: The Realities of Online Teaching Lessons from the Virtual Classroom: The Realities of Online Teaching. *International Journal of Information and Communication Technology Education*.

Papouli, E. (2019). Diversity dolls: a creative teaching method for encouraging social work students to develop empathy and understanding for vulnerable populations. *Social Work Education*. https://doi.org/10.1080/02615479.2018.1515904

Pashevich, E. (2022). Can communication with social robots influence how children develop empathy? Best-evidence synthesis. *AI and Society*. https://doi.org/10.1007/s00146-021-01214-z

Patchin, J. W., & Hinduja, S. (2012). Cyberbullying: An update and synthesis of the research. In *Cyberbullying Prevention and Response: Expert Perspectives*. https://doi.org/10.4324/9780203818312

Peicheva, D., Milenkova, V., Manov, B., & Raycheva, L. (2017). The ICT, E-reading and media ecosystem. *IMSCI 2017 - 11th International Multi-Conference on Society, Cybernetics and Informatics, Proceedings*, *Imsci*, 83–86.

Pennacchini, M., Bertolaso, M., Elvira, M. M., & De Marinis, M. G. (2012). A brief history of the quality of life: Its use in medicine and in philosophy. *Clinica Terapeutica*, *162*(SUPPL.3).

Pescaru, M. (2018). The importance of the socialization process for the integration of the child in the society. *Articles R.U.S.*

Power, M., Quinn, K., & Schmidt, S. (2005). Development of the WHOQOL-Old module. *Quality of Life Research*. https://doi.org/10.1007/s11136-005-7380-9

Pratt, T. C., & Turanovic, J. J. (2016). Lifestyle and Routine Activity Theories Revisited: The Importance of "Risk" to the Study of Victimization. *Victims and Offenders*. https://doi.org/10.1080/15564886.2015.1057351

Preston, S. D., & de Waal, F. B. M. (2002). Empathy: Its ultimate and proximate bases.

In *Behavioral and Brain Sciences*. https://doi.org/10.1017/S0140525X02000018

Qureshi, S. F., Abbasi, M., & Shahzad, M. (2020). Cyber Harassment and Women of Pakistan: Analysis of Female Victimization. *Journal of Business and Social Review in Emerging Economies*. https://doi.org/10.26710/jbsee.v6i2.1150

Rafi, M. S. (2019). Cyberbullying in Pakistan: Positioning the aggressor, victim, and bystander. *Pakistan Journal of Psychological Research*. https://doi.org/10.33824/PJPR.2019.34.3.33

Ramos-Díaz, E., Rodríguez-Fernández, A., Axpe, I., & Ferrara, M. (2019). Perceived Emotional Intelligence and Life Satisfaction Among Adolescent Students: The Mediating Role of Resilience. *Journal of Happiness Studies*. https://doi.org/10.1007/s10902-018-0058-0

Reniers, R. L. E. P., Corcoran, R., Drake, R., Shryane, N. M., & Völlm, B. A. (2011). The QCAE: A questionnaire of cognitive and affective empathy. *Journal of Personality Assessment*, *93*(1), 84–95. https://doi.org/10.1080/00223891.2010.528484

Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/0022-3514.79.3.410

Richardson, J. C., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Network*. https://doi.org/10.24059/olj.v7i1.1864

Riess, H. (2017). The Science of Empathy. *Journal of Patient Experience*, *4*(2), 74–77. https://doi.org/10.1177/2374373517699267

Rigby, K. (2004). Addressing bullying in schools: Theoretical perspectives and their implications. In *School Psychology International*. https://doi.org/10.1177/0143034304046902

Riggio, R. E. (2014). *What Is Social Intelligence? Why Does It Matter?* Psychology Today.

Roswell, R. O., Cogburn, C. D., Tocco, J., Martinez, J., Bangeranye, C., Bailenson, J. N., Wright, M., Mieres, J. H., & Smith, L. (2020). Cultivating Empathy Through

Virtual Reality. *Academic Medicine*.

Rovai, A. P., & Downey, J. R. (2010). Why some distance education programs fail while others succeed in a global environment. *Internet and Higher Education*. https://doi.org/10.1016/j.iheduc.2009.07.001

Rueckert, L., Branch, B., & Doan, T. (2011). Are Gender Differences in Empathy Due to Differences in Emotional Reactivity? *Psychology*. https://doi.org/10.4236/psych.2011.26088

Saeed, R. (2020). Offline versus Virtual Socialization Patterns and Smartphone: A Study of Pakistani Youth. *Pakistan Social Sciences Review*, *4*(II), 384–396. https://doi.org/10.35484/pssr.2020(4-ii)31

Saleem, N. (2002). Canadian Journal of Media Studies,. *Media*, *2*(1), 130–162.

Saleem, N. (2016). Virtual Socialization: A Step Towards Social Transformation. *Journal of Distance Education and Research (JDER)*.

