Internet Use in Bangladesh: A Study of Activities and Attitudes of Youths

PhD Dissertation

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Declaration

I hereby declare that the thesis, **"Internet Use in Bangladesh: A Study of Activities and Attitudes of Youths,"** is completely written by me under the guidance and supervision of Dr. Md. Golam Rahman, now a retired Professor from the Mass Communication and Journalism Department at the University of Dhaka. The dissertation is prepared and submitted in accordance with university guidelines. This dissertation is original, based on my PhD research, and has never in any manner been submitted for any degree.

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Certificate

I am happy to certify that Mohammad Ali Asgar Chowdhury, PhD Fellow, Department of Mass Communication and Journalism, University of Dhaka, wrote the dissertation titled **"Internet Use in Bangladesh: A Study of Activities and Attitudes of Youths"** under my supervision and guidance. The data and facts contained in this thesis are unique and have never been submitted for any other degree. I further certify that I have read the thesis and deemed it appropriate for submission as part of the requirements for the degree of Doctor of Philosophy (PhD).

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List of Abbreviations

4G	Fourth-generation wireless
A2I	Access to Information
ANOVA	Analysis of variance
BBS	Bangladesh Bureau of Statistics
BGD e-GOV CIRT	Bangladesh Government's e-Government Computer Incident Response Team
BLAST	Bangladesh Legal Aid and Services Trust
BRAC JPGSPH	BRAC James P Grant School of Public Health
BTCL	Bangladesh Telecommunications Company Limited
BTRC	Bangladesh Telecommunication Regulatory Commission
CIGI	Centre for International Governance Innovation
CIU	Compulsive Internet Use
CIUS	Compulsive Internet Use scale
F&F	Family and Friends
FoMO	Fear of Missing Out
GPIUS2	Generalized Problematic Internet Use Scale 2
GSMA	Global System for Mobile Communications Association
HSD	Honest Significant Difference
IA	Internet Addiction
IADQ	Internet Addiction Diagnostic Questionnaire
IAS	Internet Attitude Scale
IAT	Internet Addiction Test
ICT	Information Communication Technology
ICTD	Information Communication Technology Division
IPSOS	Institut Public de Sondage d'Opinion Secteur (French)
ISN	Information Services Network
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunication Union
LSD	Least Significant Difference
NGO	Non Government Organisation
PIU	Problematic Internet Use
SANEM	South Asian Network on Economic Modeling
SCT	Social Cognitive Theory

SEA-ME-WE 4	South East Asia–Middle East–Western Europe 4
SEA-ME-WE 5	South East Asia–Middle East–Western Europe 5
SMS	Short Message Service
SPSS	Statistical Package for Social Science
TV	Television
U&G	Uses and Gratifications
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VIF	Variance Inflation Factor
VSAT	Very Small Aperture Terminal
Wi-Fi	Wireless Fidelity

Abstract

Internet has become an increasingly vital component of the live of all types of people, especially the youth of today's society. There have been very few empirical studies that look into the Internet use of Bangladeshi youths. This study investigates the Internet usage activities of Bangladeshi young people, with a focus on their attitudes toward Internet use, the prevalence of compulsive Internet use and its impact on their lives. It also examines the relationship between Internet attitude and compulsive Internet use, and youths' perceptions of the benefits and risks of using the Internet. In this quantitative study, 448 youths of age 15 to 35 were surveyed through stratified random sampling. In addition to descriptive statistics, inferential techniques such as the chi-square test, T-test, one-way analysis of variance (ANOVA), Pearson correlation, and hierarchical regression analysis were employed to interpret the data. Results showed that the majority of young people engaged in Internet activities for content pleasure, followed by social and process gratifying, and validating the prevailing patterns in young attitudes. The findings revealed that the Internet has a substantial impact on young people's daily lives, as time spent watching television, sleeping, and reading for academic or other purposes has reduced since youths began using the Internet. The Internet Attitude Scale (IAS) showed that the young people have overall positive attitudes on Internet use. Social Network Sites (SNS) activities and gender were revealed to be statistically significant predictor variables for Internet attitudes in hierarchical regressions. As per Compulsive Internet Use Scale (CIUS), 25.89 percent of the respondents were found Internet addicts. Hierarchical regression analysis indicated that SNS activities, duration of Internet use, profession, and frequency of Internet use were significant predictors of youths' compulsive Internet use. A significant positive relationship was found between Internet attitude and compulsive Internet use. With the rapid development of new areas of Internet use that expand at the speed of time, new concerns arise concurrently with old ones. More research is required to address behavioural concerns associated with Internet attitude and compulsive Internet use among young people, who represent the majority of Internet users.

CHAPTER ONE

Introduction

1.1 Preface

Internet and other Information and Communication technologies (ICT) have had a significant impact on today's society and way of life. It has infiltrated people's daily lives all over the world. The Internet is now universally perceived as the most powerful means for communication and information dissemination. “By definition, the Internet is a technical system: a communications infrastructure that enables networks around the globe to interconnect” (Internet Society, 2017, p.17). Though the Internet began as a system of interconnected computer networks, today it has evolved into an indispensable part of the social and economic systems worldwide. It is a revolutionary technology that ushered in a new era of global transformation. The Internet is a technological marvel widely regarded as ushering in a new Enlightenment that has the potential to further revolutionized the world (Wellman, 2004).

The Internet's diffusion was so rapid that it only took four years to reach the threshold of 50 million users, whereas the telephone technology took nearly 75 years to touch that point (ITU, 1999). The number of people using the Internet increased by 1266 percent in between 2000 to 2020, an extraordinary increase for any technology (BroadbandSearch, n.d.). The unprecedented diffusion and connectedness of the Internet was compared with the discovery of fire by Barlow et al. (1995): ‘…with the development of the Internet, and with the increasing pervasiveness of communication between networked computers, we are in the middle of the most transforming technological event since the capture of fire’ (Barlow et al., 1995, p.36). The Internet

has penetrated people's lives in such a swift and widespread manner in the preceding decades that it has become an increasingly important feature and integral elements of lives (Kim et al., 2020; Kuss & Griffiths, 2017).

There were 4.95 billion Internet users worldwide in January 2022, representing a 62.5 percent penetration rate (Kemp, 2022). Earlier, ITU (2021) estimated that by the end of 2021, 4.9 billion people would be online, accounting for 63 percent of the world's population. Furthermore, out of the 7.91 billion people in the world, 5.31 billion used mobile phones, with a penetration rate of 67.1 percent, and 4.62 billion used social media, with a penetration rate of 58.4 percent (Kemp, 2022). Youths are the early adopters of high levels of Internet usage worldwide. While 57 percent of the global population of all ages used the Internet in 2020, the rate was as much as 71 percent for young people (ITU, 2021). This suggests that Internet use among youths was likely 1.24 times higher than in other demographic groups around the world.

The Internet is used in almost every aspects of a young person's life, including studying, information sharing, communicating, making friends, socializing, having fun, getting around, finding a job or service, starting a business, and far more (Xi & Jiar, 2016). Young people, however, use the Internet in a variety of ways, according to the basic tenets of uses and gratifications research, which states that people use a variety of media to satisfy a variety of needs, but they use the same media in different ways (Lin, 1999b). Many factors influence people's use of the Internet, including the Internet's uniqueness and their attitudes toward the medium (Papacharissi & Rubin, 2000).

While the Internet has numerous benefits for making people's lives easier, it also carries the risk of compulsive use, which can lead to Internet addiction. Young people in general, and students in particular, make up the vast majority of problematic Internet

users (Kuss & Griffiths, 2017; Young, 1998; Unsar et al., 2020). Researchers observed a positive relationship between Internet attitude and Internet addiction (San & Johnson, 2020). This suggests that attitude has a significant influence on Internet use.

1.2 Rationale for selecting the study

The first online Internet service in Bangladesh began on June 6, 1996, when the country's first ISP, the Information Services Network (ISN), initiated the service and made it available to the public via VSAT (Rahman, 2012; Sabir, 2015). However, offline email service introduced in the country through private initiative on 11 November 1993 (Shamimuzzaman, 1996). The growth of Internet users was slow and steady in the first decade, but has accelerated in recent years. Internet penetration in Bangladesh increased from 1,00,000 or 0.01 percent in 2000 to 99,984,000 or 60.7 percent in 2020 (InternetWorldStats, n.d.).

In Bangladesh, the Internet was not a potentially effective sector until 2007, when only 4,50,000 people had access to it, representing a penetration rate of only 0.3 percent (InternetWorldStats, n.d.). Since 2008, when the Digital Bangladesh vision was announced as part of the political agenda of the then ruling party (the Awami League), the government of Bangladesh has placed a high priority on the ICT sector, with the goal of transforming the country into a high-tech nation by 2021 (Access to Information Programme, 2009, 2011; Alliance for Affordable Internet & Access to Information Programme, 2019; Centre for Research and Information, 2019). The Digital Bangladesh vision was included as a priority agenda item in the country's first-ever 'Bangladesh Perspective Plan 2010-2021,' with the goal of transforming the country into a middle-income country by 2021 (Bangladesh Planning Commission, 2020). As part of the plan, the Prime Minister's Office's Access to Information (A2I)

project has been directly supervising the government's ICT initiative in coordination with the ICT Division of the Ministry of Post, Telecommunications, and Information Technology. To expedite the adoption of Internet in mass level the government also enacted the National ICT Policy 2009 repealing the policy of 2002.

For 10 years, Bangladesh depended entirely on VSAT for Internet access until 2006, when the first submarine fiber optic cable, SEA-ME-WE 4, was connected, allowing for increased and relatively lower-cost data. Bangladesh has now been connected to the SEA-ME-WE 5 optical fiber submarine cable communication system since September 2017, the country's second submarine cable to ensure uninterrupted Internet connectivity in the event that the first one is cut off for any reason. Additionally, the second submarine cable enabled the establishment of 4G facilities in Bangladesh. Bangladesh entered the space age as the 57th state in May 2018 with the launch of its first satellite, 'Bangabandhu-1,' which is regarded as the country's most sophisticated digital infrastructure, expanding Internet coverage and broadcast connections. The Bangabandhu-1 satellite will make it possible to connect remote 700 Union Parishds (UPs) to the Internet via a broadband network (Centre for Research and Information, 2019). Outside urban areas, the government planned to connect all 4600 UPs (the lower tier of the local government) to the nationwide fiber optic broadband network by 2020, including remote areas of three hill districts.

Since 2010, the number of Internet users has increased at an astounding rate with increased mobile phone penetration. There are more than 181.02 million mobile phone subscribers by December 2021, up from only 20 million in 2006 (BTRC, 2022b). This has helped to raise the country's teledensity to 105 percent, up from 34.5 percent in 2008 (BTRC, 2022b, Centre for Research and Information, 2019).

Bangladesh accessed the Internet via three different modes: mobile Internet broadband, wireless broadband, and fixed broadband. According to the Bangladesh Telecommunication Regulatory Commission (BTRC), the country had 123.82 million Internet subscribers as of December 2021 (BTRC, 2022a). With 113.73 million mobile Internet subscribers, four mobile phone operators connect the lion's share of Internet subscribers. Only 10.82 million fixed Internet subscribers connected via Internet Service Providers (ISPs) and Bangladesh Telecommunications Company Limited (BTCL). In Bangladesh, there is currently no wireless broadband service available. According to BTRC, currently Internet penetration rate is 71.73 percent with mobile broadband accounted for 65.56 percent and fixed broadband only 5.81 percent (BTRC, 2022c).

Though Internet use is gaining much attention in Bangladesh as a result of the government's initiative to make technology affordable and accessible to all, very little empirical research has been conducted to ascertain the impact of Internet use on young people. In order to further Bangladesh's efforts to promote Internet use and understand the crucial role of youth technology use, this study seeks to investigate several key characteristics of young people's overall online activities in the country.

1.3 Overall objective of the study

The overall objective of this study is to better understand youths' Internet usage patterns, with a particular emphasis on the Internet's influence on young people's activities and attitudes, as well as their compulsive Internet use behaviour. This study will focus on five primary areas, which will serve as discussion points and outcomes: Bangladeshi youths' Internet usage patterns, attitudes toward the Internet, compulsive Internet use, the relationship between Internet attitude and compulsive use, and understanding of the Internet's good and bad aspects.

1.4 Specific objectives

- To understand the general patterns of Internet use among young people
- To investigate the purposes of Internet use by youths
- To study the impact of Internet use on youths
- To comprehend the Internet attitudes of young people
- To explore young people's compulsive or addictive Internet use behaviour
- To determine the relationship between Internet attitude and compulsive Internet use
- To know youths' perceptions about the benefits and harms of Internet use

1.5 Research questions

The following research questions were designed to analyse the research objectives:

RQ 1: How do young people use the Internet and for what purposes do they use it?

RQ 2: How does the use of the Internet affect young people's activities and attitudes?

RQ 3: What are the attitudes of young people toward the use of the Internet?

RQ 4: How and to what extent do youths involve in compulsive or addictive Internet use?

RQ 5: Is there any association between Internet attitude and compulsive Internet use?

RQ 6: How do youth perceive the advantages and disadvantages of using the Internet?

1.6 Context of the Study

The aim of this study is to look into the prevalent trends in young people's online behaviour by looking into the activities that young people do while using the Internet, as well as the purposes of those activities. It was specifically investigated how youths' attitudes toward Internet use influenced their online and offline activities, as well as

how some youths became victims of compulsive use. The main reason for selecting youths for this study is that they use the Internet more than any other age group. Today, the Internet is considered a part of young people's lives, and they rely heavily on it for both learning and earning. Internet use was highest (80.7 percent) among youths aged 15-24 years, followed by 56.3 percent among those aged 25-34 years, and only 29.3 percent and 15.3 percent, respectively, among those aged 35-44 years and 45-60 years (Alliance for Affordable Internet & Access to Information Programme, 2019).

Given that youths constitute the majority of the country's workforce in the ICT sector, the government has launched a number of special projects aimed at educating and training them in the most up-to-date technological skills (Centre for Research and Information, 2019). Some of those projects include Freelancer to Entrepreneurs; Leveraging ICT for Growth, Employment and Governance; Learning and Earning; Sustainable Women Development on ICT; She-Power; and Fast Track Future Leader Programme. Youths at the grassroots level have been receiving training through the 'Info-leaders' programme. Additionally, Internet-enabled 'Digital Labs' have been established in over 6000 schools, 1500 intermediate colleges, and all public universities throughout the country to increase young people's ICT literacy. Besides that, numerous workshops for girls have been carried to educate them about cybercrime and online harassment. As a result of these programmes, the country has seen a dramatic increase in the outsourcing of IT professionals by youth (Centre for Research and Information, 2019).

In this backdrop, the quantitative research data was gathered through a nationally representative random questionnaire survey to provide a comprehensive picture of Internet use and its effects on young people's lives. A comparison of the research

questions' findings with similar research findings from Bangladesh and other parts of the world was designed to portray an overall picture of the youth's Internet use patterns, attitudes toward Internet use, and compulsive or addictive use behaviour. In addition, the study looked into the relationship between youths' Internet use attitudes and their compulsive nature of Internet use, and how this has influenced whether they use the Internet for beneficial or harmful purposes.

1.7 Significance of the study

Researchers in many developed countries, as well as some developing countries, have conducted extensive studies on Internet use for academic purposes, patterns, and attitudes toward Internet use by students since the Internet's introduction in the 1990s. The majority of those studies were conducted on school or college-going adolescents, as well as graduate or postgraduate university students. As a result, there has been very little research on the attitudes of young people toward general Internet use other than academic purposes. Though there is a small body of literature on the purposes and attitudes of Internet users in Bangladesh, the findings of were questionable due to the ambiguity in measuring Internet attitudes.

A wide range of studies have been conducted around the world on the use of Social Networking Sites (SNS) as well as the addictive use of the Internet in various aspects. In Bangladesh, a number of studies on the impact of problematic Internet use on physical, psychological, and social wellbeing were conducted, with the majority of the studies focusing on students who were assumed to be addicted Internet users. Another limitation of previous Bangladeshi studies was the study participants' narrow age range, which made it difficult to identify the age group most likely to be Internet addicts.

Internet activities, Internet attitudes, and compulsive Internet use have been found to be linked in studies (Dhir, 2015). In previous Bangladeshi studies, these relationships were not examined, which has had a significant impact on overall Internet use. Furthermore, the perception of Internet users is essential to understanding their attitudes toward Internet use and its long-term effects. There has been a lack of investigation into the newer issues that have emerged as Internet technology has advanced.

Aside from communication and information retrieval, the Internet's primary function was to facilitate the exchange of ideas. With today's technological advancements, the Internet has become a dynamic tool that not only provides access to a vast amount of information, but also facilitates new ways of connecting people and content (GCF Global, n.d.).

In comparison to other developing countries, Bangladesh has a scarcity of research data on Internet users' online activities, making it difficult to fully comprehend their usage patterns, attitudes toward the Internet, and addictive use. “It has also been argued that one of the key constraints of conducting rigorous research in the ICT sector is lack of data, which has severely restricted the scope of analysing the challenges as well as prospects of this sector and the potential contribution of ICT services from a broader point of view” (Khondker, 2015). Due to a lack of empirical research on Internet use behaviour, the impact of the Internet on its users, particularly young people, is unclear. The Internet is a two-edged technology, and how it is used determines whether it is beneficial or detrimental. Many citizens and policymakers in Bangladesh are concerned about the Internet's impact on young people's lives, which can be both positive and negative. Empirical research can help raise public awareness and enable policymakers to develop appropriate policies for the effective use of the Internet for the betterment of society.

1.8 Bangladesh country perspective and ICT initiative

1.8.1 Bangladesh country profile

Bangladesh became a sovereign country on December 16, 1971, following a nine-month bloody Liberation War with Pakistan. Bangladesh is a delta in South Asia that borders the Indian states of West Bengal on the west, West Bengal, Assam, and Meghalaya on the north, Assam, Tripura, and Mizoram, as well as Myanmar, on the east, and the Bay of Bengal on the south. Bangladesh has a total land area of 1,47,570 square kilometres and a total land border of 4,246 kilometres, 94 percent with India and 6 percent with Myanmar. Bangladesh has a territorial sea of 12 nautical miles in the Bay of Bengal, as well as a 200 nautical mile Exclusive Economic Zone (Banglapedia, n.d.).

Bangladesh has four administrative units; the uppermost is eight divisions, followed by 64 districts, 492 upazilas, and 4554 union parishads (Bangladesh National Portal, n.d.). Dhaka is the capital. According to census in 2011, Bangladesh's overall population was 149.8 million, with 75.0 million men and 74.8 million women; 76.6 percent of the population lives in rural areas, while 23.4 percent lives in urban areas (BBS, 2015b). Seventy percent of the total population is under the age of 35, with more than a third (34.81%) of the population falling between the ages of 15 and 34 years. Bangladesh ranked 8th in the world population in 2020 and had a total population of 164.68 million (Worldometer, n.d.).

The official language of the country is Bangla, which is spoken by 99.5 percent of the population and 0.5 percent of the population speaks various dialects, with English being the second most common language. In 2020, the literacy rate for persons aged 15 and up was 75 percent while youth literacy rate was 94.5 percent (UNESCO, n.d.). The majority of the population (88.3 percent) is Muslim, with 10.5 percent Hindus and the remainder practicing various religions.

1.8.2 Government initiative to advance an ICT-based nation

The government under the premiership of Sheikh Hasina launched the "Digital Bangladesh" programme in 2009 with the goal of making Bangladesh to a digital economy by 2021 and a knowledge-based economy by 2041 (ICTD, 2019). To promote "Digital Bangladesh," the government has set four goals: developing ICT-based skill manpower, ensuring connectivity with citizens, digitising government systems, and promoting an ICT industrial base to ensure the sector's smooth growth. The government has already made significant progress in these areas. A number of steps have already been taken to produce skilled workers, including the establishment of ICT labs in schools, colleges, and universities, as well as the launch of special training programmes for young IT professionals. To ensure high-speed Internet access in remote villages, the government has already established fiber optic networks up to the lowest level of local governance, the 'Union Parishad.' The installation of two submarine cables and the launch of the Bangabandhu satellite increased bandwidth capacity to a remarkable level. Bangladesh has also made significant progress in digitising government systems, launching over 45,000 national web portals and establishing 5,000 digital centres across the country. The government is also taking steps to improve policies governing the ICT industry, which is expected to generate 5 billion dollar in revenue by 2023 (ICTD, 2019). Furthermore, the Digital Bangladesh programme is envisioned in the National ICT Policy 2018 and is included in the government's five-year development plan.

The first Bangladesh Perspective Plan 2010-2021 was launched in 2009, with the goal of achieving 'Vision 2021,' which includes Bangladesh being a middle-income country by 2021 and strengthening information technology to create a Digital Bangladesh (Bangladesh Planning Commission, 2012). To move from a lower middle income to an upper middle income and then a high income country by 2041, Bangladesh launched its

second perspective plan 'Vision 2041' in 2020. The plan's objectives include maximizing export-oriented manufacturing, raising agricultural productivity, transitioning from an agricultural-based economy to a primarily industrial and digital economy, increasing energy and infrastructure efficiency, and establishing Bangladesh as an information base station (Bangladesh Planning Commission, 2020). The government's strong commitment and continuous support towards the achieving Digital Bangladesh as well as ICT-based economy bring significant changes in overall Internet use in the country.

1.9 Outlines of the study

This dissertation comprises six chapters, as well as a bibliography and appendixes. The first chapter provides a detailed background to the study as well as a brief overview of Bangladesh's Internet usage situation. Chapter 2 provides a brief overview of the theoretical framework of the study, as well as reviews of related studies on Internet usage patterns and purposes, as well as attitudes toward the Internet and its addictive use in Bangladesh and other parts of the world. Chapter 3 describes the study's research methodology as well as the research design process in detail. In Chapter 4, the study's findings are presented in accordance with the research questions that guided the study's design. Finally, Chapter 6 concludes the work with a thorough summary and recommendations for future research.

CHAPTER TWO

Theoretical Framework and Related Literature

2.1 Introduction

This chapter examines a wide range of previous scholarly literature on Internet use patterns, Internet attitudes, and compulsive Internet use among young people in particular and the public at large. Studies related to young people, mostly adolescents and students age ranging 15 to 35 years will be examined with special focus as majority of the total Internet users belongs to this age group as well as they are the frequent online users. Besides, studies related to other age groups comprising both children and adult, and studies on general population will be discussed in relevant cases to give a comparative view of Internet use. In the first section, the conceptual and theoretical literature on Internet attitudes and compulsive Internet use will be reviewed to help understand the investigation's problems. The second section discusses Internet use patterns in terms of demographics such as age and gender, as well as use-related characteristics such as frequency of use and duration of use. Attitudes towards the Internet will be discussed in the third section followed by compulsive Internet use in the fourth section. In the final section, perceptions toward Internet use will be discussed in terms of the technology's advantages and disadvantages.

2.2 Theoretical framework

2.2.1 Theories imply in this study

Since the inception of Internet studies in 1990s, researchers develop and apply a number of media and technology-centric theories to investigate the various latent issues of Internet use in the general population as well as in specific group or segment of people. Using the Uses and Gratification Theory and the Social Cognitive Theory, a

good deal of research has attempted to uncover the socio-psychological factors that underpin Internet use.

2.2.2 Theory of Uses and Gratifications (U&G)

Uses and Gratification Theory is one of the most significant theories in the field of mass media study. From its very origins in the early 1940s, the theory has progressed significantly (Ruggiero, 2000). Katz and Blumler (1974) developed the fundamental assumptions of the theory, which asserts that every individual uses mass media to meet a specific set of needs. The theory's primary goals are to: a) explain how people use media to satisfy their needs, b) comprehend the motivations that drive media behavior and c) identify the functions or consequences of needs, motives, and behavior. The theory focuses on "the social and psychological origins of needs, which generate expectations of mass media and other sources, which lead to differential patterns of media exposure (or engagement in other activities), resulting in need gratification and other consequences, perhaps moostly unintended ones" (Katz et al., 1973).

Katz et al. (1973) categorized needs into three major categories: cognitive needs, affective needs, and integrative needs. Theoretically, cognitive needs relate to the enhancement of information, knowledge, and understanding; affective needs are related to the enhancement of aesthetic, pleasurable, and emotional experience; and integrative needs combine both cognitive and affective elements that are related to the enhancement of credibility, confidence, stability, and status. Additionally, they noted another need connected to escape or tension-release, which they characterize as a weakening of one's connection with one's own self and one's own social roles. Rubin (2002) developed five hypotheses about uses and gratifications. First, people's communication behavior is goal-directed and individualistic; second, people make

motivated media choices based on their own needs and desires; thirds, social and psychological factors guide and filter people's communication behavior; fourth, media compete with other sources of need satisfaction; and fifth, people are more influential than mass media, and individual initiative mediates the pattern and consequences of media use.

The uses and gratifications theory's main purpose is to explain and appreciate the psychological needs that shape people's reasons for using media, as well as the motivations that lead them to engage in specific media use behaviours to meet those needs (Rubin, 1994). Another objective is to determine how individuals utilise mass communication to suit their requirements and to identify the positive and negative consequences of individual media use (Lin, 1999a). According to to this theory, people's attitudes toward a medium and its content are taken into account along with the pleasure they seek in a particular medium. The theory emphasises human usage and choice, implying that different individuals may use the same mass medium for vastly different ends (Severin & Tankard, 2010).

The usues and gratification theory has been used to explain many types of mass communication, such as newspapers, radio, TV, watching soap operas on TV, cable TV, videocassette recorders, and the Internet, among others (Roy, 2008; 2009). Because the Internet has grown quickly and is more interactive than other traditional mass media, the uses and gratification theory has been used to try to figure out why people use the Internet (Ruggiero, 2000).

In their study on Internet uses and gratifications, LaRose and Eastin (2004) mentioned two sorts of gratifications: process gratifications and content gratifications. Process gratifications are those that occur throughout the course of a task. When one consume

media content, receive gratifications that are derived from the pleasure experience of the content and are enjoyable while doing so, but which are not tied to the real world. In this context, content gratifications were defined as those that arise from gaining information from media material and then using that information in real-world practical situations. Process-oriented Internet usage is as simple as surfing for entertainment purposes, but content-oriented Internet usage is as particular as accessing the Internet in order to find a certain piece of information or to complete a task. According to Cutler and Danowski (1980), content pleasure is acquired from the usage of mediated signals that are used to gain knowledge or understanding of the subject matter. Process gratifications occur when a person enjoys being a part of the communication process rather than the content of the communication message. Process gratifications are not related to the properties of the messages in any direct way. According to Stafford et al. (2004), there is yet another sort of gratification that can be experienced outside from process and content satisfaction. They refer to this as "social gratifications." They echoed that interpersonal communication and social networking are forms of social pleasure sought by the audience, especially while utilizing the Internet.

2.2.3 Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT) views human behavior through a triadic lens of reciprocal causality - between persons, their environments, and their behaviors (Bandura, 1986). According to the reciprocal causation paradigm, individual factors, behavioral patterns, and environmental events all exert bidirectional influence on one another. The hypothesis is one of the most prominent and frequently utilized in social psychology, communication, and particularly in the study of media influences processes and results (Pajares et al., 2009). It provides a theoretical justification for the empirical association between media gratifications and media consumption.

Apart from media effects, SCT examines the social transmission of innovation through the lens of three constituent functions and the underlying mechanisms (Bandura, 1986; 1994). The functions are knowledge acquisition, practice adaptation, and social networks. The functions are conveyed via symbolic modeling, perceived self-efficacy, and structural interconnectivity, respectively (Bandura, 1999). The Internet modifies the process of information acquisition and social diffusion; it also serves as a medium for the formation of social networks for the purpose of cooperating on knowledge creation (Bandura, 2006a; 2006b). Thus, SCT serves as a guide for developing the personal efficacy and cognitive abilities required for productive and creative Internet use (Debowski et al., 2001).

Self-efficacy is a core component of social cognitive theory (Pajares, 2002). According to Bandura, “Perceived self-efficacy occupies a pivotal role in social cognitive theory because it affects action not only directly, but through its impact on other classes of determinants as well” (Bandura, 1999, p. 28). Self-efficacy is the belief that individuals have in their ability to accomplish certain performance goals that have an effect on their lives. How people view their own ability to succeed has a profound effect on their ideas, feelings, motivations, and actions (Bandura, 1994). In other words, self-efficacy plays a vital role in human agency, or human's ability to make decisions and impose those decisions (Bandura, 1989). Like any other decisions making, Internet use also depends on one’s self-efficacy to Internet. "Internet self-efficacy" refers to a person's self-perception of their online abilities (Joyce & Kirakowski, 2013). Prior Internet use experience reinforced an individual's self-efficacy (LaRose & Eastin, 2004).

Another dimension of SCT is self-regulation. Self-regulation is the process by which people review and guide their own behaviour, evaluate it in the context of personal and

environmental boundaries, and regulate it through self-reactive rewards (Bandura, 1991; 1999). Increased media consumption is almost certainly a result of a lack of self-regulation. LaRose and Eastin (2004) described this as a habit of weak self-regulation. According to them, self-regulation deficiencies resulted in a loss of conscious self-control, resulting in Internet addictions or Problematic Internet Use (PIU) in the case of Internet use habits.

2.3 Internet use patterns

2.3.1 Frequency of Internet use

Frequency of Internet use in terms of mostly daily and weekly Internet usage to determine how regular people use the web varies. Frequency of Internet use depends on the availability and affordability of the Internet. The government's initiative to provide affordable Internet services to all has resulted in an increase in the frequency of daily Internet use in Bangladesh (Alliance for Affordable Internet, 2016). The first ever Bangladesh National Household ICT Survey (Alliance for Affordable Internet & Access to Information Programme, 2019) found that 78% of the Internet users aged 15 years and above had used the Internet daily while 17.4% used the Internet once a week.

Most of recent studies (Almarabeh et al., 2016; Dwivedi et al., 2007; Hossain et al., 2018; Hossain & Rahman, 2017; Merugu et al., 2014; Salubi & Muchaonyerwa, 2018) showed that over 70% of the respondents used the Internet every day. Peytcheva-Forsyth et al. (2018) in a study on Bulgarian youths found that 98% of them use Internet very often or every day.

The frequency of young people’s daily Internet used varied for different reasons. Tezer and Yildiz (2017) suggested that those who used Internet through personal computer, through mobile phone, at home and for accessing SNS were more frequent Internet

users with long hours of duration. They found a strong relationship between frequency of daily Internet use and duration of hours of time spent on Internet. The most disparities in frequency of Internet use was found in terms of gender. Ochnik and Dembinska (2018) examined 452 Polish students in two separate studies conducted in 2005 and 2012 to explore their Internet use differences and behaviour in seven-year distance. They observed that men were found to continually spend more time on more frequent Internet interactions than females throughout a seven-year period, with the average duration of spending time and frequency of Internet usage increasing noticeably for both genders. Oyedemi (2015) looked at the Internet use patterns and behaviours of 1044 South African youths and found that more than half of the participants (53.8%) utilised the Internet on a daily basis, with males (59%) using it more frequently than females (49.3 percent). In Bangladesh, Miah (2008) discovered considerable variations in Internet use between young men and women, with men utilising it more frequently than women. However, Labucay (2014) reported that roughly 60% of Filipino individuals aged 18 and above used the Internet at least once a day, with no disparities between males and females in their usage of the Internet.

Jobayer et al. (2017) categorized the Internet users as light, moderate and heavy Internet users according to duration and frequency of use and found that 30.91% were light users who used a few times a week, 55.06% were moderate users who used a few times daily and 14.03% were heavy users who spend more than four hours daily on the Internet. Among the heavy users, 20.4% were male and 6.3% female, resulting in a statistically significant gender difference.

2.3.2 Duration of Internet use

Studies showed that generally most of the adolescents and young people spent 1 to 4 hours daily on Internet (Abbas et al., 2018; Arefin et al., 2016; Deniz & Geyik, 2015; George et al., 2019; Hassan et al., 2020; Hossain & Rahman, 2017; Khan et al., 2019; Unsar et al., 2020). Four to five hours of Internet use by majority of the respondents were reported by several studies ((Abdel-Salam et al., 2019; Faruq, 2017; Islam & Hossain, 2013; Qureshi et al., 2014). While investigating effects on Internet on Omani adolescents, Al-Badi et al., (2016) found that over half of the youngsters stayed online for 5 to 7 hours each day, with another 25% spending 3 to 5 hours per day.

Duration of hours of Internet use or time spent online is a strong parameter of Internet use behavior of the users (Kuss et al., 2014). Among various factors, time spent on the Internet is determined predominantly by device for accessing Internet (Salubi & Muchaonyerwa, 2018), motives for use using the Internet (Kuss et al., 2014), and affordability to use Internet (GSMA, 2020; ITU-UNESCO, 2020). At the initial phase of Internet adaptation in Bangladesh, Azad & Islam (1997) in a cross sectional study found that the early adopters had spent 5 to 40 minutes on Internet per day, for a total of 2.5 to 20 hours per month, with an average of 5 hours per month. According to the researchers, high cost of Internet in terms of both bandwidth and devices, low purchasing capacity of the users, inadequate Internet access facility as well as the government's policy were the major obstacles in Internet adoption and penetration. Dwivedi et al. (2007) also found similar trend of Internet use while exploring the Internet use and adoption of adults in Dhaka. They observed that the majority of study participants (37.1%) spent less than an hour on Internet and another 27.1% spent only an hour due to affordability problem such as high price of Internet.

Salubi and Muchaonyerwa (2018) found another characteristics duration of Internet use on the basis of device use for accessing the web. In a study on 390 South African undergraduate students they found considerable difference in Internet use hours based on the device used to access the Internet. Most of the students (34.4%) had used the Internet for 3 hours or less while using their laptop or desktop, however the majority (55.1%) of the respondents had used the Internet for 10 hours or more when using their mobile phone. Duration of the Internet use was also differed by gender. Ochnik and Dembinska (2018) examined 452 Polish students in two separate studies conducted in seven years distance in 2005 and 2012. While men spent 5.84 hours per week and women spent 5.35 hours on Internet in 2012 it was 4.05 hours and 3.34 hours respectively for men and women in 2005. In another study, Bujała (2012) found similar trend with men spent about 12.08 hours per week on the Internet while women spent 9.05 hours.

2.3.3 Location of Internet use

People nowadays try to stay connected online at all times, and young people are obviously a big part of this practice. However, this necessitates financial affordability in order to cover the costs of an Internet data pack, an Internet gadget, and Internet use abilities, which are dependent on education level, socioeconomic standing, and cultural acceptance. People can now access the Internet from their homes, workplaces, educational institutions, public Wi-Fi hotspots (both free and paid), cybercafés, and other locations. Studies suggested that the majority of Internet users nowadays choose to use the Internet from their homes or other residential locations (Abdel-Salam et al., 2019; Chakrabarty & Latifee, 2014; Donat et al., 2009; Erdogan, 2008; Islam & Hossain, 2013; Khan et al., 2019; Mahmud, 2011; Oyedemi, 2015; Qureshi et al., 2014; Rahaman, 2018). Though the proportion of home Internet users varies among the

studies, it ranged around 50 percent (Rahaman, 2018) to up to 92% (Islam & Hossain, 2013). Now globally 57% people have home Internet access (ITU, 2021). Most women in Bangladesh and some other Asian countries, including Arab countries, use the Internet primarily from their homes because they are not permitted to use the Internet outside their homes due to cultural and family restrictions (Oshan, 2007).

Cybercafé was another popular place of Internet use now losing its position with the availability of mobile and broadband Internet. Miah (2008) found that 68% youth in Dhaka had used cybercafé for accessing Internet while only 20% from home. In a different study of 400 young Indians, Merugu et al. (2014) found that 25 percent of young people had used cybercafés and 22.75 percent had accessed the Internet at home.

2.3.4 Internet access device

The majority of Internet users in today's information age use multiple devices. Mobile phone use for Internet access is growing every day, especially among young users, and is beginning to supplant desktop, laptop and tablet, as people spend more time online and engage in multiple activities through their smartphones (GlobalWebIndex, 2017b).

There are many means to connect to the Internet, including a mobile phone, a desktop computer, a laptop, a tablet, a smart television, and other portable devices. A mobile phone may access data from both cellular networks and wireless or Wi-Fi broadband networks. Mobile phones have become the ultimate device for Internet use worldwide due to their ease of use and low cost, with 93 percent of people having mobile broadband Internet access ((ITU, 2020; GSMA, 2020).

Widespread use of mobile phone was found in many parts of the world as recent studies showed that mobile phone used for Internet access by 95 percent youths aged between

18 to 25 years in Bulgaria (Peytcheva-Forsyth et al., 2018); 96 percent 18 to 30 years youths in Bangladesh (Rahaman, 2018); 94.6 percent medical students in Bangladesh (Khan et al., 2019); 85 percent university student in Turkey (Unsar et al., 2020); 91.5% in India (George et al., 2019); 84.7 percent youths in Bangladesh (Jobayer et al., 2017) and 79.5% Saudi Arabian young people (Abdel-Salam et al., 2019). Mobile phone was found to be used by majority of the people in other studies (Faruq, 2017; Fatema et al., 2020; Hasan et al., 2020; Hossain & Rahman, 2017; Islam et al., 2020; Islam & Hossain, 2013; Khan et al., 2017; Mostafa et al., 2019; Oyedemi, 2015; Qureshi et al, 2014).

People liked to use the Internet on smartphones because a smartphone is bearable and its functions are also too much easy to understand (Fatema et al., 2020). Convenience and affordability of mobile phone created considerable difference in Internet use with 55.1% South African undergraduate university students were found to be used the Internet for 10 hours or more when using mobile phone compared to 34.4% who had used the Internet for 3 hours or less while using their laptop or desktop (Salubi & Muchaonyerwa, 2018). In a study on Omani adults, (Khan et al., 2017) found that the majority of respondents had used mobile phones to access the Internet, with no significant difference between males and females. In terms of the most preferred device for internet access, smart phone stands out as the clear choice across gender and age groups as it is handy, convenient and provides mobile access of Internet. The easy access to mobile phones for teenagers has facilitated the use of the Internet in rural areas of the country, as most rural areas are still not covered by the Internet's broad band network (Jobayer et al., 2017).

Over the previous two decades, mobile phones have evolved significantly, and the transformation has been both rapid and noticeable (Faruq, 2017). The device's numerous functionalities and user friendliness make it more appealing to the users. According to a recent study, almost all of the reported Internet users (96.5%) do so via their mobile phone (using a data plan), whereas more than one-fourth of the users (28.9%) also used Wi-Fi on their mobile devices. Only 8% of respondents used desktop or laptop computers to access the Internet (Alliance for Affordable Internet & Access to Information Programme, 2019).

However, a study of 15- to 29-year-olds by Raihan et al. (2021) found a significant gender gap in smartphone use, with more men than women using smartphones. One major reason for females' limited Internet access is a lack of appropriate devices, such as smartphones and computers, to connect to the Internet. Families are seen to be more restrictive in allowing female youths to use smartphones than male youths, with females typically allowed to use after completing high secondary school or tertiary education. Families feared that allowing female youth to use mobile phones would lead to wrong-headed behaviour.

2.3.5 Expenditure of Internet use

When getting access to Internet data and Internet use device depends on affordability likewise the expenditure for Internet depend on household income (Raihan et al., 2021). Youths with higher family income have more Internet affordability compared to lower the income families, so the expenditure. Also there exist the gender difference with female in lower income group have to experience more disparity than higher income families.

A study on 150 university students in Bangladesh (Hossain & Rahman, 2017) showed that the majority of young people used Tk 100 to 200 per month for Internet access while a sizable proportion used Tk 400 to 800. In a study on 503-young people aged 15 to 35 years, Faruq (2017) found that the majority of them (42.8%) had spent Tk 100 to 500 on Internet usage in a month while one-third of spent between Tk 500 and Tk 1000 on this purpose. Chakrabarty and Latifee (2014) also revealed a similar trend among youths where the majority (30%) paid monthly Internet use bills in the range of Tk 01 to 500, while 16% paid in the range of Tk 500 to 1000.

2.3.6 Experience of Internet use

The experience of the Internet use assess by calculating the length of difference between one's first access to the Internet and the time responding to the present study. Experience of Internet use is related to attitudes toward the Internet and problematic Internet use (Alzahrani and O'Toole, 2017; Mahmud, 2011; Otaibi, 2012; Tsai et al., 2001).

Alzahrani and O'Toole (2017) conducted a study on 142 Saudi Arabian youths aged 19 to 27 years and found that 69.7% had used Internet for three years or more. Bujała (2012) in a study on 2000 Polish citizens revealed that male and females had significant difference in Internet experience with men had 6.51 years of Internet use experience, while women had 6.05 years. In a study on 200 Indian youths, George et al. (2019) found that more than half (53%) of those youths had used the Internet for 5 years or more. Shahnaz and Karim (2014) in a study on 210 Bangladeshi youths found that the participants' Internet use experience ranged from 5 months to 12 years, with a mean of 3.65 years. In a study on 454 youths aged ranging from 19 to 35 years, Hassan et al., (2020) found that the majority of participants (86.8 percent) had been using the Internet for more than a year.

Mostofa (2011) examined the Internet use patterns of 137 young people aged 17 to 25 years and discovered that approximately 60% of respondents had experience using the Internet for six months to two years. Shuva and Akter (2011) examined 461 students, the majority of whom were inexperienced Internet users with six months to two years of experience. Abbas et al. (2018) in a study involving 180 Pakistani aged 18 to 25 found that the majority of participants (31.1%) used the Internet for 1 to 2 years, while 26.7 percent used it for 3 to 4 years. Chakrabarty and Latifee (2014) found that the majority of participants (30%) had used the Internet for 2 to 3 years, and 24% had used it for 3 to 5 years. Dwivedi et al. (2007) in a study found that the majority of respondents (45.7%) had been using the Internet for more than three years, with 24.3 percent having used it for one to two years. In a study on 536 Jordanian undergraduate students, Almarabeh et al. (2016) discovered that the majority (43%) of respondents had 6 years or more of Internet usage experience, followed by 29 percent who had used for 4 to 5 years and around one-fifth who had used for 2 to 3 years. Jones et al.(2009) in a study on 7421 youths in the United States revealed that the majority (66%) of male participants had more than ten years of experience using the Internet, compared to only 56% of female participants.

2.3.7 Monthly family income

Labucay (2014) investigated the Internet usage patterns of 1200 Philippine citizens and observed that 58 percent of the higher income group used the Internet, while only 25 percent of the lower income group did. Individuals with a higher socioeconomic status have greater access to and capabilities on the Internet and are thus more likely to use it frequently (Khan et al., 2017).

2.4 Internet use activities

2.4.1 Bangladesh scenario

In a study on 600 youths aged 15 to 30 years, (Miah, 2008) found that more than three-fourths (77.6%) of youths used the Internet to send and receive email, 53.4% for study-related information, 58.4% for reading news, 44.5% for chatting, 33% for listening to music, 29.2% for downloading software, 29.5% for entertainment-related information, 28.4% for playing games, 28.4% for shopping, and 28% for finding a job. Use of the Internet differed between the young and the old, male and female. The younger population, particularly students, used the Internet primarily for learning, chatting, listening to music, and downloading software, whereas older youths used it primarily for news reading, emailing, and job hunting. The study revealed significant differences in Internet usage between men and women, with men using the Internet significantly more than women. In terms of downloading software, gathering information, playing games, and making friends, males were observed to use the Internet more frequently than females.

Jobayer et al. (2017) found that the majority (42.1%) of teenagers living in rural areas used the Internet mainly for entertainment, followed by social networking (35.6%) and educational purposes (9.9%). Though young students usage the Internet for various purposes, use of Internet for education purpose was not prominent and differed significantly based on subjects matters of study (Hossain & Rahman, 2017). They found that around 9% of university students used the Internet each for academic, communication, and entertainment purposes, while 36% used the Internet for both academic and non-academic purposes. The duration and frequency of Internet use, the cost of Internet use, and the purpose of Internet use varied according to the subjects of study, and those who studied Science and Arts subjects had a lack of Internet use for academic purposes.

In the early stage of Internet adoption in Bangladesh, people mainly used it for communication purposes with 83 percent of respondents used the Internet primarily for emailing, 12 percent for browsing, and only 5 percent for reading news (Azad & Islam, 1997)**.** Twenty years later, SNS have largely replaced email communication, with finding that the majority (93 percent) of respondents using the Internet to access SNS, one of the most popular browsing activities (Faruq, 2017). Aside from SNS, 72% youths used Internet for emailing, 72% for watching videos, 63% for getting information, 42% for instant messaging, 38% for academic purpose, 32% for playing games, 32% for Internet telephony and 31% for shopping. This indicated that communication, entertainment and information were the most common reasons for using the Internet, while shopping was the least preferred.

Shaheen et al. (2016) assessed the computer and Internet use habits of 659 undergraduate medical students of whom 52% female and 48% male. According to the study, 91% of respondents had computer access, and 90% had Internet access. The findings revealed that the respondents had nearly identical computer and Internet habits, with the computer being used by 65.1% of participants for social networking (chatting), followed by 58.4% for academic purposes. On the other hand, the majority of Internet users (84.1%) use it for entertainment and 75.9% for getting information. Apart from social networking and academic reading, the young students used the Internet and computers for entertainment purposes, such as watching movies (66.0%), listening to music (61.7%), and playing games (43.7%). Chakrabarty & Latifee, (2014) in their study on young university students found that the majority (72%) of respondents used the Internet to access SNS, 14 percent for chatting, 4% for just surfing, 2% for reading news and 6% for other activities.

The use of the Internet for academic purposes did not differ significantly between men and women. Although not statistically significant, female respondents appeared to use the Internet more for academic purposes than male respondents (Kamruzzaman et al., 2014). Males, on the other hand, used the Internet more for entertainment and communication than females. In a study, Islam (2013) found that undergraduate university students used the Internet for research or assignment, as well as emailing, meeting personal interests, entertainment, and chatting. The students thought that easy access to information was more important than other features of the Internet.

According to a study by Shuva and Akter (2011), nearly all (98.26%) young people used the Internet for communication, 67.03% for academic purposes, and 19.31% for entertainment. In addition, respondents used the Internet for emailing, job searching, chatting and reading news. Mostofa (2011) in a study on 17 to 25 years young people found that more than half (56.2%) of them used the Internet for educational purposes, followed by 16.8 percent for entertainment and 10.2 percent for communication, indicating that the majority of participants used the Internet to aid in their study. The results of a study conducted by Roknuzzaman (2006) revealed that 100 percent of participants perceived the Internet as a medium for communication, and that 91 percent regarded it as an instrument for academic excellence. The Internet was also described as a source of a plethora of information by 90 percent of the respondents.

In their study, Dwivedi et al. (2006) observed that the vast majority of study participants (91 percent) used the Internet to send and receive emails as well as communicate with others (57 percent). More than half (53%) of people said they used the Internet for searching, while 39% said they just browsed. In addition, 13% downloaded music or software applications, and 4% played online games. However, none of the respondents

were found to be engaged in e-commerce activities such as online shopping or selling. Regarding the usefulness of the Internet, the majority of respondents (89%) said the Internet is beneficial for communication; 43% said it is beneficial for accessing desired information; and 31% said it is helpful for education, such as performing research and homework. In addition, about one-fifth of the respondents regarded the Internet as a means of entertainment, with other advantages being the ability to use the Internet for office work (9%), keeping up with foreign events (7%), and simply passing the time (1%).

2.4.2 Global scenarios

Salubi and Muchaonyerwa (2018) observed that communication was the most common reason for using the Internet, with the highest mean score (3.4), followed by social networking (3.17), enjoyment (3.02), and academic (2.95). This indicated that individuals utilized the Internet more for communication, entertainment, and social networking than for academic purposes. The highest ranked academic activities were retrieving study-related information and searching assignments or research materials; the highest ranked communication activities were keeping in touch with friends and sending or receiving email; the highest ranked entertainment activities were watching videos and listening to music; and the highest ranked social networking activities were instant messaging and activity with Facebook, Twitter, and Myspace.

In two separate studies conducted between 2005 and 2012, Ochnik and Dembinska, (2018) examined the Internet usage behaviour of Polish youth. Over the course of two investigations, they found that Internet activities varied by gender, with men using the Internet for entertainment more frequently than women. Men were also found to be more prevalent in discussion groups. Men sought pornography on the Internet

significantly more frequently than women, and men's pornographic consumption had increased significantly. In contrast, women have used to email significantly more frequently than men. However, no significant differences in male and female Internet usage for information search, shopping, or aimless browsing were found.

Khan et al. (2017) noted that males (80%) used the Internet significantly higher for work than females (59%) and females (41%) used the Internet more for leisure and social networking than males (20%). In terms of age, younger age groups used the Internet for both work and entertainment, whereas older age groups used the Internet mainly for work. They suggested that Internet use appears to decline with age.

Almarabeh et al. (2016) found that 97.95% young people used Internet for social networking, 95.90% for chatting, 91.98% for studying, information gathering, and searching, 85.45% for watching or downloading songs and videos, 84.51% for reading news, 78.92% for emailing, 63.99% for playing games, and 36.38% for purchasing products online. Social networking was regarded as an important and appealing element of the Internet while communication, information collecting, and academic pursuits were additional popular reasons for using the Internet. However, online shopping was the lowest rated reason for using the Internet.

Al-Badi et al. (2016) investigated bad Internet practice of 500 Omani adolescents and revealed that teenagers abused the Internet in a variety of ways. Approximately 85% downloaded illicit contents, 82.5% searched for age-restricted contents and created relationships with strangers, 55.5% shared adult-content with others, 36% hacked others accounts, and 25% harassed others online. Furthermore, searches for pornography materials had grown by both males and females, but males consumed pornography more frequently than females.

Oyedemi (2015) found that South African teens used the Internet for a variety of activities, with the majority (98.6%) preferring for information, 98.2 percent for assignment research, 94.0 percent for sending and receiving emails, 92.1 percent for seeing study-related information, 89.2 percent for downloading academic articles, 85.0 percent for staying connected with friends, 80.6 percent for social networking, and 73.1 percent for shopping. The majority of the youngsters (82.7 percent) had never purchased anything online.

Deniz and Geyik (2015) observed that 95 percent of Turkish youths had used SNS, with only 5 percent having never used the platform. Around 62% of them used the social media to communicate with their friends and teachers. After SNS, 76% used the Internet for entertainment purposes such as chatting, downloading films or music, playing games, gambling, and shopping. Only 24% used the Internet for educational purposes.

Qureshi et al. (2014) found that among Malaysian youths, 81 percent used the Internet for entertainment, followed by education (74.3%). Furthermore, 65.7% of respondents used the Internet for social activities, 34.9% for research, 16% for political information, and 11.4% for sports news. Only 9.1 percent of respondents used the Internet for online shopping, 4 percent for tourism-related information, and 2.3 percent for economic information. The majority of SNS users said they used Facebook, and the most of them used it to communicate with family and friends.

Among Indian Internet users, Merugu et al. (2014) found that all the respondents (100%) had used the Internet for file sharing and emailing, 86.5 percent for chatting, 77.25 percent for social networking, 44.5 percent for gaming, 39.75 percent for music and movies, 31.25 percent for shopping, and 16.5 percent for blogging. The users

believed that, among other things, the Internet was extremely beneficial for improving one's quality of life and performing study or work.

Labucay (2014) observed that social networking was the primary and most important Internet activity among Filipino Internet users, with 95 percent using various SNS. Searching for information, learning, and entertainment were also popular activities, while creativity and commercial use were the least popular. Getting current event news and searching for information on health, dieting, and fitness were the most popular information seeking or learning activities. Males and youths aged 18-34 were more likely to play online games for entertainment and leisure. Internet users engaged in the least amount of creativity and production, as well as commercial activities such as blogging and online shopping.

Bujała (2012) observed that one of the most significant gender disparities in Internet usage habits of Polish youths was men's greater interest in the medium's entertainment function. When compared to women, men's online activities were dominated by entertainment. Checking email, surfing the web, and reading news were the most popular online activities for both sexes. Men's daily online activities were dominated by gaming, whereas women's were dominated by communication. Gender differences in information, education, and services were also observed based on online activity frequency, though these differences were minor.

In the United Kingdom, Selwyn (2008) found that educational information was the most frequently searched for type of information on the Internet when compared to consumer items, news or current events, recreation, hobbies and interests. Furthermore, searching for academic information on the Internet was a more common use than other online activities such as online transactions, online shopping, playing online games,

downloading, and engaging in online lessons. However, Internet use for educational information was ranked lower than Internet use for communicative and social software, with significantly higher proportions of students reporting frequent use of the Internet for emailing, chatting, and social networking. As a result, while study-related information searching was prominent, it was not dominant.

2.5 SNS use pattern

SNS are platforms that allow for the establishment and maintenance of online interactions, both personally and professionally. Communication with individuals all over the world, as well as keeping in contact with friends and family, is made possible through SNS, which fosters a sense of belonging. SNS have been defined as:

> "a networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site (Ellison & Boyd, 2013, p. 157)."

Kuss and Griffiths defined SNS as "virtual communities where users can create individual public profiles, interact with real-life friends, and meet other people based on shared interests," (Kuss & Griffiths, 2011, p. 3529). SNS have become increasingly popular because they satisfy two fundamental social needs: the need to belong to a community and the need to present oneself to the rest of society (Nadkarni & Hofmann, 2012). It is possible that these needs operate unilaterally and that they are affected by a wide range of other considerations, including one's demographic background, cultural context, socio-economic conditions, and personality types such as self-esteem.

Hossain (2019) conducted a study on 241 youths to assess the uses and gratifications of SNS use, particularly on Facebook. The study found that young people used Facebook mainly to fulfill their needs for social interaction, passing time, enjoyment, self-presentation, information seeking, and social presence. It further stated that gratifications lead to habitual use behaviour, resulting in more frequent and continued use of SNS with better satisfaction.

Saha and Guha (2019) investigated the impact of social media use youths aged 18 to 25 years and found that Facebook is the common SNS used by 63.7% of the young people. The majority (45.2%) young people used SNS for chatting, 32.9% for downloading music or video, 16.1% for educational purpose, 14.7% for posting photos, 13.7% for blogging, 12.4% for uploading music and video, 9.4% for conducting poll or survey purposes, 4.8% for posting article in the website and 8.2% for sports news. Though majority (37.6%) students said that SNS didn't hamper their life, at the same time around one third (30.4%) believed that SNS usage hampered their study as they spent their time for using SNS instead of learning. More than a quarter of the participants said excessive SNS used caused various physical and mental complications including eye problem, lack of sleep, headache, mental depression and stress.

Kabir et al. (2016) found that 83.3% of Internet users had used SNS, and Facebook was the most preferred SNS. The majority of the students (64.2%) were using Facebook as a recreational medium, followed by searching for new friends (60.0%), updating status (57.5%), and uploading photos of different events (51.7%). The majority of the young people (89.2%) had a highly favourable attitude towards SNS. Above a quarter (27%) of the students were addicted to SNS, which interfered with their personal and professional responsibilities, resulting in poor academic performance.

However, Khanam (2020) found that proper utilization of SNS can be beneficial to academic performance. While investigating the relationship between social media use and the academic performance of university students, the researcher found that Facebook and other social media used for study purposes improved their academic results. Use of SNS has offered a friendly environment for students to share academic information and course materials, exchange instant feedback, and comment on any academic topic that positively influences their academic outcome. Munshi et al. (2018) investigated the use of social media for educational purposes among 150 postgraduate students and found that 95.33 percent of them used Facebook. Most of the students (88.66%) used SNS daily followed by 7.34% weekly. The majority of students (96.66%) used SNS for chatting with their friends, 92.66 percent for private messaging and photo uploading, 89.34 percent for academic purposes, 88 percent for leisure and socialisation, 84.66 percent for watching movies, video songs, and news, and 65.33 percent for online learning. Students value the importance of SNS for academic purposes, according to the findings, because SNS helps students meet their academic needs by fostering positive relationships with their teachers, friends, and other stakeholders.