Saleem, N., Malik, Q., Ali, A., & Hanan, A. (2014). Influence of Social Networking Sites on Interaction Patterns of Youth : A Pakistan Case. *Pakistan Vision*, *15*(1), 40–58. point cantik mana tau

Saleem, S., Khan, N. F., & Zafar, S. (2021). Prevalence of cyberbullying victimization among Pakistani Youth. *Technology in Society*. https://doi.org/10.1016/j.techsoc.2021.101577

Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior*, *15*(2), 112–120. https://doi.org/10.1016/j.avb.2009.08.007

Santre, S. (2022). *Theory of Empowerment in Female Cyber Victimization*. *July*. https://doi.org/10.25215/0904.132

Scannell, L., & Gifford, R. (2017). Place Attachment Enhances Psychological Need Satisfaction. *Environment and Behavior*, *49*(4), 359–389. https://doi.org/10.1177/0013916516637648

Sened, H., Lavidor, M., Lazarus, G., Bar-Kalifa, E., Rafaeli, E., & Ickes, W. (2017). Empathic accuracy and relationship satisfaction: A meta-analytic review. *Journal of Family Psychology*. https://doi.org/10.1037/fam0000320

Şengönül, T. (2018). Socialization Processes toward Children and Adolescents for Developing Empathy, Sympathy and Prosocial Behaviors. *Socialization - A Multidimensional Perspective*. https://doi.org/10.5772/intechopen.74132

Sharma, S., & Tiwari, V. (2022). Emotional Intelligence in the Field of Business and Management: A Bibliometric Analysis of the Last Two Decades. *Vision*. https://doi.org/10.1177/09722629221132122

Shashkevich, A. (2018). *Virtual reality can help make people more compassionate compared to other media, new Stanford study finds*. Stanford | News Service.

Sheanoda, V., & Bussey, K. (2021). Victims of Cyberbullying: An Examination of Social Cognitive Processes Associated with Cyberbullying Victimization. *Journal of School Violence*. https://doi.org/10.1080/15388220.2021.1984933

Shek, D. T. L. (2011). Quality of Life Research: Responses to Emerging Issues in a Changing World. *Social Indicators Research*, *100*(3), 371–374. https://doi.org/10.1007/s11205-010-9628-1

Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media. *Psychological Science*. https://doi.org/10.1177/0956797616645673

Sidrah, A., Saima, M., & Farah, M. (2016). Psychological Predictors of Cyber Bullying in Early Adulthood | Insight Medical Publishing. *Health Science Journal*, *February 2016*. https://www.hsj.gr/medicine/psychological-predictors-of-cyber-bullying-in-early-adulthood.php?aid=9365#2

Silvera, D. H., Martinussen, M., & Dahl, T. I. (2001). The Tromsø Social Intelligence Scale, a self-report measure of social intelligence. *Scandinavian Journal of Psychology*, *42*(4), 313–319. https://doi.org/10.1111/1467-9450.00242

Singer, T., Seymour, B., O'Doherty, J., Kaube, H., Dolan, R. J., & Frith, C. D. (2004). Empathy for Pain Involves the Affective but not Sensory Components of Pain. *Science*. https://doi.org/10.1126/science.1093535

Siraj, S. (2018). Impact of Internet Use on Social Capital: Testing Putnam's Theory of Time Displacement in Urban Pakistan. *The Journal of Social Media in Society*

*Spring*, *7*(1), 456–468.

Siti Nurannisaa, P. B., Mustaji, Bachri, B. S., & Patricia, F. D. (2020). Exploring Digital Native Characteristic to Create Learning Instruction for Learning Computer Graphic Design. *International Journal of Emerging Technologies in Learning*. https://doi.org/10.3991/ijet.v15i20.14311

Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial a Report from the WHOQOL Group. In *Quality of Life Research*. https://doi.org/10.1023/B:QURE.0000018486.91360.00

Slavin, R. E. (2018). Educational Psychology : Theory & Practice (12th Edition). In *Pearson Education*.

SLONJE, R., & SMITH, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*. https://doi.org/10.1111/j.1467-9450.2007.00611.x

Smith, J., Hewitt, B., & Skrbiš, Z. (2015). Digital socialization: young people's changing value orientations towards internet use between adolescence and early adulthood. *Information Communication and Society*, *18*(9), 1022–1038. https://doi.org/10.1080/1369118X.2015.1007074

Smith, P. K. (2016). Bullying: Definition, Types, Causes, Consequences and Intervention. *Social and Personality Psychology Compass*. https://doi.org/10.1111/spc3.12266

Smith, P. K., López-Castro, L., Robinson, S., & Görzig, A. (2019). Consistency of gender differences in bullying in cross-cultural surveys. In *Aggression and Violent Behavior*. https://doi.org/10.1016/j.avb.2018.04.006

Snow, N. E. (2009). Virtue as social intelligence: An empirically grounded theory. In *Virtue as Social Intelligence: An Empirically Grounded Theory*. https://doi.org/10.4324/9780203880579

Soldatova, G. U. (2018). Digital socialization in the cultural-historical paradigm: a changing child in a changing world. *Social Psychology and Society*.

https://doi.org/10.17759/sps.2018090308

Soldatova, G. U., Rasskazova, E. I., & Chigarkova, S. V. (2020). Digital Socialization of Adolescents in the Russian Federation: Parental Mediation, Online Risks, and Digital Competence. *Psychology in Russia: State of the Art*, *13*(4), 191–206. https://doi.org/10.11621/PIR.2020.0413

Soldatova, G. U., & Voiskounsky, A. E. (2021). Socio-cognitive concept of digital socialization: A new ecosystem and social evolution of the mind. *Psychology, Journal of the Higher School of Economics*. https://doi.org/10.17323/1813-8918-2021-3-431-450

Sorrentino, A., Baldry, A. C., Farrington, D. P., & Blaya, C. (2019). Epidemiology of cyberbullying across europe: Differences between countries and genders. *Educational Sciences: Theory and Practice*. https://doi.org/10.12738/estp.2019.2.005

Stanley, S., Mettilda Buvaneswari, G., & Meenakshi, A. (2020). Predictors of empathy in women social workers. *Journal of Social Work*. https://doi.org/10.1177/1468017318794280

Staudinger, U. M. (2001). Life Reflection: A Social–Cognitive Analysis of Life Review. *Review of General Psychology*. https://doi.org/10.1037/1089-2680.5.2.148

Steiger, J. H., & Lind, J. C. (1980). Statistically based tests for the number of common factors. *The Annual Meeting of the Psychometric Society*.