Teenagers' use of social media has both a positive and negative impact on their daily lives, according to Al-Jubayer (2013), who investigated the impact of Facebook use on teenagers in Dhaka. The majority of teenagers (62 percent) used Facebook for chatting, followed by playing games (19 percent), and updating their profiles (around 10%). About 23% of the teenagers said they used Facebook for other purposes, such as communicating with family and friends, sharing photos and information, making new friends or strengthening existing friendships, and sharing personal information through updates on their own profiles. Teenagers used Facebook to waste time as a form of

recreation, according to Al-Jubayer (2013), because there are few outdoor recreation facilities for young people in the city. As a matter of concern, some teenagers used Facebook to create false identities in order to find opportunities for romantic relationships and to view pornography.

Quader (2013) examined SNS usage habits of 19 to 24 years youths and found that majority of them (88.46%) used Facebook. The majority (71.8%) of the respondents used SNS every day. The main purposes of using SNS includes, connect with friends and family, uploading photograph and videos, meeting new people, and playing games. Other than Facebook use, the youths were comparatively less interested in writing blogs or online dating. The majority of of the young people (52.6%) stated that their SNS usage had no effect on their academic standing. Vast majority of the respondents, both male and female, used the Internet to obtain study-related information and to connect with friends via social networking sites. This could be one reason why high SNS usage had no effect on the majority of students' academic performances.

Can and Gokce (2019) investigated SNS use purposes of 549 Turkish youths in terms of gender and enlisted seven different reasons for using SNS. Youths used SNS for research, collaboration, initiating communication, maintaining communication, sharing content, and entertainment. Young people use SNS to communicate the most intensely and to initiate communication the least. Males and females used SNS equally for research, collaboration, maintaining communication, content sharing, and entertainment.

Alnjadat et al. (2019) observed that there was a significant relationship between SNS use and academic performance based on gender. Academic performance of the majority of males (71.9%) did not affect, as opposed to 53.5% of females, due to SNS use.

Kircaburun et al. (2020) noticed significant differences in SNS use by gender and age among Turkish young people aged 17 to 32 years while examining the motivations for problematic SNS use. Women use SNS more for education and information, as well as relationship maintenance and task management, whereas men use it more for networking, socialising, and entertainment. Younger generations use social media to maintain existing relationships, meet new people, socialise, express themselves or appear more popular, while also passing the time and entertaining.

Baglari et al. (2020) conducted a study on 300 young Indians aged 18-25 years to explore their SNS use patterns. The majority of the young people (62.3%) used SNS to communicate with others, and 75% used it to share information, videos, and photographs, which they regarded as a good impact of social media. On the other side, almost all (99.7%) youths stated that SNS impacted their daily routine and academic performance, and 73 percent said that SNS use caused sleep disturbance. Around 60% of the young people were concerned about their personal information's privacy and security while using SNS. As a deviant character, fake SNS profiles were used by 60% of the youths.

In a 2018 study, Brahma and Verma (2018) found that 98 percent of the 200 youths aged 20 to 24 years had used SNS every day and majority of them used Facebook platform. The youths had used SNS for various purposes. Majority of respondents had used SNSs for entertainment purpose followed by instant messaging and academic communication. The other purposes of SNS usage includes, searching jobs, finding old friends, sharing videos, discussing new ideas, sharing experience, getting opinions from others and promoting themselves or their work. A prominent number of young people said they usage SNS because it is convenient for communication and relieves boredom.

Alhabash and Ma (2017) compared motivations of 363 college students for using four popular SNS platforms; Facebook, Twitter, Instagram, and Snapchat. They found that majority (97.2%) of the respondents had active account on Facebook, 87.1% on Instagram, 84.3% on Snapchat and 79.1% on Twitter. The study reported eight motivations for SNS use: information sharing, self-documentation, social interaction, entertainment, passing time, self- expression, medium appeal, and convenience across four platforms were investigated. Though there were no significant difference among four platforms, mean scores showed that Facebook was used highest for information sharing. The other two highest rated motivations across the four platforms were entertainment and convenience. Other than convenience and entertainment, Facebook was used by the students for passing time, medium appeal, self-expression, social interaction, and self-documentation motivations, respectively.

Shabir et al. (2014) conducted a study on 300 Pakistani youths aged 15 to 30 years old to investigate the impact of social media use on youths. SNS use had the most negative impact on the youth's education as they used the Internet excessively to communicate with their friends on social media, ignoring study and research-related activities. Unwanted messages, unwanted friend requests, controversial political links, unethical pictures and links, irrelevant religious and anti-religious messages, and useless information were among the most common issues mentioned by the youths. Despite agreeing that social media has an impact on youth's lives they continued to use SNS. The majority of the young people agreed that positive use of social media forums can increase sociopolitical awareness, improve various skills such as language proficiency, develop online communication skills, and create broader visionary power and connectivity.

In a study of 354 Turkish youths, Kayaoglu (2016) reported that males spend significantly more time on Facebook than girls. Furthermore, males were found to use Facebook for non-work-related purposes such as boredom relief and games. In comparison to females, these behaviours indicated that males were more addicted to Facebook. Facebook was being used for more than just communication and pleasure, and it was interfering with youths' everyday life.

Soron and Tarafder (2015) analysed the Facebook use patterns of 341 people ranging in age from 13 to 61 years and noticed that the activities and motivations associated with Facebook use were significantly influenced by demographic characteristics. Female Facebook users had different motivations than male users, and female users were more concerned with privacy compared to males. The age of a person was also a significant factor in determining and influencing their decision to use Facebook. People between the ages of 18 and 30 were the most active on Facebook. Despite Facebook's age restrictions, the study found that 14% of young people used the site before the age of 13 by inventing a false date of birth.

Eke et al. (2014) investigated Nigerian youths' SNS use patterns and noticed that communicating and interacting with friends was the most frequented activity among 11 SNS activities explored, while connecting and interacting with business partners was the least preferred. The other SNS activities young users performed were: online learning, finding online friends, leisure and personal socialization, professional activities, academic purposes such as group discussion, watching movies, communicating, mobilizing and organizing national issues, private messaging, uploading photos, and updating profile information.

2.6 The influence of Internet

2.6.1 How Internet transformed media use and regular activities

Vilhelmson et al. (2017) studied how Internet use transforms Internet users' daily activities in a study of 2998 Swedish adults. They discovered that the amount of time spent on the Internet is heavily influenced by the availability of free time. For excessive Internet users, time spent on outdoor activities such as recreation, sports, and free-time travel was reduced to some amount. Time spent on off-line cultural activities and amusement, as well as reading newspapers and books, was substituted by Internet use, indicating that the Internet has had an impact on daily activities. However, the impacts were more noticeable in heavy users compared to light users since heavy users spent more time alone. In terms of social life, the study revealed no difference in the amount of time spent interacting with family and friends. Heavy users, once again, spent less time speaking face to face.

In a research of Pakistani school students, Abbasi and Huang (2020) discovered that the 17 to 19-year-olds heavily rely on social media for news and information. Teenagers were divided into two age groups in the study: 13 to 16 years old and 17 to 19 years old. Overall, 38 percent of teenagers got their news from television, 36 percent from family and friends, 31% from social media, and 19% from websites or apps. Only 10% of teens rely on their teachers for news and information, while 7% rely on newspapers and 4% on radio, showing that teenagers used radio and newspapers the least. In the 17-19 year old age range, 27% of adolescents relied on social media for news and information, compared to 24% who relied on television, 14% on family and friends, 7% on newspapers, and 4% on radio. However, the majority of teens aged 13 to 16 preferred televisions (38 percent) for news and information, with social media coming in third (31 percent). According to the study, 17-19 year olds were more likely to own a

smartphone and use it to obtain news and information via social media than 13-16 year olds, who were less likely to own a smartphone but occasionally used their parents' smartphone.

Kaye (1996, 1998) investigated whether Internet use was displacing time spent on other media use among US adults, the majority of whom were young (25.3 years on average). The researcher observed that after starting to use the Internet, more over a quarter (27.9%) of the participants reduced their time spent watching television and reading newspapers. Instead of reading books, 21.9 percent of respondents spent their leisure time on the Internet, while listening to radio declined by 13.9 percent. However, a substantial majority of participants (66.5%) reported that their time spent watching television, listening to the radio, reading newspapers, or reading books was unaffected by Internet use. According to the study, Internet use has had a substantial impact on traditional media consumption, with television and newspapers being substituted most by the Internet for news, information, and entertainment.

Livingstone et al. (2018) demonstrated in a study of the parents of 0-17 year old children in the United Kingdom (UK) that the use of new media has effectively integrated family interactions, refuting popular misconceptions that digital media is destroying traditional social patterns. They observed that 67 percent of parents called and 66 percent texted, while 58 percent met in person to contact family and friends, compared to 40 percent messaging apps and about 25 percent email and SNS communication. Younger parents used SNS to make more video calls or messages, while older parents used email, but their phone calls and in-person visits were indifferent.

In another study, Livingstone and Das (2010) stated that widespread Internet access is changing family lives. When interactive, interpersonal, and personalised modes of communication emerge, family communication and social bonds appear to be transformed. As parents became more concerned about public space, they instilled a media-rich "bedroom culture" in their children at home. It implies that children and adolescents spend more time at home, in their own private environment, rather than in community or family settings. The researchers, however, contended that the role of media in family life is complicated and that media influence varies depending on context. In some contexts, media is used to generate and reinforce collective experiences, values, and discussion; in others, media is used in a more personalized and private manner, with the emergence of bedroom culture promoting highly individualised taste, customs and practices within the family.

According to Ling and Yue (2015), the displacing effect of media competition is classified into two types: function displacing and time displacing. If a new medium performs better and more effectively than existing media, it will almost certainly be abandoned by audiences. In reality, no new medium can entirely replace an older one, and thus the function displaced between media is frequently reflected in time displacement. When compared to traditional media, new media may provide superior user experiences. The audience is devoting less time to traditional media and more to new forms of communication. In a study of 3000 Chinese Internet users, Ling and Yue reported that after starting to use the Internet, time spent reading newspapers declined by 65.8%, radio listening by 75.4%, television viewing by 62%, and book reading by 60.9%. The findings showed that time spent on traditional media had been replaced by time spent on the Internet. There is a correlation between time spent on the Internet and time spent on conventional media, with more time spent on the Internet equaling less

time spent on traditional media. However, the link between the two is rather intricate. Among the specific functions, the Internet has readily surpassed traditional media such as newspapers, radio, and television in terms of information communication, leisure, entertainment, and education, but companionship and ceremony have proven more difficult to replace. Users accustomed to obtaining information more quickly and efficiently via the Internet no longer rely on conventional media for information, and their time spent on traditional media naturally declines.

Kitamura (2013) evaluated the Internet's effects on the Japanese public's information acquisition via traditional information channels, with a particular emphasis on displacing and complementing effects, as well as on Internet access devices. Kitamura observed that when comparing several information channels — television, radio, newspapers, and friends or family members — other than the Internet, respondents prioritised television (M=4.16), newspapers (M=3.00), friends and family (M=2.16), and radio (M=0.87). Comparing Internet use with a mobile phone to that on a personal computer, the research found that Internet use on a mobile phone has complementing impacts on information acquisition through conventional media, whereas Internet use on a personal computer does not.

Gaskins and Jerit (2012) did an empirical study to investigate the relationship between time spent online and time spent on conventional media, specifically whether people were utilising the Internet to replace traditional media outlets or as a supplement to older media. According to the survey, time spent reading newspapers, watching television, and listening to the radio reduced by 44.3 percent, 26.2 percent, and 40 percent, respectively, after starting to use the Internet. However, over half of the respondents said they still read newspapers, watch TV, or listen to the radio in the same

quantity as before they started using the Internet. When it comes to ease of use, users believe that the Internet meets their demands better. The study asked participants to rate how convenient and useful they found the Internet, newspaper, television, and radio as sources for news. On a 4-point scale, respondents ranked the Internet first, with a mean score of 3.48, followed by television, 2.53, radio, 2.18, and newspaper, 2.04. People regarded the Internet as the most convenient source of news since they may get it at any time and from anywhere.

Ayyad (2011) found that the Internet ranked highest among five sources of information for young university students in the United Arab Emirates (UAE), with a mean score of 4.5, followed by television with a mean of 3.6, newspapers with a mean of 3.2, and radio with a mean of 3.1. The Internet, by far, is the most popular media among students, according to this finding. The investigation found that the primary motivations for surfing the Internet were entertainment, information, and communication. The Internet was widely used to meet personal, social, and academic needs.

Chan and Fang (2007) conducted a study on 405 Hong Kong youths aged 15 to 24 to look at how they use traditional media and the Internet. They noticed that time spent on the Internet outpaced time spent on television, reading, and listening to the radio. Youth can always get the most up-to-date information on nearly any topic by using the Internet. As a result, the Internet was preferred over other traditional media for information-related activities. Traditional media is increasingly combining with the Internet to reach young people as a result of the widespread use of the Internet. As radio and the Internet converge, more people are turning to online broadcasting for entertainment. Television stations use the Internet to deliver video streams to

subscribers, and newspapers publish news online. With the introduction of multimedia-enabled browsers, the Internet has progressed. Traditional media, such as newspaper articles, television shows, and radio broadcasts, are accessible via the Internet.

According to a 2017 study of adult media consumption in seven Middle Eastern countries (Northwestern University in Qatar, 2017), widespread Internet use had a significant impact on media consumption, with fewer people watching television, listening to radio, or reading magazines and newspapers. Over a five-year period from 2013 to 2017, watching television, listening to the radio, and reading newspapers all decreased in Egypt, Jordan, Lebanon, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates. In 2013, 98 percent citizens of these countries watched television, 59 percent listened to radio, and 47 percent read newspapers; by 2017, these figures had fallen to 93 percent, 49 percent, and 25 percent, respectively. On the other hand, Internet use increased 63 percent in 2013 to 84 percent in 2017. Internet users preferred to interact with their friends over their family members. Arab Internet users estimate that they spend 13 hours a week with friends and 9 hours with family. Due to the growth of chat apps, social networks, and other Internet communication instruments, online interaction has increased.

According to GlobalWebIndex (2017), daily television viewing time in 29 of the 31 nations has declined since 2012. Radio broadcasting was curtailed in 24 countries, while printing presses were reduced in 15 countries.

2.6.2 How Internet use-related concerns influence its users

According to the (Ofcom, 2020a), 81% of UK individuals aged 16 and above were apprehensive or concerned about using the Internet, which includes social platforms, apps, online games, and email communication. Females were more concerned (84%)

about the Internet use compared to males (79%). On the other hand, 27% of the children aged 12 to 15 had apprehension about the Internet. Regarding specific issues, the greatest 61 percent of Internet users indicated they were concerned about hacking or security, 51 percent were concerned about content and contacts with other people particularly thorough SNS, and 37 percent were concerned about privacy. Other concerns regarding Internet use include the promotion of fake news; the unauthorised use of personal information; the transmission of violent or disturbing content, sexual or pornographic content, and viruses; bullying or abusive behaviour or threats; child sexual abuse and offensive videos and images; cyberstalking; harmful or misleading advertising; the promotion of terrorism or radicalization; unexpected friend or follow requests; hate speech or inciting violence; and offending others.

According to a Doteveryone (2020) report, people were concerned about the possible harm that the Internet could cause. Problems with technology risks were prevalent, particularly when it came to concerns that people saw or heard about on a daily basis. The most often expressed concerns about Internet use were children being exposed to improper content (84 percent), cheating (83 percent), and cyberbullying (74 percent). Females and the elderly were more concerned about Internet-related cyber dangers.

Ullah et al. (2015) conducted a study on 1895 Pakistani adults to investigate their awareness of incidents involving online privacy and security. According to the study, more than 80% of respondents experienced at least one cybercrime incident, such as spam and virus attacks, defacement, threats, and offensive messages via fake SNS and email accounts. 35 percent received hateful or threatening emails or messages, 23 percent experienced privacy violations, 10 percent were victims of defacement and

unauthorised access, and 5 percent encountered fake Facebook or email accounts. Surprisingly, 63 percent of the respondents had no knowledge of cybercrime.

In a study, Haque (2019) found that the cybersecurity awareness level of the majority of participants (37.9%) was satisfactory, while it was inadequate for one-third of respondents (30.2%). According to the findings, 88.8% of all respondents believe Bangladesh should have a strong cybersecurity strategy because personal data is not protected and users do not have enough control over their own data. Virus attacks were the most common Internet security threat in Bangladesh, according to the study.

In a recent study, Blank and Dutton (2019) found that more than half (52%) of respondents were concerned about privacy while online, and that these users had taken steps to protect their privacy when it came to contact information, medical issues, marital status, age, and online purchases. Users were also concerned about malware or virus attacks, obscene or abusive emails, and personal data theft. The respondents, on the other hand, believed that concerns about Internet security, specifically virus attacks, were either stable or declining. One of the main reasons for the decreased fear of a virus attack is that antivirus software is frequently installed by default.

BGD e-GOV CIRT (2020) identified the following as Bangladesh's top 15 cyberthreats: spam, ransomware, phishing, malware, information leakage, insider threat, identity theft, web-based attacks, data breach, denial of service, web application attacks, Botnets, Cryptojacking, physical manipulation in the form of damage, theft or loss, and cyber espionage. The public body identified the cyber-threats on the basis of the results of an anonymous survey which was designed following the guidelines of European Union Agency for Network and Information Society (ENISA).

In Bangladesh people are gradually realizing the significance of recognizing cybersecurity (Agrafiotis et al., 2018). While incidents such as hacking email and SNS accounts, cyberbullying, and fraud do occur, the majority of people are unaware of the risks and have not recognized or taken proactive steps to improve their cybersecurity. Bangladeshi Internet users have blind faith in ICT and Internet services, and they are unable to evaluate what they see online or the security of the apps they use. People in Bangladesh were either unaware or unconcerned about the handling and protection of personal information online. Despite widely publicized data breaches, fraud, and bullying, they were unaware of the interconnections between privacy and security concerns.

According to a Pew survey (Vogels, 2021), 41% of adult Americans had experienced online harassment in some form, such as being called an offensive name, being purposefully embarrassed, or being physically threatened. Social media was the most common platform for harassment for both men and women, accounting for 75% of all online abuse. Women were harassed on social media at a higher rate than men. Young people were more likely to be harassed, with roughly 64 percent of adults under 30 reporting having been harassed online. Approximately half of 18 to 29-year-olds (48%) were severely harassed online, compared to 32% of those aged 30 to 49. Overall, 43 percent of men and 38 percent of women said they had been harassed online, indicating that men were more likely to be harassed than women. Among the offences, 35% of men were called an offensive name, compared to 26% of women, and 16% of men were physically threatened, compared to 11 women. Women, on the other hand, were sexually harassed 16% of the time, while men were only 5% of the time. Overall, 90% of Americans believe online harassment or bullying is a problem, with 55% believing it is a major issue. Despite the fact that more men (43%) were harassed online than

women (38%), women were found to be more easily apprehended or upset by online harassment (61 percent versus 48 percent).

Internet users face a variety of online annoyances, such as harassment or offensive language, direct attacks or threats of violence, online account hacking, and the unauthorized distribution of personal information (Alliance for Affordable Internet & Access to Information Programme, 2019). Women were more likely to be harassed with offensive language and direct threats of violence, whereas men's personal information was hacked and shared online without their consent. According to the report, more than half (53 percent) of Internet users had no knowledge of online security, and the majority of them were women (60 percent). Only 40.9 percent had some level of online security awareness, while 6.1 percent had none at all.

Bonnya (2020) classified cybercrime into four categories. Individuals are targeted in the first type of cybercrime for hacking email and social media accounts, obtaining illegal or unauthorized access, interfering with personal information, cheating and fraud, harassing and cyber-stalking, defamation, virus spread, information theft, denial of service attacks, and dissemination of obscene material. The second category of cybercrime involves theft of property, such as credit card passwords and intellectual property. Thirdly, organizations are targeted for unauthorized control or access to network resources and websites, virus attacks, email spamming, access blocking, theft of valuable possessions, terrorism against government organizations, and network infrastructure vandalism. Forgery, online gambling, human trafficking, pornography, and polluting the youth through indecent exposure are the fourth category of cybercrimes that target society. When it comes to sexually explicit and aggressive online harassment, young Bangladeshi women face a greater risk than young men.

Culver and Grizzle (2017) investigated the privacy and Internet safety attitudes and behaviours of 1735 youngsters from 100 countries around the world. In this study, "privacy" refers to the desire to keep personal information private and possibly limit access to it. The findings showed that 74% of the youths strongly agreed and 23% agreed that privacy was important to them. More than half (55%) of youths believe that security is more important than privacy, while 31% are undecided about whether privacy or security is important. About three-fifths (58%) of youths thought that personal information they shared through the Internet could cause them harm, while 24% thought that their shared information could not harm them. Although a majority of the youths were concerned about the safety of their personal information, 50% shared it frequently and 26% very frequently. More than half of the young people (54%) reported having unpleasant online experiences that jeopardized their privacy and safety. Both men and women are vulnerable to Internet safety and privacy violations. Females, on the other hand, are significantly more susceptible to cyber-attacks because they are viewed as easy targets, are more likely to be victims of sexual harassment, and are watched more than males for specific online behaviours. This could be due to offline social and cultural norms and practices.

Seventy eight percent of Internet users aged 16 to 64 in 25 countries were at least somewhat concerned about online privacy (IPSOS, 2019). More over half of the respondents (53%) were extremely concerned about their online privacy. Internet users in developing countries were the most concerned, while those in developed countries were the least concerned. At the same time, 71% of respondents said that other Internet users were contributing to their anxiety. A large proportion of respondents (81%) claimed their worry or distrust of the Internet was due to cyber criminals, while 75

percent blamed social media, 66 percent blamed government, 61 percent blamed e-commerce sites, and 56 percent blamed online and mobile banking platforms.

Cho et al. (2009) in a study on 1261 multinational Internet users found that more than 70.1 percent of Internet users were concerned about their online privacy. Individual factors such as age and gender, as well as Internet experience and national culture, were found to have a significant influence on Internet users' privacy concerns. Older people and women were seen to be more concerned about online privacy than their counterparts.

2.7 Attitudes towards Internet use

Previous studies on attitudes towards Internet use had showed overall there is a positive attitude towards Internet use. In terms relationship between Internet attitudes and various demographic and Internet use variables there are diverse and inconsistent findings among various studies. This section portrays perceptions and attitudes of the Internet users during the last two decades as conceptualized in previous studies.

2.7.1 Positive attitudes

Almost all Internet and computer users had favourable and positive attitudes toward the Internet in the majority of studies (Abedalaziz et al., 2013; Birisci et al., 2009; Li & Kirkup, 2007; Peytcheva-Forsyth et al., 2018; San & Johnson, 2020; Tsai et al., 2001; Yango et al., 2019). Donat et al. (2009) found that Austrian adults have 'positive' attitude regarding Internet use. Despite respondents' favourable perceptions of the Internet, however, significant discrepancies in sentiments existed between Internet users and non-users. They noticed that while developed nations do not have a first order digital divide in terms of Internet availability, they do have a second order digital

difference in terms of people's unwillingness to use the Internet. As such, attitudes can have a significant impact on an individual's desire to use the Internet.

Alzahrani and O'Toole (2017) found that youths who had access to the Internet at home and were more experienced had much higher favorable attitudes toward Internet use. In a study on Saudi Arabian youths, Otaibi (2012) also observed similar findings with youths who had home Internet access used the Internet more frequently, resulting in positive attitudes toward Internet use compared to their counterparts who had less opportunity to use the Internet. Tekerek et al., (2011) evaluated young Turkish school teachers' attitudes on the use of the Internet in the classroom. Since Internet was widely used in distant education, teachers had generally positive sentiments concerning its utilisation. The usage of personal computers with Internet access at home resulted in a positive attitude about Internet use at work, the study observed.

In a study (Luan et al., 2005) of 310 Malaysian youths, it was discovered that, despite their moderate Internet use, the youths had a positive attitude toward the Internet, indicating a strong conviction in the new technology and a favourable evaluation of its functionality in productivity improvement. Tsai et al. (2001) studied 753 Taiwanese students in 2001 and discovered that the students had generally favourable attitudes toward the Internet. Additionally, increased Internet experience resulted in more positive attitudes, decreased apprehension, and increased self-confidence when using the Internet.

Anasi and Owoeye (2016) reported a favourable attitude toward Internet use among Nigerian students, with the majority of the teenagers believing that the Internet is useful, instructive, simple to use, and saves time. Peytcheva-Forsyth et al. (2018) investigated undergraduate students' attitudes towards online learning in Bulgaria. The

majority (64.6%) of the participants were found very interested to use Internet for teaching and learning indicating that the positive attitude towards the Internet in education influences students' positive attitudes towards distance learning. In India, Konwar (2017) and Kar et al. (2014) obtained similar findings. They observed that students had a very high and positive attitude toward e-learning. In Pakistan, Jan (2018) found that users' attitudes toward ICT were favourably associated with their digital literacy. Because the adolescents were digitally literate, the majority (53.48%) of them had a favourable view regarding the use of ICT in teaching.

2.7.2 Gender differences in attitudes towards Internet

According to studies, males, on average, had more favourable attitudes toward Internet use than females. In a study of 843 youths in the United States, Odell et al. (2000) found that on average, male students spent more time on the Internet weekly (7.1 hours) than their female counterparts (5.4 hours). However, the researchers discovered a shrinking gender difference, with about equal numbers of girls and boys using the Internet. Durndell and Haag (2002) in a study on 150 Romanian youths revealed that on all of the measures, there was a substantial gender difference, with women reporting lesser favourable attitude about the Internet, less time spent on the Internet, higher computer anxiety, and even worse computer self-efficacy than men. According to the researchers, if gendered power dynamics exist in the real world, they are also likely to exist in computer and Internet use.

In 2001, Tsai et al. (2001) found that Taiwanese young males felt more cheerful, less apprehensive, and more confident while using the Internet than their female counterparts. In other words, when compared to females, males were less apprehensive, more confident, and more inclined to use the Internet on a regular basis. In another

study in 2006, Wu and Tsai (2006) found that male respondents demonstrated significantly higher levels of positive attitude in the perceived control subscale of Internet attitudes and Internet self-efficacy when compared to their female counterparts. There were no significant differences between male and female students in the other three subscales of Internet attitudes: affection, perceived usefulness, and behaviour. The researchers concluded that respondents with more Internet experiences had more positive Internet attitudes, and that Internet experiences could play a significant role in narrowing the attitudinal gender gap, which was more prevalent in the previous study (Tsai et al., 2001).

Sanchez-Franco (2006) conducted a study on 873 Spanish individuals to investigate the impact of gender on Internet usage and acceptance. Findings revealed that the perceived utility of Internet use has a considerable favourable impact on the intention of using the net. Males showed a substantially greater view of the usefulness of the Internet than females, which influenced their intention to use the media. Females, on the other hand, had a limited grasp of the Internet's utility and a lack of confidence in using it.

Li and Kirkup (2007) conducted a cross cultural study on 220 Chinese and 245 British youths to compare their Internet and computer usage patterns, attitudes towards Internet use and, and gender prejudice. Males in both countries operated computers more for emailing, chatting, and playing games because they were more self-confident. In terms of Internet use, men were found to be more confident in accessing the Internet in both countries. Although both men and women had favorable attitudes toward the Internet, males had a stronger positive attitude than women. Amid a decreasing tendency in the

digital divide between men and women, differences still remain between the two genders in terms of frequency and diversity of Internet use.

Erdogan (2008) studied the Internet attitudes and usage patterns of 1049 Turkish adolescents. Males had more positive attitudes toward the Internet than females, owing to the fact that males spend significantly more time online than females. In another Turkish study, Birisci et al. (2009) found that males had a more positive attitude toward Internet use than females, although there was no significant gender difference in computer use. They assumed that males in Turkey may have had better access to computers and Internet access than females, making males more positive toward the Internet.

Helsper (2010) studied the gender differences in Internet use among British adults by generation and life stage. Men were found to be the most frequent users of seven out of nine Internet activities studied. Thus, men used technology more than women. However, Helsper believed that life stage factors like work and marital status influenced the majority of online behaviours. In that, practical considerations may obscure the effect of the life stage. Male sexual needs were met when in a stable relationship, so men may not have needed to look for them online. Because the Internet reflects real-life conditions, online gender roles must be considered alongside real-life gender roles, the study proposed.

Jones et al. (2009) found that the vast majority (66%) of young males in the United States had more than ten years of experience using the Internet, compared to 56% of female students. Males spent significantly more time on the Internet than females, with 50% of men spending more than 3 hours on the Internet, compared to only 33% of women who spent more than 3 hours. In Hong Kong, Yau & Cheng, (2012) noticed that

males were more confident in using technology for learning than their female counterparts. They suggested that the disparity in confidence levels between men and women was socially produced and not related to a learner's natural ability. Attuquayefio & Addo (2016) in a study on Ghanaian Internet found that males were found to use ICT more than females to communicate with their teachers, gather information for research, contact peers, and participate in forum discussions.

In a systematic literature review, Goswami and Dutta (2016) investigated how the usage and adoption of information and communication technology differed by gender. The study found mixed results regarding gender influence on technology usage based on articles published from 2000 to 2015. Men were found to use computers more than women, but there was a mixed trend in mobile and Internet banking. The same is true for social media use, where males and females are used for different purposes. Finally, the researchers noted that gender plays a significant role in determining usage and adoption of information technology, but differently for meeting different needs, with females confronting some challenges and risks.

Cai et al. (2017) conducted an extensive literature search on gender differences in the attitudes towards technology during 1997 and 2014. They compared their findings with a previous meta-analysis on gender differences in computer-related attitudes and behavior conducted by Whitley (1997). The researchers observed that after seventeen years very little attitudinal changes were found between the two studies demonstrating males still continuing positive attitudes towards technology use compare to females. Scietal and cultural norms and variables, such as the prevalent notion that new technology is a male-dominated sector and that men are more technically adept, may all contribute to this gender attitude difference. The researchers, on the other hand, were

certain that, while women's opinions about technology use were slightly lower than men's, they were still have positive attitudes towards Internet, not negative. In another meta-analysis, Shaouf and Altaqqi (2018) reviewed 80 papers published between 2000 and 2017 that looked at gender disparities in IT adoption and related behaviours. They found that in comparison to women, men exhibited a more positive attitude about new information technology-related behavior. The researchers concluded, however, that while the study found more males than women adopting new technology, the trends were mixed.

Zabadi and Al-Alawi (2016) investigated the views of young Saudi Arabian university students about e-learning and discovered that male students had considerably more favorable attitudes toward e-learning than female students. In a study on 685 Romanian university students, Maican and Cocorada (2017) observed that males experienced less anxiety when using the Internet. Moreover, respondents with more positive attitudes about new technology were more reliant on it, whereas those with more negative opinions were less reliant on it.

While investigating young university students attitude towards the Internet in the Philippines, Yango et al. (2019) found that overall the youths had positive attitudes. However, there were no significant differences of the young people’s attitude towards Internet on the basis of gender**.** The researchers indicated that the Internet promoted democratic practice and created a digital community that enabled people to communicate and express their thoughts with others directly, despite socioeconomic, gender, religious, cultural, and national divides, which blended gender differences.

Anasi and Owoeye (2016) reported a favourable attitude toward Internet use among Nigerian young people, with the majority of them believing that the Internet is useful,

instructive, simple to use, and saves time. Males had a slightly higher total mean score of Internet attitudes than females, but the difference was not statistically significant, indicating that males and females had the same attitude toward the Internet. The findings supported the notion that the gender difference in Internet attitudes was narrowing. Females' prior Internet use experience in school may have helped to gender equality in attitudes toward Internet use.

No significant variations of Internet attitudes between males and females was also reported by Konwar (2017) and Kar et al. (2014) in studies in India. In a series of studies conducted while developing an Internet attitude scale, Morse et al. (2011) observed no significant gender differences in young people's Internet attitudes. However, females reported lower levels of Internet self-efficacy than males. The researchers anticipated that rapid changes in Internet usage over the last decade contributed to the removal of gender differences in Internet attitudes. Joyce and Kirakowski (2015) also found no substantial differences in how men and women used the Internet. In the United States**,** Duggan et al. (2001) found no differences between male and female students in overall attitudes about educational usage of the Internet, implying that both male and female students used Internet on a regular basis. Additionally, other research found no substantial variation in Internet attitudes between males and females (Abedalaziz et al., 2013; Jan, 2018; Stephen & Asiimwe, 2013; Tekerek et al., 2011; Tuncer et al., 2013). However, some studies (Peytcheva-Forsyth et al., 2018), reported that females had more positive attitudes about online learning compare to males.

2.7.3 Internet attitude and age

Studies found a relationship between age and attitude towards Internet use. Donat et al. (2009) found that younger people had a positive attitude towards using the Internet compare to the elder ones. Peytcheva-Forsyth et al. (2018) investigated undergraduate students' attitudes towards online learning in Bulgaria and found that younger students had more positive attitudes about teachers support in online learning compare to older students. Joyce and Kirakowski (2015) examined 2618 adults, the majority of whom were between the ages of 18 and 34, in order to develop an Internet attitude scale for general use. They noticed that the age group with the greatest Internet attitude ratings was 25–34 years old, and Internet attitude scores fell as age climbed beyond 25–34 years, showing that older people had less favourable attitudes about the Internet.

In a study of young people in Malaysia, Abedalaziz et al. (2013) revealed that in terms of age, younger tended to score significantly higher than elder individuals on attitudes toward computers and the Internet, demonstrating that attitude toward computers and the Internet decline with age. Attuquayefio and Addo (2016) found age to have significant influences on information and communication technology use for education and research. They found that younger participants appeared to use ICT more for learning materials, research, and knowledge enhancement than older participants. Maican and Cocorada (2017) conducted a survey with 685 Romanian university students to investigate their attitudes on Internet use in relation to age. They observed that young students experienced less anxiety when using the Internet. However, there were no statistically significant changes in attitudes toward new technology based on age.

Yango et al. (2019) found no significant differences of the young people's attitude towards Internet on the basis of age. The researchers indicated that the Internet promoted democratic practice and created a digital community that enabled people to communicate and express their thoughts with others directly, despite socioeconomic, gender, religious, cultural, and national divides, which blended gender and age differences. In a study of Pakistani adolescents, Jan (2018) also found that the Internet attitudes of teenagers did not influence based on age. Stephen and Asiimwe (2013) conducted a study on 350 youths in Uganda to measure the effect of gender and age differences on their attitudes towards Internet use. Regarding age, they didn't find any differences in attitudes towards the Internet use between young people age 25 and below and age 25 and above. Tuncer et al. (2013) conducted a study on Turkish youths aged 16 to 28 to investigate their attitudes towards the Internet. The study found no differences of attitudes of the participants in terms of age.

2.7.4 Internet attitude and duration and frequency of Internet use

Internet use duration and frequency have a substantial impact on Internet attitudes. In Saudi Arabia, Otaibi (2012) observed that youths who had more frequent access to the Internet had more favourable attitudes regarding Internet use than their peers who had little access. Odell et al. (2000) reported that the duration of Internet use seems to have a significant effect on Internet attitudes. They discovered that males and females had significantly different attitudes toward the Internet, with males having higher attitudes and spending more time on the Internet per week (7.1 hours) than females (5.4 hours). Examining 150 Romanian youths, Durndell and Haag (2002) found that those with lower computer anxiety and higher computer self-efficacy had more favourable attitudes toward the Internet and anticipated duration of use.

Joyce and Kirakowski (2015) noticed that Internet attitude is significantly related to frequency of Internet use, which determines why people who use the Internet regularly have more positive attitudes about it than people who use it infrequently. In the United States, Duggan et al. (2001) found that college students who used the Internet frequently had a considerably more positive attitude regarding using the Internet for education. Luan et al. (2005) revealed a strong positive association between duration of time spent online and Internet attitude indicating that the young people with a good attitude about the Internet used it for a longer period of time.

2.7.5 Internet attitude and experience of Internet Use

Studies found significant correlation between Internet use experience and Internet use attitudes, with those who have more experience having higher Internet use attitudes. Alzahrani and O'Toole (2017) found that youth who had more Internet use experience had much higher favorable attitudes toward Internet use. According to Tsai et al. (2001)**, g**reater Internet experience had contributed more positive attitudes, less apprehension, and more self-confidence when using the Internet.

Wu and Tsai (2006) observed that young people with more Internet experiences had more positive Internet attitudes, and Internet experiences could play a significant role in narrowing the attitudinal gender gap of the users. Anasi and Owoeye (2016) reported that females' prior Internet use experience in school may have helped to gender equality in attitudes toward Internet use. Tuncer et al. (2013) observed that the youths who had experience of computer education had less Internet anxiety compared to who had not received computer education before.

2.8 Empirical studies on Internet attitude in Bangladesh

Mahmud (2011) used a 23-item Internet attitude scale to investigate attitudes toward the Internet among university students in Dhaka. A total of 1022 people were interviewed, with 65.9% of men and 34.1% of women. The majority of respondents (91.7%) had their own computer, and 80.9% had Internet access at home. The students were found to be used the Internet very frequently.

The study only compared the individual items of measuring Internet attitudes with gender, education level of participant's mother, education level of participant's father, having computer in home, having Internet connection in home, and educational status of students. The study followed a questionnaire survey method in line with a previous study by Isman and Dabaj (2004) who investigated students' attitude towards Internet use. The results revealed that students had a generally positive attitude toward Internet use, with more than half of the students agreeing or strongly agreeing with 13 of the 23 statements. The study found no gender differences in Internet attitudes between male and female respondents in majority of the individual statements. According to the researcher, widespread agreement on the benefits of the Internet and conscious may contribute to females' positive attitude. The study also didn't find any significant differences of attitudes of the students based on Internet access in their home.

Islam and Hossain (2013) conducted a study on 200 university students aged 18 to 22 in northern Bangladesh to investigate respondents' attitude towards mobile Internet use. Among the participants, 68.5% respondents were male and 31.5% were female. This questionnaire survey method study enquired respondents attitudes in terms of expenditure for Internet use, place of Internet use, duration of mobile Internet use, purposes of Internet use and common barriers of Internet use in terms of age, income,

gender and some other variables. Majority (52%) of the participants had used mobile phone for Internet access and mobile phone was used mostly for communication and social networking. Majority (92%) of the respondents used mobile Internet from their living places, either home or hostel. Most of the students (92%) were using mobile Internet not more than 15 hours in a week that is approximately 2 hours daily.

The study found no significant difference for duration of Internet use on the basis of age, income, and gender of the young students. Older age and higher income groups had spent more money for Internet use. Female spend less than Tk. 101 packages compare to male who spent Tk. 101 to 200 packages. Maximum students (54.5%) had used mobile Internet for SNS and 29% for study purpose, 15% for entertainment and a little part (1.5%) for financial transactions. One significant finding was that most of the students used SNS as the major means for communicating among all other media. Older students had used Internet for study purpose (50.5%) while younger for communication and social network (36.7%). While using mobile Internet, the respondents were highly concerned about low speed (56.18%) costing price (21.35%), personal security (8.99%), reliability (7.87%), virus attack (3.37%) and privacy (2.25%).

Nahar et al. (2020) studied attitudes of 419 university students to assess their attitudes towards the Internet, specifically how they access it and how often they use it in university. The study found that the students had a very positive attitude toward using the Internet for their studies. The study unearthed three motivators for Internet use: the Internet makes life easier, the Internet is a faster source of knowledge, and the Internet fosters close social relationships. Furthermore, the study uncovered a number of issues as barriers to Internet use. Access to the Internet, the cost of the Internet, a lack of

Internet experience, a lack of Internet use facilities in universities, insufficient technical support, a lack of training facilities, and a lack of privacy were some of the major issues faced by young Internet users.

Islam (2017a) did a study to compare university teachers' attitudes toward the use of the Internet and library. Among the respondents 61.3% were between the ages of 22 and 35, with the remaining respondents being over the age of 35. The research used a survey question for the study. The majority of the participants (75.80%) used the Internet on a daily basis, while only 11.29% used the library on a daily basis. Easy access and prompt locations of desired resources and information on the Internet is the main benefit of browsing than using library. About half of the respondents considered Internet as a traditional library and believed that finding educational information is equally effective using the Internet and the library. The majority of faculty members (75%) believed that Internet may not pose any threat to library.

Despite many advantages, Internet has some drawbacks. The good side of the Internet, according to one-fifth of the participants, was that it is accessible 24 hours a day and that any information on any subject matter is available with just a click. On the other hand, about a third of the participants believed that users should be required to pay for every piece of high-quality and valuable information. A good number of (38.55%) respondents said they were confused about the accuracy of information because there are no gatekeepers to check the authenticity of information because anyone can publish any type of information, true or false. More than one-fifth of the respondents said it's difficult to extract precise information from a large amount of data.

Islam (2017b) conducted another study on 96 Rajshahi University research scholars to determine the extent of their Internet literacy skills. The majority of the research

scholars (69%) were between the ages of 30 and 39, and 96% of them used the Internet. The study used a self-administered questionnaire, which revealed that 78.26% of the scholars used the Internet to find resources related to their research. The scholars' primary reasons for using the Internet were to communicate (89.13%), assist with research (78.26%), and write research papers (73.39%). Furthermore, the majority of the scholars used e-mail, SNS, and blogs frequently, while only a few used an e-journal database or a citation index database.

Akanda et al. (2019) investigated the attitudes of 240 graduate and postgraduate students toward the Virtual Learning Environment (VLE) in university education. VLE is a collection of educational tools that use computers and the Internet to help students learn more effectively. The survey research showed that students had a strong and positive attitude toward using VLEs for educational purposes, and they had sufficient knowledge, required ICT skills, and access to network enabled devices. To supplement their existing academic knowledge, the majority of the participants used VLE for class work through the Internet. They used the Internet to conduct research, upload files, and participate in synchronous discussions.

2.9 Internet addiction (IA) or Compulsive Internet Use (CIU)

This section discusses prior research on IA in Bangladesh and other regions of the world. In doing so, this section highlights prior research on the prevalence of IA, as well as demographic and Internet use characteristics of problematic Internet users. Before delving into the literature, a primer on the phrase "Internet addiction" and the assessment techniques used to analyse the problem was offered.

2.9.1 What is Internet addiction?

Internet addiction, according to previous literature, is a state of uncontrollable and excessive use of the Internet that impairs users' normal lives and results in physical and mental problems (Griffiths, 1996; Young, 1998; Young et al., 2000). Researchers have been studying Internet addiction since the inception of the Internet, but they have yet to agree on a definition of what constitutes IA. Also, no consensus has been reached on terminology for IA. Researchers have come up with a number of terms to describe this phenomenon. Internet addiction (Young, 1998), compulsive Internet use (Meerkerk et al., 2009), problematic Internet use (Caplan, 2002), and pathological Internet use (Davis, 2001) are some of the terms used by researchers.

2.9.2 Assessment of Internet addiction

A good number of assessment instruments have been developed by the researchers to measure Internet addictions. Researchers and practitioners can quickly assess Internet addiction levels within a target community of Internet users by using the instruments. Laconi et al. (2014) stated that there were 45 instruments to assess Internet addictions, but only a few of those have been found psychometrically validated and reliable. There is no gold standard for measuring Internet addiction, and 24 different evaluation techniques have been identified (Kuss et al., 2014). Dhir (2015) suggested two Internet addiction assessment methods that have been generally recognized by researchers and practitioners in terms of their psychometric validations. One is Internet Addiction Test (IAT) and the other is Compulsive Internet Use Scale (CIUS).

2.9.3 Internet addiction prevalence

Internet addiction prevalence varies significantly between researches, depending on assessment methods, difference in samples, cut-off scores, and social and cultural factors as well as time period of conducting the study (Laconi et al., 2018; Tenzin et al., 2018).

2.9.3.1 Internet addiction prevalence worldwide

Laconi et al. (2018) reported a PIU prevalence rate ranging from 14% to 55% in nine European nations. The average prevalence rate was 25% for the entire sample, which was much higher than the previous prevalence rate of 14 percent. Balhara et al. (2018) revealed that the prevalence of Internet addiction varied between 0 and 47.4 percent across 38 studies from seven Southeast Asian countries: Bangladesh, Bhutan, India, Indonesia, Nepal, Sri Lanka and Thailand.

Mak et al. (2014) employed two separate scales to quantify Internet addiction in a study involving six Asian countries: China, Hong Kong, Japan, Malaysia, South Korea, and the Philippines. The prevalence of addictive Internet usage in IAT ranges from 1 percent in South Korea to 5 percent in the Philippines, while problematic Internet use ranges from 13 percent in South Korea to 46 percent in the Philippines. According to the Revised Chen Internet Addiction Scale, Japan had the lowest Internet addiction prevalence rate of 6 percent while the Philippines had the highest at 21 percent.

The prevalence of Internet addiction among the general population was 0.7 percent in Norway and 1.0 percent in the United States, ranging from 1.0 to 9.0 percent among European youths, 2.0 to 18.0 percent among Asian young people, and 6.0 to 35.0 percent among university students worldwide (Spada, 2014). Like most of the studies (Kuss et al., 2014; Spada, 2014) also reported a higher prevalence rate of PIU among adolescents and Asian population.

In a meta-analysis conducted in China, Li et al. (2018) reported an overall prevalence of 11.3 percent using a random-effect model, but 8.4 percent, 9.3 percent, 11.2 percent, and 14.0 percent using four alternative measuring scales. The findings indicated that the prevalence of Internet addiction varied according to the assessment scale used. Other Chinese research reported 6.3 percent moderate Internet addiction and 0.2 percent severe addiction among youths (Guo et al., 2020), and 10.2 percent mild and 0.2 percent severe Internet addiction among youths (Wu et al., 2016).

Kuss et al. (2014) found a wide range of Internet addiction prevalence in a systematic review of 68 studies published after 2000. Depending on various diagnostic tools and cut-off scores, the prevalence rate of adult samples varied 1.2 percent in UK, 9.7 percent in Turkey, 1.0 percent in Norway and 22.8 percent in Iran, 12.3 to 17.9 percent in Taiwan, 1.8 percent in Sweden and 4.3 percent in Hungary. On the hand, the prevalence of adolescents was 0.8 percent in Italy, 20.8 percent in South Korea, 26.4 to 26.7 percent in Taiwan and 8.8 percent in China. The study found that the prevalence rates in Asian young people were much higher than in both Western countries and samples of both children and adults.

There were 14.1 percent to 26.7 percent Internet addiction prevalence in Turkey (Bener et al., 2019; Cinar et al., 2020; Erol & Cirak, 2019; Kayri & Gunuc, 2016)**.** 33.4 percent of Ethiopian youths were moderately addicted to the Internet, while 1.8 percent were severely addicted, (Asrese & Muche, 2020). In Malaysia, Haque et al. (2019) found that 49.1 percent youths were moderate Internet addicts and 5.4 percent were severe addicts. Another Malaysian study, Lu and Jiar (2016), also reported 49.0% Internet addiction prevalence.

In South Korea, Kim et al. (2020) reported that 5.8% of respondents were Internet addicts and 3.2% were at high risk of addiction, whereas Chung et al. (2019) found that 65.5 percent of respondents had moderate Internet addiction and 6.5 percent had severe addiction. Internet addiction prevalence varied significantly across Indian studies, ranging from 0.1 percent to 61.4 percent (Asokan et al., 2019; Chauhan et al., 2020; Desai et al., 2018; George et al., 2019; Goswami et al., 2018; Jain et al., 2020; Patel, 2019; Sharma et al., 2016; Thakur et al., 2017).

In Pakistan, Internet addiction was found to be more prevalent, with moderate addiction indicated by 41.99 percent of adolescents and severe addiction reported by 9.09 percent of respondents (Ansar et al., 2020). In the Middle East, Abdel-Salam et al. (2019) found that 49.5 percent of 370 Saudi youths had moderate Internet addiction, while 1.9 percent had severe Internet dependency. In United Arab Emirates, El-Kader and Hanson (2019) found that 46.4 percent of youths had moderate Internet addiction while 5.5 percent had severe Internet addiction. 27.3 percent of the 4261 Iranian youths were found to be addicted to the Internet, according to a study by Poorolajal et al. (2019).

2.9.3.2 Internet addiction prevalence in Bangladesh

In Bangladesh, various rates of Internet addiction prevalence have been observed. According to Chandrima et al. (2020), 24.0 percent of respondents were problematic Internet users, and 2.6 percent had severe Internet addiction. An Internet addiction prevalence of 27.1 percent was reported by Hassan et al. (2020)**.** According to Mamun et al., (2019b), 32.6 percent of respondents reported having a moderate to severe Internet addiction. A study conducted by Arefin et al. (2016) on university students in Dhaka revealed that one-quarter of the respondents (25 percent) had an addiction to the

Internet. Karim and Nigar (2014) found 36.04 percent Internet addiction prevalence with 34.30 percent moderate and 1.74 percent were excessive users.

Other studies reported higher prevalence of Internet addiction, encompassing both moderate and severe Internet addiction in IAT. Among those studies, Islam et al. (2020) reported a prevalence of 54.1 percent, Mostafa et al. (2019) reported a prevalence of 47.12 percent, Khan et al. (2019) reported a prevalence of 76.9 percent, and Hossain et al. (2017) reported a prevalence of 66.5 percent.

2.9.4 Internet addiction and gender

There were considerable gender variations in the prevalence of CIU, particularly in Asian, African and European countries, and in developing nations (Su et al., 2019), with men being more susceptible to PIU than women (Alduaij & Al-Amari, 2016; Ansar et al., 2020; Asokan et al., 2019; Bener et al., 2019; Bernal-Ruiz et al., 2017; Chauhan et al., 2020; Chow, 2017; Chung et al., 2019; Desai et al., 2018; George et al., 2019; Goswami et al., 2018; Haque et al., 2019; Kim et al., 2020; Tenzin et al., 2018; Wu et al., 2016).

Balhara et al. (2018) showed that the majority of researches reported male participants to have greater PIU than female participants in a meta-analysis of 38 studies involving adolecents and young students from seven Southeast Asian countries, including Bangladesh. In another meta-analysis Li et al. (2018) observed that the prevalence of Internet addiction differed significantly by gender, with 13.7 percent of males and 6.6 percent of females being addicted to the Internet.

Su et al. (2019) in a meta-analysis on 101 studies examined the gender differences in Internet addiction around the world for ten years, from 2010 to 2019. Analyzing the

global Internet addiction scenario, the study found that North American countries had a negative effect size on gender differences in Internet addiction, whereas Asian, African, and European countries had a positive effect size. In accordance with the findings, the meta-analysis suggested that "males appeared more vulnerable to experiencing IA in developing countries, especially in the region of Asia (e.g., Bangladesh, Pakistan, South Korea and India), while in some European countries (e.g., Poland, Estonia, France, and Slovenia) females were more vulnerable than males to IA," (Su et al., 2019, p. 96).

In a study on Turkish youths, Cinar et al. (2020) found that males had more prevalence of Internet addiction compared to their female counterparts. The researchers hinted that male may feel more secure and liberated in Turkish society than females due to factors such as men's willingness to move away from parents at a certain age, youth period syndromes, and peer environments. Additionally, the Turkish family structure as a whole may contribute to men's increased reliance on the Internet. In Sri Lanka, male predominance in Internet addiction was attributed to males engaging in more entertainment-related activities such as online gaming, adult chatting, and pornographic consumption than females (Chamika & Dias, 2018).

According to an Italian research, 14.2 percent of males and 10.1 percent of females were addicted to PIU, indicating a significant gender disparity (Vigna-Taglianti et al., 2017). Several gender differences in PIU parameters were observed in the research. Men were found to be more likely to use the Internet than women (61.5 percent versus 53.7 percent). Males were more likely to be continually connected to the Internet than females (11.4 percent vs. 8.0 percent). Online communication and file sharing, as well

as the site of the Internet service point, have been associated with a higher risk of PIU in men and a younger age in women.

Regardless of the time period, location, or method of measurement, almost all Bangladeshi studies found that males were more prone to Internet addiction than females (Hassan et al., 2020; Karim & Nigar, 2014; Mamun et al., 2019b; Mizan & Islam, 2017; Mostafa et al., 2019). The greater levels of PIU among the research participants might be explained by variations in cultural difference and the purposes for which men and women use the Internet. Traditionally, females in Bangladesh society experience greater parental oversight than males, prohibiting girls from spending excessive time online. Furthermore, patriarchal communities in Bangladesh coerce males into exhibiting such PIU-related conduct (Akhter et al., 2020).

Islam and Hossin (2016) investigated problematic Internet use in 573 young people and found that more than double numbers of male participants were addicted to Internet compared to female. The PIU rate was 28.8% among males and 12.7% among females. The study mentioned several causes of male dominance in PIU. The distinct personality patterns of males and females and the purposes of using the Internet were some common reasons. Moreover, male have highly sensational gratifications seeking from Internet use, which is not common among females. Additionally, males were found to be more engaged in addictive contents like playing game and cybersex than females. Another prominent cause of higher PIU rate among men was their inability to control time management in Internet use. Karim and Nigar (2014) also discovered that males were nearly twice as likely as females to be moderately or excessively addicted to the Internet. While 21.33 percent of the women were moderate users, 44.33 percent of

males were moderate users, and 2.06 percent of males were excessive users, compared to 1.33 percent of females.

Against the backdrop of male dominance in CIU prevalence, Guo et al. (2020) in a study on 31,659 Chinese youths found that more females were addicted to Internet than males. In comparison to men (5.9 percent), more women (7.2%) had a mild Internet addiction. According to the study, the increased prevalence of Internet addiction among females could be explained in part by the recent availability of gender-neutral or female-oriented online games. In another study on Ethiopian young people, Asrese and Muche (2020) found female participants were more addicted to the Internet than male participants. On the other hand, Erol and Cirak (2019), in a study on 489 Turkish youths aged 17 to 26 years, found no significant differences in Internet addiction between males and females.

2.9.5 Internet addiction and age

The use of the Internet varies depending on one's age. Studies suggested that the prevalence of Internet addiction is higher among younger individuals than it is among older ones (Akhter et al., 2020; Alduaij & Al-Amari, 2016; Bernal-Ruiz et al., 2017; Haque et al., 2019; Su et al., 2019; Unsar et al., 2020; Vigna-Taglianti et al., 2017). Guo et al. (2020) grouped participants aged 15 to 23 years into three groups: 15 to 17 years, 18 to 19 years, and 19 to 23 years. Compared to two younger age groups, the majority of respondents aged 19 to 23 had no or only a minor type of Internet addiction. According to the study, Internet addiction has become more prevalent among younger people over time, presumably as a result of the expansion and availability of mobile phones, which may enhance the risk of Internet addiction.

In line with Guo et al., Chauhan et al. (2020) noted that people who used the Internet on their smartphone before the age of 16 and after the age of 18 differed significantly. Those who used the Internet on their own mobiles before they were 16 years old were more likely to become addicted to the Internet than those who were 18 years old. The study noted that having access to a mobile phone at younger age had a major influence on developing Internet addiction, which was caused in part by a lack of parental control and a lack of users understanding about the impacts of Internet addiction.

Adults, young people, and children and adolescents were divided into three groups in a study by Su et al. (2019). According to the study's findings, young people were more likely than adults, and children and adolescents to be more addicted to the Internet. In a study of 224 Malaysian youths, it was observed that younger respondents (20 years old) were more addicted to the Internet than older respondents (25 years old), with younger respondents scoring the highest IAT mean score than the elder (Haque et al., 2019).

Research on age differences indicated that Internet use has a significant effect on different stages of users' ages (Bernal-Ruiz et al., 2017). In Spain, they found that 'the most critical age for compulsive use is 17 years,' and that as they grow older, the risk decreases. On the other hand, as adolescents and young people experience emotional changes, the use of the Internet for mood control and regulation increases after 21 years.