Sunassee, A., Bokhoree, C., & Patrizio, A. (2021). Students' Empathy for the Environment through Eco-Art Place-Based Education: A Review. *Ecologies*. https://doi.org/10.3390/ecologies2020013

Tariq, N., Tayyab, A., & Jaffery, T. (2018). Differences in empathy levels of medical students based on gender, year of medical school and career choice. *Journal of the College of Physicians and Surgeons Pakistan*. https://doi.org/10.29271/jcpsp.2018.04.310

The WHOQOL Group. (1998). WHO Quality of Life Scale (WHOQOL). *Psychological Medicine*, *28*(3), 551–558.

Theofilou, P. (2013). Quality of life: Definition and measurement. *Europe's Journal of Psychology*, *9*(1), 150–162. https://doi.org/10.5964/ejop.v9i1.337

Thiyagu, K. (2022). *A Manual for Cyber Socialization Scale (CSS-TSKT)*. *May*.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*. https://doi.org/10.1007/BF02291170

Tunc-Aksan, A., & Akbay, S. E. (2019). Smartphone addiction, fear of missing out, and perceived competence as predictors of social media addiction of adolescents. *European Journal of Educational Research*. https://doi.org/10.12973/eu-jer.8.2.559

Twenge, J. M., & Spitzberg, B. H. (2020). Declines in non-digital social interaction among Americans, 2003–2017. *Journal of Applied Social Psychology*, *50*(6), 363–367. https://doi.org/10.1111/jasp.12665

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *Cyberpsychology and Behavior*. https://doi.org/10.1089/cpb.2006.9.584

Vanleerberghe, P., De Witte, N., Claes, C., Schalock, R. L., & Verté, D. (2017). The quality of life of older people aging in place: a literature review. In *Quality of Life Research*. https://doi.org/10.1007/s11136-017-1651-0

Vossen, H. G. M., & Valkenburg, P. M. (2016). Do social media foster or curtail adolescents' empathy? A longitudinal study. *Computers in Human Behavior*, *63*, 118–124. https://doi.org/10.1016/j.chb.2016.05.040

Vroom, C., & Von Solms, rossouw. (2004). Towards information security behavioural compliance. *Computers and Security*. https://doi.org/10.1016/j.cose.2004.01.012

Walker, G., & Venker Weidenbenner, J. (2019). Social and Emotional Learning in the age of virtual play: technology, empathy, and learning. *Journal of Research in Innovative Teaching and Learning*. https://doi.org/10.1108/JRIT-03-2019-0046

Walter, H. (2012). Social cognitive neuroscience of empathy: Concepts, circuits, and genes. In *Emotion Review*. https://doi.org/10.1177/1754073911421379

Wang, J., Li, X., Liu, W., Yang, B., Zhao, Q., Lü, Y., & Xiao, M. (2022). The positive

aspects of caregiving in dementia: A scoping review and bibliometric analysis. *Frontiers in Public Health*. https://doi.org/10.3389/fpubh.2022.985391

Wang, M. J., Yogeeswaran, K., Andrews, N. P., Hawi, D. R., & Sibley, C. G. (2019). How Common Is Cyberbullying among Adults? Exploring Gender, Ethnic, and Age Differences in the Prevalence of Cyberbullying. *Cyberpsychology, Behavior, and Social Networking*. https://doi.org/10.1089/cyber.2019.0146

Wang, M., Wang, J., Deng, X., & Chen, W. (2019). Why are empathic children more liked by peers? The mediating roles of prosocial and aggressive behaviors. *Personality and Individual Differences*. https://doi.org/10.1016/j.paid.2019.02.029

Weisz, E., & Cikara, M. (2021). Strategic Regulation of Empathy. *Trends in Cognitive Sciences*, *25*(3), 213–227. https://doi.org/10.1016/j.tics.2020.12.002

Weisz, E., & Zaki, J. (2017). Empathy-Building Interventions. *Oxford Handbook of Compassion Science*.

Wölfer, R., Cortina, K. S., & Baumert, J. (2012). Embeddedness and empathy: How the social network shapes adolescents' social understanding. *Journal of Adolescence*. https://doi.org/10.1016/j.adolescence.2012.04.015

Wondra, J. D., & Ellsworth, P. C. (2015). An appraisal theory of empathy and other vicarious emotional experiences. *Psychological Review*, *122*(3), 411–428. https://doi.org/10.1037/a0039252

Wright, M. F., & Wachs, S. (2020). Adolescents' cyber victimization: The influence of technologies, gender, and gender stereotype traits. *International Journal of Environmental Research and Public Health*, *17*(4). https://doi.org/10.3390/ijerph17041293

Yanos, P. T., Rosenfield, S., & Horwitz, A. V. (2001). Negative and supportive social interactions and quality of life among persons diagnosed with severe mental illness. *Community Mental Health Journal*. https://doi.org/10.1023/A:1017528029127

Yermentaeyeva, A., Aurenova, M. D., Uaidullakyzy, E., Ayapbergenova, A., & Muldabekova, K. (2014). Social Intelligence as a Condition for the Development

of Communicative Competence of the Future Teachers. *Procedia - Social and Behavioral Sciences*, *116*, 4758–4763. https://doi.org/10.1016/j.sbspro.2014.01.1021

Yildiz Durak, H. (2019). Cyber Human Values Displayed By University Students in Online Social Networking Sites: the Relationship of Cyber Human Values To Cyberbullying and Cyber Victimization Behaviors Displayed. *INTED2019 Proceedings*, *1*(January), 10035–10038. https://doi.org/10.21125/inted.2019.2531

Yuliani, N. M. (2018). Media Massa dalam Komunikasi Ekonomi. *Widya Duta: Jurnal Ilmiah Ilmu Agama Dan Ilmu Sosial Budaya*. https://doi.org/10.25078/wd.v13i1.437

Zaki, J., & Cikara, M. (2015). Addressing Empathic Failures. *Current Directions in Psychological Science*. https://doi.org/10.1177/0963721415599978

Zautra, E. K., Zautra, A. J., Gallardo, C. E., & Velasco, L. (2015). Can we learn to treat one another better? A test of a social intelligence curriculum. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0128638

Zeyer, A., & Dillon, J. (2019). The role of empathy for learning in complex Science|Environment|Health contexts. *International Journal of Science Education*. https://doi.org/10.1080/09500693.2018.1549371

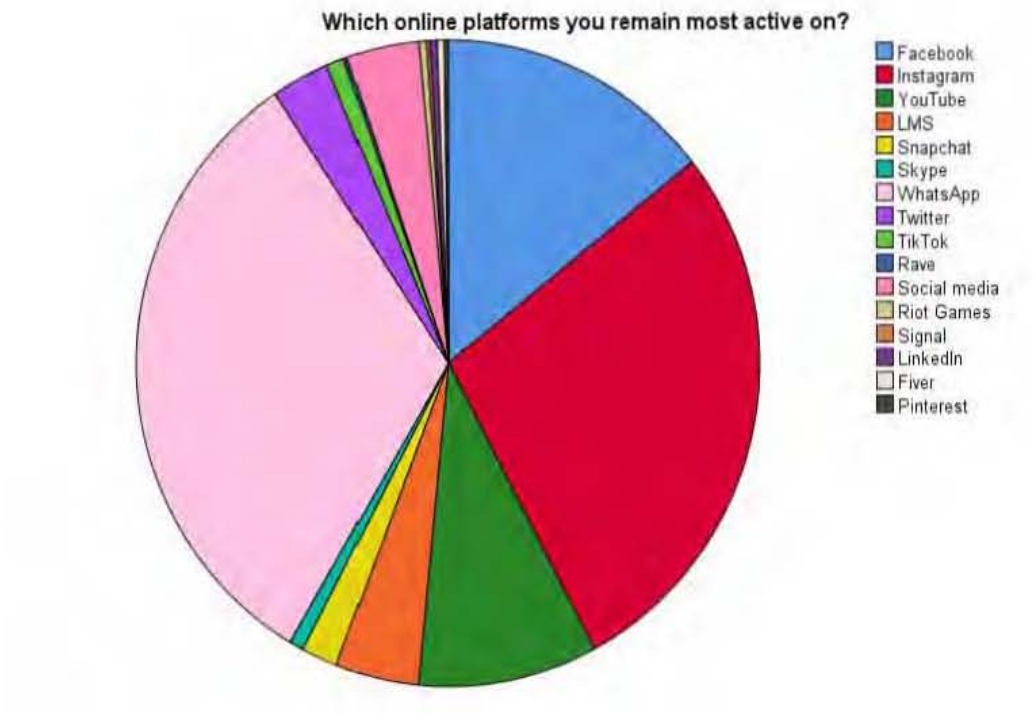
Zheng, X., Zhu, X., Zhou, X., Xie, F., & Huang, L. (2022). Internet altruistic motivation promotes internet altruistic behavior: a moderated mediation model. *Current Psychology*. https://doi.org/10.1007/s12144-022-03918-x

Zimmer-Gembeck, M. J., Rudolph, J., Webb, H. J., Henderson, L., & Hawes, T. (2021). Face-to-Face and Cyber-Victimization: A Longitudinal Study of Offline Appearance Anxiety and Online Appearance Preoccupation. *Journal of Youth and Adolescence*. https://doi.org/10.1007/s10964-020-01367-y

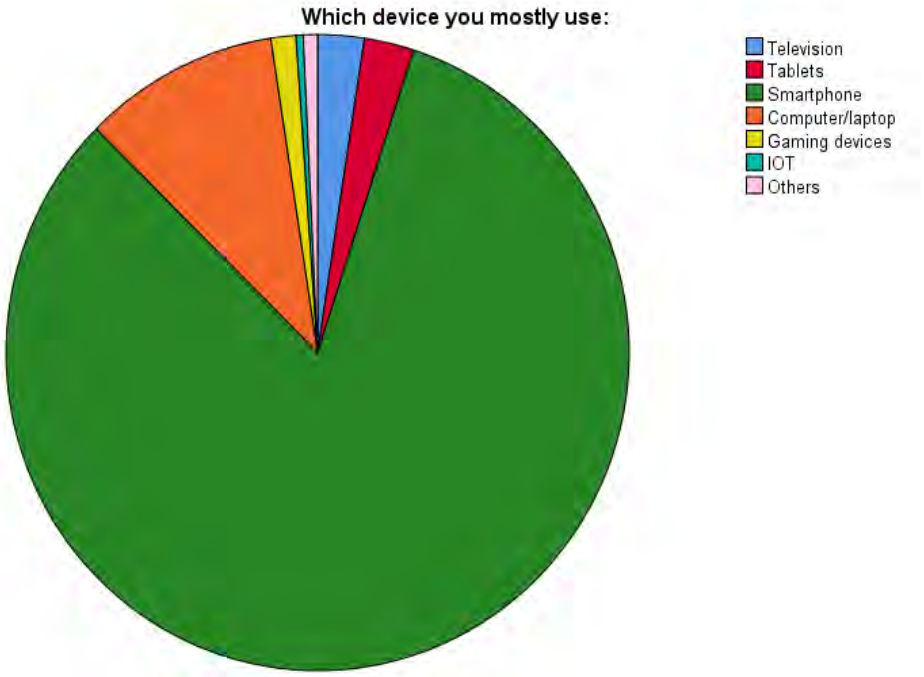
Zsila, Á., Urbán, R., Griffiths, M. D., & Demetrovics, Z. (2019). Gender Differences in the Association Between Cyberbullying Victimization and Perpetration: The Role of Anger Rumination and Traditional Bullying Experiences. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-018-9893-9