Though the study did not mention age directly, Hossain et al. (2017) observed that nine grade students (74.8%) were likely to be more moderate and severe Internet addicts than their older ten grade students (39.6%). It was found that tenth graders were 60% less likely than ninth graders to be addicted to the Internet. Alduaij and Al-Amari

(2016) also found that first and second year high school students in Kuwait were more addicted to the Internet than the students of third and fourth year.

While most studies suggested Internet addiction prevalence at younger age, some studies also found no association between age and Internet addiction (Abdel-Salam et al., 2019; Erol & Cirak, 2019; Tran et al., 2017). Also a few studies reported that elder people were more prone to Internet addiction than the younger (Poorolajal et al., 2019).

2.9.6 Internet addiction and family Income

A few studies have investigated if there are any correlations between Internet addiction and one's socio-economic status or family income. Most studies found no association between family income and Internet addiction (Abdel-Salam et al., 2019; Cinar et al., 2020; Tran et al., 2017). Cinar et al. (2020) proposed that the absence of variation in addiction rates by family income might be explained by the ease and accessibility of low-cost Internet connection for all. However, people from higher-income families were more likely to become addicted to the Internet according to some studies (Kayri & Gunuc, 2016; Wu et al., 2016).

2.9.7 Internet addiction and living status

According to studies, people's living arrangements are related to their Internet addiction. Many studies that examined participants' living situation found that participants who lived alone or apart from their family were more likely to be Internet addicts than those who lived with their family (Chauhan et al., 2020)**.** Uddin et al. (2016) revealed that participants who lived with family had a rate of Internet addiction of 26.3 percent, compared to 47.92 percent of those who did not. One apparent reason for this difference would be that people who live with family members typically have more time to spend with family members, which provides them with support when it

comes to problematic Internet use (Hassan et al., 2020). However, Abdel-Salam et al. (2019) and Tran et al. (2017) in their studies did not find any statistically significant relationships between Internet addiction and residential status.

2.9.8 Internet addiction and marital status

There was a relationship between marital status and Internet addictions, according to some research. In comparison to married persons, single people, particularly those who were unmarried, were more prone to Internet addiction. In a study of 4261 young Iranians, Poorolajal et al. (2019) observed a strong correlation between Internet addiction and marital status. Findings show that being single is associated with a 2.57 times greater risk of Internet-related problems than being married. Chow (2017) anticipated that single young adults could have less responsibility at home and significantly more spare time to spend on the Internet than their non-single peers. However, some studies did not find any relationship between marital status and Internet addiction (Mostafa et al., 2019; Tran et al., 2017).

2.9.9 Internet addiction and frequency, and duration of Internet use

Recent studies have revealed that both the frequency with which people use the Internet and the amount of time spent on the Internet are associated with Internet addiction. However, the question of how frequently people use the Internet on a daily or weekly basis has become obsolete, as some people remain connected to the Internet at all times. As a result, most of the recent studies omit the question of frequency of use and instead inquire about the duration of Internet use.

Significant association between hours of Internet use and Internet addiction was reported by previous studies (Asokan et al., 2019; Balhara et al., 2018; Bener et al.,

2019; Desai et al., 2018; El-Kader & Hanson, 2019; Patel, 2019; Sharma et al., 2016; Simcharoen et al., 2018; Thakur et al., 2017).

Unsar et al. (2020) found that greater hours spent on the Internet per day were positively connected to Internet addiction and stress. Youths use the Internet to distract themselves from difficulties in their daily lives, which leads to an increase in time spent on the Internet, which eventually leads to Internet addiction. Jain et al. (2020) in their cross-sectional study revealed a substantial positive association between Internet addiction and the number of hours spent on the Internet, with those who spent two hours or more on the Internet daily being more addicted than those who spent less time on the Internet.

According to George et al. (2019), respondents who used the Internet for 2 hours or more daily were 2.74 times, more likely to develop Internet addiction. Poorolajal et al. (2019) also revealed a strong correlation between PIU and the number of hours spent online each day. It turns out that people who use the Internet for two to four hours a day are 2.88 times more likely to have problems with it than people who use it less than two hours a day. In a Turkish study it was found that those who used a computer daily for more than three hours were more addicted to the Internet than those who used it for less than three hours, while those who used a mobile phone for more than five hours were more addicted than those who used it for less than five hours (Erol & Cirak, 2019). It suggested that Internet use device also have impact on Internet addiction.

Vigna-Taglianti et al. (2017) suggested that those who used the Internet daily had a fourfold increased risk of developing Internet addiction compared to those who used it once a week and an eightfold increased risk for those who connected several times a day. There was a two-fold increase in the risk of PIU in individuals who used the

Internet for 2–3 hours daily compared to those who used it for less than 2 hours. PIU was nearly five times more common in those who used the Internet for 4–5 hours daily than in those who used it for less than 5 hours a day. PIUs and non-PIUs can be identified by how much time they spend online. Studies show that people with PIU spend more time online than their peers without the condition (Wu et al., 2016)**.**

In Bangladesh, Chandrima et al. (2020) reported that both the frequency and duration of Internet use were linked to problematic Internet use. Individuals who used the Internet more than four days per week and for more than two hours per day had a higher score on problematic Internet usage than those who used it fewer than four days per week and for less than two hours per day. Shahnaz and Karim, (2014) also found that Internet addiction was significantly related to duration of use, frequency of use, and time spent online per day. Participants who had spent four to eight hours for Internet were addicted to the Internet and also had academic problems (Khan et al., 2019)**.** On the other hand, people who spent little time on the web had a lower risk of developing Internet addiction (Hassan et al., 2020). Other research done in Bangladesh also found a correlation between length of Internet use and Internet addiction (Mamun et al., 2019a; Mostafa et al., 2019).

2.9.10 Internet addiction and Internet activities

"One is not addicted to the Internet itself but rather to certain online activities" (Meerkerk et al., 2009). This phrase accurately describes how individuals become addicted to the Internet as a result of participating in specific activities. Diverse individuals engaged in disparate activities while utilizing a common medium (the Internet) to meet disparate requirements. Studies have indicated that young people use the Internet for SNS, chatting, searching for news and information, communicating,

studying, having fun, playing online games, reading books or newspapers, shopping, blogging, consuming pornography and adult content, updating their knowledge, gambling, and many other things. Some of those activities were very likely to make people addicted to the Internet, but not all of them.

A study by Unsar et al. (2020) found that Turkish university students who played online games and chatted online were more likely to get hooked than those who didn't. According to Kim et al. (2020), South Korean youngsters who were addicted to online games were found to be 56 percent of the group.The study also stated that people who used the Internet to watch pornography had the highest rate of Internet addiction, than people who used it to play online games. They used the Internet for different things, with men preferring to play games and women preferring to chat to each other. Males watch more porn than females.

In Ethiopia, people who used the Internet for social networking and online games were more likely to become addicted to the Internet than their peers. Young people who used the Internet for SNS were 7.07 times more likely than individuals who didn't use the Internet for that purpose to become addicted to the Internet. The youths were 2.17 times more likely to become addicted to the Internet if they played online games (Asrese & Muche, 2020).

Wu et al. (2016) also revealed similar findings, stating that increased exposure to online games increased the chance of Internet addiction by roughly 1.8 times for those who engaged in online gaming more often than other activities. There was an increased risk of Internet addiction among Saudi Arabian youths who utilized the Internet for communication (Abdel-Salam et al., 2019). It was observed that those who used Internet for communication reasons were significantly associated with Internet addiction.

There is a strong correlation between problematic Internet use and playing online games (Poorolajal et al., 2019). The study found that playing online games was connected with an odds ratio of problematic Internet usage 1.31 times greater than not playing games. Chung et al. (2019) found that South Korean youths who were moderate to severe Internet addicts were more likely to play online games than those who were not addicted. Adolescents who used the Internet anonymously and played online games were more likely to become addicted to the Internet. For young Indian medical students, Desai et al. (2018) observed a substantial correlation between Internet addiction and Internet use for online friendships, viewing movies, finding information and instant messaging and accessing pornographic content. When people used the Internet, going to pornographic sites doubled their risk of getting PIU, but going to specific websites to look up specific information for study or other reasons was protective (Vigna-Taglianti et al., 2017). Many others studies also reported a strong association between playing online game and Internet addiction (Laconi et al., 2014).

In Bangladesh, Chandrima et al. (2020) found that Internet usage for SNS, to entertain, to chat, to play online games, to shop online, and to seek pornographic material, was more likely to lead to problematic Internet use. Similarly, Mamun et al. (2019b) reported that chatting and SNS use were more likely to contribute to problematic Internet use. According to the study, chat was used by 97.7 percent of problematic users versus 90.6 percent of non-problematic users, while SNS was used by 94.4 percent of problematic users compared 87.9 percent of non-problematic users. Another Bangladeshi study Shahnaz and Karim (2014) revealed that people who engaged in Internet talk, sexual chatting, video games, chatting, online relationship, and viewing pornographic content had a higher level of Internet addiction.

2.9.11 Internet addiction and SNS activities

Numerous studies found that using the Internet for various SNS activities increased the likelihood of acquiring an Internet addiction, and SNS users were more likely to develop an Internet addiction (Asokan et al., 2019; Rahaman, 2018; Tran et al., 2017; Wu et al., 2016).

SNS were the strong indications of Internet addiction. Individuals who used the Internet for SNS were 7.07 times more likely to develop an Internet addiction than those who did not (Asrese & Muche, 2020)**.** People who used SNS frequently were found to be more addicted to the Internet than people who only used it a few times (Erol & Cirak, 2019). According to Goswami et al. (2018), social networking was the primary source of Internet addiction, and it was most prevalent among people who engaged it for several purposes. Social networking was the sort of Internet use that was most closely associated to all the criteria of PIU. This could be due to the fact that social connection becomes a highly significant component of young years, therefore peers and community activities are the most powerful reinforcers at this period (Bernal-Ruiz et al., 2017).

Reyes et al. (2018) examined 1,060 Filipinos to see whether participants' fear of missing out (FoMO) is associated with increased SNS use and PIU. FoMO refers to the urge to always be online so that one does not miss out on what other people are doing. Przybylski et al. (2013) define it as “a pervasive apprehension that others might be having rewarding experiences from which one is absent" (Przybylski et al., 2013, p. 1841). Results revealed that FoMO, SNS use, and PIU were significantly related to each other. Multiple regression analysis showed that FoMO accounts for 17 percent of the variance in SNS and 33 percent of the variance in PIU.

Kuss and Griffiths (2017) determined that not everyone who uses social media sites is addicted to the Internet. They claimed that habitual, non-problematic SNS usage differed significantly from habitual, problematic, or addicted SNS use, which they believed was obvious. Internet users who exhibit the signs and symptoms of substance misuse may be addicted to SNS. Moreover, Internet users who have FoMO, nomophobia (No Mobile Phone Phobia), or smartphone addictions are also prone to be addicted to SNS.

Participants who used the Internet for SNS purposes were shown to be more addicted to the Internet than those who used it for educational purposes or other goals (Thakur et al., 2017). A study by Sharma et al. (2016) found that 84 percent of Indian Internet users used SNS, and they spent 21 percent of their total online time on SNS. The need for socializing, as indicated by extroverts' social augmentation and introverts' social compensation, might be one of the reasons for the increasing usage of social media sites.

In Bangladesh, Mamun et al. (2019b) revealed that SNS use was more likely to result in problematic Internet use, with 94.4 percent of problematic users using SNS compared to 87.9 percent of non-problematic users. Raisa (2018) found that 90.7 percent of Bangladeshi Internet users used Facebook and 12.7 percent of them were addicted to Facebook, while 28.7 percent were at risk of becoming addicted. There was also a significant difference in frequency of use, with those who used Facebook more frequently being more likely to be addicted to it. Shahnaz and Karim (2014) also revealed that people who had frequently participated in SNS such as Facebook had a relatively higher Internet addiction score and demonstrated greater neglect of duty, online dependence, and lived in the virtual world more than the real world.

2.10 Empirical studies on Compulsive Internet Use Scale (CIUS)

Ghazanfarpour et al. (2020) did a meta-analysis of studies that employed the CIUS to measure problematic Internet use published between 2009 and 2018. The researchers examined the scale's reliability and validity across a variety of demographic groups, most notably age and profession, in 18 studies involving a total of 44,198 participants. The Cronbach Alpha in the tests ranged from 0.78 to 0.94, indicating that the scale's reliability as a diagnostic tool for assessing CIU is sufficient.

Dhir et al. (2015a) conducted three sequential cross-sectional studies with 3640 adolescent students in India to explore compulsive Internet usage behaviour using CIUS. The majority of respondents were between the ages of 15 and 19 years amid an overall age of the participants ranged from 12 to 19 years. Males were shown to be more likely than females to be compulsive Internet users, and older respondents were found to have a higher CIU score than younger respondents. Those who spent more time each day on the Internet and used a mobile phone for access were shown to be more obsessive Internet users. CIU results were unrelated to respondents' family income. The study found that neither home Internet access, personal mobile phone ownership, nor total Internet usage experience predicted CIUS scores in terms of teen technology access. The researchers cited several reasons for users' non-compulsive behaviour, including the fact that in India, students are encouraged to use the Internet for school tasks, and more homes have Internet access; owning a mobile phone does not imply Internet availability; and more than two-thirds of study participants had between one and two years of Internet use experience. As a result, Internet use was not unusual to them and did not result in compulsive Internet use. The study found that adolescents who had Internet connectivity on their mobile phones and spent more time online daily were also more likely to develop obsessive Internet use. Possible

explanations for this behaviour include the fact that mobile Internet enables the adolescents to connect to the Internet at any location and at any time, enabling them to develop an Internet habit and compulsive Internet use; and Internet users who spend an unusually long time online develop compulsive Internet use.

In another study on 425 Taiwanese adolescents, Dhir et al. (2015b) found that the mean CIU score of male participants (39.00) was substantially greater than that of female participants (36.91). The study discovered a substantial positive relationship between CIU and daily Internet use, as well as a negative relationship between CIU and academic performance. The study found no significant relationship between CIU and participants' age, experience of years of Internet use, device of Internet use, respondents' monthly family income, or location of Internet use. According to the study, Internet access in Taiwanese populations, regardless of whether they were excessive or non-excessive Internet users, was nearly equal. Home Internet access, as well as high Internet penetration and inexpensive Internet device and data costs, may result in a narrowing of the Internet usage gap between compulsive and non-compulsive users. Because the researchers did not uncover a significant age and CIU association, they hypothesised that the respondents' narrow age disparities were the explanation. The hierarchical regression analysis indicated that daily Internet usage was a strong positive predictor of CIU, while gender and academic performance of participants were significant negative predictors, explaining 11.5% of the variance in CIU scores.

Kutty and Sreeramareddy (2014) investigated the compulsive Internet use of 330 Malaysian youths with a mean age of 23.17 years. The majority of the participants (61.5%) were students, and the majority of them (74.8%) were unmarried. The majority

of respondents (93.3 percent) used the Internet at home, while the majority (62.7 percent) utilised the Internet on their mobile phones. The respondents had an average of 8.7 years of Internet use experience and utilised the Internet for 6.56 hours each day. The Internet was used by the majority of respondents (85.5 percent) for social networking, 78.5 percent for email, 67.2 percent for study or job, and 63.9 percent for information. The respondents' mean CIUS score was relatively low (19.85). Those with a higher level of education had a higher CIUS score than those with a lower level of education. There was a substantial relationship between CIUS score, age, and daily hours spent on the Internet. Age and marital status had been found to be adversely related to CIUS score in regression analysis, whereas daily hours of Internet use were found to be positively related to CIUS score. According to the study, convenient Internet access, such as Internet at home and on mobile phones, may promote compulsive Internet use.

Quinones-García and Korak-Kakabadse (2014) studied the compulsive Internet use of 516 British adults aged 18 to 65, differentiated by gender and employment. There were 50.2% of males and 49.8% of females among the participants, with 50.4 percent employed and 49.6 percent unemployed. The study found that 63.4 percent of respondents were compulsive Internet users, which is significantly higher in the Western context. There were no significant differences in Internet addiction between men and women. Unemployed participants, on the other hand, had higher mean CIUS scores than employed participants. Compulsive Internet users were more likely than non-compulsive Internet users to rely on online social support, whereas non-compulsive Internet users were more likely to rely on real-life friends. Participants in the 18 to 24 and 25 to 34 age groups used the Internet more frequently than those in the 55 to 65 age groups.

Khazaal et al. (2012) conducted interviews with 127 French-speaking young people to investigate compulsive Internet use and related psychological factors. The study discovered no statistically significant difference in CIUS scores between male and female participants, while younger people were found to be more compulsive Internet users. The lack of compulsive Internet behaviour among men, such as playing online games on social media sites and engaging in cybersex, may result in a gender-balance in Internet addiction. Youths' increased involvement in technology-related activities, on the other hand, was linked to a higher risk of Internet addiction. Depressive participants had higher CIUS scores, implying that people with depression used the Internet excessively to avoid adverse impacts of actual life, the study suggested. In another study, Khazaal et al. (2011) investigated the compulsive Internet use behaviour of 186 Arabic-speaking youths ranging in age from 15 to 25 years old. The average participant spent 2.5 hours per day on the Internet, according to the data. The majority of participants (37.5%) had at least 5 years of experience with the Internet, while 26.1 percent had 3 to 5 years. The CIUS score of the participants was low (22.0 out of 56.0), indicating that they were not Internet addicts in general. CIUS was found to be unrelated to gender, age, or years of Internet use experience in a multiple regression analysis. The only significant relationship discovered was between CIUS and daily hours of Internet use, implying that those who used the Internet for more hours per day were more likely to develop compulsive Internet use than those who used it less. The non-significant correlations between CIUS and age and gender, the researchers reasoned, were most likely due to sampling bias.

In 2007, Meerkerk (2007) conducted a series of studies to explore the problematic Internet use of teenagers and adults in the Netherlands. In his first study on adult Dutch people, he found that those who spent more time online had a higher prevalence of

CIU. The second longitudinal study discovered that frequent chatting and use of instant messaging were strong predictors of CIU. It was found that adolescents who had engaged in chatting and instant messaging were found to be more vulnerable to CIU. According to the third study of 17000 online respondents, compulsive Internet use is associated with low emotional activity and depressive symptoms that exaggerate personal problems. The studies suggested that adults used the Internet more for sexual content, which increased the risk of CIU, whereas adolescents used instant messaging and chatting, which also increased the risk of CIU. In all, frequent use of social networks, such as chatting and instant messaging, increases the risk of CIU, which has heightened over time. According to these findings, adults and adolescents used the Internet for different reasons, but had similar addictive qualities. Compulsive Internet users, for example, have been reported to spend more time online than intended and to continue their online behaviour despite being aware of the issues caused or exacerbated by their Internet use. They tried, but failed, to limit their Internet use.

2.11 Internet attitude and Internet addiction relationship

Tsai and Lin (2001) examined 90 Taiwanese Internet-addict adolescents to explore the relationship between attitudes about computers and Internet addiction. Adolescents with positive attitudes toward computer networks and having greater confidence in using the Internet scored higher on the attitude scale and at the same time scored higher on the Internet addiction scale. This suggests that positive attitudes towards computers may contribute to Internet addiction.

Masrek et al. (2012) studied the relationship between Internet attitude and Internet addiction among Malaysian youths. The respondents of the study had positive attitudes towards the Internet and they were not really addicted to the Internet. Pearson

correlation showed that there was weak positive relationship between Internet attitude and Internet addiction. The findings indicate that those who had higher Internet attitudes were likely having higher level of Internet addiction. The weak relation was due to the fact that the participants were students and they were occupied with study purposes as such they didn't have enough time to waste for Internet use that led them to be addicted to Internet.

Sargin (2013) evaluated the association between Internet attitudes and problematic Internet use among 300 Turkish youth aged 19 to 24. The research found a substantial positive correlation between participants' Internet attitudes and their problematic Internet use. This implies that those with a favourable attitude toward the Internet were more likely to be problematic Internet users. Concerning the weak correlation between participants' Internet attitudes and problematic Internet use, it was stated that while some subscales, such as loneliness and impaired impulse control, were positively correlated with the overall attitude score, the social support and distraction subscales were not. The absence of a link between the Internet attitude and the social support and distraction subscales can be explained by the fact that social support is considered adaptive rather than pathological, and distraction or doing something unusual to escape daily stress and concerns is not considered pathological. As a result, a relationship between social support and distraction subscales, and Internet attitude may be lacking.

İlhan et al. (2016) investigated the relationship between Internet attitude and Internet addiction among Turkish adolescents. They found that the participants had a highly positive attitude towards the Internet, with an average attitude score of 3.66 in a scale of 5. With an average Internet addiction score of 2.12, only 7.69% of the participants were found to be Internet addicts, 68.18% probable addicts and 24.13% were non-

addicts. The finding indicated that the majority of the adolescents had positive Internet attitudes, and most of them were at risk of Internet addiction. Pearson correlation coefficients found a significant positive relationship between Internet attitudes and Internet addictions. However, the relationship is weak.

El-Kader and Hanson (2019) explored Internet attitudes and Internet addictions among the UAE young people in a cross-sectional study. They found that the majority of the participants (62.7%) had a positive attitude toward the Internet, 31.8 percent had a moderately positive attitude, and only 6% had a negative attitude toward the Internet. Approximately half of the respondents (46.4 percent) were at risks of Internet addiction, 5.5 percent were severely addicted to the Internet, and the remainders were normal Internet users with no difficulties. The researchers noted a non-significant negative relationship between Internet attitude and addiction. The study assumed that attitudes toward the Internet and Internet addiction were insignificant due to actual online behaviour and efficiency perceptions of the participants.

San and Johnson (2020) conducted a study in Myanmar on young people's Internet use attitudes and their associated demographic, psychological, and Internet use-related variables. They found a significant positive correlation between a favourable Internet attitude and Internet addiction. Internet attitude was found to be a significant predictor of Internet addiction.

Erdogan (2008) in a study on 1049 Turkish young people aged 14 to 18 years examined the relationships among the usage of the Internet use, attitudes towards the Internet, and loneliness, which is a significant predictor of Internet addiction. The study found a significant correlation between Internet usage and Internet attitudes with excessive Internet use resulted greater Internet attitudes. The study also found that Internet usage

and Internet attitudes were significantly correlated with loneliness. These finding suggested that those who used Internet frequently had a higher positive Internet attitude and also became lonelier due to excessive dependency on Internet.

2.12 Perception about advantages and disadvantages of Internet use

In this section, perceptions of youths about the advantages and disadvantages of Internet use are discussed. The Internet has both advantages and disadvantages, but perceptions vary according to one's level of understanding and utility of the technology.

2.12.1 What is perception?

Cambridge Dictionary defines perception as "a belief or opinion, often held by many people on how things seem." According to the Macmillan Dictionary, perception is "a particular way of understanding or thinking about something." These definitions imply that perception can be thought of as the cognitive process of becoming aware of or capable of understanding sensory information about any object.

2.12.2 Mixed perception

In a study of Pakistani young people, Ansari (2017) investigated the participants' perceptions of the Internet's benefits and drawbacks. In terms of the Internet's benefits, 63 percent of participants perceive it as a world of information; while 45 percent regard it as an unrivalled source of information in comparison to newspapers, television, books, and radio etc. While 82.5 percent of young people perceive the Internet as a good tool for learning, 30.5 percent believe it can be used to solve problems. Thirty percent of teenagers perceive the Internet as a source of knowledge. The usage of the Internet for communication and amusement are intertwined notions for young people, and participants in this study perceived the Internet as a crazy feature for both communication and entertainment. One of the most commonly recognized benefits of

the Internet, according to more than two-fifths of participants, is quick access without mobility. Because it was the quickest conduit for getting information, the Internet was regarded as a time-saving medium by around 17.5 percent of participants, while 15 percent perceived it as a money-saving medium.

In terms of the Internet's drawbacks, 37.5 percent of young people believe that exploring the Internet for personal interest wastes a lot of their time and yields no beneficial outcomes. A quarter (25%) of the participants stated that using the Internet created health problems such as blurry vision and pain in their back, neck, and shoulders, disturbing their daily routine. More than half of young people (57.5%) believe that access to Internet resources is difficult and that high-quality resources are expensive. The majority of young people (80%) believe that information overload is a major problem with Internet use, because it is quite tough to choose useful information sources from a sea of irrelevant sites. Because there is no gatekeeper and the Internet is often used for propaganda, more than two-fifths (42.5 percent) of participants had reservations about the credibility and veracity of information obtained from the Internet. As there are no restrictions from the government or parental oversight to restrict unwanted sites, the Internet creates potential threats to children and young people. Another disadvantage of the Internet, as mentioned by 22.5 percent of participants, is cybercrime, which is used for illegal purposes such as blackmail and hacking.

In a study of UK citizens aged 14 and above, Blank and Lutz (2016) showed that Internet users had both positive and negative perceptions on the use of the Internet. They found that Internet users believe the Internet offers more advantages than drawbacks, and that there is a substantial positive correlation between benefits and

drawbacks. Despite terrible encounters with the Internet, many continue to use it because the advantages may outweigh the risks. Furthermore, many individuals found it impossible to stop using the Internet since it had become an integral part of their life. The study found that those who gained the most advantages from the Internet were also the most vulnerable to dangers, limiting the extent of the advantages. People with negative attitudes toward the Internet appear to have a bigger impact on harms, while those with positive attitudes appear to have a greater impact on benefits. On the other hand, privacy concerns have a favourable impact on both the benefits and drawbacks of using the Internet.

Anderson and Rainie (2018) collated expert viewpoints on the influence of the Internet, which they described as the good and bad impact of digital life. The Internet's most beneficial influence is worldwide connectivity, innovative lifestyle, improved health and life care, and online transactions. One of the most positive advantages of the Internet is its connectivity capacity. The Internet 'connects directly with friends, family, colleagues, knowledge, education, entertainment, and more anywhere globally at any time in a nearly free and frictionless manner' (Anderson and Rainie, 2018, p.3). The Internet makes it possible to build enterprises, find the ideal employment, and introduce people of similar interests to widen the network that allows people to come up with novel ways of living and working. People, particularly the disabled, children, and the elderly, can now get life-saving and urgent care in healthcare through Internet-driven technologies. People now have access to a wide range of transactional services through the Internet, such as shopping, banking, online learning, social interaction, recreation and entertainment, and coordination of everyday activities from any location at any time, irrespective of geographical boundaries.

Anderson and Rainie (2018) observed that despite its numerous advantages, the Internet is not without drawbacks. The negative consequences include connectivity overload, loss of privacy and security, loss of personality and self-confidence, and loss of creativity and attention. The Internet's convenient, low-cost, and quick access can overwhelm people with information, creating tension, worrying, sleepiness, and a loss of tolerance. Some people deliberately avoid face-to-face interpersonal contact and "real life" because of an excessive reliance on the Internet. Internet service and product providers adopt an addictive business model based on user emotions and trust. There are also fraudsters. As a result, users' privacy and security are all at threat. Cyberbullying and other forms of cyber pressure, primarily through social media, have led to a loss of self-confidence and self-esteem among some Internet users. As a result, individuals lose faith in others, and develop a pessimistic outlook. People's ability to concentrate deeply on a task is affected as a result of the superficial and multiple information available on the Internet. It finally suffocates critical and analytical thinking.

Begum (2019) conducted a survey in southern India to ascertain attitudes towards the negative and beneficial effects of Internet users. According to the study, participants had both negative and favourable perceptions of the Internet's impact on adolescents. The majority (73 percent) of parents of teenagers believe the Internet is beneficial for education, 81 percent believe it is a source of information, 51 percent believe it aids in children's individual development, and 78 percent believe it is absolutely necessary for communication and entertainment. Concerning the negative effects of children, 55% of respondents criticized the Internet for promoting child-unfriendly materials, 70% for impeding individual development, 64% for causing negative psychological effects, and 75% for developing physical hazards.

In a study, Miah (2008) found that Bangladeshi young people had both favourable and unfavourable perceptions of Internet use. When asked about the benefits of using the Internet, 81.4 percent said it is a source of up-to-date information, 70.6 percent said it is useful for learning, 70.4 percent for entertainment, 70.2 percent for a plethora of information, 65.8 percent for ease of access and use, and 47.1 percent for communicating with others. On the other hand, when it comes to the drawbacks of the Internet, 53.1 percent believe the Internet is harmful to their health, 52.5 percent believe the Internet contains sexual and violent content, 50.6 percent believe the Internet provides distorted information, 50.5 percent believe the Internet contains bad ideological content, 44.2 percent believe the Internet wastes time, 43.8 percent believe the Internet creates addiction, and 40 percent believe the Internet creates virtual communication dependency. Overall, the Internet is beneficial for news and information, communication, education, and entertainment, and for some people, it helps to strengthen their personalities. However, the Internet is detrimental for providing harmful information, cybercrime and social evils, privacy and security, cultural invasion, and information overload.

Anderson and Jiang (2018) found a mixed perception regarding the impact of social media among American teens, despite its near-universal presence in their lives. One-third (31%) of teenagers (13 to 17 years old) thought social media had a positive impact on their lives, while 24% thought it had a negative impact. However, the vast majority of young people (45%) reported that social media had no positive or negative impact on their lives. Those who believed social media had a generally good impact cited reasons such as how it facilitates connecting with family and friends, how it makes it easier to access news and information, how it facilitates finding people with similar interests, and how it facilitates entertainment, among others. The causes of negative effects

include cyberbullying or spreading rumours, a lack of in-person contact, false perceptions of other people's lives, Internet addiction, and peer pressure.

Pew Research Centre (2015) looked at the Internet's impact on society in terms of education, personal relationships, the economy, politics, and morality among adult Internet users in 32 nations. The majority of participants (64%) thought the Internet had a positive influence on education, while 53 percent thought it had a positive influence on personal relationships and 52% thought it had a positive effect on the economy. Only 36 percent of respondents felt the Internet had a positive influence on politics, while 30 percent said it had a negative effect on politics. The impact of the Internet on morals was deemed to be the most worrying of the five categories examined in the study. Overall, 42% say the Internet has had a detrimental impact on morality, while 29% believe it has had a favourable impact. The moral influence of the Internet was rated as the lowest in 28 of the 32 countries studied. Furthermore, no country's majority believes the Internet has improved morals.

Jobayer et al. (2017) noticed that rural teenagers in Bangladesh had mixed feelings about the Internet's benefits and drawbacks. They found that approximately half (49%) of teenagers believe the Internet is good for communication and that more than a quarter (27%) believe the Internet facilitates the formation of new relationships. Furthermore, 13% of respondents thought the Internet has been good for entertainment, 7% for education. In contrast to the benefits of the Internet, more than half (53 percent) believed that it creates addiction, a quarter believed that it wastes time, and 16 percent believed that it hinders study.

According to Lewandowsky et al. (2012), while the Internet has greatly increased access to information, it has also aided in the spread of misinformation due to the lack of formal gate-keeping systems. They define "misinformation" as any information that

is initially disseminated as true but is later proven to be false. Because the Internet is an interactive medium, people actively create web content to promote or counter existing content, particularly on social media, which has contributed to the spread of misinformation. Moreover, information provided in social networks as expert opinions is sometimes misleading and does not come from true experts. Furthermore, some websites are primarily designed to disseminate misinformation under the guise of an official source of information.

Cook et al. (2015) pointed out that three factors have contributed to the spread of fake news and misinformation: the rapid growth of social media, the rapid pace of media stories, and the segmentation of the media environment. Misinformation processing and retention may be influenced by peoples' cultural values and worldview. In this way, ideologies and worldviews have been shown to have an impact on fundamental cognitive processes and attitude development toward misinformation, a harmful use of the Internet.

Abbas et al. (2018) observed that the Internet had both positive and negative effects on Pakistani youths. According to the study, the majority of respondents (56.7 percent) believe that the Internet is useful for education to a great extent, while 41.7 percent believe it is useful to some extent. Conversely, 92.2 percent of respondents believed that late-night Internet use was harmful to their health and caused sleep deprivation. Another disadvantage of using the Internet is that it can lead to addiction. More than half of the respondents (51.7%) were addicted to the Internet to some degree, and 46.7 percent had a severe addiction. Only 1.7% of young people said they were not addicted to the Internet. It was also noticed that young people's lifestyles had changed as a result

of their use of the Internet. Although the Internet is the most effective means of communication, it also isolates some young people.

2.12.3 Only bad perception

In a study on Greek Internet users, Mavridis (2018) blamed social media for the generation and dissemination of fake news, a harmful use of the Internet. The vast majority of participants (96 percent) stated that Facebook is the number one SNS platform for effortlessly spreading fake news. Fake news, according to 90 percent of the participants, misleads users, and 82 percent believe it increases xenophobic attitudes.

Scheerder et al. (2019) investigated the negative consequences of Internet use in both highly educated and less-educated Dutch residents. They observed that, as compared to highly educated Internet users, less educated Internet users were more likely to experience disadvantageous outcomes as a result of their use. All Internet users, regardless of educational status, are vulnerable to dangerous Internet scams or being exposed to undesirable or inappropriate content. Some specific disadvantages of Internet use mentioned by participants include offensive, discriminatory, and insulting material, as well as unintended exposure to sexual or violent content. On a more personal level, roughly half of those surveyed believed they were wasting time online when they could be doing more productive things. Furthermore, the majority of respondents noted information overload as a result of Internet use, which causes annoyance and mental restlessness.

Quaglio and Millar (2020) focused on five specific disadvantages of Internet use: Internet addiction, harm to children's cognitive development, information overload, harm to people's personal lives, and harm to social relationships and communities. Internet addiction is a loss of control over one's Internet use that causes physical and

psychological difficulties that interfere with one's normal life. Children who use the Internet for an extended amount of time, especially without parental supervision, may suffer from cognitive development problems. Excessive information or information overload impairs intellectual performance, making it difficult to understand a problem. People's personal lives are substantially impeded as smartphone Internet use blurs their borders of public and private lives, affecting quality of life as well as privacy and security. Excessive Internet use can lead to online reliance, such as the maintenance of online community interactions and the consumption of online pornography, which can harm both offline communal and intimate relationships.

Al-Badi et al. (2016) investigated Omani teenagers' negative online behaviour and found that 82.5 percent of them believed the Internet had a significant effect on the academic achievement, social relationships, and general wellbeing. Around 85 percent of the teenagers were involved in illegally downloading entertainment content and software, and 82.5 percent were searching for age-restricted content and meeting strangers online. More than half of the respondents (55.5%) had exchanged adult content online, more than a third (36%) had breached into other people's accounts, and a quarter (25%) had bullied others online.

According to the study, Omani teenagers used the Internet to transact drugs, which is the most harmful refutable online activity among teenagers because it encourages serious law violations. This was accomplished largely through the use of social networking site connectivity. Young people's communication with strangers was also a serious negative behaviour that could jeopardise their personal safety. Despite the fact that most teenagers seemed to be aware of the dangers and consequences of negative online activities, they engaged in them to avoid boredom or pass the time. Many

teenagers, on the other hand, blamed their negative online activities on a lack of awareness.

Safaria (2016) unearthed that 80 percent of Indonesian adolescent had encountered cyberbullying on a frequent basis. Individuals who primarily used the Internet for social networking were more likely to be victims of cyberbullying than individuals who primarily used the Internet for educational purposes. Males were more likely than females to be cyberbullies, and cyberbullies committed cybercrime using online anonymity.

2.12.4 Only good perception

Dwivedi et al. (2007) used an open-ended question procedure to investigate respondents' perceptions of important benefits of using the Internet. They asked respondents to list three major advantages of using the Internet, and after compiling and synthesizing the responses, eight advantages of using the Internet were identified. While 91 percent responded, the remaining 9 percent did not. According to the study, the majority (89%) of respondents believed that the Internet facilitated good communications with family members and friends, with 43% believing that it facilitated information gathering. One-third (31%) of respondents said the Internet was beneficial for education, while 19% said it was also beneficial for entertainment. Other benefits mentioned by respondents include 9% for office work, 7% for updated information, 1% for simply passing the time, and 1% for anti-virus software facilities.

CHAPTER THREE

Research Methodology

3.1 Introduction

This chapter discusses the research design and the methodology adopted in the research process. In the subsequent sections, the researcher elaborates the research design, the method adopted to design and administer the questionnaire, the sampling technique used and the justification for choosing the samples. It also describes the method of data collection, data analysis, and the application of the analysis. In all, the chapter presents an overview of the research strategy followed in the investigation.

3.2 Research design

A research design is a blueprint or comprehensive plan outlining the steps necessary to perform a research investigation. A research design outlines the general strategy for getting answers to the research questions and resolving some of the issues that may arise during the research process (Polit & Beck, 2010a). Research designs are developed to meet the unique requirements of a study. Thus, the research designs are created to fit the study's specific needs. A key factor in determining if a research design is successful is whether it does the best job possible of providing accurate answers to the study topic. Within quantitative, qualitative, and mixed methodologies techniques, research designs are types of inquiry that provide precise direction for procedures in a conceptual framework (Creswell, 2014)**.** Based on the research goal, there are three types of research designs: exploratory, descriptive, and explanatory or casual (Saunders et al., 2019; Malhotra et al., 2017).

Exploratory research is carried out to get a deeper grasp of the nature of the issue since there may be few studies in that area. Exploratory research is frequently performed when an issue has not yet been properly identified or the true extent of the problem is unknown. The goal of descriptive research is always to clarify the characteristics of a particular problem. It is also intended to provide the investigator with a description of the key aspects of the phenomenon under investigation. This is a description of events as they occur in nature. The data collected is often quantitative, and statistical techniques are used to summarise the results. Descriptive research differs from exploratory research such that it is being used to define and describe the issue's characteristics. According to Malhotra et al. (2017), descriptive studies are further divided into cross-sectional and longitudinal designs, with cross-sectional designs collecting data just once from each sample and longitudinal designs assessing a fixed sample or samples on a set interval.

Explanatory research demonstrates the relationship between two variables. It is a subset of descriptive research that aims to understand why things behave the way they do by analyzing the issue surrounding the study topic. Beyond just reporting the features, the researcher analyzes and explains why or how anything occurs. Thus, critical inquiry attempts to comprehend events by identifying and quantifying their incidental relationships.

The current study may be described as a 'descripto-explanatory study,' as defined by Saunders et al. (2019). Descriptive-explanatory in nature, as it aims to examine the features of the new phenomena of Internet usage behaviours and attitudes, as well as compulsive Internet use by Bangladeshi young, and to establish a causal connection with the phenomenon. When a specific phenomenon is being investigated, research is

required to characterize it, to clarify and explain its internal connections and characteristics. This study is cross-sectional. Simultaneously, the study is exploratory, since very little research has been conducted to date on youth Internet usage attitudes and compulsive Internet use in Bangladesh.

3.3 Methodology selection

Designing research studies can be divided into three categories: quantitative, qualitative, and mixed methods (Creswell, 2014; Neuman, 2014; Saunders et al., 2019). To attain the research objectives and address the research questions, the current empirical study used a quantitative approach. Quantitative research, as per Malhotra et al. (2017), is appropriate for assessing both attitudes and behaviour. Depending on an observable attribute, quantitative research may be used to develop a prediction system because not everyone holds a specific perspective or would act in a given way. Quantitative research approaches use statistical analysis to find quantifiable facts. It is primarily concerned with observable and measurable phenomena involving people, events or things, and establishing the strength of the relationship between variables, usually by statistical tests. A quantitative research lends itself to investigating phenomena that require precise measurement and quantification, often involving a rigorous and controlled design (Polit & Beck, 2010a). A quantitative research primarily rests upon numbers aggregated into statistics, to enable the researcher to interpret obtained data and reach conclusions.

Creswell (2014) distinguished two types of quantitative approaches: descriptive or non-experimental and experimental. The descriptive survey design was chosen for this quantitative study because the researcher felt it was the best method for learning more about the characteristics of Internet use in-depth. A survey collects information from

the population so that it can be used to examine the characteristics, opinions, or intentions of that population. A survey examines a sample of a population to provide a quantitative or numerical description of trends, attitudes, or opinions. A survey design is the most effective method for providing a sample-based description of a population's attitudes, behaviour, or beliefs, with survey results that can be generalized to the entire population (Creswell, 2014). Considerations for sample selection, requirements for determining the required sample size, and criteria for selecting the appropriate questionnaire are three key components of survey design, (Glasow, 2005). Quantitative survey research, which employs a standardized questionnaire, enables researchers to examine the opinions and habits of a large number of people (Choy, 2014; Neuman, 2014; Ponto, 2015). Surveys, as a result, are an excellent way to learn about people's self-reported beliefs and behaviors. It also enables the collection of descriptive data and the testing of research questions, allowing for the measurement of a wide range of parameters. Because of the face-to-face interaction with the participant during survey research, the interviewer can administer complex surveys, explain and clarify difficult questions, and even use unstructured methodologies. Because the participants can see the questionnaire and the interviewers are present to clarify any ambiguity, a face-to-face survey can ask a wide range of questions.

3.4 Sampling design

This study's sample frame consists of young people aged 15 to 35 years old who use the Internet in eight divisions of Bangladesh. This age group is referred to as "youths," and it accounts for one-third of the Bangladeshi population. There are multiple definitions of youth, and different countries, organisations, and institutions use different age ranges to define youth (BBS, 2015; Islamic Development Bank, 2019; UNDP, 2014). Bangladesh's National Youth Policy 2017 (Ministry of Youth and Sports, 2017) defines

youth as people aged 18 to 35. However, the Bangladesh Bureau of Statistics considers people aged 15 to 29 to be youth in its Bangladesh Labour Force Survey (BBS, 2018). Individuals between the ages of 15 and 24 are defined as youth by the United Nations (United Nations, n.d.). Individuals aged 15-29 years are referred to as youth in the European Union (Eurostat, n.d.), while individuals aged 15-35 years are referred to as youth in the African Union (African Union Commision, n.d.). BRAC, a renowned NGO in Bangladesh, classifies those aged 15 to 35 as youths (BRAC, 2018). In this study, we opted to define youth as people aged 15 to 35.

Youth are selected for this study for a number of reasons. Firstly, there is a dearth of well-researched data on young people's attitudes toward Internet use and compulsive Internet use in Bangladesh. Secondly, Bangladesh has implemented a programme known as "Digital Bangladesh," which encourages young people to use ICT in education as well as public and private sector services for the country's overall growth. As a result, it is imperative to understand young people's attitudes toward digital technology use. Thirdly, global research revealed that young people are the most frequent Internet users. In accordance with the global youth community, how Bangladeshi youngsters use new technology and what effects the Internet has on their life patterns are crucial indicators for effective technology utilisation. The researcher wanted to get a national picture of how young people in Bangladesh use the Internet, so it was decided to include participants from all over the country. The study includes a well-representative sample with an adequate sample size because the generalizability of any study findings is dependent on the sample size (Polit & Beck, 2010b). Therefore, a nationally representative random survey of 448 young people was conducted to collect perspectives and perceptions on Internet use from all segments of the young population.

3.5 Stratified random sampling procedure

The survey followed in this research was multistage stratified sampling. Stratification divides a varied population into homogeneous subpopulations, ensuring accuracy in population estimation. From symmetrical startum with similar data, an exact estimate of each segment average can be determined (Cochran, 1977; Wimmer & Dominick, 2011). Because the population was separated into non-overlapping homogenous groups, this sampling procedure ensures that the sample represents the whole population (Creswell, 2014; Somekh & Lewin, 2005). A researcher uses supplemental information to divide the population into subpopulations (strata) in stratified sampling. After stratifying the population, the researcher uses simple random or systematic sampling to select a random sample from each subpopulation. According to Neuman (2014), stratified random sampling is a simple method for dividing a population into subgroups and then randomly dividing those subgroups into two or more groups. As stated by Wimmer and Dominick (2011), startified random sampling could be used either proportionally or disproportionally. Proportionate random sampling uses strata of comparable size to the population, whereas disproportionate statistical random sampling is employed to upper wall some specific startum.

Using disproportionate stratified random sampling, this study surveyed an equal number of samples from eight divisions. This process over-represents some administrative divisions with a smaller population, such as Bariasl, Mymensingh, and Sylhet, to ensure that their proportion of the total sample is not significantly under-represented. When the four age groups are separated, the 15-19 year olds, 20-24 year olds, and 25-29 year olds are slightly overrepresented in comparison to the 30-35 year olds. According to the 2011 national population census, the male-female ratio was 50.06 percent male and 49.94 percent female (BBS, 2014) ; thus, the male-female ratio is almost proportionate in this study.

The youth population in this study comes from eight administrative divisions of Bangladesh: Dhaka, Chittagong, Rajshahi, Khulna, Sylhet, Rangpur, Bariasl, and Mymensingh. The study locations were categorised into two groups within each division: city in divisional headquarters as urban and upazila in district as rural. A total of 16 study areas were chosen at random for the study, with one urban and one rural region chosen from each division. However, in the Sylhet division, the city centre was selected from the Sylhet district, but the upazilla was selected from the neighbouring Sunamganj district to save time and money on transportation. Following a systematic random sampling technique, 28 youths (14 males and 14 females) were selected in each city and upazila, totaling 448 youths divided evenly over eight divisions (56 youths from each division). The detailed distributions of respondents are shown in Table 1.

Table 1

Numbers of Respondents Based on the Locations of the Study

Division	District	Locations Name		Total
		Urban	Rural	(Urban+Rural)
Dhaka	Dhaka	Shahbag	Dhamrai	28+28 = 56
Chittagong	Chittagong	Chawkbazar	Raozan	28+28 = 56
Rajshahi	Rajshahi	Motihar	Paba	28+28 = 56
Khulna	Khulna	Sonadanga	Rupsha	28+28 = 56
Sylhet	Sylhet/Sunamganj	Kotwali	Chhatak	28+28 = 56
Rangpur	Rangpur	Kotwali	Taraganj	28+28 = 56
Barisal	Barisal	Kotwali	Banaripara	28+28 = 56
Mymensingh	Mymensingh	Sadar	Bhaluka	28+28 = 56
			Total	224+224 = 448

3.6 Determination of sample size

Statistical Determination of Sample Size: The following formula was used to compute the sample size for this study (Cochran, 1977, p.76; Malhotra et al., 2017, p. 449).

$$N = \frac{z^2 pq}{d^2}$$

For the given formula, N denotes the sample size, z denotes the selected critical value for the desired degree of confidence, p denotes the estimated proportion of an attribute present in the population, q equals (1-p), and d denotes the desired level of precision.

The estimated proportion (p) of youths in the target population was about 35% (BBS, 2015b).

So here, q = (1 – .35) = .65

z = Standard deviation usually set as 1.96 which corresponds to the 95% confidence interval

d = Desired precision 5%

So, $N = (1.96)^2 (.35X.65)/(.05)^2 = 349.59 = 350$.

Because very few practical designs are as simple as those examined in the sample size calculation using the preceding formula, it is important to consider the design effect. The design effect is determined by the sampling design used in the survey-type investigation. This is typically approximated by a factor of one to two for stratified, systematic, and cluster random sampling to account for deviations from the simple

random sample technique ((Suresh & Chandrashekara, 2012). Using the aforementioned criteria, an effect size of 1.2 was calculated for the overall sample of this study for convenience. When the design effect is 1.2, the total sample size is 350 x 1.2=420. Because individual responses cannot be fractional, the total number of responses must be greater than 420. The survey gathered information from 448 young people.

3.7 Questionnaire preparation and pilot survey

A self-administered survey questionnaire congruent with the study objectives and research questions was created after extensive revisions of related literature (Appendix 1). The questionnaire had been piloted on 40 undergraduate and postgraduate university students by a group of trained interviewers before the final survey. The pilot experiment enrolled a balanced mix of male and female students. Certain ambiguities discovered during pre-testing were resolved, and the instruments were redesigned and ready for field use. The instruments were rigorously examined to verify that they addressed the objectives of the study. Finally, a seven-page questionnaire with three subsections was translated into Bangla for the field survey (Appendix 2). The first component, which the interviewer completes, comprises information about the respondents' place of residence (such as ward/village, thana/upazilla, district, division, and city/suburb) and/or place of interview. The second section of the questionnaire consisted of 51 closed-ended structured questions and two open-ended questions designed to collect information on a number of themes connected to Internet use. This component of the survey contains yes/no, single, multiple choice, and likert-scale items. Participants were asked to respond to open-ended questions on their Internet experiences, as well as the benefits and drawbacks of utilising it. The final component

includes seven demographic questions about respondents' gender, marital status, age, education level, occupation, monthly family income, and residence status.

3.8 Content of the questionnaire according to research questions

As a cornerstone to engage respondents with the study's important questions, several introductory and supplementary questions related to familiar use of Information Communication Technology (ICT) as well as the impacts of Internet use on offline activities were queried. Issues relating to research questions were discussed at this point.

3.8.1 Research question one

How do young people use the Internet and for what purposes do they use it?

Questions about frequency of Internet use, Internet use experience, hours spent on the Internet daily, monthly Internet expenditure, devices used for Internet use, types of Internet access, place of Internet use, and place of Internet use at home were asked to investigate this inquiry. The questionnaire included 26 common uses of the Internet based on prior research and the researcher's experience to determine the purpose of Internet use. Respondents were asked to choose which activities they performed via the Internet from a list of activities.

The use of SNS is one of the most popular and widespread uses of the Internet by youths in particular and people of all ages in general. As a result, the study employs a pool of 15 likert-type questions on a 5-point ordinal scale (always = 5, never = 1) to investigate the youths' SNS use activities. Previous research found that frequent SNS use had two effects: some youths use SNS for communication and study, while others

use it primarily for entertainment, chatting, or gaming. In addition to the purposes of SNS use, the frequency of SNS usage was also investigated.

3.8.2 Research question two

How does the use of the Internet affect young people's activities and attitudes?

Previous research found that use of traditional media and interpersonal communication channels had declined as a result of Internet use in many situations. Regular daily activities (such as sleeping and reading time) have been impacted in some cases, and social interaction with family and friends has been called into question as a result of the attitudinal influences of Internet use. To learn about such changes in attitudes, respondents were asked about the importance and preferences they have for getting the latest news or information about any current event through the Internet, television, newspaper, radio, and family and friends. A list of five media options was provided to the respondents, and they were asked to select one or more, and then to rank the importance of those media options on a likert of 1-5. Respondents were also quizzed on their preferred method of communicating with friends and family.

The effects of Internet use on respondents' regular activities, such as watching television, reading newspapers, calling the phone, academic reading, and sleeping time, as well as changes in social interaction, such as outings with family and passing time with family members and friends, were investigated. A five-point likert scale (5 = significantly increased, 1 = significantly decreased) was used to assess the effects of the Internet. The involvement of respondents in anonymous Internet use was investigated. Another major source of concern among Internet users is apprehension about Internet security. A set of six questions on a five-point likert scale (5 = very high, 1 = very low) were used to assess respondents' attitudes toward Internet security.

3.8.3 Research question three

What are the attitudes of young people towards the use of the Internet?

Over the last two decades, research has developed a variety of scales to assess attitudes toward the Internet use. Most of the scales were designed for measuring students' attitudes towards Internet use for academic purposes. The purpose of this study was to explore relationships of respondent's overall Internet attitudes and various demographic and Internet use characteristics. This study chose to assess youths' Internet attitudes through the use of a 26-item modified attitude scale (Table 2) mostly based on two previously developed general Internet attitude scales (Joyce & Kirakowski, 2013; Zhang, 2007). The scale included items representing various components of Internet attitude, including affective, cognitive, and behavioural dimensions that ultimately expresses Internet's usefulness and detriment effects. The affective dimension reflects how individuals feel about the Internet, behavioural intention reflects how individuals behave on the Internet, and cognition reflects how individuals believe about the Internet. The modification of the scale was necessary to suit the setting of the items in the local context of the current study. The Likert scale was set at 5 for strongly agree, 4 for agree, 3 for undecided, 2 for disagree, and 1 for strongly disagree. The reliability test for this scale revealed that the Cronbach's Alpha achieved was .79, which is acceptable. Table 2 shows the items of the Internet Attitude Scale (IAS).

Table 2

26-Item Internet Attitude Scale

Item No	Statements
1	Internet is an important tool for academic study
2	Internet is an effective means of conducting research
3	Internet is helpful for job opportunities
4	Internet makes life easier
5	Internet creates opportunities to introduce new people
6	Internet is an easy means of exhibiting oneself to other people
7	Internet is effective for efficient use of time
8	Internet helps keep communication with other people
9	Internet is a means of passing idle time
10	Internet helps escape unpleasant things
11	Internet is an excellent means of communication to avoid face-to-face contact
12	Internet decreases face-to-face contact with family and friends
13	Internet decreases physical activity like exercises and sports
14	Internet use is confusing because it is a mine of information
15	Internet makes it difficult to find accurate information in the midst of sea of irrelevant and unverified data
16	Internet provides a huge amount of immoral material
17	Internet-based relationships are trustworthy
18	Internet influenced me to adopt alien culture
19	Internet creates a cultural dilemma
20	Internet is an efficient means of finding information
21	Internet does not make me feel lonely
22	Internet is a easy source for acquiring knowledge
23	Internet intensifies social relations
24	Internet gives me unlimited freedom
25	Internet helps with innovative works
26	Internet creates some sort of addiction

3.8.4 Research question four

How and to what extent do youths involve in compulsive or addictive Internet use?

This study question was designed to investigate respondents' deviant Internet use behaviour and its relationship to their demographic and other Internet usage characteristics. Though the Internet's importance cannot be overstated these days, it has also become a cause of frustration for others. As the Internet has grown in popularity, so have the drawbacks of always being connected online. While the vast majority of people are unlikely to have an issue with excessive Internet use, statistics suggests that it may be a legitimate concern for some.

Since 1996, researchers have created a number of instruments for measuring problematic Internet use, as well as a number of terms to define problematic Internet use. After doing a thorough literature review of various problematic Internet use assessment scales, this researcher determined that Meerkerk et al. 's (2009) Compulsive Internet Use Scale (CIUS) was a better fit for this study and chose to use it (Table 3). To the best of the researcher knowledge, the scale has never been validated in any Bangladesh study previously; therefore, written permission was obtained from the scale's developer to use it in the Bangladeshi setting (Appendix 3). The CIUS examined five basic components of compulsive Internet behaviour: loss of control, preoccupation, conflict, withdrawal symptoms, and coping, and included 14 items from these components to assess compulsive behaviour. The scale cover the typical symptoms of CIU; loss of control (items 1, 2, 5, and 9); preoccupation (items 4, 6, and 7); withdrawal symptoms (item 14); coping or mood modification (items 12 and 13); and conflict (items 3, 8, 10, and 11). When compared to other instruments, the CIUS has two significant advantages: its briefness allows it to be used with other variables, and it

has a one-dimensional structure, which distinguishes CIU as an inability to refrain from using the Internet. The 5-point Likert scale was ranging from never = 0, rarely = 1, sometimes =2, often = 3, and very often = 4. To categorise respondents into compulsive and noncompulsive Internet users, a cut off point of 28 was determined. According to the scale's creators (Meerkerk et al., 2009), for compulsive Internet use, respondents would have experienced the 14 items of the CIUS at least "sometimes," so the cut-off score should be 28. The reliability test of this scale demonstrated that the Cronbach's Alpha obtained was .89 which is excellent. Table 3 shows the items of the CIUS.