# Appendices

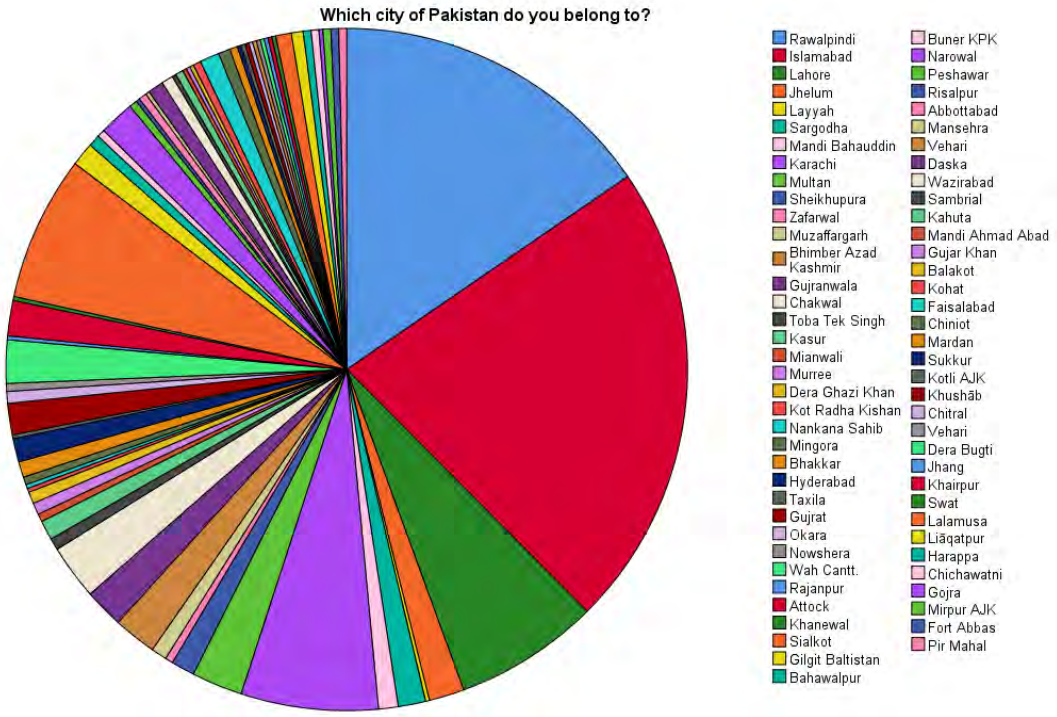
## Appendix A


Which online platforms you remain most active on?
Facebook
Instagram
YouTube
LMS
Snapchat
Skype
WhatsApp
Twitter
TikTok
Rave
Social media
Riot Games
Signal
LinkedIn
Fiver
Pinterest

## Appendix B


Which device you mostly use:
Television
Tablets
Smartphone
Computer/laptop
Gaming devices
IOT
Others

# Appendix C


Which city of Pakistan do you belong to?
Rawalpindi
Islamabad
Lahore
Jhelum
Layyah
Sargodha
Mandi Bahauddin
Karachi
Multan
Sheikhupura
Zafarwal
Muzaffargarh
Bhimber Azad Kashmir
Gujranwala
Chakwal
Toba Tek Singh
Kasur
Mianwali
Murree
Dera Ghazi Khan
Kot Radha Kishan
Nankana Sahib
Mingora
Bhakkar
Hyderabad
Taxila
Gujrat
Okara
Nowshera
Wah Cantt.
Rajanpur
Attock
Khanewal
Sialkot
Gilgit Baltistan
Bahawalpur
Buner KPK
Narowal
Peshawar
Risalpur
Abbottabad
Mansehra
Vehari
Daska
Wazirabad
Sambrial
Kahuta
Mandi Ahmad Abad
Gujar Khan
Balakot
Kohat
Faisalabad
Chiniot
Mardan
Sukkur
Kotli AJK
Khushāb
Chitral
Vehari
Dera Bugti
Jhang
Khairpur
Swat
Lalamusa
Liāqatpur
Harappa
Chichawatni
Gojra
Mirpur AJK
Fort Abbas
Pir Mahal

**Appendix D**

## Informed Consent

Dear Participant,

I am an M.Phil scholar at National Institute of Psychology, Quaid-i-Azam University, Islamabad. As a researcher, I am interested in testing the impact of digital socialization on Quality of life along with exploring the roles of empathy and cyber victimization. This research holds great significance in the current scenario to see how students' life is getting affected by technology and its use. Your participation will help us a lot in the scientific understanding of the phenomenon.

Participation in this research project is voluntary. I request you to participate in the research if you are part of any two online platforms i.e., social media platform, Learning and Management system (LMS), online banking, online shopping, matrimonial sites, any online groups on Facebook, Snapchat, Twitter, Instagram, WhatsApp, etc.

It is ensured that the data will be kept confidential and will not be used for any profit-making activity.

If you decide to participate in this research, you are given a questionnaire booklet on which you can share your experiences and opinions. I request you to respond to all the questions once you volunteer to participate. There is no right or wrong answer. Nevertheless, if some statement is not clear to you, you can ask for clarification. Thank you for reading this information sheet.