Table 3

14-Item Compulsive Internet Use Scale

Item No	Statements
1	How often do you find it difficult to stop using the Internet when you are online?
2	How often do you continue to use the Internet despite your intention to stop?
3	How often do parents and friends say you should use the Internet less?
4	How often do you prefer to use the Internet instead of spending time with others
5	How often are you short of sleep because of the Internet?
6	How often do you think about the Internet, even when not online?
7	How often do you look forward to your next Internet session?
8	How often do you think you should use the Internet less often?
9	How often have you unsuccessfully tried to spend less time on the Internet?
10	How often do you rush through your home or work in order to go on the Internet
11	How often do you neglect your daily obligations because you prefer to go on the Internet?
12	How often do you go on the Internet when you are feeling down?
13	How often do you use the Internet to escape from your sorrows or get relief from negative feelings?
14	How often do you feel restless, frustrated, or irritated when you cannot use the Internet?

3.8.5 Research question five

Is there any association between Internet attitudes and compulsive Internet use?

To answer this question, the Pearson product moment correlations coefficient was used to determine whether two dependent variables, Internet attitude and compulsive Internet use, were associated.

3.8.6 Research question six

How do youth perceive the advantages and disadvantages of using the Internet?

The primary goal of this study is to investigate the Internet usage trends of young people as well as their attitudes regarding it and compulsive Internet behaviour. Although the problems were covered through structured questions, there is still the possibility of more inquiries concerning Internet use from the respondents' own perspective. As a result, two open-ended respondents were posed concerning the respondents' perceptions of the advantages and disadvantages of using the Internet. Open-ended questions allow respondents to express themselves freely without being constrained by the confines of a questionnaire or the respondents' preconceived notions about significant issues (Malhotra et al., 2017). Respondents are more likely to give important underlying issues when asked open-ended questions, which contributes to the understanding of the study's difficulty. Participants' beliefs are crucial in perception studies, and their contributions in this respect assist the researcher in critically analysing the difficulties. Given the flexibility with which open-ended questions can be answered, they have a much smaller effect on response bias than structured questions. As a result of the respondents' spontaneous responses, the researcher gains a wealth of information. This research question explores respondents' free opinions about their

perceptions of Internet use, with the goal of obtaining qualitative feedback from personal experiences with Internet use.

An approach such as principal component or cluster analysis is used to analyse open-ended questions, with an element repeated between significant terms in the respondents' responses (Popping, 2015). Using this procedure, the terms, phrasings, and words found in the responses of the respondents were placed and categorized under specific topics using a computer programme. The open-ended questions were analysed using a set of procedures that included close evaluations of the comments in the responses, synthesis of relevant information, categorization of major concepts through coding, interpretation of main topics, and finally concept mapping (Conceicao et al., 2017; Novak & Canas, 2007).

3.9 Reliability and validity of the instruments

According to Saunders et al. (2019), reliability can be referred as the degree to which measurements are free from error and bias, therefore, give in consistent results. Consistency entails connecting replies to individual items in the questionnaire with responses to other questions. Cronbach's Alpha is a commonly used measure for determining internal consistency. It is defined as the degree of correlation between the components that comprise a scale. Cornbach's Alpha coefficient values between.60 and.80 are considered good and acceptable for a scale's internal consistency (Janssens et al., 2008, p. 275; Mooi & Sarstedt, 2011, p. 220). However, the coefficient's generally accepted limit is .70, and values of .80 or more are considered highly excellent. According to Creswell (2014), when a researcher alters or combines instruments in a study, the previous instrument's reliability and validity may no longer exist, necessitating further reliability and validity assessments. Alpha is extensively

employed in social science research because it gives a measurement of consistency that may be derived from a single delivery of a questionnaire (Leech et al., 2005). Analyses of scale reliability were conducted, and all instruments in this study got acceptable reliability ratings of greater than .70.

Validity is perhaps the most important metric for determining a test's quality. The ability of a test to measure what it claims to assess is referred to as "validity." The degree to which a concept, deduction, or measurement is well-founded and accurately describes the realities is referred to as validity. Validity, according to Saunders et al. (2019), is the process of determining whether the findings are accurate. When developing a survey instrument, the researcher should follow certain criteria to ensure the study's validity (Glasow, 2005). The study's objectives must be well-defined and quantifiable, the investigator must be knowledgeable about the subject, and the survey must be conducted consistently, among other requirements. Subject-matter experts should assess instruments for content validity (Corbin & Strauss, 2008). The questionnaire is pre-tested by academics and practitioners before it is distributed. These experts were tasked with conducting a thorough review of the instrument and providing feedback on its content, phrasing, and readability. The researcher pre-tested the questionnaire before data collection to ensure its validity in this study. Every effort was made to ensure the questionnaire's validity and reliability throughout the study's conception, design, and administration. To ensure the instrument's reliability and validity, a thorough review of the literature on Internet usage in Bangladesh and other parts of the world, consultation with the research supervisor and experts, and a pre-test of the instrument were conducted.

3.10 Translation of questionnaire

The questionnaire was originally written in English. The questionnaire was translated into Bangla for the respondents' convenience. The translation and retranslation were carried out with the assistance of experts in both Bengali and English.

3.11 Data collection procedure

A team of research assistants was trained to help respondents in filling out the questionnaire during data collection. The data was collected from the eight divisions of the country by team members working under the direction of the researcher from December 15, 2018 to January 15, 2019. The interviewers informed the participants personally about the nature and aim of the study, the questionnaire instructions, their right to withdraw from the survey at any time, and the confidentiality of the data. During the survey, interviewers kept a close eye on whether any of the questions were left unanswered. After collecting the questionnaires, the interviewers instantly checked it for any missing data. If any participant left any questions unanswered, it was noted immediately and he/she was encouraged to finish all the answers. If any participants withdrew from the survey for whatever reason, or refuse to answer all the questions, the survey was cancelled, and the next respondent was contacted to complete the sample's quota. As a result of partial replies and withdrawals from the survey at any time for a variety of reasons, approximately 520 young people were approached to fill a quota with 448 respondents. However, the respondents were given the option to response the open-ended questions according to their wish. It takes roughly 25 minutes to finish the answers.

3.12 Secondary data

According to Malhotra et al. (2017), “examination of available secondary data is a prerequisite to the collection of primary data” (p. 95). They recommended gathering secondary data from an original source for two reasons: an original source has information on the detail of data collection design, and an original source is more likely to be accurate and dependable than a surrogate source. This study used secondary data from various sources including books, print and online scholarly journals, dissertations, newspapers, magazines, blogs, Internet data-base of private and public institutions, reports from NGOs and government documents to explore relevant literature. Neuman (2014) suggested for a thorough search of scholarly journals, books, dissertations, government documents, policy studies, and presented papers for secondary data.

3.13 Data entry, coding and verification

Following the collection of the data, a data entry frame was prepared in the Statistical Package for Social Science (SPSS) application. A codebook was developed and maintained during data entry. To verify that inaccuracies were corrected, data was examined and confirmed. It was essential to examine the data for inaccuracies because errors are prevalent during the data entry stage. According to Pallant (2016), it is imperative to review the data before analysing it because mistakes can alter the analysis's findings. The data screening technique was divided into three steps: first, checking errors for values, second, detecting the inaccurate data, and third, correcting the data fault.

3.14 Analytical framework and statistical tools used

The following sections (3.15 and 3.16) discusses the approaches for examining data with statistical tools.

3.15 Descriptive statistics

In data analysis, descriptive statistics are used to quantify specific characteristics of study participants. Descriptive statistics summarize or illustrate the information revealed by data. The goal of descriptive statistics is to convey quantitative data in an easy-to-understand format. Each descriptive statistic reduces a large amount of data to a manageable amount. Descriptive statistics include frequency, percentage, mean, median, and mode. It is used to test some common inferential test assumptions, such as normality and reliability (Leech et al., 2005). Descriptive statistics are also used to determine the appropriateness of parametric or non-parametric tests based on data distribution. The parametric test can only be applied to data with a normal distribution, which can be determined by inspecting the skewness and kurtosis, as well as the frequency of occurrence graph of values of a given characteristic. Skewness and kurtosis value of plus one and minus one as well as Bell Curve of histogram graph determined that the data is distributed in a regular pattern. Checking for skewness, kurtosis, and the histogram graph revealed that the data in this study were normally distributed.

3.16 Inferential statistics

Several inferential statistical procedures, such as the chi-square test, the T-test, ANOVA, Pearson correlation, and multiple regressions, are used to investigate correlations between variables and to analyse relationships between two or more groups.

3.16.1 Chi-square test for independence

Chi-square inferential statistical techniques are conducted to investigate relationships between variables. The chi-square test is used to find whether or not two categorical

variables are related. It compares the frequency of cases found in the various categories of one variable to the frequency of cases reported in the other.

3.16.2 Independent sample T-test

The independent-samples t-test is used to compare the mean score for two distinct groups of individuals, such as comparing total mean scores of male and female derived from the Internet Attitude Scale (IAS) and Compulsive Internet Use Scale (CIUS).

3.16. 3 Analysis of variance (ANOVA)

ANOVA is used to compare the variance between three or more groups, such as mean score age group differences on the aforementioned scales. Post hoc tests such as LSD and Tukey's HSD were performed to determine whether group combinations were substantially different.

3.16.4 Pearson correlations

The relationship between the attributes was determined using Pearson's product moment correlation coefficient. The product moment correlation (r), which is the most frequently used statistic, summarises the degree of relationship between two variables. Association measurements between variables show the degree, significance, and direction of the correlation. The intensity and direction of a linear relationship between two variables is represented by Pearson's (r) coefficient. Pearson's (r) value ranges from -1 to 1. A complete negative or positive correlation between two variables is shown by a relationship with a value of -1 or +1. The significance (p) value indicates the degree of certainty in the association between two variables.

3.16.5 Multiple regressions

Regression analysis is a statistical approach for determining the association between one dependent variable and one or more independent variables. While simple linear regression is used to investigate the link between a single independent and dependent variable, multiple regressions is used to gain a better understanding of the relationship between independent and dependent variables. When there are multiple predictor factors, multiple regressions enable researchers to determine the best predictor of the independent variables. Multiple regressions are a straightforward expansion of this approach, in which one variable is predicted using multiple other factors. Multiple regressions are used to account for the observed variance in scores. The assumptions of this statistical analysis must be checked to make sure that the assumptions of normality, linearity, and multicollinearity are not violated before performing multiple regressions (Leech et al., 2005). The sample size of 448 was deemed appropriate in this study due to the limited number of independent variables to be included in the analysis (Tabachnick & Fidell, 2007). Singularity was also satisfied because the independent variables were not composites of other independent variables. Correlation analysis found that none of the independent variables were highly associated. Multicollinearity was assumed to be true because all collinearity statistics, Tolerance and VIF, were within acceptable bounds. Residuals and scatter plots demonstrated that the normality, linearity, and multicollinearity assumptions were all satisfied (Malhotra et al., 2017; Leech et al., 2005).

3.17 Report writing

The report has been prepared following the collection of necessary data using all available methods, tabulating, synthesizing, and analyzing the data. The analysis was integrated using data gathered through a variety of methods.

3.18 Research ethics

The term "research ethics" refers to a set of standards that assess how well research methodologies comply to academic, professional, legal, moral, and sociocultural commitments to conduct a study (Polit & Beck, 2010a). According to Malhotra et al. (2017), safeguarding participant privacy, obtaining permission from study participants, and ensuring study participant safety are just a few of the fundamental premises that underpin ethical research practices. Neuman (2014) recommended that researchers be well-versed in both proper research procedures and sensitive moral questions in research. This study adhered to all of the ethical standards.

3.19 Summary

The purpose of this study was to examine the perspectives of Bangladeshi youth to see how their daily activities changed as a result of Internet use, and how some of them became compulsive users, interfering with daily life. A quantitative research design for the study was created based on the research objectives and research questions. Data were collected from a stratified simple random sample of 448 respondents aged 15 to 35 years old using a questionnaire survey approach. The study used a descriptive cross-sectional survey design to gather information about young people's Internet usage habits.

CHAPTER FOUR

Findings of the Study

4.1 Introduction

This part of the thesis aims to present the statistical analysis of the findings of the study. The SPSS (Statistical Package for the Social Sciences) analytical tool is used for the analysis.

4.2. Findings based on sociodemographic characteristics

This section provides a quick overview of the demographics of the study participants. Gender, marital status, age, educational background, profession, monthly family income, and residential status were among the demographic data collected from the respondents.

4.2.1 Gender

The gender ratio of the participants was equal for both males and females, i.e., 50 percent for both genders, according to the research design. There were a total of 448 respondents, 224 males and 224 females. To ensure that the sample was representative of Internet users throughout the country, the urban and rural populations were equally represented; half of the respondents came from urban areas, while the other half came from rural areas (Table 4).

Table 4

Gender Distribution of the Participants

Gender	Area of Residence				Total	
	Urban		Rural			
	N	%	N	%	N	%
Male	112	25	112	25	224	50
Female	112	25	112	25	224	50
Total	224	50	224	50	448	100

4.2.2 Marital status

In Table 5, the respondents' marital status is displayed. Data shows that 81.3 percent (42.0 percent male and 39.3 percent female) of the total respondents were unmarried, while 18.7 percent (8.0 percent male and 10.7 percent female) were married.

Table 5

Marital Status of the Respondents

Marital Status	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Married	36	8.0	48	10.7	84	18.7
Unmarried	188	42.0	176	39.3	364	81.3
Total	224	50.0	224	50.0	448	100.0

4.2.3 Age

The age range of the participants in this study who were classified as youths ranged from 15 to 35 years old. The total number of participants by gender in each age group is shown in Table 6. The 15-19 year age group had 29.7 percent (14.5 percent male and 15.2 percent female) respondents, the 20-24 year group had 28.6 percent (14.3 percent male and 14.3 percent female), the 25-29 year group had 27.5 percent (14.1 percent male and 13.4 percent female), and the 30-35 year group had 14.2 percent (7.1 percent male and 7.1 percent female).

Table 6

Distribution of Age of the Respondents

Age Group	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
15-19 year	65	14.5	68	15.2	133	29.7
20-24 year	64	14.3	64	14.3	128	28.6
25-29 year	63	14.1	60	13.4	123	27.5
30-35 year	32	7.1	32	7.1	64	14.2
Total	224	50.0	224	50.0	448	100.0

4.2.4 Educational background

The study participants were divided into three subgroups based on their educational level. Table 7 shows that 30.1 percent (15.8 percent male and 14.3 percent female) of the participants had up to a higher secondary level of education or less, 41.7 percent (21.2 percent male and 20.5 percent female) had graduated or were still graduate students, and 28.1 percent (12.9 percent male and 15.2 percent female) had completed postgraduate education or were still in education.

Table 7

Distribution of Level of Education of the Participants

Level of education	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Up to higher secondary	71	15.8	64	14.3	135	30.1
Graduate	95	21.2	92	20.5	187	41.7
Postgraduate	58	12.9	68	15.2	126	28.1
Total	224	50.0	224	50.0	448	100.

4.2.5 Profession

Participants in the study were divided into three broad categories based on their current occupation. Table 8 shows that 69.0 percent (34.6 percent male and 34.4 percent female) of the participants were students, 24.6 percent (12.5 percent male and 12.1 percent female) were employed, and 6.5 percent (2.9 percent male and 3.6 percent female) were from other categories. Housewives were counted among the employed.

Table 8

Distribution of Occupations of the Participants

Occupation	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Student	155	34.6	154	34.4	309	69.0
Employed	56	12.5	54	12.1	110	24.6
Others	13	2.9	16	3.6	29	6.5
Total	224	50.0	224	50.0	448	100.0

4.2.6 Monthly family income

The participants' monthly family income was divided into four categories, ranging from <Tk 20,000 to Tk 60,000 and above. Table 9 shows that 34.9 percent (17.4% male and 17.5% female) of them were in <Tk 20000 income group, 35.1 percent (19.0% male and 16.1% female) in Tk 20000 to <Tk 40000 income group, 17.6 percent (8.0% male and 9.6% female) in Tk 40000 to <Tk 60000 income group and 12.3 percent (5.6% male and 6.7% female) in Tk 60000 and above income group.

Table 9

Distribution of Family Income of the Participants

Monthly Family Income	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Less than Tk 20000	78	17.4	79	17.6	157	35.0
Tk 20000 to <40000	85	19.0	72	16.0	157	35.0
Tk 40000 to <60000	36	8.0	43	9.6	79	17.6
Tk 60000 and Above	25	5.6	30	6.7	55	12.3
Total	224	50.0	224	50.0	448	100.0

4.2.7 Residential status

Table 10 shows that 72.4 percent (32.4 percent male and 40.0 percent female) of the participants live with their families, while 27.6 percent (17.6 percent male and 10.0 percent female) live without family.

Table 10

Distribution of Residential Status of the Participants

Living status	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
With Family	145	32.4	179	40.0	324	72.4
Without family	79	17.6	45	10.0	124	27.6
Total	224	50.0	224	50.0	448	100.0

Table 11 shows the sociodemographic characteristics of the respondents at a glance:

Table 11

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Sociodemographic Characteristics of the Respondents at a Glance

Socio-demographic characteristics	**N**	**%**
Gender		
Male	224	50
Female	224	50
Marital status		
Married	364	81.2
Unmarried	84	18.8
Age		
15-19 year	133	29.7
20-24 year	128	28.6
25-29 year	123	27.5
30-35 year	64	14.3
Education		
Up to Higher Secondary	135	30.1
Graduate	187	41.7
Postgraduate	126	28.1
Profession		
Student	309	69.0
Employed	110	24.6
Others	29	6.5
Monthly Family Income		
Less than Tk 20000	157	35.0
Tk 20000 to <40000	157	35.0
Tk 40000 to <60000	79	17.6
Tk 60000 and Above	55	12.3
Residential status		
With Family	324	72.3
Without Family	124	27.7

4.3 Findings based on research questions

The main findings of this study were based on a questionnaire survey that was administered to the participants. The questionnaire was developed to investigate specific research questions regarding Internet use pattern and practices, Internet attitude, compulsive Internet use behaviour, relationships between Internet attitude and compulsive Internet use, and study participants' perceptions of the potential harm and benefits of Internet use. The study's findings are presented in the following section in accordance with the research questions.

4.3.1 RQ 1: How do young people use the Internet and for what purposes do they use it?

The issues of frequency, duration, experience of Internet use, device used for Internet use, types of Internet access, were covered in this section. In addition, purposes of Internet use and SNS activities were investigated in this research question

4.3.1.1 Frequency of Internet use

Table 12 shows that 79 percent (41.3% male and 37.7% female) respondents were very frequent (seven days in a week) Internet users, 7.8 percent (3.8% male and 4.0% female) respondents use Internet frequently (4-6 days in a week), 8.3 percent (2.9% male and 5.4% female) occasionally (1-3 days in a week) and 4.9% (2.0% male and 2.9% female) use rarely (several days a month).

Table 12

Frequency Distribution of Internet Use of the Respondents

Frequency of use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Very Frequently (Seven days of a week)	185	41.3	169	37.7	354	79.0
Frequently (4-6 days in a week)	17	3.8	18	4.0	35	7.8
Occasionally (1-3 days in week)	13	2.9	24	5.4	37	8.3
Rarely (Several days in a month)	9	2.0	13	2.9	22	4.9
Total	224	50.0	224	50.0	448	100.0

4.3.1.2 Duration of Internet use

Analysis of Table 13 reveals that 15.4 percent (4.7% male and 10.7% female) participants had used the Internet less than 1 hour, 29.0 percent (12.7% male and 16.3% female) use Internet 1-2 hours, 25.7 percent (13.2% male and 12.5% female) use 3-4 hours, 15.0% (8.9% male and 6.0% female) use Internet 5-6 hours and 15.0 percent (10.5% male and 4.5% female) uses Internet 7-8 hours and above.

Table 13

Duration of Internet Use of the Respondents

Duration of Use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Less than 1 hour	21	4.7	48	10.7	69	15.4
1-2 hours	57	12.7	73	16.3	130	29.0
3-4 hours	59	13.2	56	12.5	115	25.7
5-6 hours	40	8.9	27	6.0	67	15.0
7-8 hours	47	10.5	20	4.5	67	15.0
Total	224	50.0	224	50.0	448	100.0

4.3.1.2a Association of duration of Internet use and gender

The results of the Chi square test revealed a significant gender difference in terms of Internet use duration: χ^2 (4, 448) = 26.02, p <.001. Male participants spent significantly longer time on the Internet than female participants, who spent significantly less time.

4.3.1.3 Experience of Internet use

Table 14 shows that 8.7 percent (1.6% male and 7.1% female) respondents had less than one year Internet use experience, 9.8 percent (1.6% male and 8.3% female) had 1 to 2 years, 19.6 percent (8.7% male and 10.9% female) had 2 to 4 years, majority 40.6 percent (21.9% male and 18.8% female) had 4 to 8 years and 21.2 percent (16.3% male and 4.9% female) had 8 years above Internet use experience.

Table 14

Experience of Internet Use of the Respondents

Experience of Use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Less than 1 year	7	1.6	32	7.1	39	8.7
1-2 year	7	1.6	37	8.3	44	9.8
2-4 year	39	8.7	49	10.9	78	19.6
4-8 year	98	21.9	84	18.8	182	40.6
8 years and above	73	16.3	22	4.9	95	21.2
Total	224	50.0	224	50.0	448	100.0

4.3.1.3a Association of Internet use experience and gender

Chi square test shows that there was a significant difference χ^2 (4, 448) = 66.07, p <.001) between male and female relating to experience of Internet usage. Males had more year of Internet usage experience compared to females.

4.3.1.4 Device for Internet use

Through multiple options the respondents were asked what types of devices they use for Internet. It was found from Table 15 that the highest 90.8 percent (46.0% male and 44.9% female) young people uses touch screen mobile or smart phone, 29.0 percent (17.0% male and 12.1% female) uses laptop, 19.2 percent (12.1% male and 7.1% female) uses feature mobile phone, 14.7 percent (11.8% male and 2.9% female) uses desktop computer, 9.8 percent (5.1% male and 4.7% female) uses tablet and 2.2 percent (1.3% male and 0.9% female) uses smart TV.

Table 15

Device of Internet Use of the Respondents

Internet Use Device	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Desktop Computer	53	11.8	13	2.9	66	14.7
Laptop	76	17.0	54	12.1	130	29.0
Tablet	23	5.1	21	4.7	44	9.8
Touch Screen Mobile	206	46.0	201	44.9	407	90.8
Feature Mobile	54	12.1	32	7.1	86	19.2
Smart TV	6	1.3	4	0.9	10	2.2
Total	418	93.3	325	72.6	743	165.7

Note: Because of multiple responses, the total number and percentage have exceeded.

4.3.1.4a Association between device use and gender

The Pearson chi-square test results revealed a significant gender difference in using desktop computers for the Internet χ^2 (1, 448) = 28.43, p < .001), as males use desktops for the Internet more than females. Furthermore, males used laptops χ^2 (1, 448) = 5.25, p = .022 and feature mobile phones χ^2 (1, 448) = 6.97, p = .008 more than females for accessing the Internet. However, there were no significant differences between males and females when accessing the Internet using a touch-screen mobile phone χ^2 (1, 448) = 0.67, p = .413, tablet χ^2 (1, 448) = 0.10, p = .751, or smart TV χ^2 (1, 448) = 0.41, p = .522.

4.3.1.5 Types of Internet access

Respondents were asked whether they used mobile Internet networks provided by mobile phone operators, WI-FI or cable networks provided by ISPs, dial-up Internet networks provided by BTCL, or all of the facilities at the same time. In response, 95.8 percent (47.8% male and 48.0% female) of participants said they used a mobile phone network for Internet connectivity, 48.9 percent (29.5% male and 19.4%) use WIFI or cable connections, 9.8 percent (6.7% male and 3.1% female) use a dialup system and 6.9 percent (4.9% male and 2.0% female) use all three facilities (Table 16).

Table 16

Types of Internet Access of the Respondents

Types of Access	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
WI-FI or cable	132	29.5	87	19.4	219	48.9
Mobile phone	214	47.8	215	48.0	429	95.8
Dial-up	30	6.7	14	3.1	44	9.8
All of these	22	4.9	9	2.0	31	6.9
Total	398	88.9	325	72.5	723	161.4

Note: Because of multiple responses, the total number and percentage have exceeded.

4.3.1.5a Association between types of Internet access and gender

Chi square test results showed that in comparison to females, males had more opportunities to access WI-FI or cable χ^2 (1, 448) = 18.09, $p < .001$, dial-up χ^2 (1, 448) = 6.45, p = .011, and all three types of the Internet χ^2 (1, 448) = 5.86, p = .016. However, in terms of mobile Internet access, there was no significant difference between men and women χ^2 (1, 448) = 0.06, p = .815.

4.3.1.6 Location of Internet use

Table 17 shows that the majority of the respondents, 93.8 percent (45.5% male and 48.2% female), had used the Internet at home. Besides, 12.1 percent (7.6% male and 4.5% female) had used the Internet in the office, only 2.0 percent (1.1% male and 0.9% female) in school, 18.3 percent (11.2% male and 7.1% female) in college, 30.0 percent (15.0% male and 15.o% female) in university, 14.7 percent (10.5% male and 4.2% female) in cybercafé or restaurant, 34.2 percent (21.2% male and 12.9% female) in friends or relatives house, 48.8 percent (30.6% male and 17.9% female) used Internet while on the move or travelling and 7.4 percent (6.2% male and 1.1% female) use the Internet at others places.

Table 17

Location of Internet Use of the Respondents

Location of use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Home	204	45.5	216	48.2	420	93.8
Office	34	7.6	20	4.5	54	12.1
School	5	1.1	4	0.9	9	2.0
College	50	11.2	32	7.1	82	18.3
University	67	15.0	67	15.0	134	29.9
Cybercafé/restaurant	47	10.5	19	4.2	66	14.7
Friends/relatives home	95	21.2	58	12.9	153	34.2
During travel	137	30.6	80	17.9	217	48.4
Other places	28	6.2	5	1.1	33	7.4
Total	667	148.9	501	111.8	1168	260.7

Note. Because of multiple responses, the total number and percentage have exceeded.

4.3.1.6a Association of location of Internet use and gender

The Pearson Chi square test results showed significant differences between male and female Internet users in terms of place or location. Females used the Internet at home more than males χ^2 (1, 448) = 5.49, p = .019, with 48.2 percent of females using the Internet at home compared to 45.5 percent of males.

Males used the Internet more than females in all other locations except school χ^2 (1, 448) = 0.11, p = .736 and university χ^2 (1, 448) = 0.00, p = 1.000 where there were no significant differences. Statistically significant differences of Internet use were found in favour of male in the office χ^2 (1, 448) = 4.13, p = .042, college χ^2 (1, 448) = 4.84, p = .028, cybercafé χ^2 (1, 448) = 13.93, p <.001, friends and relatives' homes χ^2 (1, 448) = 13.59, p <.001; during travel χ^2 (1, 448) = 29.04, p <.001), and other places χ^2 (1, 448) = 17.04, p <.001. These results showed that compared to men, women used the Internet less outside the home.

4.3.1.7 Place of Internet use at home

Respondents who had used the Internet at home were asked to mention the place in their house where they liked to browse the most. Table 18 shows that 6.7% (3.6% male and 3.1% female) of the respondents used the Internet in the reading room, 5.4% (2.5% male and 2.9% female) in the drawing room, 85.5% (43.1% male and 42.4% female) in the bedroom and 2.5% (0.9% male and 1.6% female) in other places of their house.

Table 18

Place of Internet Use at Home

Place of Use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Reading Room	16	3.6	14	3.1	30	6.7
Drawing Room	11	2.5	13	2.9	24	5.4
Bed Room	193	43.1	190	42.4	383	85.5
Other Places	4	0.9	7	1.6	11	2.5
Total	224	50.0	224	50.0	448	100.0

Crosstab analysis (Ttable 19) found that bedroom is the most popular place for Internet use at home, with 58.5 percent of students using it for browsing, followed by 21.7 percent employed and 5.4 percent respondents from other categories.

Table 19

Place of Internet Use at Home by Profession

Place of use at home	Profession						Total	
	Student		Employed		Others			
	N	%	N	%	N	%	N	%
Reading room	22	4.9	6	1.3	2	.4	30	6.7
Drawing room	17	3.8	6	1.3	1	.2	24	5.4
Bedroom	262	58.5	97	21.7	24	5.4	383	85.5
Other	8	1.8	1	.2	2	.4	11	2.5
Total	309	69.0	110	24.6	29	6.5	448	100

4.3.1.8 Monthly expenditure for Internet use

Results showed that, 25.2 percent respondents (7.6% male and 17.6% female) spent less than Tk 100 per month for Internet, 52.7% (27.5% male and 25.2% female) spent Tk 100 to <Tk 500, 15.0 percent (9.6% male and 5.4% female) spent Tk 500 to <Tk 1000 and 7.1 percent (5.4% male and 1.8% female) spent Tk 1000 and above for monthly Internet use (Table 20).

Table 20

Monthly Expenditure for Internet Use

Amount of Money Used	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Less than Tk 100	34	7.6	79	17.6	113	25.2
Tk 100 to <Tk 500	123	27.5	113	25.2	236	52.7
Tk 500 to <Tk 1000	43	9.6	24	5.4	67	15.0
Tk 1000+	24	5.4	8	1.8	32	7.1
Total	225	50.0	224	50.0	448	100.0

4.3.1.9 Purpose of Internet use

The Internet is used for a variety of purposes that are determined by the needs of the users, which vary depending on their demographics and other Internet-related characteristics. Based on previous research and the researchers' own experience, the questionnaire included 26 specific reasons for Internet use, with respondents having the option of selecting multiple reasons for Internet use.

4.3.1.9a Purpose of Internet use overall trend

Analysis (Table 21) shows that 81.0% of respondents had used the Internet for academic learning, 90.6% for news and information, 87.9% for chatting, 77% for watching YouTube, 45.5% for sports, 23.0% for adult pictures and videos, 38.8% for religious matters, 65.4% for music and movies, 4.9% for hiring vehicles, 11.2% for performing office work, 80.6% for browsing social networks, 43.5% for email, 25.0% for road instructions and maps, 31.7% for online shopping, 36.6% for hiring vehicles. The table continues that 11.2% of participants had used the Internet for performing office work, 80.6% for browsing social networks, 43.5% for email, 25.0% for road instructions and maps, 31.7% for online shopping, 36.2% for cooking recipes, 35.7% for tourism and travel, 9.8% for business and commerce, 36.6% for Internet telephony, 26.1% for passing time, 44.4% for playing online games, 57.1% for watching videos, 29.5% for weather information, 48.4% for job information, 43.3% for health and fitness, 25.7% for election news, 5.4% for freelancing, and 4.7% for other than these purposes.

Table 21

Purposes of Internet Use of the Participants

Item No	Purposes of Use	Frequency	Percent	Rank order
2	News and information	406	90.6	1
3	Chatting	394	87.9	2
1	Academic learning	363	81.0	3
11	Social networking	361	80.6	4
4	Watching YouTube	345	77.0	5
8	Music and movie	293	65.4	6
21	Watching videos	256	57.1	7
23	Job information	217	48.4	8
5	Sports	204	45.5	9
20	Playing games	200	44.6	10
12	Email	195	43.5	11
24	Health and fitness	194	43.3	12
7	Religious matters	174	38.8	13
18	Internet telephony	164	36.6	14
15	Cooking recipes	162	36.2	15
16	Travel and tourism	160	35.7	16
14	Online shopping	142	31.6	17
22	Weather information	132	29.5	18
19	Passing time	117	26.1	19
25	Politics and election	115	25.7	20
13	Road instructions and maps	112	25.0	21
6	Adult pictures and videos	103	23.0	22
10	Office work	50	11.2	23
17	Business and commerce	44	9.8	24
26	Freelancing	24	5.4	25
9	Hiring vehicles	22	4.9	26
27	Others	21	4.7	27

4.3.1.10 Classification of Internet use purposes by U&G

Researchers (Chigona et al., 2008; Roy, 2008, 2009; Stafford et al., 2004) categorised Internet usage purposes broadly into three types of uses and gratifications: content gratifications, process gratifications, and social gratifications. The following table (Table 22) shows the Internet use purposes of this study's participants based on the aforementioned gratifications criteria.

Table 22

Classification of Internet Use Purposes by Types of Gratifications

Types of gratifications	Purposes of use	Percent of Use
Content Gratifications	News and Information	90.6
	Academic learning	81.0
	Music and movie	65.4
	Watching videos	57.1
	Sports	45.4
	Playing online games	44.4
	Adult pictures and videos	23.0
	Job information	48.4
	Health and Fitness	43.3
	Religious matters	38.8
	Cooking recipe	36.2
	Travel and tourism	35.7
	Weather information	29.5
	Passing time	26.1
	Politics and elections	25.7
Process Gratifications	Email	43.5
	Online shopping	31.7
	Road instructions and map	25.0
	Office work	11.2
	Business and commerce	9.8
	Freelancing	5.4
	Hiring vehicle	4.9
Social Gratifications	Chatting	87.9
	SNS	80.6
	YouTube	77.0
	Internet telephony	36.6

4.3.1.11 Relationship of purposes of Internet use with gender and age

The Chi-square test was used to determine whether there were any relationship between the demographic characteristics of the respondents and their Internet use purposes.

4.3.1.11a Relationship between purposes of Internet use and gender

Chi-square results revealed a significant difference between males and females in all but six of the 27 Internet use purposes (Table 23). Results revealed that males were more

engaged in chatting χ^2 (1, 448) = 4.13, p = .042, watching YouTube χ^2 (1, 448) = 15.44, p < .001, sports χ^2 (1, 448) = 97.35, p < .001, watching adult pictures and videos χ^2 (1, 448) = 53.27, p <.001, religious matters χ^2 (1, 448) = 7.37, p = .007, music and movie χ^2 (1, 448) = 9.48, p < .002, hiring vehicle χ^2 (1, 448) = 6.88, p = .009, office work χ^2 (1, 448) = 10.90, p < .001, SNS use χ^2 (1, 448) = 17.47, p < .001, email use χ^2 (1, 448) = 31.61, p < .001 and using road instructions and maps χ^2 (1, 448) = 34.71, p < .001. Chi-square results also showed that males use more Internet than females for the purposes of business and commerce χ^2 (1, 448) = 12.20, p < .001, Internet telephony χ^2 (1, 448) = 12.47, p < .001, playing games χ^2 (1, 448) = 20.81, p < .001, watching videos χ^2 (1, 448) = 30.66, p < .001, weather information χ^2 (1, 448) = 12.42, p < .001, job information χ^2 (1, 448) = 9.73, p = .002, politics and election $\chi^{2\,=}$ (1, 448) = 55.70, p <.001, freelancing χ^2 (1, 448) = 4.40, p <.036, and other purposes χ^2 (1, 448) = 6.05, p <.014.

As expected, there was a significant difference between males and females in terms of using the Internet for cooking recipes, with females being more likely than males to use the Internet for cooking recipes χ^2 (1, 448) = 130.11, p < .001.

No significant differences between males and females were observed in Internet use for academic learning χ^2 (1, 448) = 1.18, p = .278, news and information χ^2 (1, 448) = 1.68, p = .195, online shopping χ^2 (1, 448) = 2.02, p = .155, travel and tourism χ^2 (1, 448) = 1.91, p = .167, passing time χ^2 (1, 448) = 0.94, p = .333, and health and fitness purposes χ^2 (1, 448) = 0.00, p = 1.000, indicating that both genders use the Internet equally or almost equally for these purposes.

Table 23

Chi-Square Test Results for Purposes of Internet Use by Gender

Purpose of Internet Use	Significance
Chatting	$\chi^2 = 4.13$, $p = .042$
Watching YouTube	$\chi^2 = 15.44$, $p < .001$
Sports	$\chi^2 = 97.35$, $p < .001$
Adult pictures and videos	$\chi^2 = 53.27$, $p < .001$
Religious matters	$\chi^2 = 7.37$, $p = .007$
Music and movie	$\chi^2 = 9.48$, $p = .002$
Hiring vehicles	$\chi^2 = 6.88$, $p = .009$
Office work	$\chi^2 = 10.90$, $p < .001$
Social Network Sites (SNS)	$\chi^2 = 17.47$, $p < .001$
Email	$\chi^2 = 31.61$, $p < .001$
Road instructions and maps	$\chi^2 = 34.71$, $p < .001$
Cooking recipes	$\chi^2 = 130.11$, $p < .001$
Business and commerce	$\chi^2 = 12.20$, $p < .001$
Internet telephony	$\chi^2 = 12.47$, $p < .001$
Playing online games	$\chi^2 = 20.81$, $p < .001$
Watching videos	$\chi^2 = 30.66$, $p < .001$
Weather information	$\chi^2 = 12.42$, $p < .001$
Job information	$\chi^2 = 9.73$, $p = .002$
Politics and election	$\chi^2 = 55.70$, $p < .001$
Freelancing	$\chi^2 = 4.40$, $p = .036$
Other purposes	$\chi^2 = 6.05$, $p = .014$

Note. Only significant results are shown in the table

4.3.1.11b Relationship between purpose of Internet use and age

Table 24 shows significant differences in various age groups and Internet use for news and information, sports, office work, SNS, email, playing games, getting job information, and for political and election purposes. Chi-square results revealed that older age groups of 25-29 years and 30–35 years had used Internet more for news and information $\chi^2 (3, 448) = 13.89$, $p = .003$, office work $\chi^2 (3, 448) = 24.41$, $p < .001$, SNS $\chi^2 (3, 448) = 13.19$, $p = .004$, and politics and elections $\chi^2 (3, 448) = 12.86$, $p = .005$ than the younger age groups of 15-19 years and 20-24 years. The 20-24 year, 25-29 year, and 30-35 year age groups used Internet more for email $\chi^2 (3, 448) = 16.01$, $p < .001$ than the younger group. There were significant differences in using the Internet for job information $\chi^2 (3, 448) = 35.36$, $p < .001$ with the age groups of 20-24 years and 25-29 years had used Internet more for job purposes. The younger age groups of 15-19 years and 20-24 years used the Internet more for sports $\chi^2 (3, 448) = 8.83$, $p = .032$ and playing games $\chi^2 (3, 448) = 16.14$, $p < .001$.

Table 24

Chi-Square Test Results for Purposes of Internet Use by Age

Purpose of Internet Use	Significance
News and information	$\chi^2 = 13.89$, $p<.003$
Sports	$\chi^2 = 8.83$, $p< .032$
Office work	$\chi^2 = 24.41$, $p<.001$
Social network sites (SNS)	$\chi^2 = 13.19$, $p<.004$
Email	$\chi^2 = 16.01$, $p<.001$
Playing games	$\chi^2 = 16.14$, $p<.001$
Job information	$\chi^2 = 35.36$, $p<.001$
Politics and election	$\chi^2 = 12.86$, $p<.005$

Note. Only significant results are shown in the table

4.3.1.12 Social Network Sites (SNS) activities

This section of the questionnaire aimed at exploring how the youths in Bangladesh usage the SNS. Based on previous research, a 15-item SNS activities scale were drawn, and respondents were asked to rate their preference on a five-point likert scale: 5 = always, 4 = sometimes, 3 = undecided, 2 = rarely, and 1 = never. The reliability of items was measured at Cornbach's Alpha .77.

From table 25, it is observed that the top five SNS activities were chatting (M = 4.24), communication with family and friends (M = 4.20), communication for study and research (M = 3.84), looking up old friends (M = 3.67) and changing profile pictures (M = 3.30). Letting others know about one's talents (M = 3.29), making new friends (M = 3.28), updating one's status (M = 3.25), uploading photos and videos (M = 3.25) and sharing favourite videos, movies, and music (M = 3.23) were among the most common activities. Group activities (M = 2.90), playing games (M = 2.49), creating or joining events (M = 2.37), online shopping (M = 2.19), and creating a movement or activism (M = 2.16) were the least performed activities from the bottom five.

The median score for SNS-related activities ranged from 4 "sometimes" to 2 "rarely". Chatting; changing profile pictures; communicating with family and friends; meeting new people; updating status; sharing favourite videos, movies, and songs; uploading photos and videos; looking for old friends; communicating for study or research; and letting people know about talents; all of these activities received a median score of 4, "sometimes." These findings indicated that these activities were carried out on a consistent basis. Group activities received a score of 3, or "undecided," indicating that youth were not very familiar with this SNS activity. Shopping, playing online games, organizing or participating in events, and creating movements or activism all received 2 "rarely" ratings, indicating that those activities were performed the fewest times.

Table 25

Mean, Rank Order and Median of SNS Use of the Respondents

Item No.	Items	Mean	Rank order	Median
1	Chatting	4.24	1	4
4	Communicating with family and friends	4.20	2	4
13	Communicating for study or research	3.84	3	4
12	Looking for find out old friends	3.67	4	4
2	Changing profile pictures	3.30	5	4
14	Letting people know talents	3.29	6	4
5	Making new friends	3.28	7	4
6	Updating status	3.25	8	4
8	Uploading photos and videos	3.25	9	4
7	Sharing favorites videos, movie, music	3.23	10	4
11	Conducting group activities	2.90	11	3
9	Playing online games	2.49	12	2
10	Creating or joining events	2.37	13	2
3	Shopping	2.19	14	2
15	Creating movement or activism	2.16	15	2

Note. 5 = always, 4 = sometimes, 3 = undecided, 2 = rarely and 1 = never

4.3.1.13 Relationship of SNS usage activities with gender and age

The chi-square test was used to investigate the associations between youths' SNS usage and their age and gender demographic factors.

4.3.1.13a Relationship between SNS activities and gender

Table 26 shows that there was a statistically significant relationship between gender and SNS use for chatting χ^2 (1, 448) = 14.20, p < .000. Out of the 90.8 percent of SNS users who use it frequently for chatting, 48 percent were men compared to 42.9 percent women. Making new friends was more prevalent among males (35.3%) than females (21.4%), indicating a significant relationship between gender and making new friends χ^2 (1, 448) = 34.95, p < .001. There was a significant relationship between gender and updating status χ^2 (1, 448) = 22.68, p < .001. Among the 56.2 percent SNS users who frequently update their status, 33.7 percent were males and 22.5 percent females. There was a significant relationship between gender and sharing videos, movies, and music χ^2 (1, 448) = 17.03, p < .001, with 34.2 percent of frequent SNS users who shared their favourite videos, movies, and music being male, and 24.6 percent being female. Gender was found to have a significant relationship with uploading photos and videos to social media sites χ^2 (1, 448) = 21.32, p < .001. Males were found to have uploaded more photos and videos to social media sites than females (35.0 percent versus 24.3 percent).

Males and females differed significantly in their use of social media platforms to play online games χ^2 (1, 448) = 28.35, p < .001. Males were almost twice as likely as females to use social media to play games with their friends (23.9 percent vs. 11.8 percent). SNS was found to be used by just over a quarter of respondents for creating and attending events. More than double the number of males (18.1 percent) were involved in creating and joining events when compared to females (8.0 percent), indicating a significant relationship χ^2 (1, 448) = 23.43, p < .001.

Results revealed that males were more active in SNS for group activities than females, indicating a significant relationship χ^2 (1, 448) = 12.40, p < .001. 26.1 percent of the 44 percent of highly active group activists were men, and 17.9 percent were women. Males

(42.0%) searched for old friends on social media more than females (34.4%), indicating a significant relationship χ^2 (1, 448) = 14.29, p < .001. There was a significant difference between males and females χ^2 (1, 448) = 13.19, p < .001, despite the fact that only a few respondents were involved in creating activism and movement through SNS. Young people involved in creating movements and activism accounted for 17.2% of the total participants, with 11.8 percent males and 5.4 percent females.

Table 26

Chi-Square Analysis of SNS Activities by Gender

Variables	Frequency of Use	Gender		X^2	P
		Male	Female		
Chatting	Frequent	215 (48.0)	192 (42.9)	14.20	.001
	Infrequent	9 (2.0)	32 (7.1)		
Making new friends	Frequent	158 (35.3)	96 (21.4)	34.95	.001
	Infrequent	66 (14.7)	128 (28.6)		
Updating status	Frequent	151 (33.7)	101 (22.5)	22.68	.001
	Infrequent	73 (16.3)	123 (27.5)		
Sharing favorites videos, movie, music	Frequent	153 (34.2)	110 (24.6)	17.03	.001
	Infrequent	71 (15.8)	114 (25.4)		
Uploading photos and videos	Frequent	157 (35.0)	109 (24.3)	21.32	.001
	Infrequent	67 (15.0)	115 (25.7)		
Playing online games	Frequent	107 (23.9)	53 (11.8)	28.35	.001
	Infrequent	117 (26.1)	171 (38.2)		
Creating or joining events	Frequent	81 (18.1)	36 (8.0)	23.43	.001
	Infrequent	143 (31.9)	188 (42.0)		
Organising group activities	Frequent	117 (26.1)	80 (17.9)	12.40	.001
	Infrequent	107 (23.9)	144 (32.1)		
Looking for old friends	Frequent	188 (42.0)	154 (34.4)	14.29	.001
	Infrequent	36 (8.)	70 (15.6)		
Creating movement or activism	Frequent	53 (11.8)	24 (5.4)	13.19	.001
	Infrequent	171 (38.2)	200 (44.6)		

Note. Percentage in parentheses.

4.3.1.13b Relationship between SNS activities and age

Except for online gaming, SNS use activities did not differ significantly by age group among youths (Table 27). When it came to social media gaming, there was a

statistically significant difference between younger and older age groups χ^2 (3, 448) = 9.71, p = .021. Among the 35.7 percent of respondents who frequently engage in social media gaming, 23.6 percent were between the ages of 15-19 and 20-24, compared to 12.1 percent between the ages of 25-29 and 30-35.

Table 27

Chi-Square Analysis of SNS Activities by Age

Variable	Frequency of Use	Age				X^2	P
		15-19 years	20-24 years	25-29 years	30-35 years		
Playing online games	Frequent	53 (11.8)	53 (11.8)	41 (9.2)	13 (2.9)	9.71	.021
	Infrequent	80 (17.9)	75 (16.7)	82 (18.3)	51 (11.4)		

Note. Percentage in parentheses.

4.3.1.14 Frequency of SNS uses

Analysis of Table 28 shows that 88.2% (47.8% male and 40.4% female) respondents used social network sites very frequently (seven days a week), 6.0% (0.9% male and 5.1% female) frequently (several days in a week), 5.1% (1.1% male and 4.0% female) rarely (several days a month) and only 0.7% (0.2% male and 0.4% female) never use SNS. Chi-square Likelihood Ratio results showed that male had used SNS χ^2 (3, 448) = 25.68, p <.001 more frequently than female.

Table 28

Frequency Distribution of SNS Use of the Respondents

Frequency of SNS Use	Gender				Total	
	Male		Female			
	N	%	N	%	N	%
Very Frequently (Seven days in a week)	214	47.8	181	40.4	395	88.2
Frequently (Several days in a week)	4	0.9	23	5.1	27	6.0
Rarely (Several days in a month)	5	1.1	18	4.0	23	5.1
Never	1	0.2	2	0.4	3	0.7

4.3.2 RQ 2: How does the use of the Internet affect young people's activities and attitudes?

This research question was designed to investigate how Internet use impacts young people's casual activities as well as their attitudes toward it. The study examined how youths adopt the Internet as part of their lives, how the Internet affects their relationships with family and friends, and how concerned they are about privacy and security when using the Internet.

4.3.2.1 Frequency of Internet's importance as a source of media information

To find out how respondents get information about current events or news, they were asked to choose between the Internet and four other accessible media or channels of information. The Internet was chosen as the information source by the vast majority of respondents (90.4 percent), followed by 61.8 percent television, 54.0 percent newspaper, 13.8 percent radio, and 20.1 percent family and friends (Table 29).

Table 29

Frequency of Use of Various Media or Channels as Information Sources

	Gender				Total	
	Male		Female			
Media or channels	**N**	**%**	**N**	**%**	**N**	**%**
Internet	208	46.4	197	44.0	405	90.4
Television	142	31.7	135	30.1	277	61.8
Newspaper	139	31.0	103	23.0	242	54.0
Radio	35	7.8	27	6.0	62	13.8
Family and friends	63	14.1	27	6.0	90	20.1
Total	587	131.0	489	109.1	1076	240.1

Note. Because of multiple responses, the total number and percentage have exceeded.

4.3.2.2 Centrality of Internet's importance as a source of media information

Based on their preferences, participants were asked to rank the importance of various media or channels for getting news or information about any current news or event. To compare five types of media or information channels, a five-point likert scale was used: 5 = very important, 4 = somewhat important, 3 = undecided, 2 = less important, and 1 = not important at all. To assess the importance of the respondents' media preferences, the mean and rank order was computed.

Table 30

Mean and Rank Order of Use of Media or Channels as Information Sources

Media/channels	Mean	Rank Order
Internet	4.58	1
Television	4.32	2
Newspaper	4.28	3
Family and friends	3.24	4
Radio	2.92	5

Table 30 shows that the Internet (M = 4.58) was preferred as the most important among all media or channels in terms of respondents' media preferences for getting up-to-date

news and information. It was followed by television (M = 4.32), newspapers (M = 4.28), family and friends (M = 3.24), and radio (M = 2.92).

4.3.2.3 The impact of the Internet on changing routine activities

In order to assess the impact of Internet use, participants were asked if they had noticed any change in certain activities after starting to use the Internet. Respondents replied on a five-point likert scale: 5 = significantly increased, 4 = somewhat increased, 3 = unchanged, 2 = somewhat decreased, 1 = significantly decreased. The overall impact of changes in Internet usage activities was calculated using mean and rank order, with a lower mean score suggesting a bigger decline in regular Internet usage. The median rating was used to determine the central tendency of the degree of changes in activities resulting from Internet usage.

Table 31

Mean, Rank Order and Median of Activities Influenced by Internet Use

Activities	Mean	Rank order	Median
Spending time with friends	2.74	1	3
Making phone call	2.63	2	3
Going out with family	2.61	3	3
Spending time with family	2.56	4	3
Reading time	2.51	5	2
Reading newspaper	2.47	6	2
Sleeping time	2.22	7	2
Watching Television	1.93	8	2

Note. 5 = significantly increased, 4 = somewhat increased, 3 = unchanged, 2 = somewhat decreased, 1 = significantly decreased

Table 31 shows that among the eight activities, watching television had the lowest mean score (M = 1.93) while spending time with friends received the highest mean score (M = 2.74). Median scores specified that time spent on watching television,

sleeping, newspaper reading, and reading (academic or other purpose) 'somewhat decreased', with all these activities obtaining a median score '2'. Four other activities; spending time with friends, making phone calls, going out with family, and spending time with family, scored median scores of '3', representing 'unchanged' of these activities after using the Internet.

4.3.2.4 The intensity of relationship of changes in regular activities

The intensity of relationship of changes in regular activities was measured using a chi-square test to see whether there is a relationship between respondents' time spent on the Internet and changes in their regular activities. Table 32 shows significant relationships between daily time spent (duration of hours) on the Internet usage and changes in watching television χ^2 (8, 448) = 55.62, p <.001, changes in reading time χ^2 (8,448) = 20.67, p = .008 and changes in sleeping time χ^2 (8,448) = 24.41, p = .002. However, no significant association was found between time spent online and changes in newspaper reading χ^2 (8, 448) = 11.85, p = .158, changes in making phone calls χ^2 (8, 448) = 12.84, p = .117, changes in family outings χ^2 (8, 448) = 15.06, p = .058, changes in spending time with family χ^2 (8, 448) = 14.08, p = .080, and changes in spending time with friends χ^2 (8, 448) = 7.22, p = .514.

Table 32

Relationship between Changes in Regular Activities and Time Spent on the Internet

Activities	Changes	Hours of Daily Internet Use					X^2	p
		Less than 1 hour	1-2 hours	3-4 hours	5-6 hours	7-8 hours & above		
Change in watching TV	Decreased	34 (7.6)	104 (23.2)	103 (23.0)	60 (13.4)	54 (12.1)	55.62	.001
	Unchanged	24 (5.4)	12 (2.7)	6 (1.3)	4 (.9)	7 (1.6)		
	Increased	11 (2.5)	14 (3.1)	6 (1.3)	3 (.7)	6 (1.3)		
Change in reading newspaper	Decreased	36 (8.0)	81 (18.1)	70 (15.6)	41 (9.2)	42 (9.4)	11.85	.158
	Unchanged	17 (3.8)	16 (3.6)	19 (4.2)	17 (3.8)	8 (1.8)		
	Increased	16 (3.6)	33 (7.4)	26 (5.8)	9 (2.0)	17 (3.8)		
Change in making phone calls	Decreased	28 (6.2)	75 (16.7)	56 (12.5)	30 (6.7)	32 (7.1)	12.84	.117
	Unchanged	29 (6.5)	36 (8.0)	34 (7.6)	17 (3.8)	20 (4.5)		
	Increased	12 (2.7)	19 (4.2)	25 (5.6)	20 (4.5)	15 (3.3)		
Change in reading time	Decreased	23 (5.1)	67 (15.0)	70 (15.6)	36 (8.0)	41 (9.2)	20.67	.008
	Unchanged	30 (6.7)	50 (11.2)	35 (7.8)	20 (4.5)	17 (3.8)		
	Increased	16 (3.6)	13 (2.9)	10 (2.2)	11 (2.5)	9 (2.0)		
Change in sleeping time	Decreased	29 (6.5)	79 (17.6)	85 (19.0)	45 (10.0)	48 (10.7)	24.41	.002
	Unchanged	34 (7.6)	43 (9.6)	27 (6.0)	20 (4.5)	14 (3.1)		
	Increased	6 (1.3)	8 (1.8)	3 (.7)	2 (.4)	5 (1.1)		
Change in going out with family for leisure	Decreased	21 (4.7)	40 (8.9)	42 (9.4)	20 (4.5)	36 (8.0)	15.06	.058
	Unchanged	42 (9.4)	76 (17.0)	66 (14.7)	43 (9.6)	28 (6.2)		
	Increased	6 (1.3)	14 (3.1)	7 (1.6)	4 (.9)	3 (.7)		
Change in spending time with family	Decreased	22 (4.9)	52 (11.6)	52 (11.6)	22 (4.9)	35 (7.8)	14.08	.080
	Unchanged	41 (9.2)	68 (15.2)	61 (13.6)	38 (8.5)	29 (6.5)		
	Increased	6 (1.3)	10 (2.2)	2 (.4)	7 (1.6)	3 (.7)		
Change in spending time with friends	Decreased	25 (5.6)	48 (10.7)	50 (11.2)	22 (4.9)	33 (7.4)	7.22	.514
	Unchanged	34 (7.6)	65 (14.5)	47 (10.5)	32 (7.1)	24 (5.4)		
	Increased	10 (2.2)	17 (3.8)	18 (4.0)	13 (2.9)	10 (2.2)		

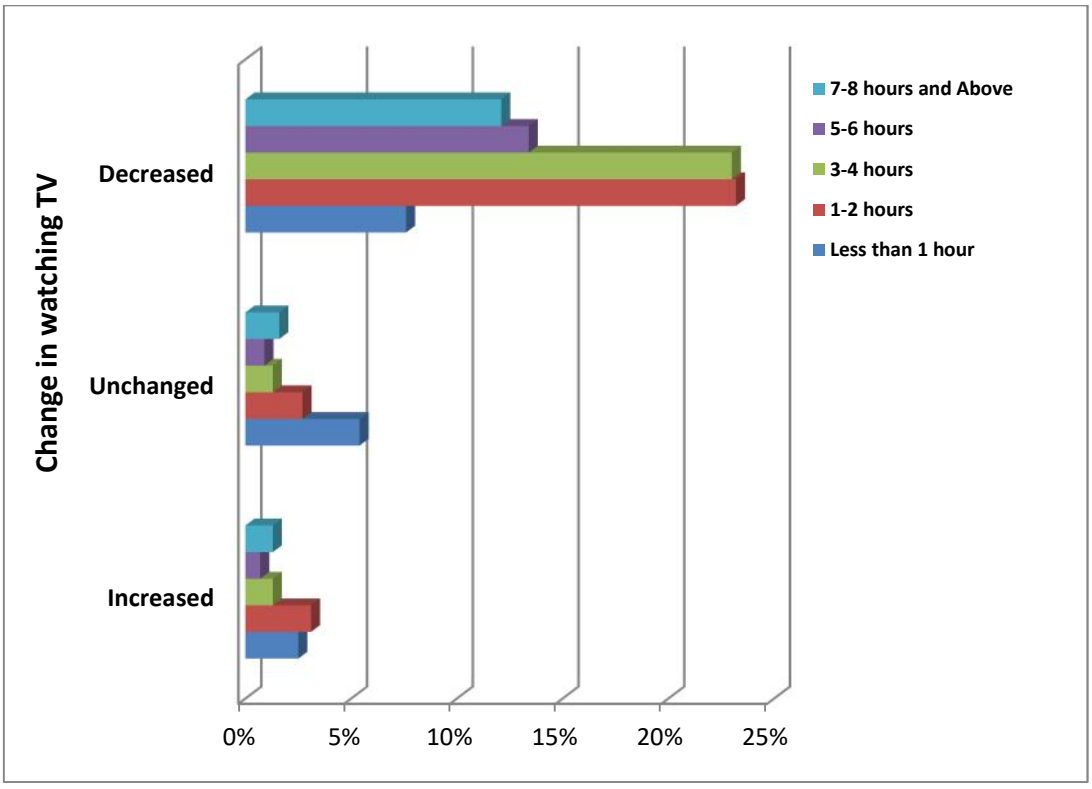
Note. Percentage in parentheses.

4.3.2.4a Relationships between watching TV and time spent on Internet

A significant relationship was found between changes in television viewing and daily time spent on the Internet (Table 32). Figure 1 further reveals that television viewing was reduced by 23.2 percent of those who spent 1-2 hours on the Internet, 23 percent of those who spent 3-4 hours, 13.4 percent of those who spent 5-6 hours, and 12.1 hours of those who spent 7-8 hours and above on the Internet. Television viewing has remained constant among the 5.4 percent of Internet users who spent less than an hour online. The results indicated that young people who had accessed the Internet for 1 to 4 hours had seen the biggest decreases in their television viewership.

Figure 1

Changes in Watching Television and Time Spent on the Internet

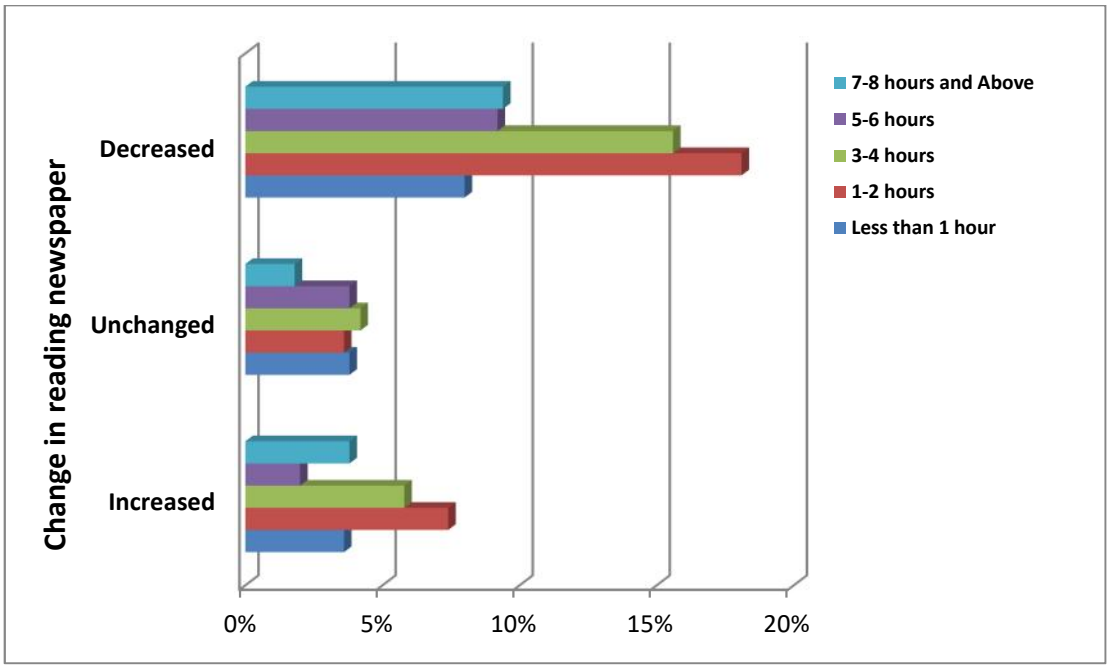


4.3.2.4b Relationships between reading newspaper and time spent on Internet

Table 32 shows that there was no statistically significant relationship between changes in newspaper reading and time spent on the Internet despite a 60.3 percent fall in overall newspaper reading. Figure 2 shows that newspapers reading was reduced 18.1 percent among those who spent 1-2 hours on the Internet and 9.4 percent among those who spent 7-8 hours or above on the Internet. Reading newspapers remained stable among 3.8 percent of respondents who spent less than 1 hour and 5-6 hours on the Internet, respectively, but it grew 7.4 percent among those who spent 1-2 hours on the Internet.

Figure 2

Changes in Reading Newspaper and Time Spent on the Internet

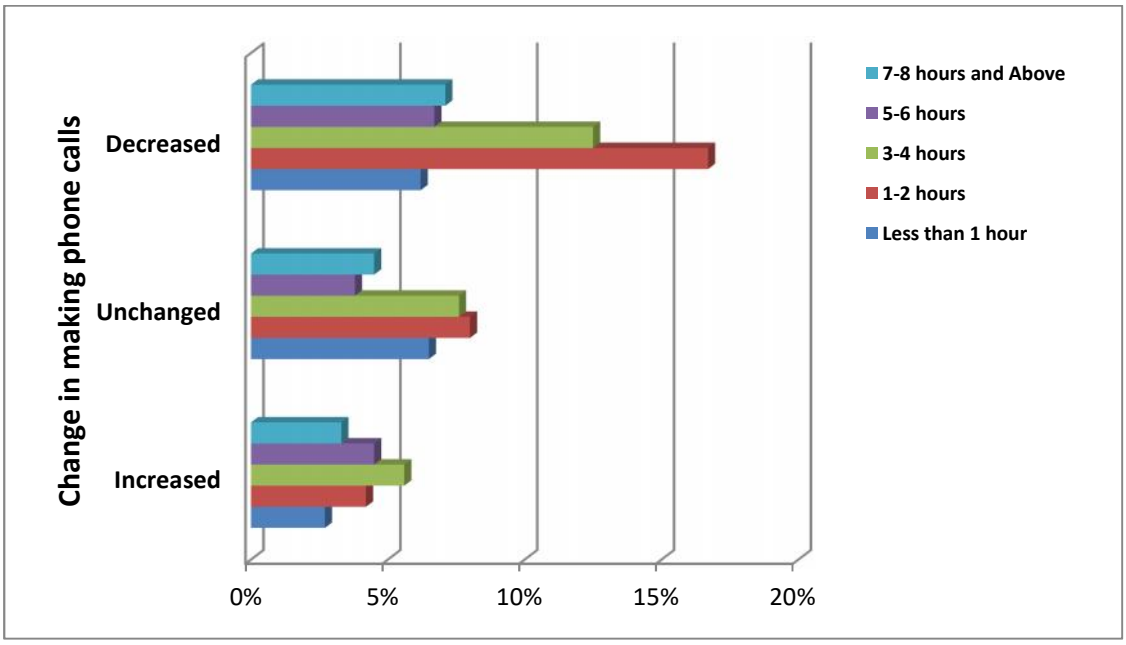


4.3.2.4c Relationships between making phone calls and time spent on Internet

Table 32 shows that there was no significant association between changes in making phone call and daily time spent on the Internet. Figure 3 shows that making phone calls decreased by 16.7 percent among those who spent 1-2 hours online. In contrast, making phone calls increased by 5.6 percent among those who spent 3-4 hours online, 4.5 percent among those who spent 5-6 hours, and 4.5 percent among those who spent 7-8 hours or more. Making phone calls remained unchanged among 6.5 percent of those who spent less than 1 hour online.

Figure 3

Changes in Making Phone Calls and Time Spent on the Internet

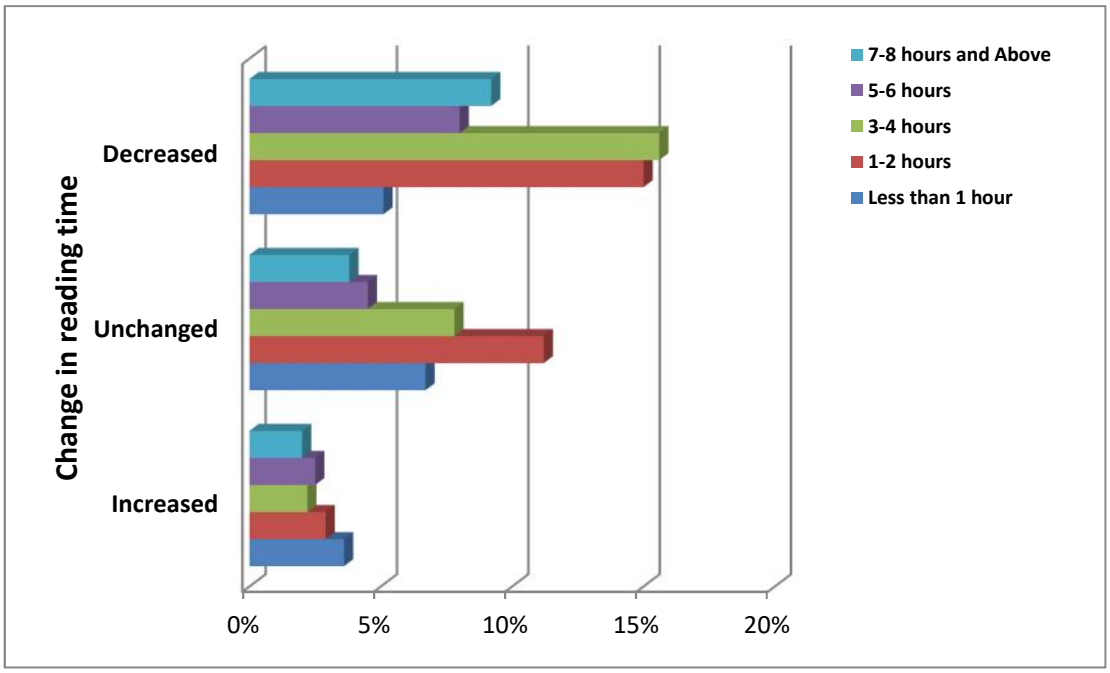


4.3.2.4d Relationships between reading time and time spent on Internet

Statistically significant associations were found between changes in reading time (academic and other purposes) and time spent on the Internet (Table 32). The greatest drop in reading time was recorded by those who spent 3-4 hours on the Internet, with a fall of 15.6 percent, and 9.2 percent by those who spent 7-8 hours or more on the Internet. Reading time was constant among 11.2 percent of those who spent 1-2 hours and 6.7 percent who spent less than an hour (Figure 4).

Figure 4

Changes in Reading Time and Time Spent on the Internet

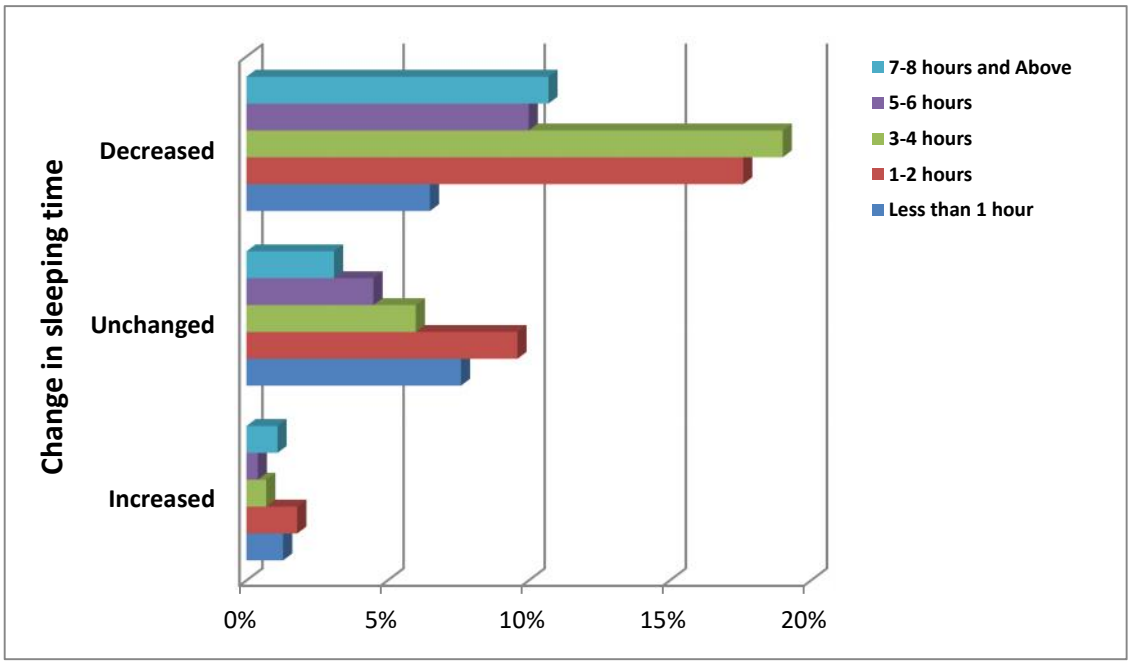


4.3.2.4e Relationships between sleeping time and time spent on Internet

There is a significant relationship between changes in sleeping time and time spent on the Internet (Table 32). Sleeping time reduced by 19 percent among those who spent 3-4 hours per day on the Internet, 10.7 percent among those who spent 7-8 hours or more per day, and 10 percent among those who spent 5-6 hours per day. Sleeping time remained constant among 9.6 percent of those who spent 1-2 hours on the Internet and 7.6 percent of those who spent less than 1 hour on the Internet (Figure 5).

Figure 5

Changes in Sleeping Time and Time Spent on the Internet

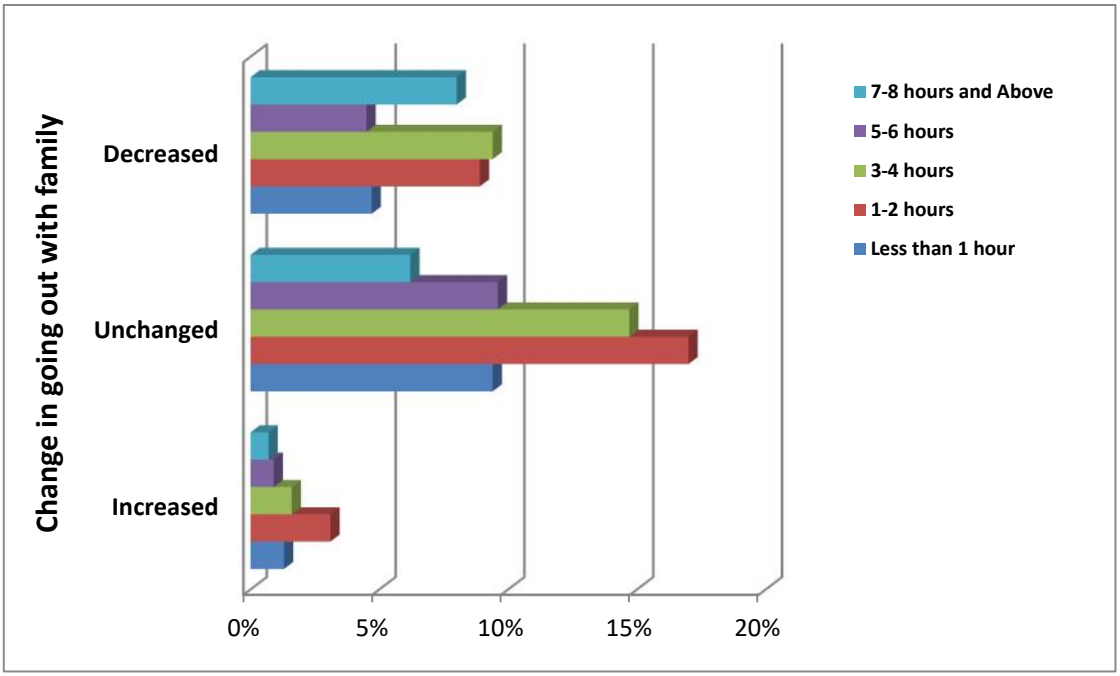


4.3.2.4f Relationships between going out with family and time spent on Internet

No significant relation was found between changes in family outings and time spent on the Internet (Table 32). Figure 6 shows that going out with family members fell by 9.4% among those who spent 3-4 hours online and by 8% among those who spent 7-8 hours online. On the other hand, 17 percent of those who spent 1-2 hours online, 14.7 percent of those who spent 3-4 hours online, and 9.6 percent of those who spent 5-6 hours online said they went out with their families as before beginning Internet use.

Figure 6

Changes in Going Out with Family and Time Spent on the Internet

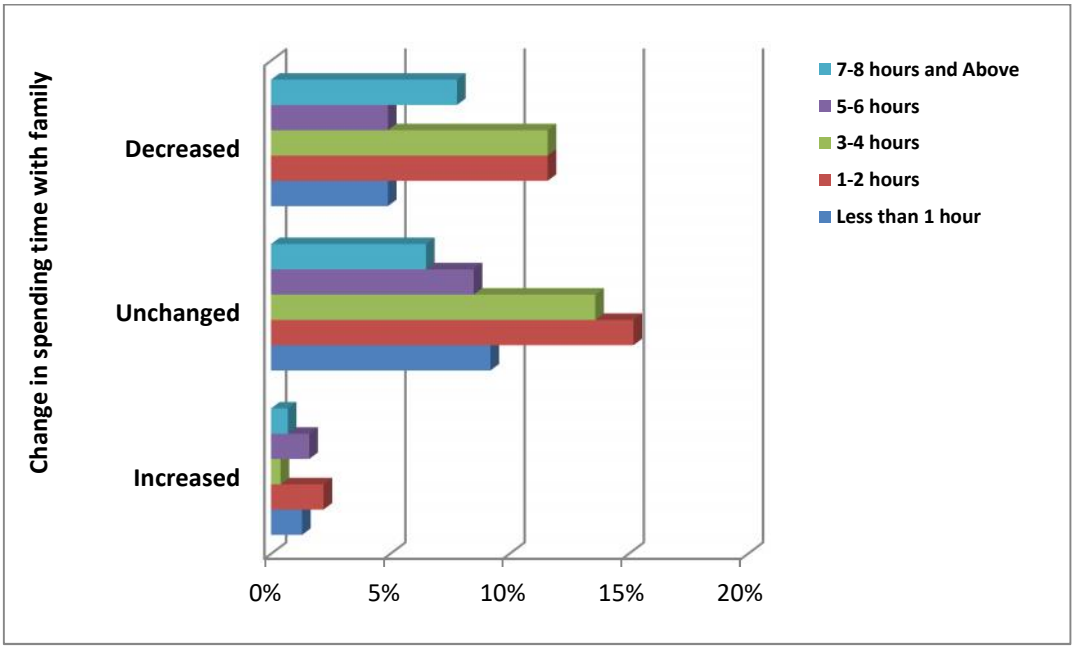


4.3.2.4g Relationships between spending time with family and time spent on Internet

There is no relationship between changes in spending time with family and time spent on the Internet as shown in Table 32. Figure 7 indicates that spending time with family reduced by 11.6 percent for those who spent 1-2 hours on the Internet and 3-4 hours on the Internet, and 7.8 percent for those who spent 7-8 hours or more on the Internet. Spending time with family, on the other hand, remained unchanged among 15.2 percent of those who spent 1-2 hours on the Internet, 13.6 percent of those who spent 3-4 hours daily on the Internet, 9.2 percent of those who spent less than 1 hour on the Internet, and 8.5 percent of those who spent 5-6 hours online.

Figure 7

Changes in Spending Time with Family and Time Spent on the Internet

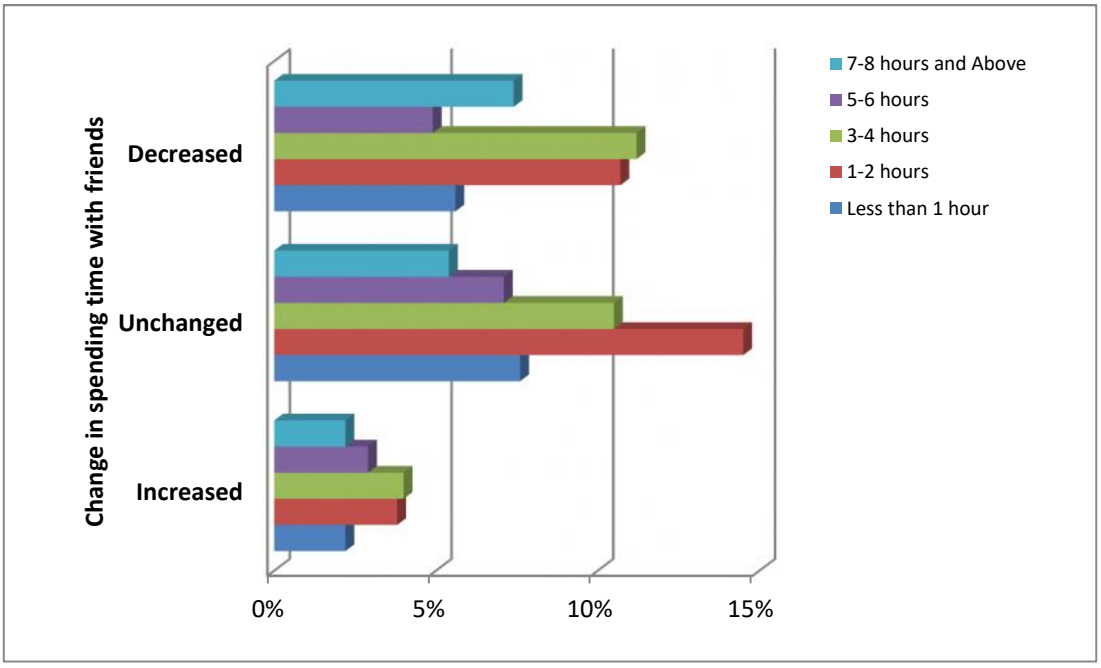


4.3.2.4h Relationships between spending time with friends and time spent on Internet

There is no relationship between changes in spending time with friends and time spent on the Internet (Table 32). Spending time with friends fell by 11.2 percent among those who spent 3-4 hours on the Internet and 7.4 percent among those who spent 7-8 hours or more. Spending time with friends, on the other hand, remained stable for 14.5 percent of those who spent 1-2 hours on the Internet, 7.6 percent of those who spent less than 1 hour, and 7.1 percent of those who spent 5-6 hours online (Figure 8).

Figure 8

Changes in Spending Time with Friends and Time Spent on the Internet



The aforesaid findings demonstrated that, among the eight activities investigated, watching television, reading time (both academic and recreational), and sleeping time have all decreased, and the reductions were statistically significant.

4.3.2.5 Youths' offline and online communication patterns with family and friends (F&F)

The Internet has a significant influence on young people's attitudes toward offline and online communication with family and friends. A series of multiple-choice questions were used to investigate the young people's communication patterns with their family members, friends, and peers. The participants were asked to select all possible means of communication with their family and friends with the options: (i) you visit them, (ii) they visit you, (iii) you call them, (iv) you email them, (v) you text them, (vi) you make video calls, and (vi) you send instant messages through social networking sites (SNS).

According to table 33, the highest percentage of youths (90.2%) had communicated with their family members, friends and peers over the phone, while 55.8 percent exchanged SMS (Short Message Service) via mobile phone for this purpose. Approximately three-fourths (73.2 percent) of respondents communicated via instant message through the use of SNS, while 58.7 percent made video calls using these platforms. Email was the least used online communication channel, with only 12.1 percent of respondents using the online system. Offline communication also had a significant share, with 58.7 percent of respondents visiting their family and friends in person and 47.1 percent saying their family and friends visit them even after online communication.

Table 33

Frequency of Patterns of Communication with F&F

Modes of communication	Frequency	Percent
You visit them	263	58.7
They visit you	211	47.1
Contact over phone	404	90.2
Text message (SMS)	250	55.8
Email	54	12.1

Video call	263	58.7
Instant message through SNS	328	73.2
Total	1773	395

Note. Total frequency and percent exceeds due to multiple response

4.3.2.5a Relationship between gender and patterns of communication with F&F

The Chi-square test was conducted to investigate the association between respondents' gender and modes of communication with their family and friends (Table 34).

A significant association was found between respondents gender and visit (you visit them) to their family and friends (χ^2 (1, 4488) = 8.85, p = .003). The results revealed that more males (male 32.8% vs. female 25.9%) visited their family and friends compared to female.

Reversely, no significant relationships were found between respondents gender and visit (they visit you) by their family and friend χ^2 (1, 448) = 0.22, p = .636. Out of 47.1 percent respondents, 23 percent male and 24.1 percent female respondents reported that their family and friends had visited them (they visit you).

Contact over the phone was the most popular communication means with 90.2% (46.0% male and 44.2% female) using the device for keeping touch with family and friends. There was no difference between male and female as chi-square test results showed χ^2 (1, 448) = 1.61, p = .204.

Table 34

Chi-Square Analysis of Patterns of Communication with F&F by Gender

Means of communication		Gender		X^2	P
		Male	Female		
You visit them	Yes	147 (32.8)	116 (25.9)	8.85	.003
	No	77 (17.2)	108 (24.1)		

They visit you	Yes	103 (23.0)	108 (24.1)	0.22	.636
	No	121 (27.0)	116 (25.9)		
Contact them over phone	Yes	206 (46.0)	198 (44.2)	1.61	.204
	No	18 (4.0)	26 (5.8)		
Email them	Yes	37 (8.3)	17 (3.8)	8.42	.004
	No	187 (41.7)	207 (46.2)		
Text Messaging (SMS)	Yes	133 (29.7)	117 (26.1)	2.32	.128
	No	91 (20.3)	107 (23.9)		
Make video call	Yes	148 (33.0)	115 (25.7)	10.03	.002
	No	76 (17.0)	109 (24.3)		
Instant message through SNS	Yes	180 (40.2)	148 (33.0)	11.66	.001
	No	44 (9.8)	76 (17.0)		

Note.Percentage in parentheses.

Email was the least popular communication means of family and friends with only 12.1% (8.3% male and 3.8% female) use the communication system. Chi-square test result found a significant association between gender and email use with male were more likely used email to contact with their family and friends than female χ^2 (1, 448) = 8.42, p = .004.

Text messaging or SMS was used by 55.8% (29.7% male and 26.1% female) respondents for communicating with their family and friends. However, Chi-square test result for the association between text messaging and gender was not significant χ^2 (1, 448) = 2.32, p = .128.

Online video call is now a day's popular communication system using various SNS platforms. A good number of respondents, 58.7% (33.0% male and 25.7% female) use this communication means to contact their family and friends. Chi-square results showed significant differences between male and female with male dominating in making video calls χ^2 (1, 448) = 10.03, p = .002.

Instant message through social media was used by 73.2% (40.2% male and 33.0% female) for contacting with family and friends. Chi-square test results showed

significant gender difference with male had used more instant message than female χ^2 (1, 448) = 11.66, p = .001.

4.3.2.5b Relationship between age and patterns of communication with F&F

The Chi-square test was conducted to investigate the association between respondents' age and modes of communication with their family and friends (Table 35).

Results showed that both younger groups of 15-19 years and older group of 30-35 years paid more visit to their family and friends compared to 20-24 years and 25-29 years age groups. But the differences between age and paying visit (you visit them) was not statistically significant (χ^2 (3, 448) = 5.63, p = .131.

In both the 15-19 year and 30-35 year age groups, family and friends visited them (they visited you) the most, while in the 20-24 year and 25-29 year age groups, it was less. The difference was statistically significant χ^2 (3, 448) = 8.67, p = .034, implying that there was an association between age and paying visits (they visit you) by family and friends.

Contact with family and friends over phone were more frequent among the older age group of 30-35 years compared to the younger age groups. However, the association was not statistically significant χ^2 (3, 448) = 3.57, p = .312).

Table 35

Chi-Square Analysis of Patetrns of Communication with F&F by Age

Means of communication		Age				X^2	P
		15-19 years	20-24 years	25-29 years	30-35 years		
You visit them	Yes	81 (18.1)	69 (15.4)	68 (15.2)	45 (10.0)	5.63	.131
	No	52 (11.6)	59 (13.2)	55 (12.3)	19 (4.2)		
They visit you	Yes	67 (15.0)	56 (12.5)	49 (10.9)	39 (8.7)	8.67	.034
	No	66 (14.7)	72 (16.1)	74 (16.5)	25 (5.6)		

Contact them over phone	Yes	122 (27.2)	113 (25.2)	108 (24.1)	61 (13.6)	3.57	.312
	No	11 (2.5)	15 (3.3)	15 (3.3)	3 (.7)		
Email them	Yes	11 (2.5)	14 (3.1)	19 (4.2)	10 (2.2)	4.05	.256
	No	122 (27.2)	114 (25.4)	104 (23.2)	54 (12.1)		
Text message (SMS)	Yes	82 (18.3)	71 (15.8)	63 (14.1)	34 (7.6)	3.09	.379
	No	51 (11.4)	57 (12.7)	60 (13.4)	30 (6.7)		
Make video call	Yes	75 (16.7)	64 (14.3)	79 (17.6)	45 (10.0)	9.40	.024
	No	58 (12.9)	64 (14.3)	44 (9.8)	19 (4.2)		
Instant message through SNS	Yes	96 (21.4)	94 (21.0)	93 (20.8)	45 (10.0)	0.71	..871
	No	37 (8.3)	34 (7.6)	30 (6.7)	19 (4.2)		

Note. Percentage in parentheses.

Older age group of 25-29 years and 30-35 years used to email more for communicating with their family and friends compare to the younger age groups, but not significant χ^2 (3, 448) = 4.05, p = .256). As such, no statistically significant difference among the age groups relating to use of email for contacting their family and friends and also email usage for this purpose was negligible by all the respondents.

Younger age group of 15-19 years text messaged more compared to their older counterparts for communicating family and friends. But the difference between age and text messages was not significant χ^2 (3, 448) = 3.09, p = .379.

Older age groups of youths 25-29 years and 30-35 years made more video calls for contacting with their family and friends compared to the younger age groups of 15-19 years and 20-24 years. A significant relationship was found between age and making video calls χ^2 (3, 448) = 9.40, p = .024.

All age groups use instant messaging via SNS to communicate with family and friends almost equally. As a result, no relationship was observed between age and use of instant messaging χ^2 (3, 448) =.71, p = .871.

4.3.2.6 Youths' apprehension towards Internet use

Apprehension towards Internet use has an impact on Internet attitude. The participants' level of apprehension about the Internet use was measured on a five-point likert scale: 5 = very high, 4 = high, 3 = neither, 2 = low, 1 = very low. Mean, rank order and median used to find out the trend of apprehension level of the Internet users (Table 36).

Table 36

Mean, Rank Order and Median of Issues Related to Internet Apprehension

Issues of apprehension	Mean	Rank order	Median
Hacking	4.04	1	4
Password stealing	3.88	2	4
Privacy of personal information	3.79	3	4
Security of email or SNS account	3.77	4	4
Virus attack	3.69	5	4
Content stealing	3.62	6	4

Note. 5 = very high, 4 = high, 3 = neither, 2 = low, 1 = very low

The mean scores showed that hacking (M = 4.04) ranked at the top of the apprehension list of Internet users. Password theft was the second most feared by respondents (M = 3.88). Disclosure of personal information (M = 3.79) ranked third in the apprehension list of the respondents. Email and social networking account security ranked fourth in Internet apprehension (M = 3.77). Fear of a virus attack (M = 3.69) ranked fifth. According to the data, content theft (M = 3.62) ranked last among Internet apprehension issues.

The median score for all six apprehension issues was 4, suggesting a 'high' level of apprehension. This indicated that there was a great deal of concern among younger Internet users.

4.3.2.6a Relationship between gender and apprehension about Internet use

Table 37 shows that almost an equal percentage of males and females (36.4% versus 36.2%) were found to be highly apprehended regarding the security of their email and SNS accounts. Hence, no relationships were found between gender and security of email and SNS accounts χ^2 (2, 448) = .10, p = .951. A significant relationship was found between gender and apprehension about privacy of personal information χ^2 (2, 448) = 7.51, p = .023. Females were likely more highly concerned about the privacy of their personal information compared to males (33.3% male versus 37.7% females). Regarding apprehension about virus attack, there were no significant differences between male and female χ^2 (2, 448) = .03, p = .985. Exactly 34.2 percent of both males and females had higher apprehension of virus attack. No significant relationship was found between apprehensions of content theft and gender χ^2 (2, 448) = .95, p = .623.

Table 37

Chi-Square Analysis of Apprehension about Internet Use and Gender

Issues of Apprehension	Level of Apprehension	Gender		X^2	P
		Male	Female		
Security of email or social media	Low	23 (5.1)	25 (5.6)	0.10	.951
	Neither	38 (8.5)	37 (8.3)		
	High	163 (36.4)	162 (36.2)		
Privacy of personal information	Low	42 (9.4)	22 (4.9)	7.51	.023
	Neither	33 (7.4)	33 (7.4)		
	High	149 (33.3)	169 (37.7)		
Virus attacks	Low	43 (9.6)	44 (9.8)	0.03	.985
	Neither	28 (6.2)	27 (6.0)		
	High	153 (34.2)	153 (34.2)		
Content Theft	Low	40 (8.9)	48 (10.7)	0.95	.623
	Neither	35 (7.8)	32 (7.1)		
	High	149 (33.3)	144 (32.1)		
Password Theft	Low	51 (11.4)	27 (6.0)	12.90	.002
	Neither	32 (7.1)	22 (4.9)		
	High	141 (31.5)	175 (39.1)		
Hacking	Low	37 (8.3)	24 (5.4)	5.51	.064
	Neither	26 (5.8)	18 (4.0)		

	High	161 (35.9)	182 (40.6)

Note.Percentage in parentheses.

Result shows that almost an equal percentage of males and females (36.4% versus 36.2%) were found to be highly apprehended regarding the security of their email and SNS accounts. Hence, no relationships were found between gender and security of email and SNS accounts χ^2 (2, 448) = .10, p = .951. A significant relationship was found between gender and apprehension about privacy of personal information χ^2 (2, 448) = 7.51, p = .023. Females were likely more highly concerned about the privacy of their personal information compared to males (33.3% male versus 37.7% females). Regarding apprehension about virus attack, there were no significant differences between male and female χ^2 (2, 448) = .03, p = .985. Exactly 34.2 percent of both males and females had higher apprehension of virus attack. No significant relationship was found between apprehensions of content theft and gender χ^2 (2, 448) = .95, p = .623. Almost an equal percentage of males and females (33.3% versus 32.1%) were found to be highly apprehended about the theft of their web content. A significant correlation was found between gender and apprehension about password theft χ^2 (2, 448) = 12.90, p = .002. More females (39.1%) were highly concerned compared to males (31.5%) about their password being stolen by others. Though both males and females had higher levels of apprehension about hacking online, the difference was not statistically significant χ^2 (2, 448) = 5.51, p = .064. More females (40.6%) were likely to be apprehended for hacking online compared to males (35.9%). The result indicated that female had higher apprehension about privacy of personal information and theft of password compared to male Internet users.

4.3.2.6b Relationship between the age and apprehension about Internet use

Results from Table 38 shows that there was no significanr relationship between age and apprehension about the security of email and SNS accounts χ^2 (6, 448) = 6.15, p = .407, privacy of personal information χ^2 (6, 448) = 3.25, p = .777, virus attack χ^2 (6, 448) = 11.55, p = .073), and hacking χ^2 (6, 448) = 10.85, p = .093.

A significant relationship was found between age and apprehension about theft of content χ^2 (6, 448) = 13.01, p = .043), suggesting that apprehension differed with the variation of age. Those of the older age group of 25-29 years and 30-35 years were found to have high apprehension compared to those of the younger age group of 15-19 years, who had lower apprehension.

Table 38

Chi-Square Analysis for Apprehension about Internet Use and Age

Issues of Apprehension	Level of Apprehension	Age				X^2	p
		15-19 years	20-24 years	25-29 years	30-35 years		
Security of mail or social media	Low	18 (4.0)	15 (3.3)	10 (2.2)	5 (1.1)	6.15	.407
	Neither	22 (4.9)	27 (6.0)	17 (3.8)	9 (2.0)		
	High	93 (20.8)	86 (19.2)	96 (21.4)	50 (11.2)		
Privacy of personal information	Low	23 (5.1)	15 (3.3)	16 (3.6)	10 (2.2)	3.25	.777
	Neither	20 (4.5)	18 (4.0)	21 (4.7)	7 (1.6)		
	High	90 (20.1)	95 (21.2)	86 (19.2)	47 (10.5)		
Virus attacks	Low	35 (7.8)	23 (5.1)	19 (4.2)	10 (2.2)	11.55	.073
	Neither	14 (3.1)	22 (4.9)	15 (3.3)	4 (.9)		
	High	84 (18.8)	83 (18.5)	89 (19.9)	50 (11.2)		
Content Theft	Low	37 (8.3)	24 (5.4)	16 (3.6)	11 (2.5)	13.01	.043
	Neither	20 (4.5)	20 (4.5)	22 (4.9)	5 (1.1)		
	High	76 (17.0)	84 (18.8)	85 (19.0)	48 (10.7)		
Password Theft	Low	31 (6.9)	17 (3.8)	16 (3.6)	14 (3.1)	14.68	.023
	Neither	18 (4.0)	22 (4.9)	10 (2.2)	4 (.9)		
	High	84 (18.8)	89 (19.9)	97 (21.7)	46 (10.3)		
Hacking	Low	25 (5.6)	15 (3.3)	10 (2.2)	11 (2.5)	10.85	.093
	Neither	14 (3.1)	15 (3.3)	13 (2.9)	2 (.4)		

	High	94 (21.0)	98 (21.9)	100 (22.3)	51 (11.4)

*Note.*Percentage in parentheses.

A significant association was found between age and apprehension about theft of passwords χ^2 (6, 448) = 14.68, p = .023), indicating that apprehension about theft of passwords varied according to age. The older age group of 25-29 years and 30-35 years had higher apprehension, and the younger age group of 15-19 had lower apprehension.

The result shows that in general, older age groups had higher apprehension about all the issues surrounding Internet use, while younger age groups, particularly the age group of 15-19 years, had lower apprehension. This finding specifically suggested that younger people of 15-19 years had low apprehension about theft of content, and passwords compared to the older age groups of 25-29 years and 30-35 years, who had higher apprehension.

4.3.2.7 Youths' anonymous Internet use

The participants' anonymous Internet use was examined because this type of Internet use has a substantial impact on users. Table 39 shows that more than a fifth (20.1 percent) of those responded to the survey said they used the Internet anonymously, while the remaining 79.9 percent said they didn't (Table 39).

Table 39

Frequency Distribution of Anonymous Internet Use of Youths

Anonymous Internet Use	Frequency	Percentage
Yes	90	20.1
No	358	79.9
Total	448	100

4.3.2.7a Relationship between anonymous Internet use and gender

Gender was found to have significant correlations with anonymous Internet use. Males were more likely to be used anonymously than females χ^2 (1, 448) = 10.90, p = .001. Males made up 13.2 percent of the 20.1 percent anonymous users, while females made up 6.9 percent (Table 40).

Table 40

Chi-Square Analysis for Anonymous Internet Use by Gender

Variable		Gender		X^2	P
		Male	Female		
Anonymous Internet use	Yes	59 (13.2)	31 (6.9)	10.901	.001
	No	165 (36.8)	193 (43.1)		

Note. Percentage in parentheses.

4.3.2.7b Relationship between anonymous Internet use and age

Youths of junior age group used the Internet anonymously more than their seniors χ^2 (3, 448) = 10.92, p = .012, suggesting a statistically significant relationship between age and anonymous Internet use. There were 7.8 percent of 15-19 year olds and 6.9 percent of 20-24 year olds who were anonymous Internet users, compared to 3.8 percent of 25-29 year olds and 1.6 percent of 30-35 year olds (Table 41).

Table 41

Chi-Square Analysis for Anonymous Internet Use by Age

Variable		Age				X^2	P
		15-19 years	20-24 years	25-29 years	30-35 years		
Anonymous Internet use	Yes	35 (7.8)	31 (6.9)	17 (3.8)	7 (1.6)	10.921	.012
	No	98 (21.9)	97 (21.7)	106 (23.7)	57 (12.7)		

Note. Percentage in parentheses.

4.3.2.7c Relationship between anonymous Internet use and CIU

Chi-square results showed that there was a significant relationship between anonymous Internet use and CIU categories χ^2 (1, 448) = 13.59, p = .001, with 8.3 percent of the compulsive users usage Internet anonymously compared to 11.8 percent non-compulsive Internet users (Table 42).

Table 42

Chi-Square Analysis for Anonymous Internet Use by CIU Categories

Variable		CIU Categories		X^2	P
		Non-compulsive user	Compulsive user		
Anonymous Internet use	Yes	53 (11.8)	37 (8.3)	13.59	.001
	No	279 (62.3)	79 (17.6)		

Note. Percentage in parentheses.

4.3.3 RQ 3: What are the attitudes of young people toward the use of Internet?

This research question was aimed at measuring the respondents' attitudes towards Internet use based on a 26-item Internet Attitude Scale (IAS). The mean scores of the Internet attitude scale were compared with the respondents' demographic and Internet use variables to examine the influences of these variables on attitudes toward Internet use.

4.3.3.1 Application of IAS

Participants were asked to rate each statement on a five-point Likert scale, where 5= strongly agree, 4= agree, 3= neutral, 2= disagree, and 1= strongly disagree. To compare respondents' perceptions of Internet use, the average mean and standard deviation of all 26 questionnaire items were calculated, and afterwards the average mean and standard deviation of all the items were summed up. A greater mean score for an individual item implies agreement with the statement, whereas a lower mean score shows

disagreement. On a five-point scale, a mean score of 4.21-5.00 indicates strongly agree, 3.41-4.20 agree, 2.61-3.40 neutral, 1.81-2.60 disagree, and 1.00-1.80 strongly disagree (Birisci et al., 2009).

From Table 43, it was observed that items 1, 8, 4, 20, and 22 secured the highest mean scores, ranging from 4.45 to 4.27, which fell under strongly agree. With a score of 4.45, the statement *Internet is an important tool for academic study* posited that young people had more positive thoughts about the academic use of the Internet. Communication is one of the best utilities of the Internet, which was reflected through the statement *Internet helps keep communication with other people* with a score of 4.45. The Internet's usefulness was strongly reflected, with the Internet makes life easier scoring 4.38. Youths had a very positive perception of the Internet's contribution to information and knowledge gathering that was reflected through the following items: *Internet is an efficient means of finding information* scoring 4.31 and *Internet is an easy source for acquiring knowledge* with a score of 4.27. Youths strongly agreed and agreed with these statements, showing the Internet's usefulness.

Sixteen items, 5, 26, 9, 3, 13, 6, 21, 7, 2, 12, 15, 23, 14, 18, 10 and 16 fell in the range of mean score 3.41-4.20, suggesting agreement with the statements. These statements expressed the affection, feelings as well as concerns of the youths that truly reflected their attitudinal perceptions towards Internet. *Internet creates opportunities to introduce new people* scored 4.20 showed positive feelings. *Internet creates some sort of addiction* scored 4.13 and *Internet is a means of passing idle time* scored 4.11suggsted that youths were highly concerned about the negative implications of Internet. *Internet is helpful for job opportunities* with a score of 4.11showed a positive perception. *Internet decreases physical activity like exercises and sports* scored 3.98 again a concerned with positive agreement. *Internet is an easy means of exhibiting*

oneself to other people with a score of 3.96, *Internet does not make me feel lonely* scored 3.77 and *Internet is effective for efficient use of time* with a score 3.75 showed a positive feeling about Internet. *Internet is an effective means of conducting research* with score 3.75 suggested that the participants aware about the Internet utility but a portion of them disagreed. *Internet decreases face-to-face contact with family and friends* with a score of 3.68 reflected most agreement with concerns. *Internet makes it difficult to find accurate information in the midst of sea of irrelevant and unverified data* with score of 3.64 was a big concern relating to control and experience of the media. This statement supported the subsequent item *Internet use is confusing because it is a mine of information* scored 3.54. *Internet intensifies social relations* with a score of 3.58, *Internet influenced me to adopt alien culture* scored 3.50, *Internet helps escape unpleasant things* 3.49 and *Internet provides a huge amount of immoral material* score 3.48 showed agree with the statements lower level.

Items 11, 17, 19, 24 and 25 are under the range of mean scores of 2.61-3.40 which indicated neutral perceptions of the respondents about Internet use with low agreement and less confident. *Internet is an excellent means of communication to avoid face-to-face contact with a score of 3.38, Internet gives me unlimited freedom score 3.24, Internet helps with innovative works score 3.20 and Internet creates a cultural dilemma which scored 3.14 showed a little agreement but low confidence.* All these statements got a comparatively low score, suggesting mixed perceptions about Internet usage, although most of the participants had a tendency to agree with the statements. *The statement that Internet-based relationships are trustworthy* with a score of 2.66 was the only statement that most of the respondents disagreed with, and almost the same percentage had different opinions.

Table 43

Mean, Standard Deviation and Rank Order of Internet Attitude Scale

Item No.	Items	Mean	Std. Dev.	Rank order
8	Internet helps keep communication with other people	4.45	0.83	1
1	Internet is an important tool for academic study	4.45	0.85	2
4	Internet makes life easier	4.38	0.92	3
20	Internet is an efficient means of finding information	4.31	0.77	4
22	Internet is an easy source for acquiring knowledge	4.27	0.81	5
5	Internet creates opportunities to introduce new people	4.20	0.88	6
26	Internet creates some sort of addiction	4.13	1.01	7
9	Internet is a means of passing idle time	4.11	1.06	8
3	Internet is helpful for job opportunities	4.11	1.27	9
13	Internet decreases physical activity like exercises and sports	3.98	0.94	10
6	Internet is an easy means of exhibiting oneself to other people	3.96	1.01	11
21	Internet does not make me feel lonely	3.77	1.09	12
7	Internet is effective for efficient use of time	3.75	1.16	13
2	Internet is an effective means of conducting research	3.75	1.45	14
12	Internet decreases face-to-face contact with family and friends	3.68	1.12	15
15	Internet makes it difficult to find accurate information in the midst of sea of irrelevant and unverified data	3.64	1.16	16
23	Internet intensifies social relations	3.58	1.22	17
14	Internet use is confusing because it is a mine of information	3.54	1.21	18
18	Internet influenced me to adopt alien culture	3.50	1.12	19
10	Internet helps escape unpleasant things	3.49	1.33	20
16	Internet provides a huge amount of immoral material	3.48	1.29	21
11	Internet is an excellent means of communication to avoid face-to-face contact	3.38	1.36	22
24	Internet gives me unlimited freedom	3.24	1.31	23
25	Internet helps with innovative works	3.20	1.30	24
19	Internet creates a cultural dilemma	3.14	1.26	25
17	Internet-based relationships are trustworthy	2.66	1.13	26
	Total	3.78	1.11	-

According to Table 43, the overall attitudes toward the Internet was 3.78, with a standard deviation of 1.11, indicating that the study participants agreed with statements expressing positive attitudes toward the Internet. The mean ranking score showed that item 8 ‘Internet helps keep communication with other people’ got the highest mean

score of 4.45 while item 17 ‘Internet-based relationships are trustworthy’ secured the lowest mean score of 2.66, predicting realistic attitudes towards Internet use.

4.3.3.2 Influences of Internet use on Internet attitudes

One of the primary objectives of this study is to determine how respondents' Internet attitudes are related to their demographic and Internet use characteristics, or how these characteristics influence their attitudes toward Internet use. This section examines the influence of gender, marital status, age, educational level, occupation, family income, residential status, Internet use frequency, experience of Internet use, duration of Internet use, and SNS use on Internet attitudes. The respondents' Internet attitudes were compared to the aforementioned characteristics. For parametric tests, required assumptions were examined and determined to be admissible for testing.

4.3.3.2a T-tests for determining influences of participants’ demographic characteristics on Internet attitudes

Independent sample T-tests were used to assess the impact of participants' gender, marital status, and residential status on their Internet use attitudes. Table (44) shows that gender had a significant impact on the participants’ attitude towards Internet use, whereas marital status and residence had no impact on Internet attitudes.

Table 44

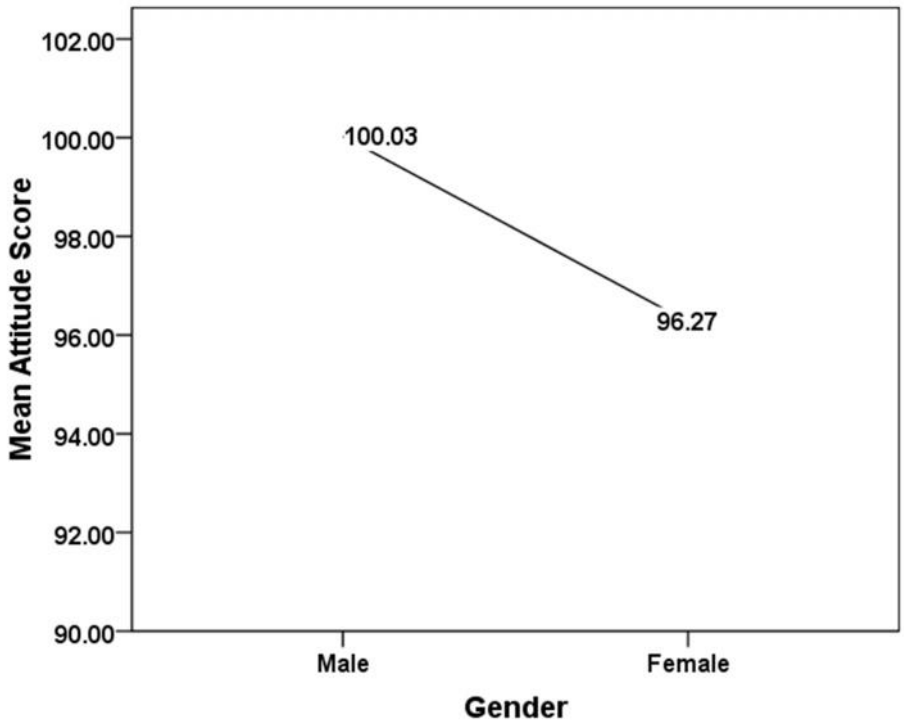
Bivariate Analysis of Internet Use Attitudes by Gender, Marital Status, and Residential Status

Variables	N	M	SD	t	p
a) Gender					
Male	224	100.03	8.79	4.51	.001
Female	224	96.27	8.87		
b) Marital status					
Unmarried	364	98.44	8.90	1.43	.154
Married	84	96.88	9.46		
c) Residential status					
With family	324	97.98	9.14	-0.64	.522
Without family	124	98.59	8.71		

Mean difference by gender: Figure 9 shows that T-test for gender was statistically significant t(446) = 4.51, p = .001, with males having a higher mean Internet attitude score (M = 100.03, SD = 8.79) than females (M = 96.27, SD = 8.87).

Figure 9

Differences of Mean Internet Attitude Scores by Gender



Mean difference by marital status: Marital status had no influence on attitude as the mean score of unmarried (M = 98.44, SD = 8.90) and married (M = 96.88, SD = 9.46) was not statistically significant, t(446) = 1.43, p = 0.15.

Mean difference by residential status: Residential status also had no significant impact on Internet attitude as who reside th family (M = 97.98, SD = 9.14) and who reside outside family (M = 98.59, SD = 8.71) had no statistically significant different mean scores t(446) = -0.64, p = .522.

4.3.3.2b ANOVA for determining influences on participants' demographic and Internet use related characteristics on Internet attitudes

The effect of age, education, occupation, family income, frequency of Internet use, experience of Internet use, duration of Internet use, expense of Internet use, and frequency of SNS use on Internet attitude score was investigated using one-way ANOVA. The mean scores of more than two groups of one continuous variable are compared using this statistical method.

Non significant differences in mean attitude scores: The analysis (Table 45) found no significant differences in the mean scores of Internet attitudes relating to age [F (3,444) = 1.417, p = 0.237], education level [F (2, 445) = 0.277, p = 0.758], profession [F (2, 445) = 1.747, p = 0.175], monthly family income [F (4, 443) = 1.391, p = 0.236] and experience of Internet use [F (4, 443) = 0.578, p = 0.679]. Hence, these variables have no impact on participants Internet attitude.

Table 45

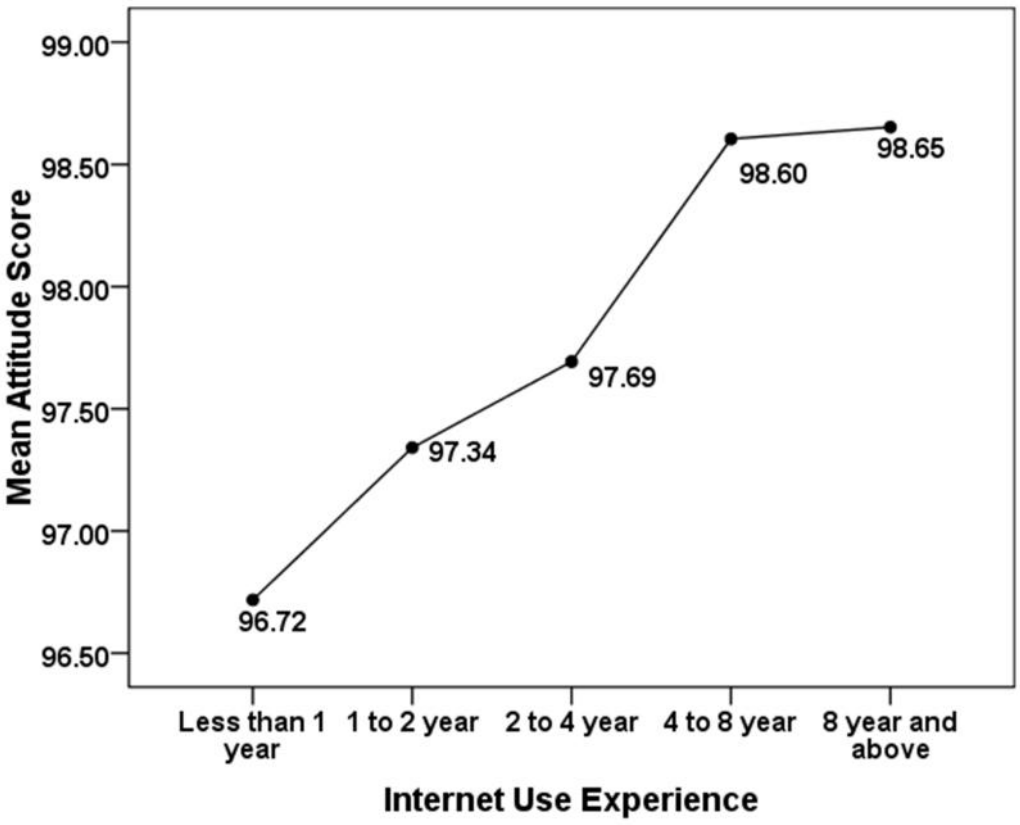
ANOVA Results for Age, Education, Profession, Family Income and Experience of Internet Use Comparing Internet Attitude Scores

Variables	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	344.656	3	114.885	1.42	.237
	Within Groups	36005.621	444	81.094		
	Total	36350.277	447			
Education	Between Groups	45.213	2	22.607	0.28	.758
	Within Groups	36305.063	445	81.584		
	Total	36350.277	447			
Profession	Between Groups	283.190	2	141.595	1.75	.175
	Within Groups	36067.087	445	81.050		
	Total	36350.277	447			
Monthly Family Income	Between Groups	319.005	3	106.335	1.31	.270
	Within Groups	36031.272	444	81.152		
	Total	36350.277	447			
Experience of Internet Use	Between Groups	188.724	4	47.181	.58	.679
	Within Groups	36161.553	443	81.629		
	Total	36350.277	447			

Experience of Internet Use: Though experience of Internet use was not statistically significant [F (4, 443) = 0.58, p = 0.679], the means plot shows that the more the year of experience the higher the mean score of attitudes of the participants. Figure 10 and Table 46 shows that those who used Internet 8 years and above had the higher Internet attitude scores (M = 98.65, SD = 7.80) followed by 4 to 8 years (M = 98.60, SD = 9.34), 2 to 4 years (M = 97.69, SD = 9.30), 1 to 2 years (M = 97.34, SD = 8.39) and less than 1 year had the lowest scores (M = 96.72, SD = 10.40).