Regards

Syeeda Hameed

National Institute of Psychology

Quaid-i-Azam University, Islamabad.

Email: saeeda@vu.edu.pk

**Please sign below if you have read and decided to participate in this research study.**

_____

Signature of Respondents

***Note: Do not fill the booklet if you use less than two online platforms.***

**Appendix E**

**Demographic Information Form**

1. Are you part of any two online platforms i.e., social media platform, Learning and Management system (LMS), online banking, online shopping, matrimonial sites, gaming sites, any online groups on FB, Instagram, WhatsApp, etc. ☐ Yes ☐ No

2. Time spent online daily (In hours): ----------

3. Which online platforms you remain most active on (specify all): ----------

4. Which device you mostly use: ☐ Television, ☐ Tablets, ☐ Smartphone, ☐ Computer/laptop, ☐ Gaming devices, ☐ IOT, Others

5. Number of social media profiles used weekly: ----------

6. For how long have you been socializing via internet? ----------

7. Age: ----------

8. Gender: ☐ Male ☐ Female ☐ Other

9. No of siblings (including yourself): ----------

10. Birth order: ----------

11. Family system you live in: ☐ Nuclear ☐ Joint

12. Program enrolled in: ☐ Bachelor ☐ MPhil ☐ PhD ☐ Other (please specify) ----------

13. Discipline: ☐ Natural Sciences ☐ Social Sciences ☐ Art and humanities ☐ Others

14. Study Mode: ☐ Conventional ☐ Online

15. Are you employed somewhere? ☐ Yes ☐ No

16. Which city of Pakistan do you belong to?

**Appendix F**

## Cyber Socialization scale

Please read each statement carefully and respond as accurately as possible.

**Response Options**

- Strongly agree (4)
- Slightly agree (3)
- Slightly disagree (2)
- Strongly disagree (1)

| Sr. No. | Statements | Strongly disagree | Slightly disagree | Slightly agree | Strongly agree |
|---|---|---|---|---|---|
| 1 | I am part of many social groups on internet. | | | | |
| 2 | I use the internet as a tool to mitigate my loneliness. | | | | |
| 3 | I use the internet to find people I want to make a relationship with. | | | | |
| 4 | Participation in various social networking platforms made me a knowledgeable and respectable individual in society. | | | | |
| 5 | I use social networking platforms to get information regarding current social events. | | | | |
| 6 | I respect the beliefs of others while I am on social media platforms. | | | | |
| 7 | I use cyber space to exchange information upon my interest. | | | | |
| 8 | My internet engagement advanced my professional network. | | | | |
| 9 | Online engagement helped to enhance my academic achievement. | | | | |
| 10 | I use internet platforms for disseminating creative ideas | | | | |
| 11 | Engagements in social networking platforms helped me widen and strengthen my social circle. | | | | |
| 12 | I entertain people online through funny creations. | | | | |
| 13 | I prefer cyber space as a medium to connect with old friends and relatives. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 14 | I engage in social networking sites to get relief from academic stress. | | | | |
| 15 | Engagements in social networking sites helped me to acquire career related information. | | | | |
| 16 | I actively engage and anticipate discussions in various social groups on the internet. | | | | |
| 17 | I respect and empathize with other people's opinions on internet platforms. | | | | |
| 18 | My social media engagement helped me to familiarize different cultures and languages around me. | | | | |
| 19 | I like to initiate and host activities on various social network platforms. | | | | |
| 20 | I use the internet as a means for making good relationships. | | | | |
| 21 | I depend on cyber space to get relief from all other tensions of life. | | | | |
| 22 | I certainly believe that cyber space has reduced family bonding and other relationships. | | | | |
| 23 | I try out new features available on the internet and bring that to public attention through social media platforms. | | | | |
| 24 | Online engagements made my life more active and easier. | | | | |

## Appendix G

### Questionnaire of Cognitive and Affective Empathy

People differ in the way they feel in different situations. Below you are presented with a number of characteristics that may or may not apply to you. Read each characteristic and indicate how much you agree or disagree with the item by ticking the appropriate box. Answer quickly and honestly.

**Response Options**

- Strongly agree (4)
- Slightly agree (3)
- Slightly disagree (2)
- Strongly disagree (1)

| Sr. No. | **Statements** | **Strongly disagree** | **Slightly disagree** | **Slightly agree** | **Strongly agree** |
|---|---|---|---|---|---|
| 1 | I sometimes find it difficult to see things from the ‘other guy’s’ point of view. | | | | |
| 2 | I am usually objective when I watch a film or play, and I don’t often get completely caught up in it. | | | | |
| 3 | I try to look at everybody’s side of a disagreement before I make a decision. | | | | |
| 4 | I sometimes try to understand my friends better by imagining how things look from their perspective. | | | | |
| 5 | When I am upset at someone, I usually try to ‘put myself in his shoes' for a while. | | | | |
| 6 | Before criticizing somebody, I try to imagine how I would feel if I was in their place. | | | | |
| 7 | I often get emotionally involved with my friends’ problems. | | | | |
| 8 | I am inclined to get nervous when others around me seem to be nervous. | | | | |
| 9 | People I am with have a strong influence on my mood. | | | | |
| 10 | It affects me very much when one of my friends seems upset. | | | | |
| 11 | I often get deeply involved with the feelings of a character in a film, play or novel. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 12 | I get very upset when I see someone cry. | | | | |
| 13 | I am happy when I am with a cheerful group and sad when the others are glum. | | | | |
| 14 | It worries me when others are worrying and panicky. | | | | |
| 15 | I can easily tell if someone else wants to enter a conversation. | | | | |
| 16 | I can pick up quickly if someone says one thing but means another. | | | | |
| 17 | It is hard for me to see why some things upset people so much. | | | | |
| 18 | I find it easy to put myself in somebody else's shoes. | | | | |
| 19 | I am good at predicting how someone will feel. | | | | |
| 20 | I am quick to spot when someone in a group is feeling awkward or uncomfortable. | | | | |
| 21 | Other people tell me I am good at understanding how they are feeling and what they are thinking. | | | | |
| 22 | I can easily tell if someone else is interested or bored with what I am saying. | | | | |
| 23 | Friends talk to me about their problems as they say that I am very understanding. | | | | |
| 24 | Friends talk to me about their problems as they say that I am very understanding. | | | | |
| 25 | I can sense if I am intruding, even if the other person does not tell me. | | | | |
| 26 | I can tell if someone is masking their true emotion. | | | | |
| 27 | I am good at predicting what someone will do. | | | | |
| 28 | I can usually appreciate the other person's viewpoint, even if I do not agree with it. | | | | |
| 29 | I usually stay emotionally detached when watching a film. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 30 | I always try to consider the other fellow's feelings before I do something. | | | | |
| 31 | Before I do something, I try to consider how my friends will react to it | | | | |