Figure 10

Differences of Mean Internet Attitude Scores and Experience of Internet Use



Means and Standard Deviations of Internet Attitude Scores: Table 46 demonstrates the mean and standard deviation of age, education, profession, monthly family income and Internet use experience on the attitude scores of the participants.

Table 46

Mean and Standard Deviations Comparing Internet Attitude Scores by Age, Education, Profession, Monthly Family Income and Internet Use Experience

Characteristics	N	M	SD
a) Age			
15-19 years	133	97.37	9.49
20-24 years	128	98.41	8.60
25-29 years	123	99.32	8.65
30-35 years	64	96.98	9.43
b) Education			
Up to Higher Secondary	135	97.78	9.88
Graduate	187	98.51	8.30
Post Graduate	126	98.01	9.13
c) Profession			
Student	309	98.32	8.81
Employed	110	98.48	9.61
Others	29	95.14	8.69
d) Monthly family income			
Tk <20000	157	98.77	9.25
Tk 20000 toTk <40000	157	97.78	9.02
Tk 40000 toTk <60000	79	98.92	8.80
Tk 60000 and above	55	96.29	8.53
e) Experience of Internet use			
Less than 1 year	39	96.72	10.40
1-2 year	44	97.34	8.39
2-4 year	88	97.69	9.30
4-8 year	182	98.60	9.34
8 year and above	95	98.65	7.80

Significant differences of mean attitudes scores: ANOVA analysis (Table 47) found significant differences in the mean scores of Internet attitudes relating to frequency of Internet use [F (3, 444) = 3.52, p = .015], duration of Internet use [F (4, 443) = 3.50, p = .008], expenses of Internet use [F (3, 444) = 4.01, p = .008] and frequency of SNS use [F (3, 444) = 5.38, p = .001].

Table 47

ANOVA Results for Frequency of Internet Use, Duration of Internet Use, Expense of Internet Use, and Frequency of SNS Use Comparing Internet Attitude Scores

Variables	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Frequency of Internet use	Between Groups	844.540	3	281.51	3.52	.015
	Within Groups	35505.737	444	79.97		
	Total	36350.277	447			
Duration of Internet use	Between Groups	1112.845	4	278.21	3.50	.008
	Within Groups	35237.432	443	79.54		
	Total	36350.277	447			
Expense of Internet use	Between Groups	959.555	3	319.85	4.01	.008
	Within Groups	35390.722	444	79.71		
	Total	36350.277	447			
Frequency of SNS use	Between Groups	1274.653	3	424.88	5.38	.001
	Within Groups	35075.624	444	78.99		
	Total	36350.277	447			

Means and Standard Deviations of Internet Attitude Scores: The following table compares the means and standard deviations of Internet frequency, duration, expenditure, and SNS use by Internet attitudes score (Table 48).

Table 48

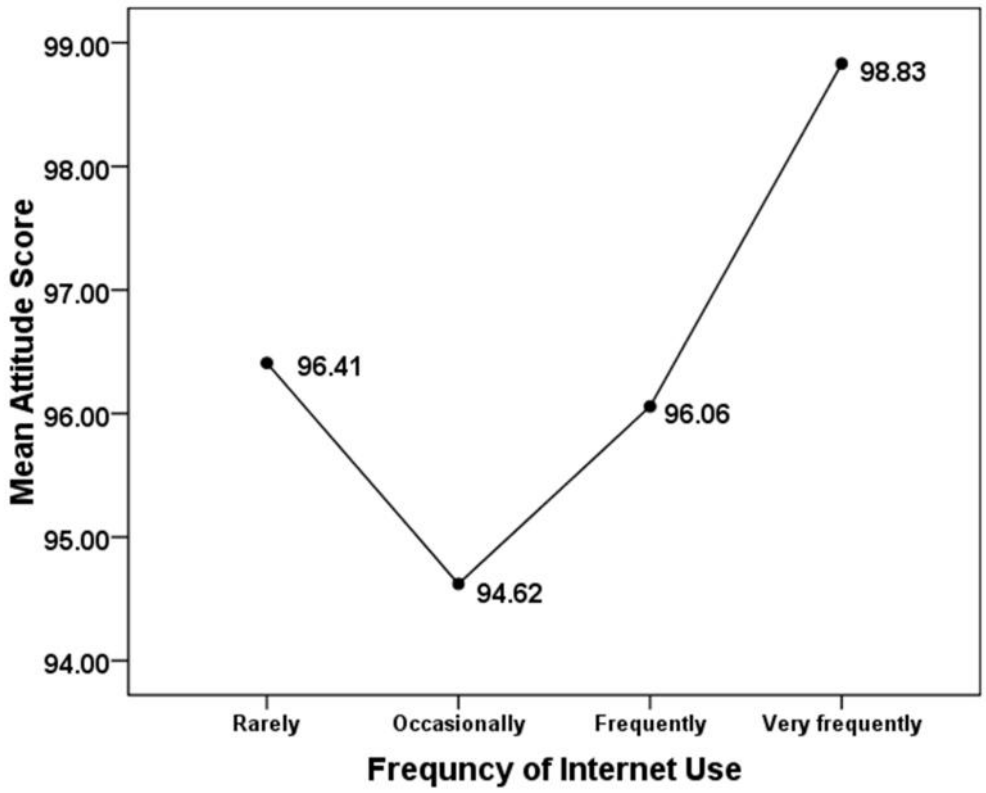
Mean and Standard Deviation Comparing Internet Attitudes Scores by Frequency of Internet Use, Duration of Internet Use, Expenditure of Internet Use and and Frequency of SNS Use

	N	M	SD
a) Frequency of Internet use			
Very frequently	354	98.83	8.82
Frequently	35	96.06	9.98
Occasionally	37	94.62	8.44
Rarely	22	96.41	9.92
b) Duration of Internet use			
Less than 1 hour	69	96.09	9.95
1 to 2 hours	130	96.61	9.28
3 to 4 hours	115	99.21	8.55
4 to 8 hours	67	99.40	8.14
8 hours and above	67	100.18	8.42
c) Expenditure for Internet use			
Less than Tk 100	113	95.82	9.45
Tk 100 to < Tk 500	236	98.79	9.11
Tk 500 to < Tk 1000	67	98.48	7.67
Tk 1000 and above	32	100.91	8.05
d) Frequency of SNS use			
Very frequently	395	98.67	8.91
Frequently	27	94.78	7.81
Rarely	23	94.65	9.92
Never	03	84.33	4.62

Differences of mean Internet attitudes by frequency of Internet use: In terms of frequency of Internet use, there was a statistically significant difference in mean Internet attitude scores [F (3, 444) = 3.52, p = .015]. The Tukey HSD test (Figure 11 and Table 48) revealed that those who used the Internet very frequently (M = 98.83, SD = 8.82) had a significantly higher mean score than those who had used it occasionally (M = 94.62, SD = 8.44). Those who used the Internet frequently (M = 96.06, SD = 8.82) and those who used it rarely (M = 96.41, SD = 9.92) were not significantly different from each other or the other two groups.

Figure 11

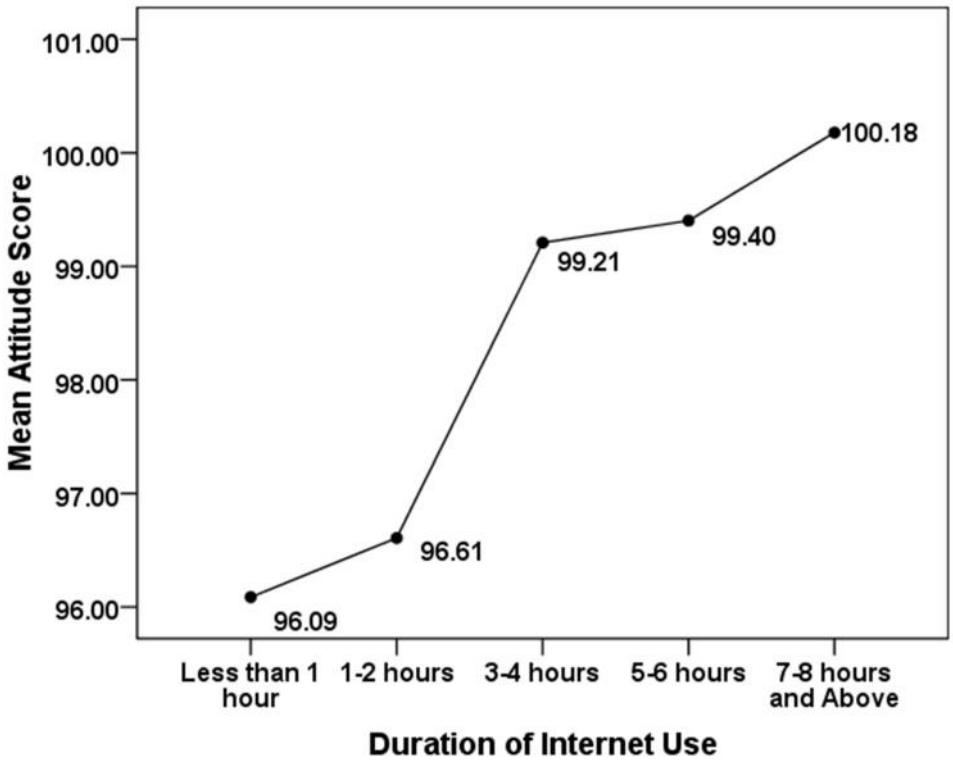
Differences of Mean Internet Attitude Scores by Frequency of Internet Use



Differences of mean Internet attitude scores by duration of Internet use: Analysis found statistically significant differences in Internet attitude score in terms of duration of Internet use [F (4, 443) = 3.50, p = .008]. Post-hoc LSD comparison test (Figure 12 and Table 48) indicated that the mean sores of participants those used less than one hour (M = 96.09, SD = 9.95) was statistically significantly lower than 3-4 hours (M = 99.21, SD = 8.55), 5-6 hours (M= 99.40, SD = 8.14) and 7-8 hours (M = 100.18, SD = 8.42). Post-hoc test was also significant for those who use 1-2 hours (M = 96.61, SD = 9.28) with 3-4 hours, 5-6 hours and 7-8 hours.

Figure 12

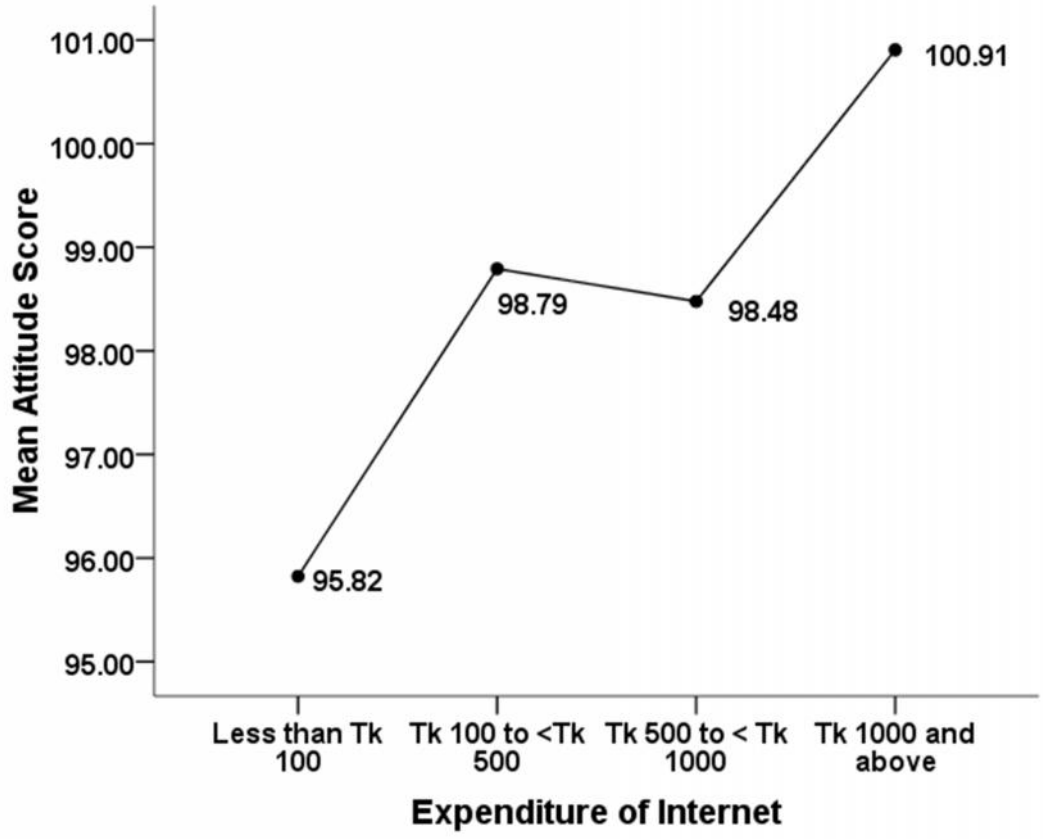
Differences of Mean Internet Attitude Scores by Duration of Internet Use



Differences of mean Internet attitudes scores by expenditure of Internet use: Analysis found statistically significant [F (3, 444) = 4.01, p = .008] differences in Internet attitude score in respect of participants' Internet use expenses in four groups. Post hoc Tukey HSD comparison (Figure 13 and Table 48) indicated that mean Internet attitude scores of (Group 1: < Tk 100 (M = 95.82, SD = 9.45) was significantly lower from (Group 2: Tk 100 to < Tk 500, M = 98.79, SD = 9.11) and (Group 4: Tk 1000 and above, M = 100.91, SD = 8.05). However, mean attitude score of (Group 3: Tk 500 to < Tk 1000, M = 98.48, SD = 7.67) was not significantly different from Group 1 and Group 2; mean scores of Group 4 was not significantly different from all others Groups.

Figure 13

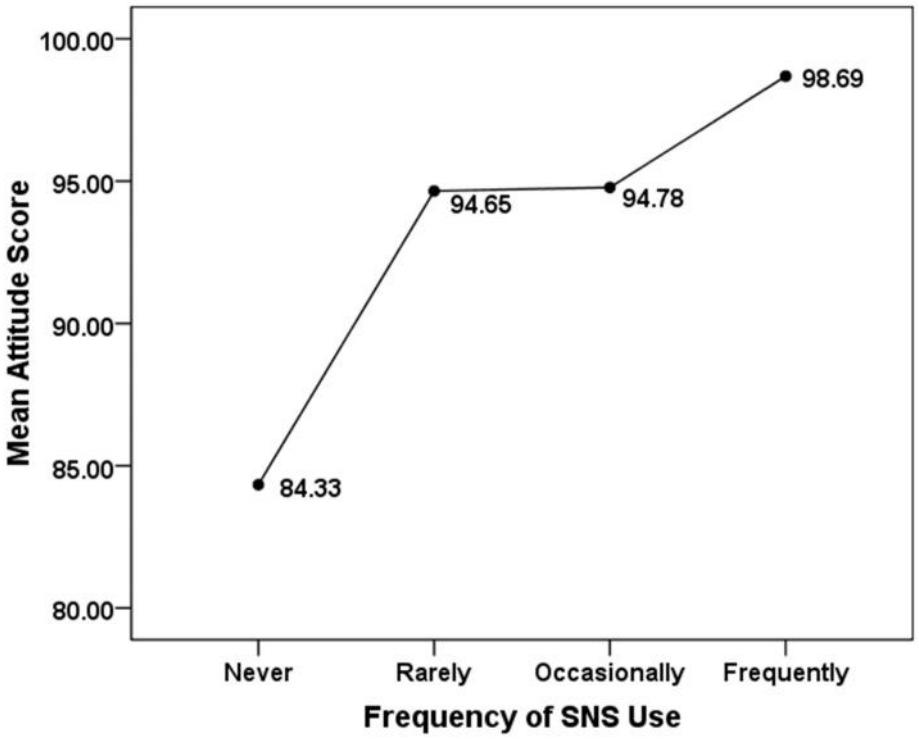
Differences of Mean Internet Attitude Scores by Expenditure of Internet Use



Differences of mean Internet attitudes scores by frequency of SNS use: The analysis found a statistically significant difference in relation to attitude scores and the frequency of SNS use [F (3, 444) = 5.38, p = .001]. Post-hoc LSD comparison (Figure 14 and Table 48) indicated that who use SNS very frequently (M = 98.69, SD = 8.91) has a higher mean score than who used frequently (M = 94.78, SD = 7.81), rarely (M = 94.65, SD = 9.92) and never (M = 84.33, SD = 4.62).

Figure 14

Differences of Mean Internet Attitude Scores by Frequency of SNS Use



4.3.3.3 Hierarchical regression analysis for Internet attitudes

A hierarchical multiple regression analysis was performed to examine the ability of Internet use-related factors (demographics, Internet use patterns, and Internet use purposes/SNS activities) to predict Internet attitudes. Prior to the analyses, a preliminary investigation was carried out to ensure that the assumptions of normality, linearity, and homoscedasticity were not violated. The assumptions of normality,

linearity, and homoscedasticity and independence of residuals all met the required criteria. There was no possible collinearity as minimum Tolerance was found .781 and maximum VIF 1.28 which were within the recommended limit of .10 and 10 respectively. The variables were sufficiently associated to the dependent variable to permit the conduct of a valid multiple linear regression analysis on all predictor variables (Table 49). Moreover, all correlations were found to be weak to moderate (less than .7). Durbin-Watson test value was 1.84 indicating that the values of the residuals were independent. Observation of the PP Plot showed that the dots closely lie with the diagonal line, suggesting a normal distribution. Residuals values were in between the range of 3 and -3.

Table 49

Correlations of Dependent and Independent Variables for Internet Attitude

Variables	1	2	3	4	5	6	7
1. Internet Attitude Scale Score	1.00						
2. Gender	.21***	1.00					
3. Frequency of Internet Use	.12**	.10*	1.00				
4. Duration of Internet Use	.12**	.20***	.23***	1.00			
5. Frequency of SNS Use	.16***	.23***	.41***	.18***	1.00		
6. Expense of Internet Use	.15***	.23***	.22***	.25***	.19***	1.00	
7. SNS Activities	.24***	.31***	.19***	.20***	.15***	.09*	1.00

Note. Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

As shown in Table 50, in the first step, demographic variable gender was entered which emerged as a statistically significant model F (1, 446) = 20.30; p < .001. The predictor variable gender uniquely explained 4.4% variance in attitudes towards Internet use. After entering four Internet use variables; frequency of Internet use, duration of Internet use, frequency of SNS use and expenditure for Internet use at step 2, a significant model was found F (5, 442) = 6.60; p < .001], which explained 7.0 percent of the total variance. Internet use variables added 3.0 percent to the variance (R^2 change =.03, F (4, 442) = 3.08, p < .05). In the second model, gender was again found to be a significant

predictor, but none of the Internet use variables were statistically significant. The total variance explained by the model as a whole increased to 10 percent after the introduction of SNS activities at step 3 (F (6, 441) = 7.88, p < .001). The SNS activities explained an additional 3 percent of the variance in Internet attitudes (R^2 change =.03, F (1, 441) = 13.33, p < .001). Two predictor variables were found statistically significant for Internet attitudes in the final adjusted model, with SNS activities recording a higher Beta value (β =.18, p < .001), followed by gender (β = .11, p < .05). Multiple hierarchical regressions corroborated the association between the Internet attitudes and the respondents' demographic and Internet use characteristics.

Table 50

Hierarchical Regression Results for Internet Attitudes

Variables	B	SE B	β	t	R^2	ΔR^2
Step 1					.04	.04***
(Constant)	96.27***	.59		163.19		
Gender	3.76***	.83	.21***	4.51		
Step 2					.07	.03*
(Constant)	92.08***	1.44		63.97		
Gender	2.85***	.87	.16***	3.26		
Frequency of Internet Use	1.24	1.37	.05	.90		
Duration of Internet Use	.86	.96	.04	.90		
Frequency of SNS Use	2.41	1.44	.09	1.67		
Expense of Internet Use	1.59	1.02	.08	1.57		
Step 3					.10	.03***
(Constant)	84.45***	2.53		33.43		
Gender	1.97*	.89	.11*	2.21		
Frequency of Internet Use	.58	1.36	.02	.43		
Duration of Internet Use	.42	.95	.02	.44		
Frequency of SNS Use	2.32	1.42	.08	1.63		
Expense of Internet Use	1.73	1.00	.08	1.72		
SNS Activities	.18***	.05	.18***	3.65		

Note. Gender (Female = 0, Male = 1); Frequency of Internet Use (Rarely & Occasionally = 0, Very Frequently and Frequently = 1); Duration of Internet Use (1 to 4 hours = 0, 5 hours and above = 1); Frequency of SNS Use (Rarely & Never = 0, Very Frequently and Frequently = 1); Expense of Internet Use (Less than Tk 100 = 0, Tk 100 and above = 1)

*p < .05. **p < .01. ***p < .001.

The study results showed that gender was significantly associated with Internet attitudes and males were found to have significantly higher attitude compared to female. SNS activities was another significant positive predictor to Internet attitudes suggesting that respondents who used Internet for SNS use activities were more likely positive attitudes towards the use of Internet. Though not statistically significant, duration of Internet use, frequency of Internet use, frequency of SNS use, and money spent on Internet use were all positively associated with Internet attitude, indicating that those who used the Internet for longer periods of time, more frequently, and spent more money had more positive attitudes toward it.

4.3.4 RQ 4: How and to what extent do youths involve in compulsive or addictive Internet use?

This research question examines young people's compulsive or addictive Internet use behaviours, focusing on the prevalence of compulsivity and the effects of demographic and Internet use characteristics on compulsive Internet use. To assess the extent and pattern of Internet use compulsivity, a 14-item CIUS was administered.

4.3.4.1 Application of CIUS for measuring Internet addiction

The 14-item CIUS developed by Meerkerk et al., (2009) was used to assess the compulsive or addictive use of the Internet by youths. In this study, the 14-item CIU scale was implicated with minor linguistic modifications. The scale included items that addressed common CIU symptoms such as loss of control, preoccupation, withdrawal coping or mood modification, and conflict. The items were measured on a 5-point Likert scale: 4 = very often, 3 = often, 2 = sometimes, 1 = rarely and 0 = never. The frequency distribution of the items, as well as their mean and standard deviation, were measured to better understand the respondents' problematic Internet use. Table 51 shows the frequency distribution of the items.

Table 51

Distribution of Frequency of Compulsive Internet Use of the Respondents

No	Items	Always		Often		Sometimes		Rarely		Never	
		N	%	N	%	N	%	N	%	N	%
1	How often do you find it difficult to stop using the Internet when you are online?	31	6.9	63	14.1	167	37.3	103	23.0	84	18.8
2	How often do you continue to use the Internet despite your intention to stop?	23	5.1	76	17.0	173	38.6	108	24.1	68	15.2
3	How often do parents and friends say you should use the Internet less?	75	16.7	77	17.2	130	29.0	72	16.1	94	21.0
4	How often do you prefer to use the Internet instead of spending time with others	21	4.7	42	9.4	107	23.9	131	29.2	147	32.8
5	How often are you short of sleep because of the Internet?	28	6.2	90	20.1	200	44.6	61	13.6	69	15.4
6	How often do you think about the Internet, even when not online?	20	4.5	68	15.2	131	29.2	131	29.2	98	21.9
7	How often do you look forward to your next Internet session?	20	4.5	70	15.6	148	33.0	123	27.5	87	19.4
8	How often do you think you should use the Internet less often?	61	13.6	72	16.1	164	36.6	63	14.1	88	19.6
9	How often have you unsuccessfully tried to spend less time on the Internet?	36	8.0	78	17.4	154	34.4	80	17.9	100	22.3
10	How often do you rush through your home or work place in order to go on the Internet?	17	3.8	34	7.6	92	20.5	103	23.0	202	45.1
11	How often do you neglect your daily obligations because you prefer to go on the Internet?	9	2.0	42	9.4	96	21.4	123	27.5	178	39.7
12	How often do you go on the Internet when you are feeling down?	43	9.6	85	19.0	167	37.3	75	16.7	78	17.4
13	How often do you use the Internet to escape from your sorrows or get relief from negative feelings?	36	8.0	80	17.9	184	41.1	77	17.2	71	15.8
14	How often do you feel restless, frustrated, or irritated when you cannot use the Internet?	18	4.0	39	8.7	126	28.1	127	28.3	138	30.8

Frequency distribution of the CIUS: From the frequency distribution (Table 51) it was found that the majority of the respondents had problems "sometimes" with Internet use in all four items of loss of control symptoms, indicating the presence of compulsive Internet use. The majority of 37.3% of respondents said they sometimes faced problems

when asked *how often do you find it difficult to stop using the Internet when you are online*; 38.6% in response to *how often do you continue to use the Internet despite your intention to stop*; 44.6% in response to *how often are you short of sleep because of the Internet*; and 34.4% in response to *how often have you unsuccessfully tried to spend less time on the Internet*.

In the three items on preoccupation symptoms, a majority of the respondents (29.2%) had considerable problems "sometimes" in the statement *how often do you think about the Internet, even when not online*; and 33.0% in item *how often do you look forward to your next Internet session*. However, in another preoccupation item, *how often do you prefer to use the Internet instead of spending time with others*, the majority of the respondents (32.8%) rarely faced problems.

In response to the only item of withdrawal symptoms, *how often do you feel restless, frustrated, or irritated when you cannot use the Internet*, the majority of the respondents (30.8%) rarely faced problems with the withdrawal symptoms.

For coping and mood modification symptoms, the majority of the respondents (37.3%) had problems “sometimes” when asked *how often do you go on the Internet when you are feeling down*; and 41.1% had problems “sometimes” in response to *how often do you use the Internet to escape from your sorrows or get relief from negative feelings*.

In the four items relating to conflict symptoms, there were mixed responses. A majority of 29.0% said they had problems ‘sometimes’ when asked, how *often do your parents and friends say you should use the Internet less?* And 36.6% said they had problems ‘sometimes’ when asked, *how often do you think you should use the Internet less often?* In the other two topics, the majority of the respondents, 45.1% and 39.7%, respectively,

said they faced problems rarely in the items: *how frequently do you rush through your home or workplace in order to access the Internet; and how frequently do you neglect your daily obligations in order to access the Internet?*

Mean and standard deviation of the CIUS: The mean score for individual item of the CIUS in this study ranged from the highest 1.93 to the lowest 1.02 (Table 52). The total mean score of the 14 items was 1.59 and standard deviation 1.16, indicating that the respondents had difficulties of problematic Internet use sometimes. Item 3, 'How often do parents and friends say you should use the Internet less?' got the highest mean score of 1.93 and found to be the most problematic. On the other hand, item 10, 'How often do you rush through your home or work place in order to go on the Internet?' secured the lowest mean score of 1.02 and found to be the least problematic. Participants' individual CIU scores in this study ranged from 0 to 48, with a mean of 22.22 and a standard deviation of 10.25.

Table 52

Mean, Standard Deviation and Rank Order of Compulsive Internet Use Scale

Item No.	Items	Mean	Std. Dev.	Rank order
3	How often do parents and friends say you should use the Internet less?	1.93	1.36	1
8	How often do you think you should use the Internet less often?	1.90	1.27	2
5	How often are you short of sleep because of the Internet?	1.88	1.09	3
12	How often do you go on the Internet when you are feeling down?	1.87	1.19	4
13	How often do you use the Internet to escape from your sorrows or get relief from negative feelings?	1.85	1.13	5
2	How often do you continue to use the Internet despite your intention to stop?	1.73	1.07	6
9	How often have you unsuccessfully tried to spend less time on the Internet?	1.71	1.22	7
1	How often do you find it difficult to stop using the Internet when you are online?	1.67	1.14	8
7	How often do you look forward to your next Internet session?	1.58	1.10	9
6	How often do you think about the Internet, even when not online?	1.51	1.12	10
14	How often do you feel restless, frustrated, or irritated when you cannot use the Internet?	1.27	1.11	11
4	How often do you prefer to use the Internet instead of spending time with others	1.24	1.14	12
11	How often do you neglect your daily obligations because you prefer to go on the Internet?	1.06	1.08	13
10	How often do you rush through your home or work place in order to go on the Internet?	1.02	1.14	14
	Total	1.59	1.16	-

4.3.4.2 Prevalence of CIU

A cut-off point of 28 was used to estimate the prevalence rate of CIU, which divides respondents into compulsive or addictive Internet users and non-compulsive or normal Internet users. Individual CIU scores in this study ranged from 0 to 48, with a mean of 22.22 and a standard deviation of 10.25. According to the cut-off point, 74.11 percent respondents were found to be non-compulsive Internet users with scores ranging from 0 to 28, while 25.89 percent respondents had scores ranging from 29 to 48, implying compulsive Internet users. A total of 34.15 percent males and 39.96 percent females

were classified as non-compulsive Internet users, while 15.85 percent males and 10.04 percent females were classified as compulsive Internet users (Table 53).

Table 53

Prevalence of Internet Use on the Basis of Non-Compulsive and Compulsive Users

Users type	Male		Female		Total	
	N	%	N	%	N	%
Non-Compulsive	153	34.15	179	39.96	332	74.11
Compulsive	71	15.85	45	10.04	116	25.89
Total	224	50	224	50	448	100

4.3.4.3 Influences of demographic and Internet use related characteristics on CIU

Research question relating to youths' compulsive Internet use, such as frequency of Internet use, experience of Internet use and duration of Internet use, SNS use, gender, marital status, age, education level, profession, monthly family income and residential status were compared with CIU in this section. The full implications of the results are discussed later.

4.3.4.4 T-tests for determining the influence of demographic characteristics on Internet addiction

Independent sample T-test was conducted to measure the impact of gender, marital status and residential status of the participants on compulsive Internet use (Table 54).

Table 54

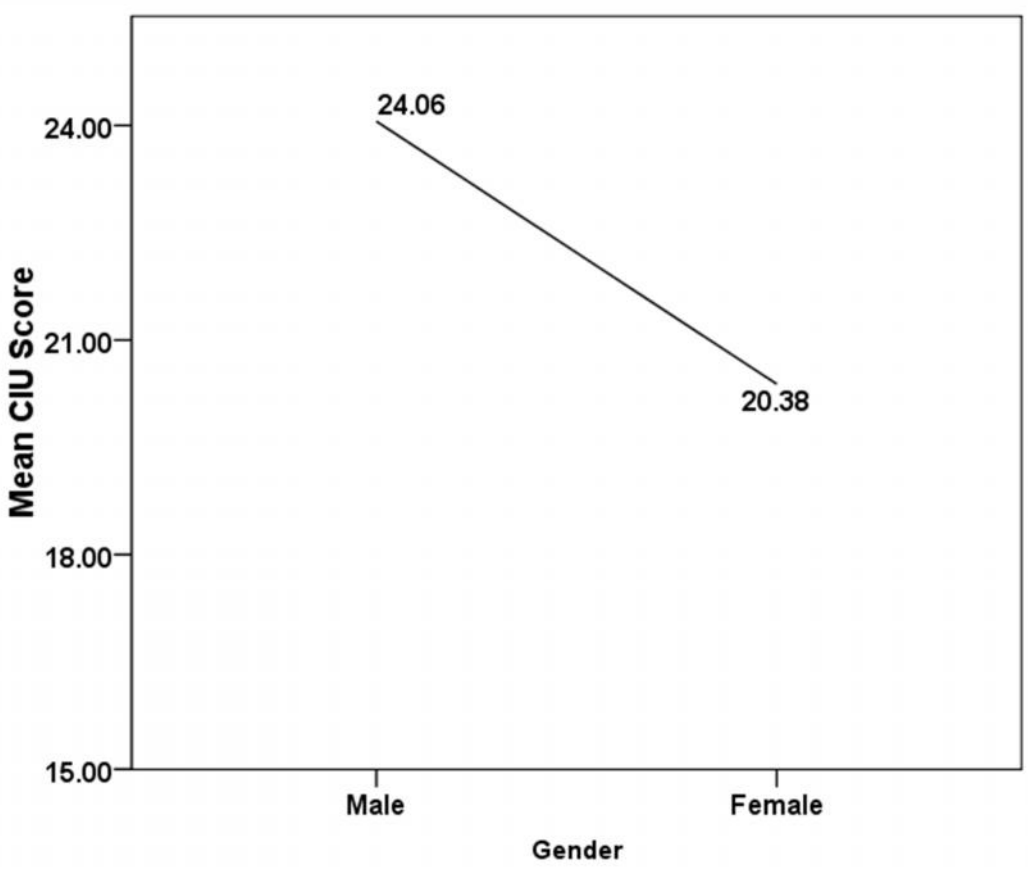
T-test Results for Gender, Marital Status and Residential Status with CIU

Variables	N	M	SD	t	p
a) Gender					
Male	224	24.06	9.85	3.85	.001
Female	224	20.38	10.34		
b) Marital status					
Unmarried	364	23.05	10.23	3.61	.001
Married	84	18.63	9.63		
c) Residential status					
With family	324	21.35	10.39	-2.91	.004
Without family	124	24.48	9.55		

Differences of mean CIU scores by gender: Results showed that gender has a significant influence on the participants' CIU score. Figure 15 and Table 54 shows that the T-test was statistically significant t(446) = 3.85, p = 0.001, with mean Internet CIU score of male (M = 24.06, SD = 9.85) was compared much higher than female (M = 20.38, SD = 10.34).

Figure 15

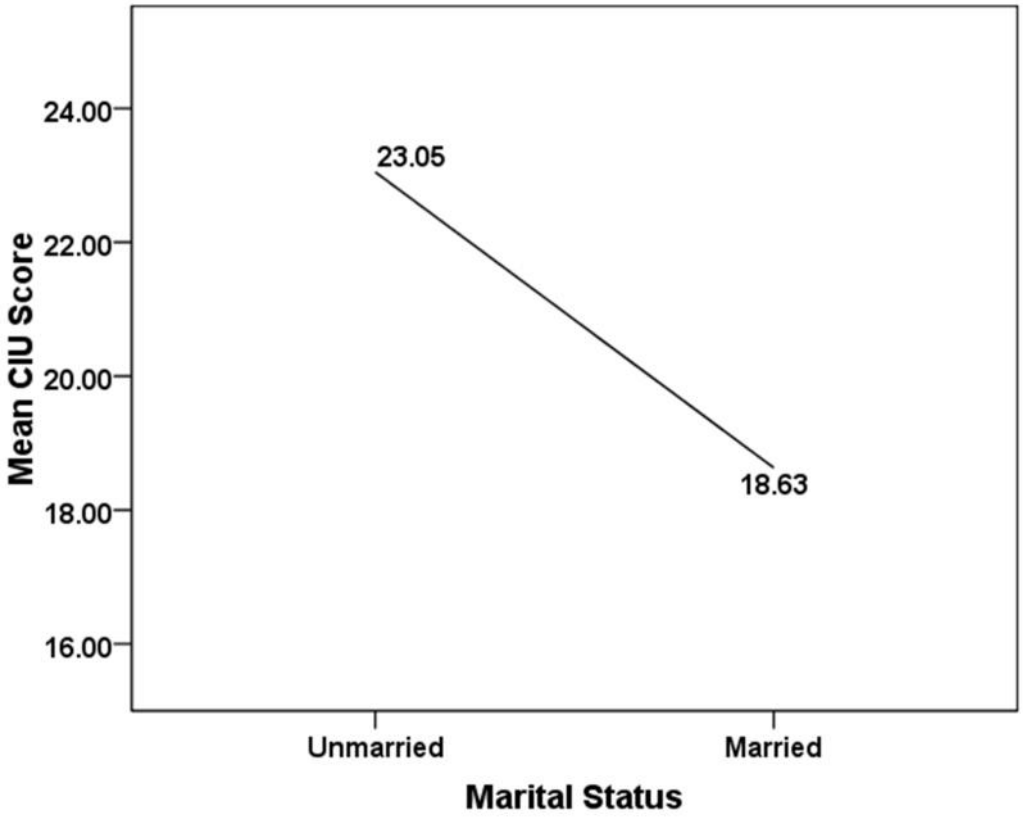
Differences of Mean CIU Scores by Gender



Differences of Mean CIU scores by marital status: Figure 16 and Table 54 shows that marital status also has significant influence t(446) = 3.61, p = .001 on CIU as mean score of unmarried (M = 23.05, SD = 10.23) was much higher than married (M = 18.63, SD = 9.63).

Figure 16

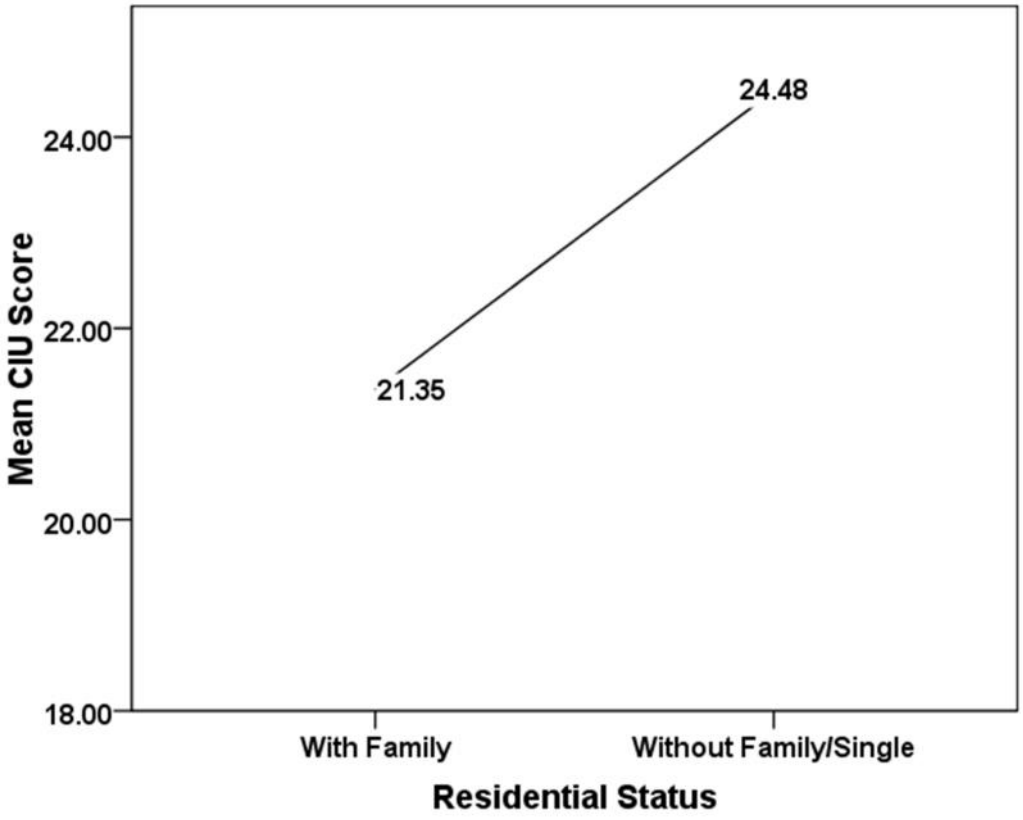
Differences of Mean CIU Scores by Marital Status



Differences of Mean CIU scores by residential status: Figure 17 and Table 54 shows that residential status also had significant impact t(446) = -2.91, p = .004 on CIU as the mean score of who reside with family (M = 21.35, SD = 10.39) was significantly lower than who reside without family (M = 24.48, SD = 9.55).

Figure 17

Differences of Mean CIU Scores by Residential Status



4.3.4.5 ANOVA for determining the influence of demographic and Internet use related characteristics on Internet addiction

ANOVA was used to explore the impact of age, education, profession, family income, frequency of Internet use, experience of Internet use, duration of Internet use, expense of Internet use, frequency of SNS use. This statistical method is appropriate for comparing means of variable having more than two groups with one continuous variable.

Significant differences for mean CIU scores: Table 55 shows that significant differences of mean CIU scores was found for age [F (3,444) = 5.05, p = .002], profession [F (2, 445) = 8.66, p = .001], frequency of Internet use [F = (3, 444) = 10.24, p = .001], duration of Internet use [F (4, 443) = 14.65, p = .001], expenditure of Internet use [F (4, 443) = 3.97, p = .008] and frequency of SNS use [F (3, 444) = 8.11, p = .001].

Table 55

ANOVA Results for Age, Profession, Frequency and Duration of Internet Use, Expense of Internet Use and Frequency of SNS Use Comparing CIU Scores

Variables	Source of Variation	Sum of Squares	df	Mean Square	F	p
Age	Between Groups	1550.767	3	516.92	5.05	.002
	Within Groups	45430.355	444	102.32		
	Total	46981.123	447			
Profession	Between Groups	1760.925	2	880.46	8.66	.001
	Within Groups	45220.198	445	101.62		
	Total	46981.123	447			
Frequency of Internet Use	Between Groups	3040.730	3	1013.58	10.24	.001
	Within Groups	43940.393	444	98.97		
	Total	46981.123	447			
Duration of Internet Use	Between Groups	5488.073	4	1372.02	14.65	.001
	Within Groups	41493.050	443	93.66		
	Total	46981.123	447			
Expenditure of Internet Use	Between Groups	1228.314	3	409.44	3.97	.008
	Within Groups	45752.809	444	103.05		
	Total	46981.123	447			
Frequency of SNS Use	Between Groups	2441.742	3	813.91	8.11	.001
	Within Groups	44539.381	444	100.31		
	Total	46981.123	447			

Mean and standard deviation of CIU Scores: Table 56 shows the mean and standard deviations of the age, profession, frequency of Internet use, duration of Internet use, expenditure of Internet use and frequency of SNS use by CIU scores.

Table 56

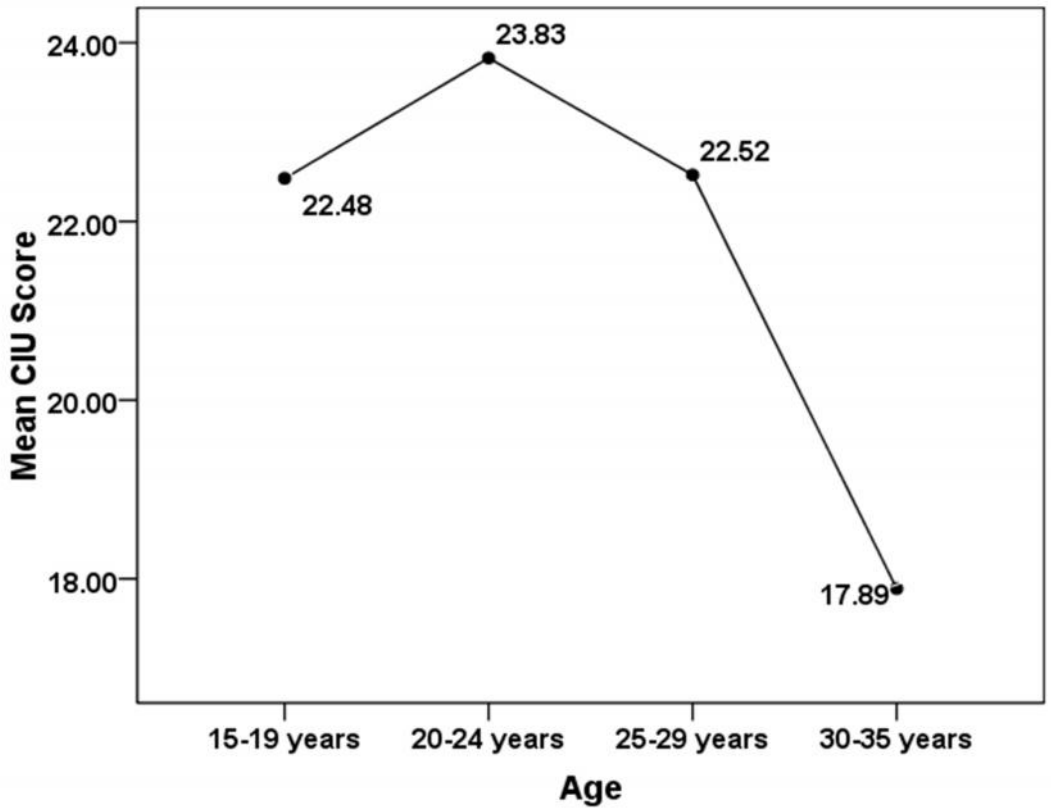
Mean and Standard Deviations Comparing Age, Profession, Frequency and Duration of Internet Use, Expense of of Internet Use and Frequency of SNS Use by CIU Score

	N	M	SD
a) Age			
15-19 years	133	22.48	10.23
20-24 years	128	23.83	10.44
25-29 years	123	22.52	9.69
30-35 years	64	17.89	9.99
c) Profession			
Student	309	23.55	10.30
Employed	110	19.32	9.973
Others	29	19.07	7.85
a) Frequency of Internet use			
Very frequently	354	23.38	10.25
Frequently	35	21.49	8.27
Occasionally	37	16.41	8.07
Rarely	22	14.55	10.22
b) Duration of Internet use			
Less than 1 hour	69	16.72	10.51
1 to 2 hours	130	19.95	9.31
3 to 4 hours	115	23.01	9.74
4 to 8 hours	67	25.61	8.65
8 hours and above	67	27.54	10.35
c) Expenditure for Internet use			
Less than Tk 100	113	19.57	8.98
Tk 100 to < Tk 500	236	22.69	10.32
Tk 500 to < Tk 1000	67	23.87	11.79
Tk 1000 and above	32	24.72	9.03
d) Frequency of SNS use			
Very frequently	395	23.03	10.01
Frequently	27	18.26	11.71
Rarely	23	14.04	8.15
Never	03	13.67	5.86

Differences of mean CIU scores and age: Analysis found that there was statistically significant differences of mean CIU scores of four age groups [F (3,444) = 5.05, p = .002]. Post-hoc analysis (Figure 18 and Table 56) using the Tukey HSD test indicated that the mean CIU scores of 15-19 year (M = 22.48, SD = 10.23), 20-24 year (M = 23.83, SD = 10.44) and 25-29 year (M = 22.52, SD = 9.69) were statistically significantly higher than those of 30-35 year (M = 17.89, SD = 10.00).

Figure 18

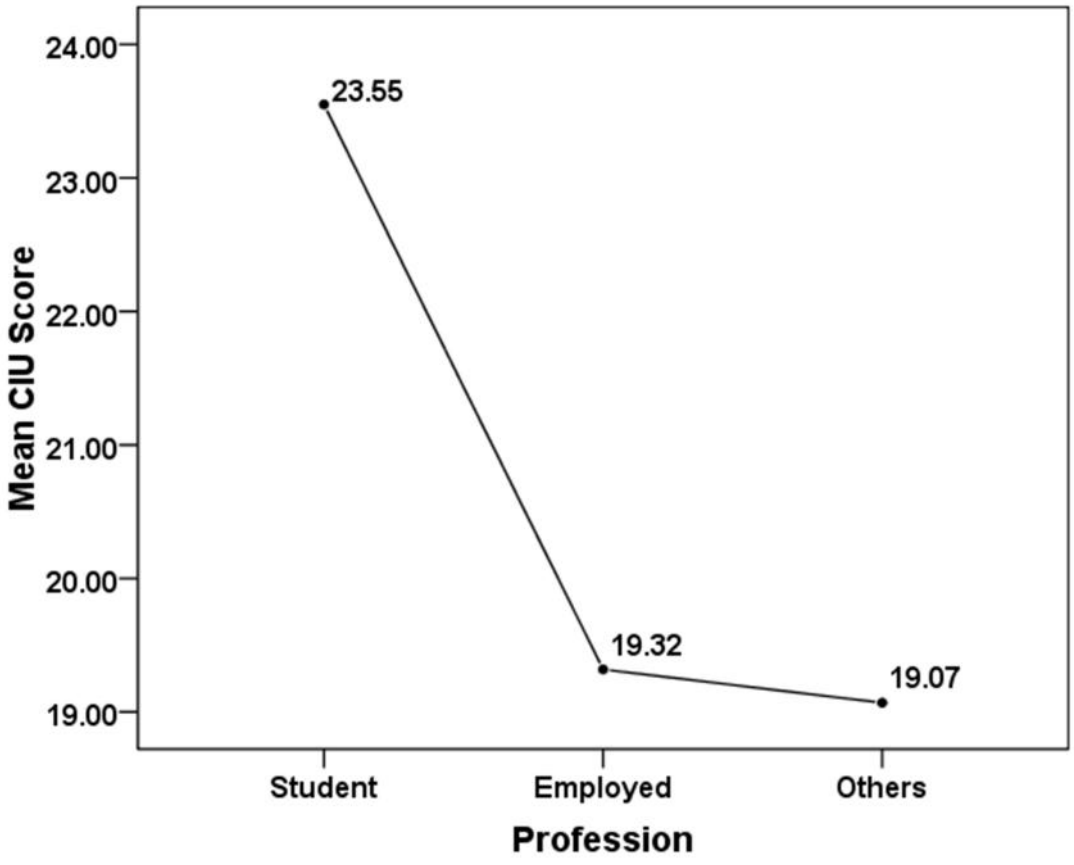
Differences of Mean CIU Scores by Age



Differences of mean CIU scores and profession: Statistically significant differences were found in the mean CIU score of on the basis of respondents' profession [F (2, 445) = 8.66, p = .001], indicating that profession had played a significant role on the Internet users. Analysis (Figure 19 and Table 56) of Post-hoc LSD test indicated that the mean CIU score of student (M = 23.55, SD = 10.30) was significantly higher than those of others profession (M = 19.07, SD = 7.85) and employed (M = 19.32, SD = 9.97).

Figure 19

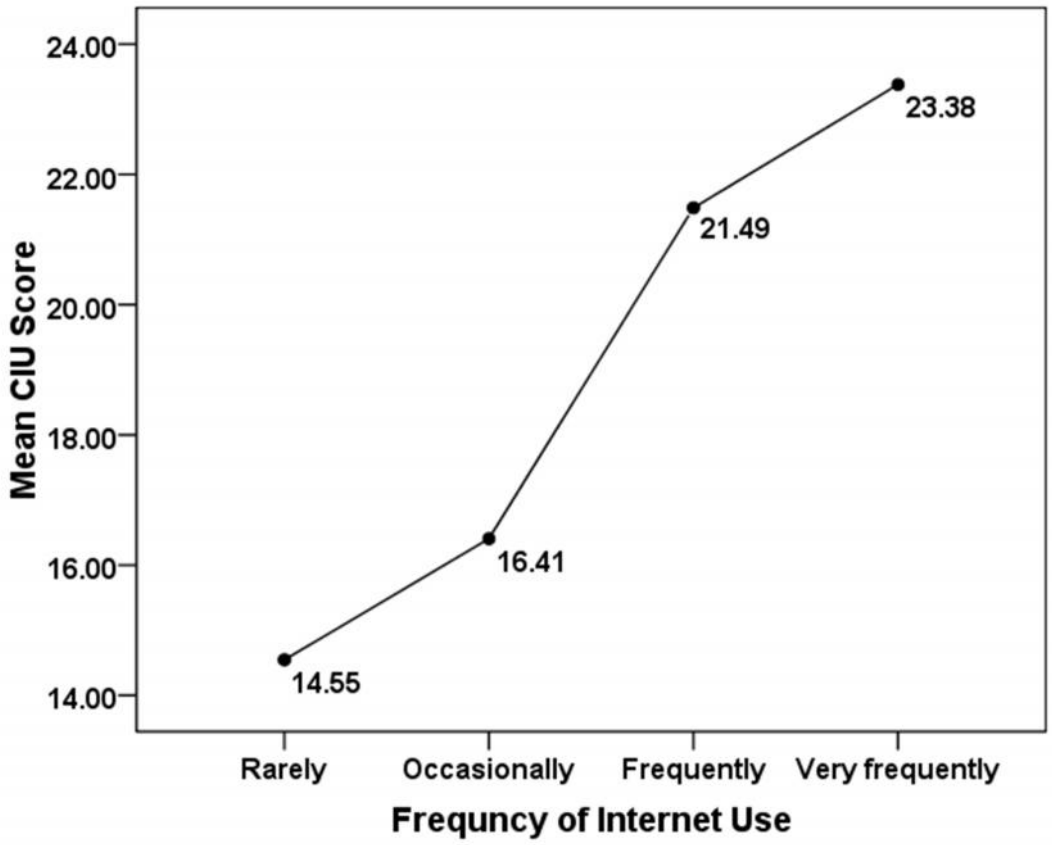
Differences of Mean CIU Scores by Profession



Differences of mean CIU scores and frequency of Internet use: There was statistically significant differences at the >.001 level among the mean CIU score of frequency of Internet use [F = (3, 444) = 10.24, p = .001]. Analysis (Figure 20 and Table 56) of Post-hoc LSD test indicated that those who use Internet very frequently (M = 23.38, SD = 10.25) had high mean score compare to those used occasionally (M = 16.41, SD = 8.07) and rarely (M = 14.55, SD = 10.22). Again, those who used Internet frequently (M = 21.49, SD = 8.27) had a significant difference with occasional and rarely users.

Figure 20

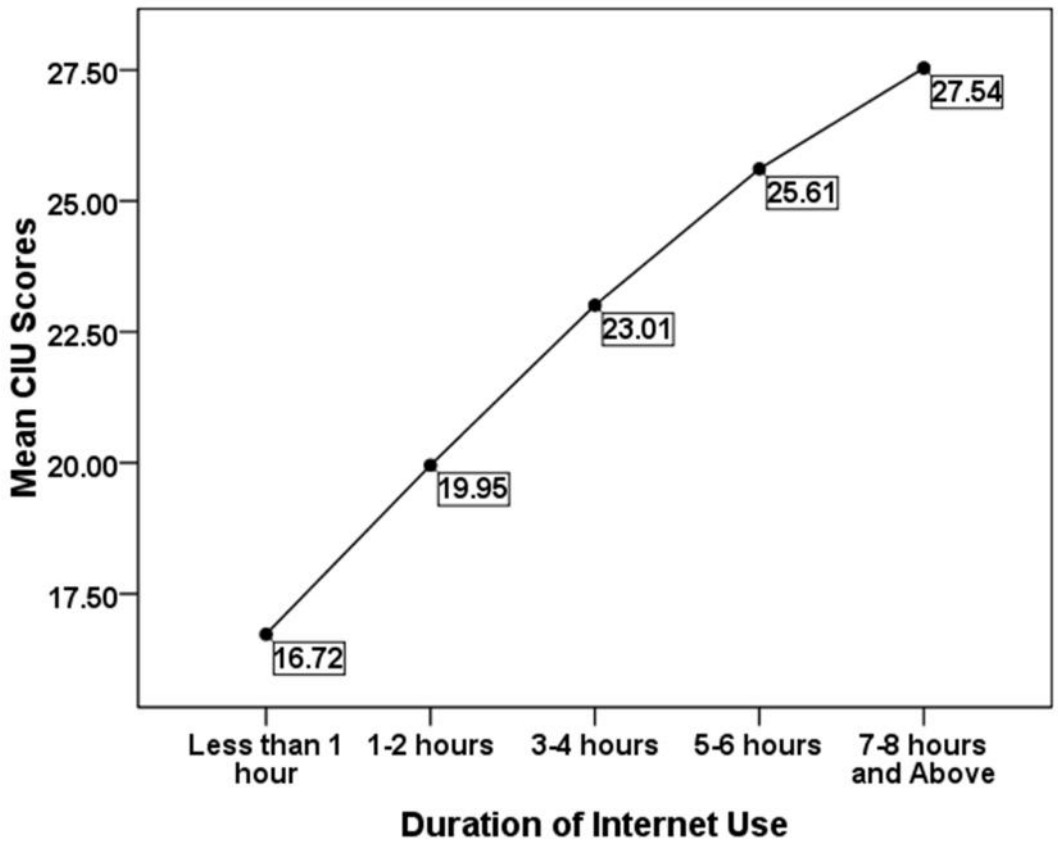
Differences of Mean CIU Scores by Frequency of Internet Use



Differences of mean CIU scores and duration of Internet use: Statistically significant differences were found in the mean CIU scores relating to duration of Internet use [F (4, 443) = 14.65, p = .001]. Post-hoc LSD analysis (Figure 21 and Table 56) indicated that those who use Internet less than 1 hour (M = 16.72, SD = 10.51) had a lower score compare to those who use 1 to 2 hour (M = 19.95, SD = 9.31), 3 to 4 hour (M = 23.01, SD = 9.74), 5 to 6 hour (M = 25.61, SD = 8.65) and 7 to 8 hour (M = 27.54, SD = 10.35). Also there were significant differences among 1 to 2 hour with 3 to 4 hour, 5 to 6 hour and 7 to 8 hour; and those of 3 to 4 hour with 7 to 8 hour.