**Appendix H**

## The Tromso Social Intelligence Scale

**Response Options**

- Extremely well (7)
- Very well (6)
- Well (5)
- Neutral (4)
- Poor (3)
- Very poor (2)
- Extremely poor (1)

| Sr. No. | Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | I can predict other peoples' behavior. | | | | | | | |
| 2 | I often feel that it is difficult to understand others' choices. | | | | | | | |
| 3 | I know how my actions will make others feel | | | | | | | |
| 4 | I often feel uncertain around new people who I don't know. | | | | | | | |
| 5 | People often surprise me with the things they do. | | | | | | | |
| 6 | I understand other peoples' feelings. | | | | | | | |
| 7 | I fit in easily in social situations. | | | | | | | |
| 8 | Other people become angry with me without me being able to explain why. | | | | | | | |
| 9 | I understand others' wishes. | | | | | | | |
| 10 | I am good at entering new situations and meeting people for the first time. | | | | | | | |
| 11 | It seems as though people are often angry or irritated with me when I say what I think | | | | | | | |
| 12 | I have a hard time getting along with other people. | | | | | | | |
| 13 | I find people unpredictable. | | | | | | | |
| 14 | I can often understand what others are trying to accomplish without the need for them to say anything. | | | | | | | |
| 15 | It takes a long time for me to get to know others well. | | | | | | | |
| 16 | I have often hurt others without realizing it. | | | | | | | |
| 17 | I can predict how others will react to my behavior. | | | | | | | |
| 18 | I am good at getting on good terms with new people. | | | | | | | |
| 19 | I can often understand what others really mean through their expression, body language, etc. | | | | | | | |
| 20 | I frequently have problems finding good conversation topics. | | | | | | | |
| 21 | I am often surprised by others' reactions to what I do. | | | | | | | |

## Appendix I

### Cyber Victimization Scale

Please read the following statements and relate to your experiences on internet to tell how often you have someone who has done these things to you.

**Response Options**

- Never (0)
- Once (1)
- A few times (2)
- Many times (3)

| Sr. No. | Statements | Never | Once | A few times | Many times |
|---|---|---|---|---|---|
| **1** | I have been cyberbullied (bullied through internet) | | | | |
| **2** | Someone posted mean or hurtful comments about me online. | | | | |
| **3** | Someone posted a mean or hurtful picture of me online. | | | | |
| **4** | Someone posted a mean or hurtful video of me online. | | | | |
| **5** | Someone created a mean or hurtful webpage about me. | | | | |
| **6** | Someone spread rumors about me online. | | | | |
| **7** | Someone threatened to hurt me through a cellphone or a text message. | | | | |
| **8** | Someone threatened to hurt me online. | | | | |
| **9** | Someone pretended to be me online and acted in a way that was mean or hurtful. | | | | |

**Appendix J**

## WHO Quality of Life (BREF)

Please read the question, assess your feelings, for the last two weeks, and circle the number on the scale for each question that gives the best answer for you.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Very poor | Poor | Neither poor nor good | Good | Very good |
| 1 | How would you rate your quality of life? | 1 | 2 | 3 | 4 | 5 |
| | | Very dissatisfied | Fairly Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
| 2 | How satisfied are you with your health? | 1 | 2 | 3 | 4 | 5 |

The following questions ask about how much you have experienced certain things in the **last two weeks**.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Not at all | A Small amount | A Moderate amount | A great deal | An Extreme amount |
| 3 | To what extent do you feel that physical pain prevents you from doing what you need to do? | 1 | 2 | 3 | 4 | 5 |
| 4 | How much do you need any medical treatment to function in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 5 | How much do you enjoy life? | 1 | 2 | 3 | 4 | 5 |
| 6 | To what extent do you feel your life to be meaningful? | 1 | 2 | 3 | 4 | 5 |
| | | Not at all | Slightly | Moderately | Very | Extremely |
| 7 | How well are you able to concentrate? | 1 | 2 | 3 | 4 | 5 |
| 8 | How safe do you feel in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 9 | How healthy is your physical environment? | 1 | 2 | 3 | 4 | 5 |
| | | Not at all | Slightly | Somewhat | To a great extent | Completely |
| 10 | Do you have enough energy for everyday life? | 1 | 2 | 3 | 4 | 5 |
| 11 | Are you able to accept your bodily appearance? | 1 | 2 | 3 | 4 | 5 |
| 12 | Have you enough money to meet your needs? | 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | How available to you is the information you need in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 14 | To what extent do you have the opportunity for leisure activities? | 1 | 2 | 3 | 4 | 5 |
| | | Not at all | Slightly | Moderately | Very | Extremely |
| 15 | How well are you able to get around physically? | 1 | 2 | 3 | 4 | 5 |