Figure 21

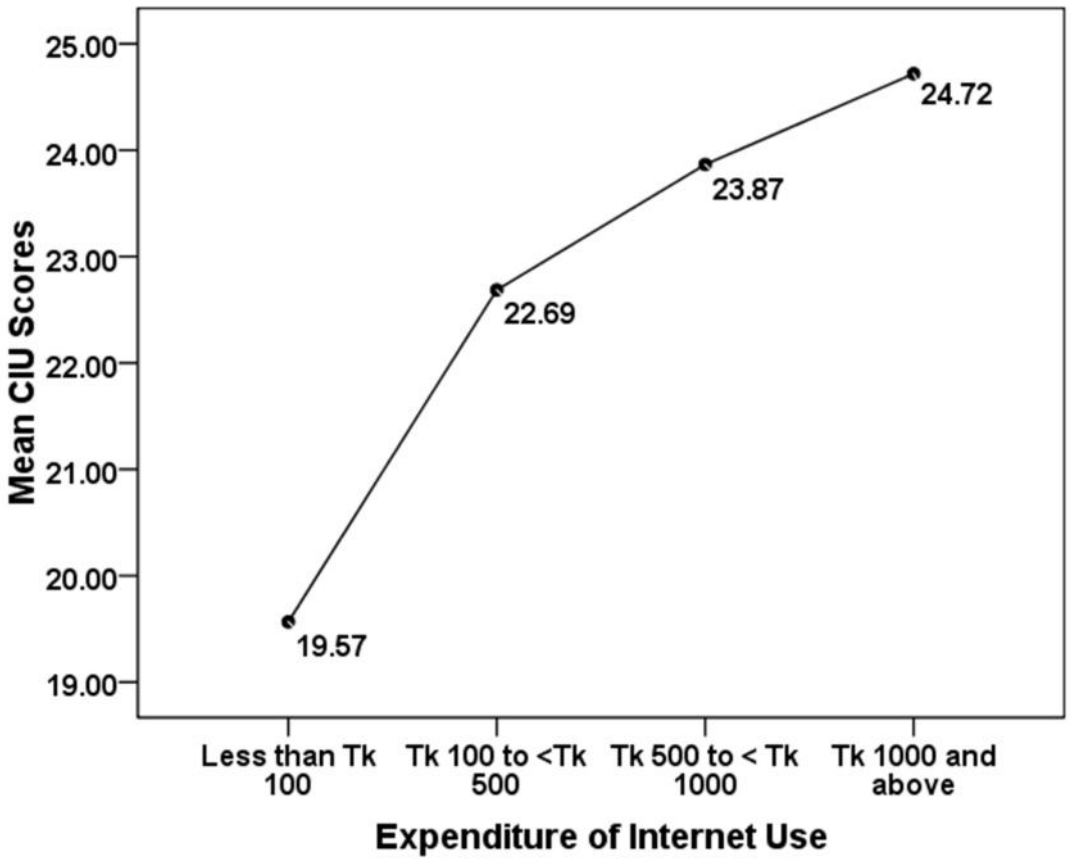
Differences of Mean CIU Scores by Duration of Internet Use



Differences of mean CIU scores and expenditure of Internet use: The mean CIU scores of four groups of respondents on the basis of monthly Internet use expenditure [F (4, 443) = 3.97, p = .008] was statistically significant. Post hoc LSD comparison (Figure 22 and Table 56) indicated that mean Internet use scores of those who spent < Tk 100 (M = 19.57, SD = 8.98) was significantly lowered from those who spent Tk 100 to <Tk 500 (M= 22.69, SD = 10.32) and those spent Tk 500 to <Tk 1000 (M = 23.87, SD = 11.79). However, mean CIU score of those who spent Tk 1000 and above (M = 24.72, SD = 9.03) was not significantly different from all other groups.

Figure 22

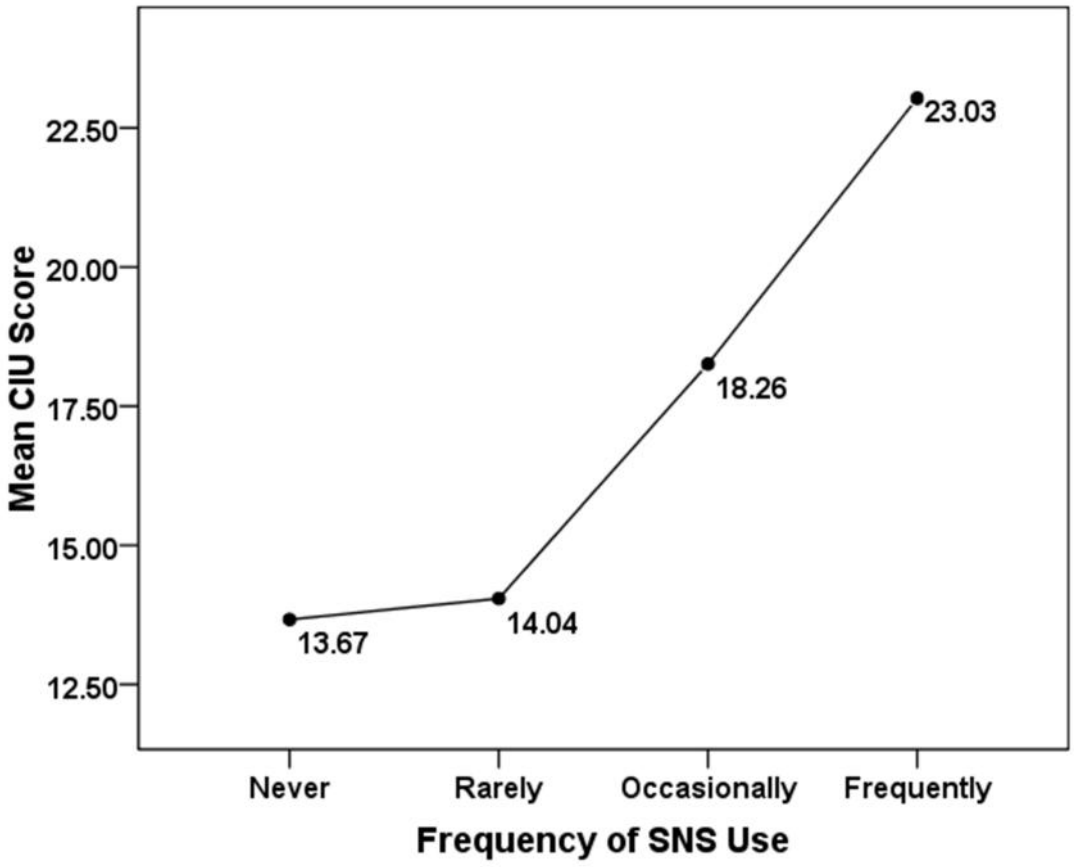
Differences of Mean CIU Scores by Expenditure of Internet Use



Differences of mean CIU scores and frequency of SNS use: Analysis found statistically significant difference in relation to CIU scores and the frequency of SNS use [F (3, 444) = 8.11, p = .001]. Post-hoc LSD comparison (Figure 23 and Table 56) indicated that who use SNS very frequently (M = 23.03, SD = 10.01) had higher mean score than who use frequently (M = 18.26, SD = 11.71) and rarely (M = 14.04, SD = 8.15). No differences were found with who never used (M = 13.67, SD = 5.86) with other groups.

Figure 23

Differences of Mean CIU Scores by Frequency of SNS Use



Non-significant differences for mena CIU scores: One-way ANOVA results (Table 57) revealed no statistically significant differences in the mean CIU score and participants' education status [F (2, 445) = 1.98, p = 0.140], family income [F (3, 444) = 0.60, p = .617], and Internet use experience [F (4,443) = 1.97, p = .098].

Table 57

ANOVA Results for Education, Family Income and Experience of Internet Use Comparing CIU Scores

Variables	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Educational Status	Between Groups	413.279	2	206.64	1.98	.140
	Within Groups	46567.844	445	104.65		
	Total	46981.123	447			
Monthly Family Income	Between Groups	188.778	3	62.93	.60	.617
	Within Groups	46792.344	444	105.39		
	Total	46981.123	447			
Experience of Internet Use	Between Groups	822.391	4	205.60	1.97	.098
	Within Groups	46158.732	443	104.20		
	Total	46981.123	447			

Mean and standard deviation of mean CIU scores: Table (58) shows the mean and standard deviations comparing respondents' education, monthly family income, and Internet usage experience according to their CIUS scores.

Table 58

Mean and Standard Deviation Comparing Education, Family Income and Experience of Internet Use by CIU Scores

	N	M	SD
b) Education			
Up to Higher Secondary	135	22.13	9.72
Graduate	187	23.20	10.41
Post Graduate	126	20.87	10.50
d) Monthly family income			
Tk <20000	157	21.99	10.81
Tk 20000 toTk <40000	157	21.66	9.95
Tk 40000 toTk <60000	79	22.84	9.24
Tk 60000 and above	55	23.58	10.95
e) Year of experience			
Less than 1 year	39	18.64	10.82
1-2 year	44	20.82	10.28
2-4 year	88	21.93	9.48
4-8 year	182	23.32	10.26
8 year and above	95	22.49	10.47

As shown in Table 58, the mean CIU scores of the respondents' educational status, family income, and Internet use experience were almost identical, with no significant variances.

4.3.4.6 Hierarchical multiple regression for predicting Internet addiction

A multiple hierarchical regression analysis was carried out to investigate the strength of Internet use-related factors (demographic, patterns and frequency of use, and purposes of use) to predict respondents' compulsive Internet use (CIU). Prior to the analyses, a preliminary investigation was carried out to ensure that the assumptions of normality, linearity, and homoscedasticity were not violated. The assumptions of normality, linearity, and homoscedasticity and independence of residuals all met the required criteria. There was no possible collinearity as minimum Tolerance was found .549 and maximum VIF 1.82 which were within the recommended limit of not less than .10 and more than 10 respectively. The variables were sufficiently associated to the dependent variable to permit the conduct of a valid multiple linear regression analysis on all predictor variables (Table 59). Moreover, all correlations were found to be weak to moderate (less than .7). Durbin-Watson test value was 1.89 indicating that the values of the residuals were independent. Observation of the PP Plot showed that the dots closely lie with the diagonal line, suggesting a normal distribution. Residuals values were in between the range of 3 and -3.

Table 59

Correlations of Dependent and Independent Variables for CIU

Variables	1	2	3	4	5	6	7	8	9	10	11
1. CIU Scale Score	1.00										
2. Gender	.18***	1.00									
3. Marital Status	.17***	.07	1.00								
4. Age	.17***	.00	.59***	1.00							
5. Profession	.19***	.01	.57***	.57***	1.00						
6. Residential Status	.14**	.17***	.16***	.10*	.07	1.00					
7. Frequency of Internet Use	.25***	.10*	.03	-.05	-.02	.14**	1.00				
8. Duration of Internet Use	.28***	.20***	.01	.00	.04	.13**	.23***	1.00			
9. Frequency of SNS Use	.22***	.23***	.05	.03	.02	.13**	.41***	.18***	1.00		
10. Expense of Internet Use	.15***	.23***	-.17***	-.13**	-.15***	.02	.22***	.25***	.19***	1.00	
11.SNS Use Activities	.39***	.31***	.14**	.15***	.12**	.04	.19***	.20***	.15***	.09*	1.00

Note. Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

As shown in Table 60, in the first step, five demographic variables were entered: gender, marital status, age, profession and residential status. A statistically significant model was emerged F (5, 442) = 8.06; p < .001 and explained 8 percent variance in compulsive Internet use. Gender and profession made significant contribution in explaining variance to the model. After entering four Internet use related variables; frequency of Internet use, duration of Internet use, frequency of SNS use and expenditure for Internet use at step 2, the model was found to explain 18 percent of the variance F (9, 438) = 10.89; p < .001]. Profession, frequency of Internet use and duration of Internet use had significantly contributed to the model with explaining additional 10 percent variance (R^2 change = .10, F (4, 438) = 13.30, p < .001). With the addition of SNS activities variable in step 3, the model explained a total of 26 percent of the variance F (10, 437) = 14.92, p < .001]. SNS use activities explained additional 7% variance (R^2 Change = .07; F (1, 437) = 42.02, p < .001). In the final adjusted model, four predictor variables were found to be statistically significant, with SNS activities recording a higher Beta value (β = .29, p < .001), followed by duration of Internet use having a Beta value (β = .15, p < .001). The other significant predictors were profession (β = .11, p < .05) and frequency of Internet use (β = .11, p < .05). Multiple hierarchical regressions corroborated the association between the CIUS and the respondents' demographic factors, Internet use characteristics, and Internet use purposes.

Table 60

Hierarchical Regression Results for Compulsive Internet Use.

Variables	B	SE B	β	t	R^2	ΔR^2
Step 1					.08	.08***
(Constant)	15.58***	1.36		11.43		
Gender	3.32***	.959	.16***	3.50		
Marital Status	.67	1.60	.03	.42		
Age	2.22	1.76	.08	1.26		
Profession	2.86*	1.31	.13*	2.18		
Residential Status	2.04	1.07	.09	1.90		
Step 2					.18	.10***
(Constant)	7.51***	1.97		3.82		
Gender	1.70	.95	.08	1.80		
Marital Status	.94	1.53	.04	.61		
Age	2.71	1.68	.09	1.62		
Profession	2.71*	1.25	.12*	2.17		
Residential Status	1.00	1.03	.04	.97		
Frequency of Internet Use	4.53**	1.48	.15**	3.06		
Duration of Internet Use	4.14***	1.03	.19***	4.02		
Frequency of SNS Use	2.41	1.54	.08	1.56		
Expense of Internet Use	1.78	1.11	.08	1.60		
Step 3					.26	.07***
(Constant)	-5.50*	2.75		-2.00		
Gender	.05	.94	.00	.05		
Marital Status	.71	1.46	.03	.49		
Age	1.72	1.61	.06	1.07		
Profession	2.44*	1.19	.11*	2.05		
Residential Status	1.39	.98	.06	1.42		
Frequency of Internet Use	3.21*	1.43	.11*	2.25		
Duration of Internet Use	3.34***	.99	.15***	3.36		
Frequency of SNS Use	2.31	1.48	.07	1.57		
Expense of Internet Use	1.85	1.06	.08	1.74		
SNS Use Activities	.34***	.05	.29***	6.48		

Note. Gender (Female = 0, Male = 1); Marital Status (Married = 0, Unmarried = 1); Age (30-35 years = 0, 15-29 years = 1); Profession (Employed & Others = 0, Student = 1); Residential Status (With Family = 0, Without Family = 1); Frequency of Internet Use (Rarely & Occasionally = 0, Very Frequently and Frequently = 1); Duration of Internet Use (1 to 4 hours = 0, 5 hours and above = 1); Frequency of SNS Use (Rarely & Never = 0, Very Frequently and Frequently = 1); Expense of Internet Use (Less than Tk 100 = 0, Tk 1000 and above = 1)

*p < .05. **p < .01. ***p < .001.

4.3.5 RQ 5: Is there any association between Internet attitude and compulsive Internet use?

4.3.5.1 Pearson product-moment correlation coefficient for Internet attitude and compulsive or addictive Internet use

This research question investigates the relationship between Internet attitudes and compulsive or addictive Internet use of the respondents. Pearson product-moment correlation coefficient was used in the study to assess the correlation between Internet Attitude Scale (IAS) and Compulsive Internet Use Scale (CIUS) which measures respondents Internet attitudes and compulsive or addictive Internet use. This technique is appropriate for measuring relationship in terms of both strength and direction between two continuous variables (Pallant, 2016). Table 61 shows that there was a significant positive weak relationship between Internet attitudes and compulsive Internet use, $r = .27$, $N = 448$, $p < .001$.

Table 61

Correlations between Internet Attitudes and Compulsive Internet Use

		Total Attitude Score	Total CIU Score
Total Attitude Score	Pearson Correlation	1	.274**
	Sig. (2-tailed)		.000
	N	448	448
Total CIU Score	Pearson Correlation	.274**	1
	Sig. (2-tailed)	.000	
	N	448	448

**. Correlation is significant at the 0.01 level (2-tailed).

4.3.6 RQ 6: How do youth perceive the advantages and disadvantages of using the Internet?

This research question explores respondents' free opinions about their perceptions of Internet use, with the goal of obtaining qualitative feedback from personal experiences with Internet use. This research question explores respondents' free opinions about their perceptions of Internet use, with the goal of obtaining qualitative feedback from personal experiences with Internet use. Two open-ended questions were included in the questionnaire to elicit qualitative responses from respondents about their attitudes toward the Internet, specifically the benefits and drawbacks they perceive while using the Internet. An approach such as principal component or cluster analysis is used to analyse open-ended questions, with an element repeated between significant terms in the respondents' responses (Popping, 2015). Using this procedure, the terms, phrasings, and words found in the responses of thematized and categorized under specific topics.

4.3.6.1 Perception about the Internet use

The examinations of the responses yielded that the most of the respondents were simultaneously perceived the use of Internet as both advantageous and disadvantageous. While respondents indicated use of Internet as beneficial, at the same time they were found critical about misuse of Internet as disadvantageous. While most of the respondents remarks about both positive and negative consequences of Internet use, only a few either mentioned advantage or disadvantage of Internet use. After coding, it was observed that 8.93% respondents did not give answers about the advantages of Internet use and 9.38% about the disadvantages. After thorough examination of the responses, the researcher synthesized all the individual remarks of the respondents on the advantages and disadvantages under some specific concepts. The results are given in the following section.

4.3.6.2 Perception about advantages of Internet use

According to Table 62, the highest 53.79 percent of respondents identified the Internet as a source of limitless information when asked about the benefits of Internet use. More than half (51.34%) participants opined that Internet make communication easier with people from both home and abroad. Nearly one third (31.25%) participants recognized the Internet as an essential tool of education, while about the same (29.24%) number of youths believed that the Internet is a source of knowledge. According to 27.46% respondents, the Internet eases social relations. About a quarter (25.67%) of respondents opined that the Internet is good for entertainment; while another quarter (24.55%) said the Internet is helpful for free expression of opinion. Some 17.41% of participants considered that Internet helps income generation and career building, and 12.95% said Internet promotes creativity and awareness.

Table 62

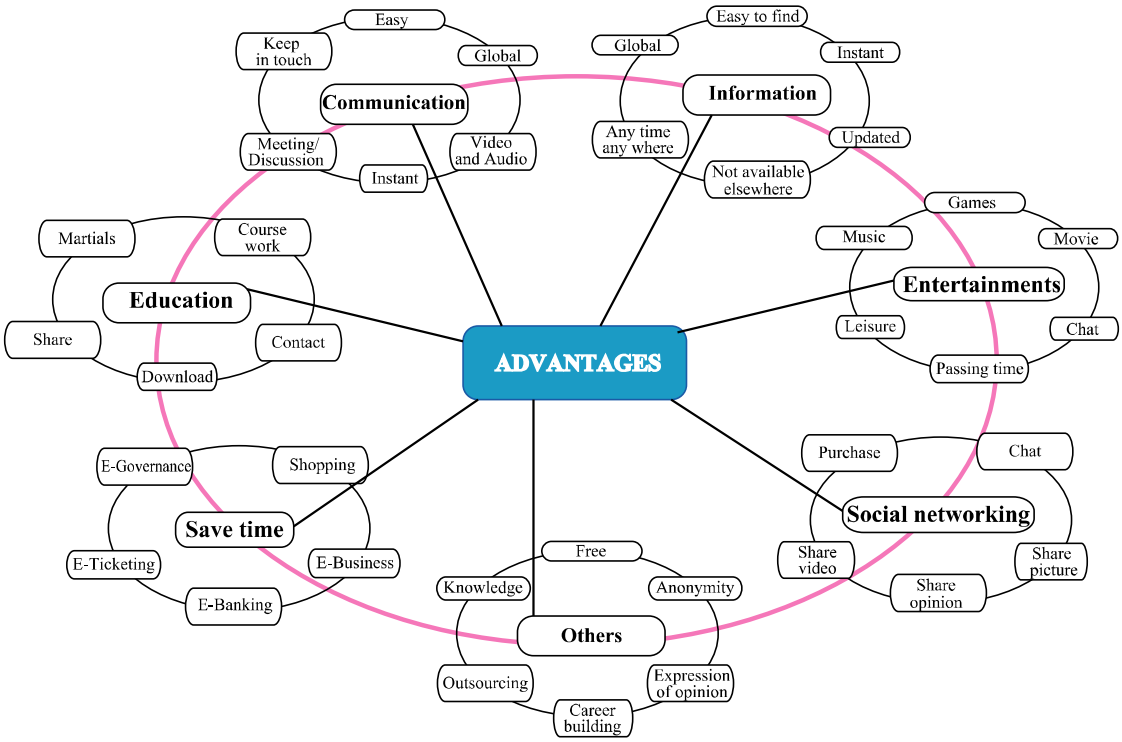
Respondents Perception about the Advantages of Internet Use

Advantages	Frequency	Percentage
Source of information	241	53.79%
Easy communication	230	51.34%
Important for education	140	31.25%
Source of knowledge	131	29.24%
Ease social relations	123	27.46%
Good for entertainments	115	25.67%
Free expression of opinion	110	24.55%
Income and career building	90	17.41%
Promote creativity and awareness	78	12.95%
No response	58	8.93%

4.3.6.3 Concept mapping for the advantages of Internet use

Figure 24

Concept Mapping for the Aadvantages of Internet Use



4.3.6.4 Perception about the disadvantages of Internet use

Table 63 shows that around one-tenth (9.38%) of the respondents did not provide any answers on the disadvantages of Internet use. Among all the disadvantages mentioned by the respondents, 40.18% thought that the Internet was wasting valuable time in their lives. While more than half of users stated the Internet as a source of information, at the same time, about one third (29.02%) of respondents were of the opinion that Internet-generated information also had disadvantages. These include information overload, misinformation and fake news. Internet addiction is another disadvantage mentioned by nearly one third (28.75%) of the respondents. The participants had almost identical views that the Internet hampers education and work (26.56%), insists on illegal and immoral activities (26.12%), cybercrime and bullying (24.78%), and pornography and

vulgarity (24.33%). In contrast to the belief that the Internet improves social relations, approximately one-fifth (19.42%) of respondents blamed it for complicating social relations. Nearly one fifth (18.75%) of the respondents were of the opinion that the Internet creates physical and mental distress among its users, and 17.41% of respondents said the Internet's excessive use is bad for children and adolescents.

Table 63

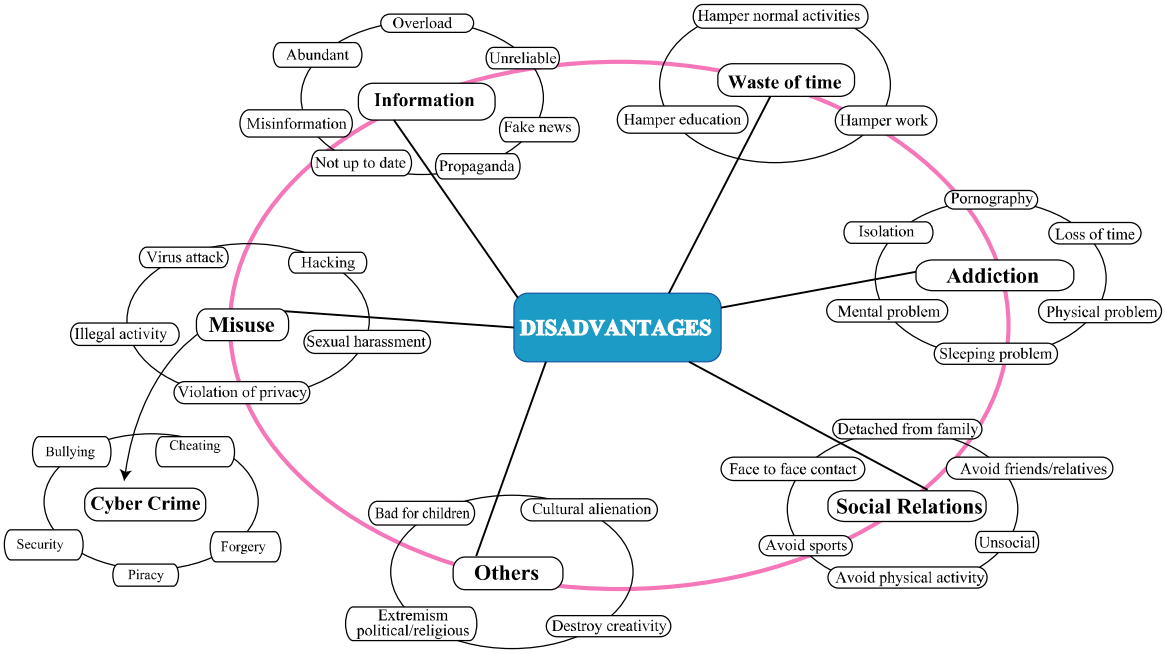
Respondents Perception about the Disadvantages of Internet Use

Disadvantages	Frequency	Percentage
Waste time	180	40.18%
Information overload, misinformation, fake news	130	29.02%
Internet addiction	128	28.57%
Hamper education and work	119	26.56%
Illegal and immoral activities	117	26.12%
Cybercrime and bullying	111	24.78%
Pornography and vulgarism	109	24.33%
Obscure social relations	87	19.42%
Physical and mental distress	84	18.75%
Bad for children and adolescents	78	17.41%
No response	42	9.38%

4.3.6.5 Concept mapping for the disadvantages of Internet use

Figure 25

Concept Mapping for the Disadvantages of Internet Use



CHAPTER FIVE

Discussion and Analysis

5.1 Introduction

This chapter detailed the research findings, including an in-depth analysis of the study's most significant findings. The goals and objectives of the study were taken into accounts in the analysis of the key findings based on research questions and theories. The discussions provided insight into the study participants' general Internet usage habits, online behavior attitudes, and compulsive Internet use when compared to other regions of the world. The effects and consequences of Internet use on Bangladesh's youth were also discussed.

5.1a Analysis based on research questions

5.2 Research question one

How do young people use the Internet, and for what purposes do they use it? The analysis of the findings of this research question is given in the following section.

5.2.1 Patterns of Internet use

5.2.1.1 Frequency of Internet use

The results (Table 12) showed that the majority (79%) of the respondents were very frequent Internet users who use it all the seven days in a week. This finding was supported by other studies in Bangladesh (Islam, 2013; Jobayer et al., 2017; Kabir et al., 2016) and also studies conducted abroad (Labucay, 2014; Merugu et al., 2014; Oyedemi, 2015; Pinto & Poornananda, 2017) which found that most of the respondents used the Internet every day. The frequency of Internet use has been increasing day by day due to availability of mobile Internet and hands-on use of mobile phone. Mobile

phone makes Internet usage convenient at any time and from anywhere where there is a network with comfortable data cost. Males were frequent users of the Internet compared to females. However, in this study, the gender difference of frequency of Internet use was not statistically significant.

5.2.1.2 Duration of Internet use

The findings (Table 13) showed that the majority (29.0%) of the respondents had used the Internet 1-2 hours daily followed by 25.7% users who spent 3-4 hours. The daily average time spent by the Internet users in this study was 2.85 hours. This finding was supported by Khazaal et al. (2011) who found daily average 2.5 hours Internet use among 15-25 years Arab youths. The finding of the current study was almost similar to some other recent studies (Hassan et al., 2020; Karthika et al., 2017; Pinto & Poornananda, 2017; Rahaman, 2018; Vigna-Taglianti et al., 2017) who found that more than a quarter young people spent 1-2 hours daily using the Internet and another quarter usage 2-3 hours. It is worthy to mention that the distribution of hours of time spent for the daily Internet usage was not identical in all the studies.

In the current study, males were found to be spent significantly more hours on the Internet compared to the females. This was also supported by the findings of Ochnik and Dembinska (2018) who found the tendency in two separate studies conducted among Polish students over a period of seven years in 2005 and 2012. The study also found that the average time of the Internet's use increased with regards to both men and women (Ochnik & Dembinska, 2018).

5.2.1.3 Experience of Internet Use

The results (Table 14) of the current study showed that the majority of the participants (40.6%) had 4 to 8 years Internet usage experience with an average 3.6 years use

experience. Male had significantly more years of use experience than female. Recent studies (Alzahrani & O'Toole, 2017; El-Kader & Hanson, 2019; Hassan et al., 2020; Karthika et al., 2017) on young, adolescent and student users had also supported that majority of the Internet users have long years of Internet use experience. The average experience of the Internet's use increased with regards to both male and female as many users had begun the Internet usage from their childhood.

5.2.1.4 Expenditure for Internet use

Results (Table 20) showed that majority (52.7%) respondents spent Tk 100 to <Tk 500 for using Internet monthly followed by 25.2% who used less than Tk 100 per month. Again male were found to be spent more money compared to female for monthly Internet use. In a previous study Faruq (2017) found that majority 42.8% respondents consumed Tk 100 to Tk 500 monthly for Internet use while Chakrabarty and Latifee (2014) in their study found that majority (30%) users paid Tk 100 to Tk 500 for monthly Internet use.

5.2.1.5 Device for Internet Use

The results (Table 15) showed that smartphone was the single most device used by the majority (90.8%) of the young participants for accessing the Internet. The findings revealed that were no significant gender differences between male and female respondents in using smartphone. The findings were supported by a recent Bangladesh nation-wide survey (Alliance for Affordable Internet & Access to Information Programme, 2019) which stated that 96.5% of the respondents who use Internet accessed it via their mobile phone.

This finding corroborated the previous findings of Bangladeshi studies (Chandrima et al., 2020; Faruq, 2017; Hassan et al., 2020; Hossain et al., 2017; Islam & Hossain,

2013; Islam et al., 2020; Jobayer et al., 2017; Kabir et al., 2016; Kamruzzaman et al., 2014; Khan et al., 2019; Miraz et al., 2011; Mostafa et al., 2019; Munshi et al., 2018; Rahaman, 2018; Saha & Guha, 2019) which found that mobile phone was the single major device used for the Internet access. Like Bangladesh, mobile phone was also used in other parts of the world as the principal device for Internet access. Studies from Bhutan (Tenzin et al., 2018), Greece (Tsimtsiou et al., 2015), India (Chaudhari et al., 2015; Chauhan et al., 2020; Goswami et al., 2018; Jain et al., 2020; Kumar et al., 2019; Patel, 2019; Zalavadiya et al., 2016), Oman (Khan et al., 2017), Thailand (Simcharoen et al., 2018) and United Arab Emirates (El-Kader & Hanson, 2019) showed that most of the Internet usage were performed through cell phone – either comparatively costly smartphone or cheap price feature phone.

Other than smartphone, the study participants also used laptop, feature phone, desktop and tablet for Internet browsing. Significant differences were found between male and female in using desktop computer, laptop and feature mobile phone with males used the devices more than the female. Low access of desktop computer and laptop was reported by a study (SANEM-Actionaid, n.d.) which found that only 6 percent people of Bangladesh have household computer access and less than 4 percent women used computer or laptop. However, no significant differences were found between male and female in using tablet and smart TV for Internet.

5.2.1.6 Location of Internet Use

The results (Table 17) of the current study showed that majority (93.8%) of the participants accessed the Internet from their home. Surprisingly, the current study found that a good number of respondents used the Internet during move or travels and friends or relatives house. The findings showed that nowadays very few respondents had used cybercafé for accessing Internet. Significant gender differences were observed

regarding the location of the Internet use between male and female. Females were found to be more home centered Internet users compared to male. On the other hand, male had more access to the Internet outside home, i.e., during move or travels, friends or relatives house and cybercafé. These gender differences seems to be reflections of deep rooted Eastern social and cultural perspective where female are expected to stay home and carry their leisure activities there (Oshan, 2007). Moreover, females in Bangladesh society did not feel secure and comfortable using the Internet outside of their homes, except for work and educational institutions.

These findings was substantiated by the previous studies (Chakrabarty & Latifee, 2014; Chandrima et al., 2020; Hossain & Rahman, 2017; Hossain et al., 2017; Islam, 2017; Mahmud, 2011; Munshi et al., 2018; Rahaman, 2018; Ullah, 2013) conducted in Bangladesh. All these studies found that majority of the respondents used Internet from their home or living places including hostels or dormitories. Globally people now have the facilities to use the Internet from their home as studies (Bujała, 2012; Goswami et al., 2018; Jain et al., 2020; Marahatta et al., 2015; Patel, 2019; Qureshi et al., 2014; Tsimtsiou et al., 2015; Vigna-Taglianti et al., 2017) found that major portion of the study participants had access Internet from their home.

An interesting feature of home Internet use was that majority of the users choose their bedroom for Internet use other than reading room, drawing room, dining room and other places of the home. This type of Internet usage is referred to as "bedroom culture" by Livingstone and Das (2010), who observed that "children and young people spend significant proportions of their leisure time at home with the mass media, increasingly screen media, in their own private space rather than communal or family space" (Livingstone & Das, 2010, p 3). Of the total bedroom users, majority (58.5%) were

students, followed by employed and unemployed. This indicated that students of all levels have had the facilities to use Internet without any supervision or restriction form their parents.

5.2.2 Purpose of Internet Use

The study's findings (Table 21) revealed that participants used the Internet for a variety of purposes. According to the uses and gratifications of the Internet as suggested by Stafford et al., (2004) the purposes of Internet use fall into three categories. The gratifications are: content gratifications, process gratifications and social gratifications. Other researchers also supported this division of Internet gratifications (Roy 2008, 2009; Chigona et al., 2008).

The results (Table 22) revealed that Internet uses motivation of the highest percentage of participants of this study was content gratifications followed by social gratifications. Process gratification was the least chosen motivation for Internet usage by the youths in Bangladesh. This finding is supported by Stafford et al., (2004) who indicated that Internet users might be gratified more by its content compare to browsing for process gratification. Li (2013) also supported that for Internet users social and content gratifications played important functions. Highlighting the information need of content motivation, Roy (2008, 2009) resolved that besides using for pure entertainment, such as music and playing online games, Internet users mainly use it for information. According to Kuss and Griffiths (2017), through the process of uses and gratifications some Internet users also gratify their information and entertainment needs by using SNS.

Findings (Table 22) showed that news and information seeking, academic learning and entertainment (music and movie; watching videos; sports; playing online games; and adult pictures and videos) were the prominent needs obtained through content

gratifications in this study. This finding was supported by previous studies (Abbas et al., 2018; Al-Badi et al., 2016; Anasi & Owoeye, 2016; Hossain et al., 2018; Hossain & Rahman 2017; Jobayer et al., 2017; Mostafa, 2011; Oyedemi, 2015; Otaibi, 2012; Qureshi et al., 2014; Rahman, 2020; Selwyn, 2008; Shaheen et al., 2016) which found that most of the participants of these studies usage Internet for fulfilling their information, academic and entertainment needs. In their study, Stafford et al., (2004) incorporated education, information, knowledge, learning, and research variables in the content gratifications of Internet pointing out that Internet content motivation mostly embrace learning and information.

In the current study, social gratifications emerged second most important motivations for Internet use with chatting, SNS usage and Internet telephony that fulfilling the interpersonal utility and social interaction needs (Table 22). Through social gratifications users get maximum benefit from Internet in the form of chatting and interacting with others which was evident in the study of Stafford et al. (2004) who first introduced the 'new' Internet gratifications incorporating chatting, friends, interaction, and people variables. This finding was corroborated by Krishnatray et al. (2009) who stated that social gratification derived from "chatting and interaction with friends and others" (p. 20). Social gratifications widen the Internet users' exposure to the outside world and interactivity with others in order to obtain maximum benefits from Internet use (Roy, 2008, 2009; Bakar et al., 2014).

Like the current study, chatting and SNS use came as second prominent motivations for Internet use in previous studies (Anasi & Owoeye, 2016; Hossain et al., 2018; Jobayer et al., 2017; Qureshi et al, 2014). However, SNS use was found to be number one Internet use motivation in the studies (Almarabeh et al., 2016; Chakrabarty & Latifee,

2014; Deniz & Geyik, 2015; Faruq, 2017; Lubacy, 2014; Salubi & Muchaonyerwa, 2018) which anticipated that through social network users maintained relationships as well as exposure to outside world and escape from real world.

In the current study process gratifications seemed to be got the lowest attention of the Internet users with more than half of the respondents not using its components comparing content and social gratifications (Table 22). According to Stafford et al. (2004), process gratifications is the 'real use' of the Internet medium which is found less attending among the young users in this study. Convenience and ease of use is the main focus of process gratification which is related with resources, search engines, surfing, technology and websites (Stafford et al., 2004). In addition, in process gratifications, users are more interested in the process of doing something to satisfy certain needs than in the message content or how they interact with it. In other words, it can be said that through process gratification users gratify searching for some specific needs or to pass time (Bakar et al., 2014). From the above observation it is suggested that more than half of the participants (with highest 43.5 percent users using email in process gratifications category) were not interested in 'real use' of the Internet due to lack of involvement with the process and over emphasis on message content and interaction or relationship gratifications.

It is worth important to mention that there are overlapping of Internet uses and gratification process on the basis of context. Say, while a student using social network site for sending or receiving study material this is a content gratifications, while the same site is used for online purchasing this may termed as process gratifications and when the same is used for chatting it is categorized as social gratifications. Researchers (Stafford et al., 2004; Rubin 2002) rightly said that Internet is used by different people

for different purposes depending on the context, interaction and attitude of the users. In the early years of Internet, Papacharissi and Rubin (2000) found that email use was the predictor of information seeking and entertainment needs of Internet usage suggesting that email chat was used mainly for 'amusement and enjoyment' (p. 192). But with the advancement of various SNS now email is no more used for chatting purpose neither it is used for amusement or entertainment.

5.2.3 SNS use activities

Results (Table 25) showed that chatting and connecting with family and friends were the highest and second-highest activities performed by the SNS users in this study. This indicated that the main purpose of SNS usage of the participants of this study was to maintain relationships that basically gratify information and communications needs. Chatting is primarily used for communication, though some people engage in sex-chat for entertainment purposes. Previous research (Baglari et al., 2020; Brahma & Verma, 2018; Eke et al., 2014; Kabir et al., 2016; Kuss & Griffiths, 2011; Munshi et al., 2018; Nadkarni & Hofmann, 2012; Rollero et al., 2019; Saha & Guha, 2019) suggested that people use SNS to satisfy two specific activities, information-seeking and communication, in order to gratify their basic needs of forming and maintaining social relationships. "SNSs are primarily used as a tool for staying connected," (Kuss & Griffiths, 2011, p.3535). Mese and Aydın (2019) also found that the SNS was primarily used for communication purposes. From the uses and gratifications perspective, Hossain (2019) cited that subjective norm or social pressure strongly influenced the people to use SNS to maintain social relations with their peers, particularly family and friends. According to Nadkarni and Hofmann (2012), people use SNS to fulfill two basic needs -- 'need to belong' that determine affiliation with others for gaining social

acceptance and 'need for self-presentation' to express the impression of the users to others.

In this study, SNS use also got significant considerations by the respondents for learning purposes, communication for study and research. Though there are contradictory findings about the impact of SNS use on learning, many previous studies (Brahma & Verma, 2018; Eke et al., 2014; Khanam, 2020; Munshi et al., 2018; Quader, 2013) found that respondents usage SNS for their academic achievements. Munshi et al. (2018) found that postgraduate university students in Bangladesh strongly beliefs that SNS help learning process through collaborative workspace joining fellow students, teachers and other professional to discuss their problems through sharing up-to-date resources and information. Al-Jubayer (2013) while investigating teenagers SNS use also found that majority of them using Facebook for educational purpose. Kircaburun et al. (2020) also found that young people's higher Facebook use was related to informational and educational gratifications. On the contrary, some studies (Alnjadat et al., 2019; Shabir et al., 2014) reported negative impact of SNS use on academic performance.

5.2.3.1 Differences on SNS use activities based on gender and age

In the current study it was found that male and female had dissimilar motives for SNS gratifications in terms of gender and age (Table 26 and Table 27). Previous studies (Baglari et al., 2020; Kircaburun et al., 2020) which mainly investigated gender and age differences regarding SNS use presented similar findings. The current study's findings on gender differences in SNS activities revealed that male and female SNS gratification motives differed. In 10 of the 15 SNS activities, males had higher mean scores, indicating that there is a significant difference in SNS activities between the genders. Though not statistically significant, females were found to have a higher mean for SNS usage for shopping and

education or research in this study, which supported that women use SNS more for task management, education, and information (Kircaburun et al., 2020).

In the four age groups of this study, younger age groups comparing to the older age group were found to be more engaged in playing online games which strengthened the findings of the previous studies (Kircaburun et al., 2020). These studies suggested that younger participants use social networks for entertainment and for passing time.

5.3 Research question two

How does the use of the Internet affect young people's activities and attitudes? This research question enquired how participants perceived the Internet as an information source in comparison to other traditional information sources, as well as how Internet use had supplanted traditional media use habits, some everyday activities, changing relationships with family and friends, apprehension about Internet use, and some exceptional Internet use by youths.

5.3.1 The Internet is a key source of media information

Both dichotomous (yes/no) counting (Table 29) and mean scores (Table 30) indicated that respondents' top preference for obtaining the most up-to-date news or information about any contemporary event was the Internet. It was followed by television, newspaper, family and friends, and radio. The finding of the current study was supported by previous studies (Abbasi & Huang, 2020; Ayyad, 2011; Chan & Fang, 2007; Flanagin & Metzger, 2001; Gaskins & Jerit, 2012; Kitamura, 2013; Ling & Yue, 2015) which suggested that Internet had a clear domination over all other traditional media or information sources. While comparing with the Internet, Kitamura (2013) found similar order of traditional information sources among Japanese adult population like the current study. Chan and Fang (2007) found that young people in Hong Kong

used the Internet the most to get information, then TV and the newspaper. And the radio was the least entertaining media for knowing information. The study also found that young people search for sensitive information on the Internet, then with their friends. These findings were in line with the results of the current study.

There are several reasons for Internet's supremacy over other media. The first and one major cause of dominance of Internet is its informative nature. Various contents on varieties of topics are being provided regularly on the World Wide Web (www) by the governmental bodies, non-governmental organizations, academic institutes, commercial companies and even individuals all over the world. Information on the Internet is becoming richer and richer with the global effort of content providers and the unlimited capacity of the Internet. Because of its importance as a source of information, the Internet has gained widespread popularity. The findings reveal that the Internet is a more essential source of information for young people than human sources when it comes to sensitive matters (Chan & Fang, 2007). "The Internet is now becoming a one-stop information hub" (Chan & Fang, 2007, p. 21).

Secondly, with increasing content convergence across media, it may become difficult to create a hierarchy between new and traditional information sources (Flanagin & Metzger, 2001). People can enjoy media contents such as newspaper articles, television and radio programmes on the Internet because the Internet integrates the functions of traditional media.

Thirdly, as per the assumption of uses and gratifications, among various media people choose one which best serve their needs. Obviously, Internet has the best facilities over all other media. According to media scholar McCombs' (1972) 'relative invariable principle,' time spent by people on the media each day is limited, so when a new media

arrives, people usually do not increase the amount of total time spent, but instead reduce time spent on other media to have access to the new one. Ling and Yue (2015) observed that when a new media appeared it certainly create interest among the audiences over the existing ones curtailing time spent from those.

5.3.2 Influence of the Internet on traditional media

In the very early stage of Internet usage while investigating whether Internet supplanting the traditional media, Kaye (1996; 1998) found that Internet had serious impact on the traditional media including television, newspaper and radio. Kaye asserted that television and newspapers were under serious risk of losing their audience as more than a quarter of them turned to the Internet for news, information and entertainment.

Ling and Yue (2015) in a study found that with the time displacing effect of Internet, more than 60% respondents had spent less time on traditional media. Similar to the current study, radio is the least popular of the five traditional media that they looked at. A longitudinal study during the period of 2013 to 2017 in eight Middle East countries showed that growth of Internet declined reading of newspapers and listening radio to a great extent while watching television moderately affecting the media use (Northwestern University in Qatar, 2018).

In a study on 13-19 years Pakistani teenagers, Abbasi and Huang (2020) showed that information retrieval system of the youngsters was transformed with increased Internet use, indicating that newspapers and radio greatly losing their positions to Internet. Seventy nine percent young people in the United Kingdom (UK) aged 16-24 used Internet as their number one news source followed by television 49%, print newspaper 20% and radio 24% (Ofcom, 2020b). Internet supplanting traditional media,

particularly television and newspapers in their daily news field (Kitumara, 2013). However, Witmer & Taweesuk (1998) in a study on Internet users in the United States and Mexico found that the Internet had little impact on electronic media such as television and radio, but had a significant impact on newspapers and magazines.

5.3.3 Influence of Internet in changing regular activities

The current study's findings revealed that, based on time spent by respondents, the Internet had a significant influence on some regular activities, but had no significant influence on others.

5.3.3.1 Internet's significant impact on regular activities

The findings (Table 31 and Table 32) of this study revealed that after starting to use the Internet, respondents experienced statistically significant changes in their television viewing, reading (academic), and sleeping habits. All of these activities were significantly reduced as a result of Internet use, indicating that the Internet had taken over respondents' TV viewing (Figure 1), reading (Figurre 4), and sleeping time (Figure 5).

Kaye (1998) revealed in her study that about a quarter of the participants reported spending less time watching television and reading newspapers after they began using the Internet. According to a recent report by (Ofcom, 2020b), 79 percent of 16 to 24 year old youths used the Internet for news, compared to 49 percent who used television, despite television being the most popular platform for news among all British adults. In the Middle East, television is no longer considered the primary source of news, with approximately 68 percent of citizens in seven Arab countries relying on digital online platforms for daily news. Television has now reached parity with online platforms, with a significant decline in viewership from 78 percent in 2017 to 68 percent in 2019 (Northwestern University in Qatar, 2019). Researchers (Cartledge, 2002; Ferguson &

Perse, 2000) noted nearly two decades ago that heavy Internet users rarely watch television. Due to the way people use the Internet to pass the time and for entertainment, these researchers predicted that the Internet may eventually supplant television.

Mamun and Griffiths (2019b) found that 20.1 percent of Facebook addicts sleep less than normal, implying a link between sleeping time and problematic Internet use. Other Bangladeshi studies (Chowdhury et al., 2018; Islam et al., 2020; Jahan et al., 2019; Uddin et al., 2016) had also reported that problematic or excessive Internet use has a direct correlation with sleep. Similar findings were made by Li et al. (2015), who observed that Internet use interferes with study and causes sleep deprivation. Bener et al. (2019) in their study of Turkish university students found that those who were addicted to the Internet slept less than those who were not addicted to the Internet. Multiple studies (Abdel-Salam et al., 2019; Bakken et al., 2009; Balhara et al., 2018; Chauhan et al., 2020; de Vries et al., 2018; Desai et al., 2018; ElSalhy et al., 2019) demonstrated that participants compromised their sleeping habits in a variety of ways as a result of Internet use.

Problematic Internet use was associated with poor academic performance and a lack of sleep. Lack of sleep, on the other hand, contributed to poor academic performance because it causes problems with concentration on study materials and loss of interest in course work. As a result, a lack of sleep reduced overall reading time and had a negative impact on academic performance (Frangos et al., 2011). Moreover, prolonged Internet use can have a detrimental effect on young people's cognitive development, including their ability to remember and pay attention, concentrate, reading, and learning (Brey et al., 2019). How online has eroded reading time is best illustrated by a social

media user's comment, "I preferred reading books to watching movies. But as I moved into the digital age, as my parents gave me a cellphone and then a computer, I spent less and less time reading books and more time online or on my phone" (Anderson & Rainie, 2018, p. 59).

5.3.3.2 Internet's non-significant impact on social interactions

According to the findings (Table 31 and 32) of this study, spending time on the Internet had no significant impact on reading newspaper, making phone calls, time spent with family and friends, nor did going out with family for leisure. The findings of the current study showed that the majority of the respondents believed that their time spent on reading newspaper (Figure 2), with family and friends (Figure 7 and Figure 8), touring with family (Figure 6) as well as making phone calls (Figure 3) remained unchanged, while a few respondents thought it had decreased a little. This indicated that Internet had no significant impact on social interaction.

In 1997, Katz and Aspden observed that the majority of Internet users did not believe the Internet had a significant impact on the amount of time spent with family and friends. They found that 88 percent of respondents had not changed their time spent in person or on the phone with friends and family since using the Internet. Shklovski et al. (2006) stated that "even though the Internet may have changed many habits, the effects of those changes on fundamental relationships and psychological well-being appear to be small or at least slow in emerging" (p. 789). They came to the conclusion following a meta-analysis of 16 studies conducted between 1995 and 2003. Livingstone et al. (2018) found that the new system of digital media use does not displace old communication systems, but rather helps families keep in touch with the parents communicating face-to-face with their family and friends. These findings corroborated

and confirmed the results of this study, which found that the Internet did not have a big impact on social interactions, despite growing concerns about people using the Internet too much.

However, there were contradictory findings about the Internet's impact on people's social relations. The debate about the impact of the Internet on people's social interaction and social involvement, specifically with family and friends, began in the late 90's (Shklovski, 2021). While Katz and Aspden (1997) in their study claimed that Internet use amplified traditional communication, Kraut et al. (1998), on the other hand, contradicted this, stating that Internet use could displace time spent with family and friends. Later, in 2006, Kraut as a co-author of Shklovski et al., (2006) overruled their earlier findings stating that Internet had little impact on social interaction.

5.3.4 Influence of the Internet on offline and online communication

Results showed that the respondents communicate with the family and friends mainly two ways (Table 33). In the first category of online and digital cluster the highest percentage of youths had communicated with their family members, friends and peers over the phone, followed by communicated via instant message through the use of SNS, and video calls using these platforms. In the second cluster, offline communication also had a significant share, with the majority of respondents visiting their family and friends in person even after online communication. Flanagin and Metzger (2001) termed the first kind of digital and Internet-based communication as mediated interpersonal communication while the second kind of offline communication as unmediated interpersonal or fact-to-face communication. They claimed that offline interpersonal or face-to-face contact was the most useful and varied method for meeting communication needs, and that it was only exceeded by mediated interpersonal

communication in meeting the desire to keep in touch. This finding indicated that the respondents of the current study continued both online and offline communication to keep in touch with their family and friends.

These findings supported previous studies (Bargh & McKenna, 2004; Flanagin & Metzger, 2001; Reich et al., 2012) which reported that online and offline communication may overlap to improve interactions. In their study, Reich et al. (2012) found that 84% of respondents used SNS to communicate with friends and 52% used it to communicate with relatives. They also discovered that online and offline relationships overlapped, with online relationships strengthening offline relationships. Offline friends and relatives, according to the study, can interact both in person and online, whereas online friends avoid in-person interactions.

5.3.5 Influence of Internet apprehension on the Internet use

The results (Table 36) of the current study indicated that hacking ranked first on Internet users' apprehension list, password theft came in second, disclosure of personal information came in third, email and social networking account security came in fourth, virus attack came in fifth, and content theft came in last among Internet apprehension issues of the respondents. Overall, the result indicated that female had higher apprehension about privacy of personal information and theft of password compared to male Internet users (Table 37). The result shows that in general, older age groups had higher apprehension about all the issues surrounding Internet use, while younger age groups, particularly the age group of 15-19 years, had lower apprehension (Table 38). This finding specifically suggested that younger people of 15-19 years had low apprehension about theft of content, and passwords compared to the older age groups of 25-29 years and 30-35 years, who had higher apprehension.

Similar findings were reported by Ofcom (2020a) which stated that 57 percent of Internet users aged 16 to 34 years indicated they were concerned about hacking or security, 54 percent were concerned about content and contacts with other people particularly thorough SNS, and 33 percent were concerned about privacy. According to the study, other concerns regarding Internet use include the promotion of fake news; the unauthorized use of personal information; the transmission of violent or disturbing content, sexual or pornographic content, and viruses; bullying or abusive behaviour or threats; child sexual abuse and offensive videos and images; cyber-stalking; harmful or misleading advertising; the promotion of terrorism or radicalization; unexpected friend or follow requests; hate speech or inciting violence; and offending others. In terms of age, 81% of UK individuals aged 16 and above were apprehensive or concerned about using the Internet for social platforms, apps, online games, and email communication. On the other hand, only 27% of the children aged 12 to 15 had apprehension about the Internet. Females were more concerned about the Internet use compared to males (Ofcom, 2020a).

In USA, 41% of adult Americans had experienced online harassment in some form, such as being called an offensive name, being purposefully embarrassed, or being physically threatened (Vogels, 2021). Social media was the most common platform for harassment for both men and women, accounting for 75% of all online abuse. Women were harassed on social media at a higher rate than men. Young people were more likely to be harassed, with roughly 64 percent of adults under 30 reporting having been harassed online. Approximately half (48%) of 18- to 29-year-olds were severely harassed online, compared to 32% of those aged 30 to 49. According to a CIGI-IPSOS Global Survey (IPSOS, 2019), 78 percent of Internet users aged 16 to 64 in 25 countries were at least somewhat concerned about online privacy. More over half of the

respondents (53%) were extremely concerned about their online privacy. Internet users in developing countries were the most concerned, while those in developed countries were the least concerned.

In Bangladesh, Internet users face a variety of online annoyances, such as harassment or offensive language, direct attacks or threats of violence, online account hacking, and the unauthorized distribution of personal information (Alliance for Affordable Internet & Access to Information Programme, 2019). Women were more likely to be harassed with offensive language and direct threats of violence, whereas men's personal information was hacked and shared online without their consent.

Previous research (Joyce & Kirakowski, 2014; Wu & Tsai, 2006) suggested that Internet use experience is associated with Internet self-efficacy, which ultimately determines Internet users' level of awareness. When it comes to Internet use, experienced users are more aware and competent. According to the current study's findings, younger respondents lacked Internet experience and a low level of awareness about Internet security, resulting in low apprehension, which could significantly affect their Internet use. This finding was supported by Joyce and Kirakowski (2014) who found significant age differences in Internet self-efficacy with older age group of 25-34 years having the highest self-efficacy score and the younger age group of below 18 years had the lowest self-efficacy scores.