The following questions ask you to say how good or satisfied you have felt about various aspects life over the over the **last two weeks**.

| | | Very Dissatisfied | Fairly Dissatisfied | Neither Satisfied nor Dissatisfied | Satisfied | Very satisfied |
|---|---|---|---|---|---|---|
| 16 | How satisfied are you with your sleep? | 1 | 2 | 3 | 4 | 5 |
| 17 | How satisfied are you with your ability to perform your daily living activities? | 1 | 2 | 3 | 4 | 5 |
| 18 | How satisfied are you with your capacity for work | 1 | 2 | 3 | 4 | 5 |
| 19 | How satisfied are you with yourself? | 1 | 2 | 3 | 4 | 5 |
| 20 | How satisfied are you with your personal relationships? | 1 | 2 | 3 | 4 | 5 |
| 21 | How satisfied are you with your sex life? | 1 | 2 | 3 | 4 | 5 |
| 22 | How satisfied are you with the support you get from your friends? | 1 | 2 | 3 | 4 | 5 |
| 23 | How satisfied are you with the conditions of your living place? | 1 | 2 | 3 | 4 | 5 |
| 24 | How satisfied are you with your access to health services? | 1 | 2 | 3 | 4 | 5 |
| 25 | How satisfied are you with your transport? | 1 | 2 | 3 | 4 | 5 |

| | | Never | Infrequently | Sometimes | Frequently | Always |
|---|---|---|---|---|---|---|
| 26 | How often do you have negative feelings such as blue mood, despair, anxiety or depression? | 1 | 2 | 3 | 4 | 5 |

## Appendix K

### Permission 1

Monica Martinussen <monica.martinussen@uit.no> Oct 30, 2022, 8:28 PM

to me, Tove, dzocs714@gmail.com

Dear Saeeda,

You have our permission to use the TSIS for research purposes. I've attached a copy of the manuscript in which we validated the scale. In that manuscript (the pdf file), Appendix A includes the English version of the scale, including which items load on which social intelligence factor. The measurement scale we used is described on p. 9 in the Materials section for Study 2. The attached .doc file describes the procedure for scoring the TSIS.

The instructions that you may provide for the participants in your study are:

Below are a number of statements that describe people. Please indicate how well or how badly these statements describe you as you usually are. If you think the statement describes you extremely well, write a "7" on the blank line to the left of the statement. If you think the statement describes you extremely poorly, write a "1" on the blank line. If you think the statement describes you to some degree, choose the number between 1 and 7 that best describes how well you think the statement describes you. There are no right or wrong answers, but please only put one number for each response.

Good luck with your research.

**Monica Martinussen**

*Professor/Instituttleder*

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monica.martinussen@uit.no

RKBU Nord, Pb 6050 Langnes

UiT Norges arktiske universitet

9037 Tromsø

**Appendix L**

**Permission 2**

Patchin, Justin W. <PATCHINJ@uwec.edu> Tue, Nov 8, 2022, 6:42 PM

to me

Hello Saeeda,

You are welcome to use our instrument (see attached). Please do provide proper attribution.

Good luck with your project,

Justin Patchin

--

Justin W. Patchin, Ph.D.
Co-director, Cyberbullying Research Center

Professor of Criminal Justice

Department of Political Science

University of Wisconsin-Eau Claire
105 Garfield Avenue
Eau Claire, WI 54701

Twitter/IG: @justinpatchin

http://www.justinpatchin.com
http://www.cyberbullying.org/

**Appendix M**

**Permission 3**

R

Renate Reniers <r.l.e.p.reniers@bham.ac.uk> Thu, Nov 10, 2022, 5:51 PM

to me

Dear Saeeda,

Thank you for your interest in the QCAE. It's free for use as long as it's for non-commercial purposes. Please find attached the measure and its scoring key.

If you're interested in using the QCAE in a different language than English, please let me know. There are quite a few translations out there and I may be able to direct you towards the person with the right translation.

Best of luck with your research.

Best wishes,

Renate

--

Renate Reniers PhD FHEA

Lecturer in Psychiatry

Institute of Clinical Sciences & Institute for Mental Health

College of Medical and Dental Sciences

University of Birmingham

*Please note, my working days are Monday-Thursday.*

**Appendix N**

**Permission 4**

permissions@who.int Sat, Nov 5, 2022, 8:25 AM

to me, permissions

Dear Mrs Hameed,

Thank you for submitting the online form and for your interest in World Health Organization (WHO) Quality of Life materials.

On behalf of WHO, we are pleased to authorize your request to reproduce, reprint and/or translate WHOQOL tools and instruments as detailed in the form below, subject to the terms and conditions of the non-exclusive licence below.

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We thank you for your interest in WHO published materials.

Kind regards,
WHO Permissions team

Office of the Ethics Committee

National Institute of Psychology
Center of Excellence
Quaid-e-Azam, University, Islamabad

## Certificate of Approval

It is certified that the research project entitled **"Impact of Digital Socialization and Empathy on Quality of Life: Exploring Role of Cyber Victimization and Social Intelligence Among University Students"** submitted by **Syeeda Hameed** under the supervision of **Prof. Dr. Rubina Hanif** is approved from ethics committee dated on 6th October 2022.

Chair: Ethics Committee

(Prof. Dr. Rubina Hanif)

Member: Ethics Committee

(Dr. Sobia Masood)

Member: Ethics Committee

(Dr. Syed Muhammad Imran Bukhari)

# Turnitin Originality Report

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By Syeeda Hameed

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