In a recent study, Blank and Dutton (2019) found that more than half (52%) of respondents were concerned about privacy while online, and that these users had taken steps to protect their privacy when it came to contact information, medical issues, marital status, age, and online purchases. Users were also concerned about malware or virus attacks, obscene or abusive emails, and personal data theft. The respondents, on

the other hand, believed that concerns about Internet security, specifically virus attacks, were either stable or declining. One of the main reasons for the decreased fear of a virus attack is that antivirus software is frequently installed by default.

The results showed the majority of the respondents in this study had a lot of apprehension about privacy and security issues when using Internet. Hacking, password theft, disclosure of personal information, and security of email and social accounts were the most concerning issues young people faced during Internet use, with more than seventy percent of respondents expressing higher apprehension (Table 37). Females were more apprehended by hacking, password theft, and disclosure of personal information, i.e., privacy. Although virus attacks and content theft seemed to be comparatively less apprehended issues, still more than sixty-five percent of users had apprehension. This finding of the current study corroborated a survey of the UNESCO (Culver & Grizzle, 2017) which indicated that 74% of the youth were concerned about their online privacy with more than half (54%) of the youths had experienced online privacy threats. According to the survey, youths were more concerned about their online security more than privacy. The result of this study also supported an Ofcom study (Ofcom, 2020a) which stated that more than two fifths of 16 years and above aged adults were worried about their personal information theft and frauds or scams.

According to a global survey on Internet Privacy and Freedom of Expression by UNESCO (Toby et al., 2012), the Internet creates inescapable dangers to people's right to privacy because its users are constantly under government and private actor observation. For instance, according to the terms of service and privacy policies of social networking sites, users provide personal information to the SNS, which is then shared in order for the SNS to generate revenue through advertising, raising concerns

about the privacy of their users. Some users, on the other hand, share their personal information in public, posing possible hazards and security problems. Bangladesh Government's e-Government Computer Incident Response Team itemized malware attacks, information leakage, and identity theft were among the top 15 cybersecurity concerns in the country (BGD e-GOV CIRT, 2020). It further stated that malware or virus attacks, information leakage or personal data content and security breaches, and identity theft through hacking and password snatching are mainly targeted at individual Internet users. From the aforesaid observations it could be concluded that current study participants rightly able to identify their Internet use apprehension from Bangladesh perspectives.

In this study female participants were found excessively concerned about Internet security which was supported by previous studies (Alliance for Affordable Internet & Access to Information Programme, 2019, BLAST & BRAC JPGSPH, 2017; Bonnya, 2020) which found that women were more likely to risks of harassment through offensive language and obscene materials, hacking, disclosure of personal information, and threats of sexual assault, physical harms or even killing. An Ofcom (2020a) survey clearly differentiated that woman (84%) were more apprehended about Internet security compare to men (79%).

5.3.6 Anonymous use of the Internet

In this study, nearly a quarter of respondents (20.1 percent) admitted to using the Internet anonymously for a variety of purposes (Table 39). Males preferred anonymity to females when it came to online interaction (Table 40). Juniors used the Internet anonymously more than seniors, indicating that there is a statistically significant relationship between age and anonymous Internet use (Table 41). It was found that 15-

to 24-year-olds were more anonymous Internet users than 25 to 35-year-olds. Compulsive Internet users were more likely to use the Internet anonymously than non-compulsive Internet users, indicating a statistically significant relationship between anonymous Internet use and compulsive Internet use (Table 42).

The findings were supported by Rainie et al. (2013) who found that 18 percent of the American adults preferred to be masked their identity while online. They also found that younger Internet users of 18-29 years old used the Internet more anonymously compared to 30-49 years and above age group. However, female were found to be more anonymous Internet users than male, the findings revealed. On the other hand, anonymous use of the Internet made people feel like they had a new sense of freedom, which made them excited. Anonymous use of the Internet play significant role in promoting harmful and anti-social behavior as well as problematic Internet use (Aboujaoude et al., 2006; Brey et al., 2019; Chung et al., 2019; Maheshwari & Preksha, 2018; Meerkerk, 2007; Mihajlov & Vejmelka, 2017; Ofcom, 2019; Sharma et al., 2016; Wallace, 2014).

5.4 Research question three

What are the attitudes of young people toward the use of the Internet? This question poses a number of issues about young people's attitudes toward the Internet, as well as the effects such attitudes have on a variety of sociodemographic characteristics.

5.4.1 Attitudes towards the Internet

Although numerous studies have been conducted on students' attitudes toward the Internet and a substantial number of studies on the general population's attitudes toward the Internet, the researcher for this study found only a few studies on youths' attitudes toward the Internet. Additionally, relatively little research on the Internet attitudes of

Bangladeshi youths were found during the literature review. While these Bangladeshi studies were dubbed "attitude" studies toward Internet use, no appropriate attitude scale or questionnaire were used to gauge Internet attitudes; rather, these research examined the pattern of Internet use among students or general populations. Previous researchers examined several elements of Internet use in Bangladesh, including students' attitudes toward learning, consumers' attitudes about online purchasing, and the attitudes of social media users in general and specifically, Facebook users. As a result, the current study's findings on attitudes about Internet use were compared mostly to those of studies conducted in many other regions of the world.

In the current study, the participants' overall attitudes toward the Internet were 3.78 in a likert scale of 5, with a standard deviation of 1.11, indicating that the study participants agreed with statements expressing positive attitudes toward the Internet (Table 43). This finding was supported previous studies (Abedalaziz et al., 2013; Birisci et al., 2009; Li & Kirkup, 2007; Luan et al., 2005; Peytcheva-Forsyth et al., 2018; San & Johnson, 2020; Tsai et al., 2001; Yango et al., 2019).

Donat et al. (2009) found that young adults have 'positive' attitude regarding Internet use and attitudes can have a significant impact on an individual's desire to use the Internet. The users who had home Internet access, who used Internet more frequently and had longer time of Internet use experience were found to have more positive attitude (Alzahrani & O'Toole 2017; Otaibi, 2012). Availability of digital devices including smartphone, laptop and desktop computers with home Internet access have contributed positive attitudes towards Internet use (Tekerek et al., 2011).

Tsai et al. (2001) reported that increased Internet experience resulted in more positive attitudes, decreased apprehension, and increased self-confidence when using the Internet, whereas Anasi and Owoeye (2016) reported that participants had a favorable

attitude toward the Internet because the majority of them believe that the Internet is useful, instructive, simple to use, and saves time. Several studies found that students' had positive attitudes towards Internet because positive attitude influences their positive attitudes towards distance learning (Kar et al., 2014; Konwar, 2017; Peytcheva-Forsyth et al. 2018). Jan (2018) found that users' attitudes toward ICT were favourably associated with their digital literacy. Because the young people were digitally literate, the majority of them had a favourable view regarding the use of ICT in teaching.

5.4.2 Influence of demographic and Internet use related variables on Internet attitudes

The following section attempts to analyze the overall attitudes of the study's respondents in terms of demographic characteristics and Internet usage habits. Gender had a substantial impact on respondents' Internet attitudes, but age, marital status, education, monthly family income, and residence status had no such impact. Frequency of Internet usage, duration of Internet use, monthly Internet use expenditure, and frequency of SNS use were all found to have a substantial impact on participants' Internet attitudes, while experience of use had no effect.

5.4.2.1 Internet attitude and gender

Results (Table 44 and Figure 9) in this study showed that gender has a significant influence on the respondents Internet attitude scores and males (Mean 100.03) had more positive Internet attitudes than females (Mean 96.27). Like many other developing countries, there is a huge 55.6% gender gap in favour of men in the Internet use in Bangladesh (Alliance for Affordable Internet & Access to Information Programme, 2019) might contributing the attitudinal difference between male and female Internet users. The positive Internet attitude of young male in this study was supported by previous studies (Attuquayefio & Addo, 2016; Cai et al., 2017; Durndell

& Haag, 2002; Erdogan, 2008; Li & Kirkup, 2007; Maican & Cocorada, 2017; Sargin, 2013; Sanchez-Franco, 2006; Shaouf & Altaqqi, 2018; Schumacher & Morahan-Martin, 2001; Tsai et al., 2001; Wu & Tsai, 2006) conducted in both developed and developing countries. In a recent study on impact of Internet use on gender role attitude, Zhou et al. (2020) found that though Internet use play an important role in shaping individuals' inequitable attitudes, males in average hold a higher degree of discriminatory attitude compare to female.

Studies (Joyce & Kirakowski, 2015; Wu & Tsai, 2006) suggested that the differences in the experience, frequency, mode or purposes of the Internet use between male and female may lead gender differences in their Internet attitudes. Previous studies (Helsper, 2010; Jones et al., 2009; Ochnik & Dembinska, 2018; Ofcom, 2020c; Tsai et al., 2001; Wu & Tsai, 2006) found that males use the Internet more frequently than females. The findings of this study established that young male Internet users spent more time compare to females which were in line with the past literature (Luan et al., 2005) which articulated that increased Internet use was related to positive Internet attitude. Hence, the longer the Internet users stayed online, the more positive attitudes they had.

In a meta-analysis study, Cai et al. (2017) found that in general, males showed more favorable attitude toward technology usage than females. Additionally, the study asserted that the gender attitude gap could be explained by a variety of factors, including widespread beliefs that technology is a male-dominated field, that males are more competent technology users, and other social and cultural norms and factors. Shaouf and Altaqqi (2018) also found that in general men have a more positive attitude toward Internet technology adoption than women.

Yau and Cheng (2012) showed that male students were more confident in using technology for learning than female university students in higher education in Hong Kong. The study suggested that the reasons for such gender imbalances are socially constructed and were not related to inborn ability. Other than educational and material resources or access that contributes gender gap between male and female, studies (Durndell & Haag, 2002; Eastin & LaRose, 2000; Helsper, 2007) suggested that there was a strong correlation between gender and the differences in confidence or online use skills that also to a great extend determined the Internet use attitude between boys and girls. Studies (Joyce & Kirakowski, 2015; Wu & Tsai, 2006) suggested that Internet use skills always transmits through one's self-efficacy and boys were found to be more confident in using Internet compare to female due to their increased self-efficacy.

In the scarcity of literature on youths Internet attitude studies in Bangladesh, findings on some other similar Internet use studies were compared to understand the gender differences in Internet use among Bangladeshi young generation. In line with the findings of the current study, Saha and Guha (2019) found that university students have positive attitude about social media use and male students were more frequent users of social media than the females. While investigating the attitudes toward pornography among young university students, researchers discovered that male students consumed more online pornography than female students and that man were active consumers of pornography (Chowdhury et al., 2018; Mamun et al., 2019c). In a cross-sectional study on adult people, Azam et al. (2013) found that males' daily ICT usage in terms of both degree of use and frequency of use was higher than females. Uddin and Sultana (2015) in a study on online purchasing attitude of adult population observed that the younger and the male Internet users have more positive attitude compare to their counterparts.

There are a number of possible explanations for the differences in the Internet attitude of male and female in context of Bangladesh. Both the duration and frequency of use and also the experiences of use of the Internet were higher among males compare to female. Males have wide range of access to the Internet from any location any time which is not possible for the females due to family restrictions and social bindings. Male can use Internet while in walking, driving, riding on even public transports, visiting a friend or relatives houses which is not usual for a female. Except academic use in educational institutions, females have less freedom to access and use the Internet at home or outside.

As males in Bangladesh have used the Internet longer period, they feel more competent and comfortable in using the Internet than females. Male self-confidence about Internet use skills reduced their anxiety and enhanced self-efficacy. Self-efficacy played a significant role for gender differences in all kinds of technology usage, including the Internet, because it influences one's choice, effort and persistence to technology use (Cai et al., 2017). The researcher predicted that males and females might view and use the Internet fundamentally differently, with men being more at ease with and less anxious about Internet technology. It has been assumed widely that Internet is a male-biased technology, and males use the Internet more than females (Odell et al., 2000). Goswami and Dutta (2016) pointed out that gender plays an influencing role in Internet use as men are found to be more technologically skillful compared to women.

Cultural and societal view about the Internet usage by females is also a significant factor for the differences of Internet attitude. Culturally women in Bangladesh think that browsing or chatting in a public place is an unacceptable or unethical practice. Society is also critical about women's Internet use other than academic or official

purposes. There is a societal perception that playing games, chatting or using Internet for social network are male-centered activities. There are also cultural differences between East and West (Tsai et al., 2001). Moreover, certain Internet activities are constructed by gender perception as Li and Kirkup (2007) mentioned that Chinese and British women have totally different opinion about surfing the Internet for passing time or playing online games.

In contrast against the above findings, there are a good number of studies which found no gender differences in Internet attitude of male and female. Studies (Abedalaziz et al., 2013; Anasi & Owoeye, 2016; Donat et al., 2009; Duggan et al., 2001; Jan, 2018; Joyece et al., 2015; Kar et al., 2014; Konwar, 2017; Morse et al., 2011; Oshan, 2007; Odell et al., 2000; Stephen & Asiimwe, 2013; Tekerek et al., 2011; Tuncer et al., 2013; Yango et al., 2019) found no significant differences in the Internet attitude between male and female. These results suggested that male and female individuals hold similar attitudes towards the Internet. A study by Mahmud (2011) on the university students' attitude towards the Internet use for academic purposes found no difference of attitude between male and female in Bangladesh. Studies (Khatun et al., 2020; Rahman et al., 2018) also didn't find any significant difference between male and female attitude towards online shopping.

It is not surprising at all that the gender differences of Internet attitude seems to be disappearing in certain online activities. The current study found that there were no significant differences between male and female in using the Internet for the purposes of academic learning, news and information, online shopping, travel and tourism, passing time and health and fitness purposes (Chapter 4). The findings of the above-mentioned studies supported the findings of this study. According to Cai et al. (2017)

recent social and educational developments, such as technological innovation in education and the social phenomenon of incorporating technology in people' daily lives could have created a better environment for females to embrace technology use more than before. Such social and educational environmental factors could be conducive to the reduction of the gender gap in the attitudes toward technology use. In education system, both females and males have equal access and opportunities to use the Internet with no disparity between them that also diminishing gender attitude gap (Abedalaziz et al., 2013).

5.4.2.2 Internet attitude and age

In this study, there were no statistically significant differences in participants' attitudes toward the Internet by age groups (Table 45). However, the mean attitude scores showed a clear distinction in the four age groups with youths' in between 25-29 years old have the highest positive Internet attitude scores followed by 20-24 years and 15-19 years while 30-35 years have the least attitude scores (Table 46). This finding was supported by previous literature (Alzahrani & O'Toole, 2017; Attuquayefio & Addo, 2016; Islam & Hossain, 2013; Jan, 2018; Marican & Cocorada, 2017; Ramadan et al., 2019; Stephen & Asiimwe; 2013; Tuncer et al., 2013; Yango et al., 2019) which found no significant differences in the attitudes of Internet users on the basis of age, but in most cases younger age groups had more positive attitude than the older.

There are several reasons for non-significant age difference of attitude of the youths in this study. One of the reasons is that this study had covered only the young people who were termed as Net Generation (Tapscott, 2009) or Digital Natives (Prensky, 2009) or Millennial (Oblinger & Oblinger, 2005) and Generation Z (Dimock, 2019; Beresford Research, n.d.). Net Generation are the people who born in between 1977 and 1997

(Jones, 2011) while Generation Z are born in between 1997 and 2012 (Beresford Research, n.d.). These people grew up in a digital environment using the Internet as part of their daily life. As such there were very little attitudinal differences. Secondly, in some studies (Abedalaziz et al., 2013) the presence of a wide age gap among the study participants age categories (i.e., less than 20 years to more than 60 years) contributed significant differences whereas in the present study only the youngest age category was selected.

Although this study found no significant age difference between the four age groups of young people (15-19 years, 20-24 years, 25-29 years, and 30-35 years), it was discovered that adolescents and young adults in the younger age groups have higher attitude mean scores than those in the older age groups. On the other hand, Joyce and Kirakowski (2015) discovered a statistically significant difference in average overall attitude scores across seven age groups of participants (18 years, 18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, and 65 years and above), but no such difference in post-hoc analysis. Additionally, the study discovered a consistent fall in attitude scores as age climbed beyond 25–34 years, showing that older age groups have less favourable attitudes regarding the Internet. The finding is consistent with those of the current investigation.

Miraz et al. (2011) discovered a nearly identical result in a comparative study between Bangladesh and the United Kingdom, indicating that in both countries, adoption of mobile Internet peaks among 19-25 year old users and then begins to decline. A number of studies (Ali et al., 2020; Hoque et al., 2020; Khatun et al., 2020; Mahmud & Hossain, 2014; Rahman et al., 2018; Tabassum et al., 2017; Uddin & Sultana, 2015) on online attitudes on a broader age range of consumers discovered that young people

aged 20 to 30 were the most frequent and confident users of ICT, with a more positive attitude toward online purchases.

In contrast to the above studies, significant difference of the Internet attitude on the basis of age groups were found in the studies (Abedalaziz et al., 2013; Deursen et al., 2011; Donat et al., 2009; Joyce & and Kirakowski, 2015; Peytcheva-Forsyth et al., 2018). Peytcheva-Forsyth et al. (2018) observed that younger people were likely to be more proactive in using technologies due to their earlier contact with technology and also to the way they perceive the technology as an instrument both for entertainment and learning. However, Abedalaziz et al. (2013) suggested that the significance differences between the age and attitudes toward ICT were probably due to the presence of a wide age gap among the participating of the study. According to van Deursen et al. (2011), younger generations compared to older were particularly skilled users of the Internet as they have had exposure to the Internet throughout their entire life. Reasoning the possible age differences, de Haan (2003) stated that as seniors did not have the opportunity to acquaint them with the Internet as the same level the younger thus it is logical to be differences in Internet attitudes between younger and older age groups. Researchers found age differences in the Internet attitude due to differences across age groups in exposure to the Internet and older age groups' continuous lower levels of Internet use than younger age groups (Dutton & Blank, 2011; Joyce & Kirakowski, 2015; Zickuhr & Madden, 2012). Joyce and Kirakowski (2015) found that when age increased beyond the 25–34 years age group, Internet attitude scores decreased, indicating that the older age groups have less favorable attitudes towards the Internet.

5.4.2.3 Internet attitudes and experience

In this study Internet experience is defined as the length of time from the time of the respondents' first usage of the Internet to that of answering date of the interview for the study. The study divided the sample of the youths into five groups of different levels of Internet experience: less than one year, 1-2 years, 2-4 years, 4-8 years and above 8 years. Although this study did not found any significant relationship between the Internet attitude and experience of use, it is observed in the means plots (Figure 10) that the more the Internet use experience the higher the mean score of attitude of the participants. The findings confirmed that when the experiences of the Internet users increased the overall mean attitude score also increased successively.

Previous studies found a relationship between the Internet users experience and their attitude towards the Internet (Alzahrani & O'Toole, 2017; Drundell & Haag, 2002; Jan, 2018; Li & Kirkup; 2007; Luan et al., 2005; Oshan, 2007; Rahman et al., 2018; Tsai et al., 2001; 2005). These studies indicated that greater Internet experiences of the users have a substantial positive effect on their attitudes towards the Internet. Alzahrani and O'Toole (2017) observed that those Internet users who have used the Internet for a longer time had significantly higher positive attitudes towards the Internet. In a comparative study between Chinese and British Internet users, Li and Kirkup (2007) found that British male students had been using the Internet for longer than female and men had statistically significant positive attitude compared to women. Luan et al. (2005) in their study observed that Internet experience plays a pivotal role in increasing Internet use and experienced Internet users tended to remain online longer than those with lesser experience each time they access the Internet. Those who had more experience using the Internet were in better control while online compared to those with less experience (Luan et al., 2005; Tsai et al., 2001).

5.4.2.4 Internet attitude and frequency of Internet use

In this study, frequency of the Internet use had a statistically significant effect on the Internet attitude of the users. Post-hoc analysis (Figure 11) indicated that the mean score of those use the Internet very frequently (seven days of a week) was significantly higher from those uses Internet occasionally (1-3 days in a week). This finding was supported by previous studies (Anasi & Oweye, 2016; Erdogan, 2008; Joyce & Kirakowski, 2015; Li & Kirkup, 2007; Mahmud, 2011; Otaibi, 2012; Tsai et al., 2001). These studies stipulated that those who use the Internet more frequently stayed online longer than non-frequent users and were more experienced and confident in actual use. The aforementioned studies also pointed out that male were more frequent users of the Internet compare to the female.

A significant correlation between frequency of the Internet usage and Internet attitudes demonstrated that youth who used the Internet excessively had more positive Internet attitude and spent more time on various Internet activities. Studies (Erdogan, 2008; Luan et al., 2005) found that students with longer Internet exposure time were found to have more positive attitudes to use the technology toward learning. Joyce & Kirakowski (2015) found that the Internet attitude scores were strongly correlated with Internet frequency and individuals who had used the Internet excessively hold more positive attitudes towards the Internet than those with less Internet interaction.

5.4.2.5 Internet attitude and duration of Internet use

Analysis in this study found statistically significant differences in Internet attitude score in terms of duration of hours of daily Internet use. Post-hoc tests (Figure 12) indicated that the mean scores of participants those used the Internet 7-8 hours daily had significantly higher attitude scores and the scores gradually lowered with lessen hours

of the Internet use, indicating that the more hours of Internet use the more positive Internet attitude. This finding was supported by previous studies (Jobayer et al., 2017; Ochnik & Dembinska, 2018; Otabi, 2012; Wu & Tsai, 2006).

In a study Ochnik and Dembinska (2018) showed relationship between self-esteem and excess time spend online and draw conclusion that positive self-perception created positive Internet behavior. Wu and Tsai (2006) indicated that students having more time of using the Internet tended to have statistically higher scores on the Internet attitude. Otaibi (2012) observed that those who had higher Internet usage rate (numbers of hours the users spend on the Internet) developed more preferable attitudes to use the Internet compared to those usage it less.

5.4.2.6 Internet attitude and expenditure of Internet use

ANOVA test indicated statistically significant differences in participants' Internet attitudes across four groups based on the cost of Internet use. Post hoc analysis (Figure 13) revealed that the mean Internet attitude scores of Group 1 (those who spent less than Tk. 100) were substantially lower than those of Group 2 (those who spent between Tk. 100 and Tk. 500) and Group 4 (those who spent Tk. 1000 or more). No prior literature had been identified that compared respondents' Internet expenditure and its relationship to their attitudes toward Internet use. However, a few studies (covered in Section 5; 5.5.2.10) examined the association between expenditure for Internet use and compulsive Internet use and concluded that people who spent more money on the Internet were more likely to be compulsive users. This study and previous studies have found a relationship between Internet attitudes and compulsive Internet use, with individuals with higher favourable attitudes toward the Internet being more compulsive

users. As a result, it was attributed that there is an indirect positive association between Internet expenditure and Internet attitudes.

5.4.2.7 Internet attitude and frequency of SNS use

The analysis found statistically significant difference in relation to attitude towards the Internet use and the frequency of SNS use. Post-hoc comparison indicated that who used SNS very frequently had a higher attitude mean score than who used frequently, rarely and never (Figure 14). Pornsakulvanich (2017) argued that the frequency with which individuals utilize the SNS for social support is ultimately determined by their attitude toward Internet use. People would utilize SNS for social support more frequently if they thought that doing so would benefit them. This is consistent with prior studies which demonstrated that a positive attitude regarding utilizing SNS will lead to increased usage (Wang et al., 2015). They also agreed that there is a positive association between attitudes toward the Internet and Internet use, and that attitude influences users' desires to use SNS frequently. According to Popadic & Pavlovic (2020), there is a substantial positive association between the frequency of SNS usage and life happiness, and young people who use SNS very frequently report better overall life satisfaction as a result of a positive Internet attitude.

5.4.3 Hierarchical regression analysis

Hierarchical regression analysis however, found only gender and SNS use activities as significant predictor of attitudes towards Internet use in the final model which explained a total of 10 percent variance to Internet attitude (Table 50). Multiple hierarchical regressions corroborated the association between the Internet attitudes and the respondents' demographic and Internet use characteristics. The study results showed that gender was significantly associated with Internet attitudes and males were found to

have significantly higher attitude compared to female. SNS activities was another significant positive predictor to Internet attitudes suggesting that respondents who used Internet for SNS purposes were more likely positive attitudes towards the use of Internet. Though not statistically significant, duration of Internet use, frequency of Internet use, frequency of SNS use, and money spent on Internet use were all positively associated with Internet attitude, indicating that those who used the Internet for longer periods of time, more frequently, and spent more money had more positive attitudes toward Internet.

5.5 Research question four

How and to what extent do youths involve in compulsive or addictive Internet use? This question explores the sociodemographic effects of Internet addiction on young people, as well as other relevant issues.

5.5.1 Compulsive Internet Use

5.5.1.1 Internet addiction prevalence

In this study, 25.89 percent respondents were found to be compulsive or problematic Internet users and of them 15.85 percent were male and 10.04 percent female (Table 53). In Bangladesh, this may be a first study to employ the 14-item CIUS to assess problematic Internet use, since the majority of previous studies used IAT (Chandrima et al., 2020; Hassan et al., 2020; Islam & Hossin, 2016; Karim & Nigar, 2014; Khan et al., 2019; Mamun, et al., 2019a, 2019b; Uddin et al., 2016). The prevalence of problematic Internet use at the CIUS cutoff point of >28 in this study is comparable to previous studies that classified problematic Internet use at the IAT cut offpoint of 50 and above. In some recent Bangladeshi studies, the prevalence of PIU among adolescents and young people was 27.1 percent (Hassan et al., 2020), 26.6 percent

(Chandrima et al., 2020), 32.6 percent (Mamun et al., 2019b), 24 percent (Islam & Hossin, 2016), and 25.3 percent (Arefin et al., 2016), while the prevalence of PIU among youths in this study was almost identical (25.89 percent). Hassan et al. (2020) used IAT to report a 27.1 percent prevalence rate of PIU among 454 youths of 19-35 year old in three administrative divisions (Dhaka, Chittagong, and Sylhet). The current study's prevalence rate of 25.89 percent among 448 youths aged 15-35 years in all eight administrative divisions of Bangladesh using CIUS is consistent with the findings of Hasan et al. (2020).

However, some of the Bangladeshi studies (Islam et al., 2020; Karim & Nigar, 2014 Mamun et al., 2019a) followed different cutoff point for IAT and other studies use different measurement tools (GPIUS2, Akhter et al., 2020; Orman's Internet Addiction Survey, Jahan et al., 2019 and IADQ, Haque et al., 2016). Comparatively higher prevalence rate were reported in a number of studies (54.1% in Islam et al., 2020; 45.12% in Mostafa et al., 2019; 76.9% in Khan et al., 2019; 68.4% in Jahan et al., 2019, 67.38% in Hossain et al., 2017; 74.8% male and 78.4% female in Uddin et al., 2016; 36.04% in Karim & Nigar, 2014) which use either different measurement methods or different cutoff point in the same scale. According to a recent study (Mamun & Griffiths, 2019a) that reviewed four Bangladeshi studies involving adolescents and youths, the prevalence rates of PIU ranged from 24 to 79.4 percent.

There are discrepancies in PIU prevalence worldwide. Reviewing 38 research studies covering school to postgraduate students from seven South East Asian countries including Bangladesh, Balhara et al. (2018) in a meta-analysis estimated prevalence ranged from 0 to 47.4%. In another meta-analysis of nine studies from India, Davey et al. (2016) projected 21.58% prevalence among Indian adolescents. Kuss et al. (2014) examined 68 epidemiological studies from various continents of the globe and estimated lowest 0.8%

prevalence in Italy and highest 26.7% in Hong Kong. Cheng and Li (2014) in a meta-analysis of 80 research reports from seven world regions projected overall 6% global Internet addiction prevalence, the lowest 2.6% in Europe and the highest 10.9% in Asia. In a cross-country study Mak et al. (2014) found that among the six Asian countries, the highest 50.9% prevalence estimated in the Philippines, 47.5% in Japan, 37.5% in Malaysia, 34.6% in Hong Kong, 19.3% in China and the lowest 13.7% in South Korea using IAT.

The prevalence rate of the current study was matched with previous studies (25.4% in Kumar et al., 2019; 26.50% in Xin et al., 2018; 25.1% in de Vries et al., 2018; 34.3 in Tenzin et al., 2018; 28.57% in Sharma et al., 2016; 19.94% in Dufour et al., 2016; 23.6% in Adiele & Olatokun, 2014; 25.3% in Guertler et al., 2014) from different parts of the world. The prevalence rate of this study was also in line with a study of Laconi et al. (2018) who found 14% to 55% problematic users in nine different European countries with an average of 25% for the total sample.

5.5.1.2 Reasons behind variations of Internet use prevalence

There are a number of reasons for variations of problematic Internet use prevalence rate across the studies in country level and globally. Lack of agreement about Internet addiction criteria and inconsistent terminology is one of the main problems in prevalence estimation (Davey et al., 2016; Guertler et al., 2014). Another significant reason is that there are up to 45 different assessment tools in use when there is no universally accepted single well-established, well-known, and validated tool (Laconi et al., 2014).

Researchers uses various tools according to their conveniences as none of these tools have emerged as the ‘gold standard’ instrument in assessing IA (Mihajlov & Vejmelka, 2017; Kuss et al.,2014; Meerkerk et al., 2009). Moreover, the prevalence varies by

context, time, different populations used in different studies, socio-cultural factors, variations in measurement instruments and assessment criteria, different cutoff scores across the same diagnostic assessment tools (Kuss & Griffiths, 2011; Kuss et al., 2014; Mihajlov & Vejmelka, 2017; Vigna-Taglianti et al., 2017; Widyanto & Griffiths, 2006). As discussed previously, prevalence studies of Internet addiction are difficult to compare due to differences in Internet access among the populations studied, differences in respondent recruitment, differences in age groups included, and differences in the definition criteria used, among so many other discrepancies.

5.5.2 Influence of demographic and Internet use characteristic on Internet addiction

5.5.2.1 Internet addiction and gender

Results (Table 54 and Figure 15) of the current study showed that gender has a significant influence on the youths PIU with male (Mean 24.06) participants scored higher PIU than female (Mean 20.38). This finding is consistent with other Bangladeshi studies (Akhter et al., 2020; Chowdhury et al., 2018; Hassan et al., 2020; Islam & Hossin, 2016; Karim & Nigar, 2014; Mizan & Islam, 2017; Mostafa et al., 2019; Uddin et al., 2016) who found significant gender differences in the prevalence of PIU with male adolescents and youths having higher PIU than female. However, no significant differences of PIU between male and female were found in the other Bangladeshi studies (Chandrima et al., 2020; Hossain et al., 2017; Khan et al., 2019; Mamun et al., 2019b).

Apart from Bangladesh, global studies also found male preponderance in PIU. In a meta-analysis of 101 articles from 34 countries spanning a time period of 2010 to 2019, Su et al. (2019) found that in general male have higher level of PIU compared to female. The study further stated that Internet users of the Asia region have the higher level of PIU, particularly Asian males, compare to other parts of the world. This finding

is also supported by previous literature (Kuss et al., 2014; Montag et al., 2016). Some other meta-analysis (Balahara et al., 2018; Chakraborty et al., 2010; Kuss et al., 2014) also reported male predominance in PIU. Kuss (2014) pointed out that male gender both in young as well as adults is the most common sociodemograpic variable associated with PIU.

In line with findings of these meta-analysis, many of the previous literature (Adiele & Olatokun, 2014; Akhter, 2013; Ansar et al., 2020; Chamika et al., 2018; Chaudhari et al., 2015; Cinar et al., 2020; Dhir et al., 2015a, 2015b; Frangos et al., 2011; Grover et al., 2010; Krishnamurthy & Chetlapalli, 2015; Morahan-Martin & Schumacher, 2000; Sharma et al., 2016; Tenzin et al., 2018; Wu et al., 2016; Xin et al., 2018; Yoo et al., 2004; Young & Rodgers, 1998) indicated that males were more likely than females to experience PIU.

A number of recent studies (Chauhan et al., 2020; de Vries et al., 2018; Dufour et al., 2016; Guertler et al., 2014; Koyuncu et al., 2014; Kumar et al., 2019; Marahatta et al., 2015; Vigna-Taglianti et al., 2017; Vink et al., 2015; Yong et al., 2017) found that there are no differences of PIU among male and female gender. Females' more open use of the Internet for SNS activities, notably chatting, is one of the improtant explanation for the disappearence of gender disparities in Internet addiction (Vink et al., 2015).

Very few studies (Laconi et al., 2018; Mihara et al., 2016) reported significantly higher PIU among women compare to men. The possible reason is that women use the Internet as much as men and women use online activities like social networking, gaming, gambling and pornography which can lead to PIU (Laconi et al., 2018). SNS and social media have been identified as risk factors for PIU and are more frequently used by women (Laconi et al., 2015; Kuss et al., 2014).

5.5.2.1a Causes of gender differences

Studies found link between male predominance in PIU for various reasons. The main reasons for higher prevalence in males are due to the differences of the purposes of Internet use and distinct personality traits between male and female as well as cultural variations (Akhter et al., 2020; Islam & Hossin, 2016; Kuss et al., 2014; Tsai et al., 2009). Of the total 26 familiar Internet use purposes pointed out in this study, males significantly highly engaged in 19 activities including chatting, sports, watching adult pictures and videos, downloading music and movie, SNS use, email use, playing online games, and politics and elections compare to females. A number of studies reported that males tend to engaged in addictive contents such as online games, pornography or cybersex and social networking compared to their counterparts (Kuss et al., 2014; Laconi et al., 2018; Tsai et al., 2009). Males who used social networking and online gaming sites significantly outweighed the number who did not use these two online activities (Xin et al., 2018). Besides, males enthusiasms regarding exposure to unknown knowledge or exploring new inventions lead them gradually involved in compulsive Internet use as Internet is the main the hub of all the exciting adventures (Akhter et al., 2020; Islam & Hossin, 2016). The study's findings also revealed that males used the Internet more frequently and for a longer period of time, and had more experiences when using it for the first time than females.

A number of studies (Akhter, 2013; Akhter et al., 2020; Tsai et al., 2009) pointed out that cultural norm may contribute significantly for male and female PIU differences. The lower percentage of Internet addiction among females involves the fact that female adolescents and youths often receive more parental monitoring than male especially in eastern cultures, which may prevent them from spending excessive time on the Internet (Tsai et al., 2009). Women in the developing world have significantly lower technology

participation rates than men, likely as a result of entrenched socio-cultural attitudes about the roles of women in society (Antonio & Tuffley, 2014). It is argued that surfing the Internet is considered more 'normal' behavior for boys than girls, and this may make boys more prone to developing IA (Liu et al., 2013). Citing the cause of male PIU preponderance, a Turkish study stated that females are deprived of their spare time by taking many responsibilities at home while males are more comfortable and free to move away from family after a certain age, adolescent period syndromes and friend environment (Cinar et al., 2020).

5.5.2.2 Internet addiction and age

Among the four age groups (15-19 years, 20-24 years, 25-29 years and 30-35 years) of youths in this study, three younger age groups had significantly higher CIU scores compared to the older age group (Table 55 and Table 56). Post-hoc analysis (Figure 18) revealed that although there were no significant differences among the three younger age groups, 20-24 years old had the highest level of PIU followed by 25-29 years and 15-19 years. This indicated that PIU developed in the early years and progressively decline with age. These findings were supported by Ansar et al., (2020) who suggested that globally youngsters aged between 18 to 25 years have the highest chance of developing Internet dependence. Consistent with the present study, Uddin et al. (2016) also found severe Internet addiction among 22-25 years age group of university students. In a study of 18 to 65 years age group of people, Quinones-Garcia & Korak-Kakabadse (2014) found that the average age of compulsive Internet users was lower than non-compulsive users with younger groups (18-24 year and 25-34 year) demonstrated more compulsive Internet use categories than the older age groups.

This trend of PIU among different age groups also found in the studies (Akhter et al., 2020; Fernandez-Villa et al., 2015; Guertler et al., 2014; Islam & Hossin 2016; Okwaraji et al., 2015; Uddin et al., 2016) which found young university students or fresher showed higher level of PIU than the elder students. In Bangladesh, young adults were at risk of PIU due to easy access to the Internet, cheap mobile Internet packages and more freedom than their early childhood age (Islam & Hossin, 2016). Although PIU related symptoms appears to be prevalent across the age spectrum of both adolescent and adult groups (Kuss et al., 2014), in the present study adolescents and younger youths showed more PIU compare to the elder age youths. Internet addiction starts at early age compare to other addictions while the onset age of online activity decreased with the age (Xin et al., 2018).

5.5.2.3 Internet addiction and profession

Statistically significant differences were found in the mean CIU score of on the basis of respondents' profession, indicating that profession had played a significant role on the Internet users (Table 55 and Table 56). Analysis of Post-hoc test indicated that the mean CIU score of student was significantly higher than those of others and employed (Figure 19).

Almost all studies on PIU were targeted to adolescents and young adults considering that younger generations are at the higher risks of troublesome Internet use. Very few studies were conducted among general population or adults to investigate problematic Internet use in terms of occupation. The findings of the current study that student had higher PIU compared to other occupations of the participants was supported by previous studies (Bakken et al., 2009; de Vries et al., 2018; Quinones-Garcia & Korak-Kakabadse, 2014; Yong, 2014; Rumpf et al., 2014; Yong et al., 2017) which compared PIU in general

population in terms of their occupation or employment status or age. One Bangladeshi study (Hassan et al., 2020) which investigated PIU with occupation did not found any significant differences among four profession categories: housewife, jobholders, students and others.

Referring various causes of students' risk factors related to PIU, Wallace (2014) pointed out that nowadays students are connected to the Internet virtually all the time, they rely heavily on the Internet to study, read news, communicate and entertain themselves as well as multitasking with various events (attending a class and using Facebook) and various mode (watching TV with multiscreen and tweet to a friend) at the same time. In their study, de Vries et al. (2018) verified that there is a strong negative association between age and PIU among the younger population, particularly students and teenagers, who mostly access the Internet through smartphones.

Another study by Quinones-Garcia and Korak-Kakabadse (2014) found a significant relationship between PIU and age, with younger unemployed individuals in the age range of 18-24 years, who are primarily students, having a higher PIU. Guertler et al. (2014) in their study echoed that younger participants were experiencing more problems concerning Internet usage. Further, Bakken et al. (2009) found that a higher frequency of problematic Internet use among students than in the total population. On American college campuses, problematic Internet usage is common (Christakis et al., 2011).

5.5.2.4 Internet addiction and marital status

Marital status has significant influence on PIU as mean CIU scores of unmarried was much higher than the married in this study (Table 54 and Figure 16). The finding of this study being unmarried or single was prone to PIU was supported by previous studies (Asiri et al., 2013; Ataee et al., 2014; Chow, 2017; Islam & Hossin, 2016; Mamun &

Griffiths, 2019b; Poorolajal et al., 2019; Yong, 2014). Previous studies (Haque et al., 2016; Ozgur et al., 2014) found that single or unmarried had higher PIU compared to married.

Ozgur et al. (2014) opined that the responsibilities and liabilities of marriage lead individuals to an organized and regular daily life and eventually limit the Internet use. On the other hand, individuals' need for establishing social relations with new people may diminish with marriage that ultimately decreased PIU. Asiri et al. (2013) found that PIU was higher in single students as they receive positive internal rewards such as a sense of competence and socialization while they are online that consequently intensifies the amount of using Internet. Chow (2017) hinted that single people might have fewer family responsibilities and more free time to use the Internet than the non-single counterparts. However, there were studies (Mostafa et al., 2019; Mamun et al., 2019a; Tran et al., 2017; Tsimtsiou et al., 2015) that found no significant relations between marital status and PIU.

5.5.2.5 Internet addiction and residential status

It is found in the study that residential status of the participants had significant impact on PIU as the mean score CIUS of who reside outside family was significantly higher than who reside with family (Table 54 and Figure 17). This findings corresponds the previous literature (Asiri et al., 2013; Chaudhari et al., 2015; Fernandez-Villa et al., 2015; Hassan et al., 2020; Young, 2004).

Youths living alone at private accommodation had higher level of PIU due to loneliness, privacy for Internet activities and lack of supervision (Asiri et al., 2013; Chaudhari et al., 2015; Fernandez-Villa et al., 2015). In one study on American college students, Young, (2004) pointed out that youngsters who live outside family prone to

be Internet addiction due to freedom from parental control that ultimately familiar them adjusting with virtual life. On the other hand, people living with family members usually get more time to spend with family members which ultimately gives them support against PIU (Hassan et al., 2020).

5.5.2.6 Internet addiction and Internet use experience

There were no statistically significant differences between the mean CIU score and the numbers of years of Internet use experience, although those with more years of Internet use experience had higher CIU scores (Table 57 and Table 58). This finding was supported by previous study of Dhir et al., (2015b) in Taiwanese adolescents' population. Contrarily, a significant correlation between years of the Internet use experience and PIU was found in previous literature (Dhir et al., 2015a; Tenzin et al., 2018; Sharma et al., 2016).

5.5.2.7 Internet addiction and education

No statistically significant relationship was found between the mean CIU score of three levels of educational status of the participants of the current study indicating that education has no direct influence on PIU (Table 57 and Table 58). Most of the participants of this research were running students and it was found that those who were in graduate level had the highest mean CIU scores followed by upto higher secondary level and post-graduate level (Table 57). Those in post-graduate education level had considerably lower CIU scores compared to the other two groups; perhaps those in post-graduate education were engaged in real-life activities or actively seeking employment, which prevented them from excessive Internet use.

This finding is supported by the previous studies (Quinones-Garcia & Korak-Kakabadse; Vries et al., 2018). Vries et al. (2018) observed that high school students

had higher PIU scores than university graduates, which is similar to the findings of this study. There is a significant relationship between education level and PIU among Japanese people aged 16 and up, with high school graduates having the highest PIU scores, followed by university graduates (Yong, 2014; Yong et al., 2017).

5.5.2.8 Internet addiction and family income

No statistical significant association was found in the mean CIU score and respondents' family income, and the CIU scores of lower to higher family income group almost equal in this study (Table 57 and Table 58). This finding is corroborated recent studies (Cinar et al., 2020; Dhir et al., 2015a; Hassan et al., 2020; Hossain et al., 2017; Mamun et al.,2019b).

Cheap and comfortable Internet access, availability of low-cost Internet use devices including smart-phone, affordable Internet data usage plans can be shown as the reason why there was no significant difference between Internet addiction and monthly family income level of the participants (Cinar et al., 2020; Dhir et al., 2015b). Moreover, most of the study participants in this study were from low-to middle-income families due to which, significant differences on the CIUS score were not visible.

However, few studies (Andreou & Svoli, 2013; Bakken et al., 2009; Islam & Hossin, 2016) found inverse relationship between family economic condition and income suggesting that those of lower socio-economic status had higher PIU. Contrary findings were also seen in the literature (Kayri & Gunuc, 2016; Wu et al., 2016) which found that those with high socioeconomic levels are more likely to have Internet addiction.

5.5.2.9 Internet addiction and expenditure of Internet use

It was found that those who spent more money had a statistically significantly higher CIUS compare to who used less money for the Internet use (Table 55 and Figure 22). This finding was supported by previous studies (Chaudhari et al., 2015; Krishnamurthy & Chetlapalli, 2015; Patel, 2019; Salehi et al., 2014; Zalavadiya et al., 2016) which confirmed that who spent more money were more prone to PIU.

Chaudhari et al. (2015) mentioned that students who were considered to be PIU spent significantly greater amount on the Internet compared to their counterparts which lead them to financial problems and distraction from academic achievements. However, no association of the PIU and expenditure of the Internet use was found by Kumar et al. (2019) and Marahatta et al. (2015).

5.5.2.10 Internet addiction and frequency and duration of use

In this study the frequency of Internet use and the duration of hours spent online were found to be correlated and contributed significantly to develop PIU among the Internet users (Table 55 and Table 56). Shahnaz and Karim (2014) echoed that duration of Internet use was found to correlate positively with online dependency indicating that the more the users use the Internet, the more the possibilities that they will become dependent on the Internet. The result of the present study indicated that very frequent (everyday) or frequent (4-6 days in a week) use of the Internet increased the risk of PIU compare to occasional or rarely users (Figure 20). This finding is similar to previous studies (Chandrima et al., 2020; Hassan et al., 2020; Khan et al., 2019; Mamun et al., 2019a; Mostafa et al., 2019; Shahnaz & Karim, 2014) conducted in Bangladesh which also reported frequent Internet use as a predictor of PIU. For instance, Mamun et al., (2019a) reported that using the Internet every day increased the risk of PIU six-fold,

whereas spending more than five hours on the Internet in one sitting increased it four-fold. This findings was also supported by Vigna-Taglianti et al. (2017) who found that the risk of PIU was four times higher among those who connected once a week compared to those who connecting every day and eight times higher among those connecting several times a day. In the case of duration of use, the risk of PIU was two times higher for those who spent 2–3 hours per day on the Internet; nearly five times higher for those who spent 4–5 hours per day on the Internet; and six times higher for those who spent more than 5 hours per day on the Internet consecutively (Vigna-Taglianti et al., 2017). Both the frequency of the Internet use and duration of hours of the Internet increased the risk of PIU is a common finding in cross-sectional studies (Sasmaz et al., 2013; Wang et al., 2011).

In the present study it was found that who usage longer hours or duration of the Internet had higher CIU score compared to those usage shorter duration (Figure 21). Previous studies (Adiele & Olatokun, 2014; Berner et al., 2018; Dhir et al., 2015a; Dhir et al., 2015b; Fernandez-Villa et al., 2015; Guertler et al. 2014, Krishnamurty et al., 2015, Kumar et al., 2019; Laconi et al., 2018; Marahatta et al., 2015; Ni et al., 2009; Salehi et al., 2014; Sharma et al., 2016; Simcharoen et al., 2018) also supported that duration of Internet use was found to correlate positively with PIU indicating that more Internet usage develop more Internet dependency. Li et al. (2015), for instance, reported that widespread Internet availability may substantially benefit people by enhancing access for information, social communication and entertainment, but it also may increase the likelihood for developing PIU. Other studies (Dhir et al., 2015a; Cheng & Li, 2014; Su et al., 2019) also pointed out that young people who had greater Internet access may engagement in frequent online activities and more likely experience increasing PIU. Moreover, it was found in studies (Kuss et al., 2014; Simcharoen et al., 2018; Vigna-

Taglianti et al., 2017) that frequent and greater Internet usage prompted most common problematic Internet activities like social networking, playing gaming, watching videos, and viewing sexual content which was also demonstrated in the current study.

Adalıer and Balkan (2012) reported that daily 1-3 hours Internet usage create personal, familial and social problems and spending more than six hours online per day was related to more psychiatric symptoms. Though PIU depends of other characteristics such as gender, performed online activities or psychological factors, time spent online designated as an important risk factor of PIU (Laconi et al., 2018, 2015).

5.5.2.11 Internet addiction and frequency of SNS use and SNS activities

Analysis in this study found statistically significant difference at the CIU mean scores of very frequent (seven days in a week) and frequent (several days in a week) Internet users and those of rarely (several days in a month) and never use the SNS (Figure 23). The results showed that who usage the SNS very frequently were likely to develop the risk of PIU almost double compare to those usage SNS rarely and never. From this findings it is evident that with many Internet use activities PIU has been found to be positively correlated with SNS use and it was consistent with the findings of previous studies (Balhara et al., 2018; Chandrima et al., 2020; Chaudhari et al., 2015; Fernandez-Villa et al., 2015; Goswami et al., 2018; Khan et al., 2019; Kuss & Griffiths, 2011, 2017; Kuss et al., 2014; Laconi et al., 2018; Mamun and Griffiths, 2019b; Mamun et al., 2019b; Mostafa et al., 2019; Shahnaz & Karim, 2014; Sharma et al., 2016; Simcharoen et al., 2018; Tenzin et al., 2018).

Research across countries and continents has suggested that social networking is the major single cause of PIU (Goswami et al., 2018; Sharma et al., 2016). Researchers (La Barbera et al., 2009; Kuss and Griffiths, 2017) observed that younger generations may

be more at risk for developing addictive symptoms as a consequence of their SNS use. Kuss and Griffiths (2017) pointed out that youngsters use peers' SNS pages for extracting information as enjoyable activities which in turn compel them to addiction experience. These activities included frequently visiting the site for long time, experiencing negative psychological or physical effects when the activity wasn't available, and scheduling other activities around online time (La Barbera et al., 2009). Moreover, need for socialization as evidenced by social enhancement in extroverts and social compensation in introverts may be a reason behind the teeming use of social networking sites (Sharma et al., 2016). Further, the anonymous nature of online interactions, achieving altered sense of personal identity online, and need for developing intimate relationships can be the reasons for excess Internet use for social networking (Chaudhari et al., 2015).

5.5.6 Hierarchical regression to predict Internet addiction

In the final model of the hierarchical regression (Table 60), four predictor variables were found to be statistically significant, with SNS use activities recording a higher Beta value (β = .29), followed by duration of Internet use having a Beta value (β = .15). The other significant predictors were profession (β = .11) and frequency of Internet use (β = .11). The model explained a total of 26 percent of the variance. Multiple hierarchical regressions corroborated the association between the CIU and the respondents' demographic factors, Internet use characteristics, and Internet use purposes (SNS activities).

The study results showed that SNS use activities was the strongest predictor of CIU, predicting that those who involved in SNS activities were more prone to developing CIU. Duration of Internet use was another strong predictor of CIU, indicating that

longer duration of the Internet use was positively related to problematic Internet use. Profession was the other significant predictor of CIU. Most of the participants in this study were students, and positive association indicated that students were more prone to CIU. Frequency of Internet use was also a significant predictor, indicating that those who used Internet more frequently have the chance of developing CIU.

Gender, which was found to be a significant predictor in the first model, became insignificant in the final model but was found to be positively related, indicating that males are more problematic Internet users. Marital status and residential status were also positively related to CIU, indicating those unmarried and livings in outside family were more prone to CIU. Age was positively related with CIU predicting younger respondents were more prone to Internet addiction. A positive correlation between CIU, and Frequency of SNS use and expenses of Internet use indicated that those who used SNS frequently and spent more money for were more susceptible to addictive Internet use.

5.6 Research question: five

Is there any association between Internet attitude and compulsive Internet use? This question explores the association between attitudes towards Internet use of the respondents and their additive Internnet use behaviour.

5.6.1 Association between Internet attitudes and compulsive Internet use

A significant positive correlation was found between attitudes towards Internet use and compulsive Internet use scores of the current study participants (Table 61). The finding indicated that the higher the attitude towards the Internet, the greater the chances of compulsive Internet use. However, the relationship between Internet attitude and Internet addiction seemed to be weak in this study. This finding was substantiated by previous studies (Ilhan et al., 2016; Masrek et al., 2012; San & Johnson, 2020; Sargin,

2013; Tsai & Lin, 2001) which stated that a positive attitude towards the Internet had a significant effect on Internet addiction. Tsai and Lin (2001) observed that many features of young people's Internet addiction could be explained by attitudes towards the Internet, which they termed 'computer networks'. Citing research findings, they explained that those who had more frequent Internet usage were inclined to more problematic Internet use, resulting in depression.

In the current study, it was found that youths had positive attitudes towards the Internet. As young people used the Internet for various daily activities, including teaching and learning, job purposes, information seeking, social contact, and entertainment, they had a very positive attitude towards the Internet. On the other hand, it was revealed that over a quarter (25.89%) of the respondents of this study were compulsive Internet users. Findings suggested that excessive use of the Internet for other than academic purposes, jobs or basic needs related activities gratified a section of youths in compulsive use of Internet activities like social networking, gaming, chatting, and consuming pornography.

Further, male participants in this study had significantly higher positive attitudes than females and males were more addicted to the Internet than females, which confirmed the consistency of the findings of the study. The relationship between Internet attitude and compulsive Internet use was also established in this study. Male participants were found to have had more positive attitudes towards the Internet and, at the same time, they were found to be more susceptible to CIU. Moreover, a previous study (Wu & Tsai, 2006) found that males had higher self-efficacy in controlling the Internet use, which may have led to their attitudes towards the Internet being positive and also more prone to CIU. Similar to the current study, Sargin (2013) also noted a similar finding

stating that males had higher self-efficacy in controlling the Internet, leading them towards a positive Internet attitude, at the same time being more disposed to compulsive Internet use. San and Johnson (2020) predicted that positive correlations between Internet attitudes and Internet addiction had an indirect effect on the academic performance of the respondents.

5.7 Research question six

How do youth perceive the advantages and disadvantages of using the Internet? Through this question, respondents provided their frank opinions on the positive and negative uses of the Internet and how those uses affected their daily lives.

5.7.1 Perception about Internet use

"The Internet's effects on society, whether pro-social or anti-social, productive or unproductive, meaningful or meaningless, or negative or positive in relation to individuals' lives as a e-communicators are neither inherently good nor evil," (Lin, 2009, p.584). As this quotation correctly stated, the Internet is not inherently good or bad; rather, it is how people perceive it that determines whether it is used advantageously or disadvantageously. Since its inception, the Internet has undoubtedly transformed the world and become integral parts of human life. Though the Internet is an essential instrument of the everyday activities of human life, it is a 'double edged' sword (Bandura, 2006b) depending on its use. Respondents of this study were asked to give their free opinion through two open-ended questions on how they perceive the Internet impact their live positively or negatively. While some of the participants of this study mention only the positive impact of the Internet use and some others only the negative effects; however, most of the respondents put their remarks on both benefits and harms of this digital technology. This finding supported the very early study of the

Internet use by Morris and Ogan (1996) who pointed out that Internet is both an information and entertainment media and it may have a "functional equivalent" of other media with equally positive and negative impacts as well as numerous uses and gratifications. This sort of findings was also observed by Anderson and Rainie(2018) who found that 'digital life has been both positive and negative' as a good number of experts comments about both sides of the story. In another study on American teens' social media use, one of the most frequent application of the Internet, Anderson and Jiang (2018) found that around one third respondents (31%) believe that social media had a positive impact while about a quarter (24%) assumed its effect negatively. Citing examples of the Internet usage from the usages and gratifications perspectives, Blank and Lutz (2016) stated that the same online content may be used by different users for different purposes. The differences of usage may lead users to dissimilar benefits and may possibly expose to dissimilar harms. Both negative and positive impact of the Internet usage also found in the previous literatures (Asianet Broadband, n.d.; Begum, 2019; Draganovic, 2020; George et al., 2019; Miah, 2008; Pew Research Centre, 2015). In the following section, findings of the youths' perception on the advantages and disadvantages of the Internet use will be discussed to give an overview of the debate on the crucial social issue.

5.7.2 Advantages of the Internet use

5.7.2.1 Source of unlimited information

The majority of respondents of the current study believed that the Internet is an infinite source of information. The Internet is said to be a data warehouse. Almost all information on any subject is available on the web. Begum (2019) in a study in southern India found that 100 percent participants believed that Internet is the fast and easy source of getting information while 81% thought that Internet is useful source of information.

One of the most significant advantages of the Internet is its ability to find any known information on any topic on the planet. Using a web service, also known as a search engine, one can obtain information on any subject in a matter of seconds by using only one fingertip to search millions of pages on the Internet. People can also share and exchange information with others through various forums located all over the world. Many previous studies (Asianet Broadband, n.d.; Anderson & Jiang, 2018; Anderson & Raine, 2018; Begum, 2019; Dwivedi et al., 2007; George et al., 2019; Jobayer et al., 2017; Miah, 2008; Morris & Ogan, 1996) have stated that the most significant benefits of the Internet are the ability to obtain information on any subject and maintain communication without difficulty.

5.7.2.2 Ease communication

Over half of the respondents of this study believed that the Internet facilitates communication by connecting people from all over the world. For instance, the majority (40%) of the American teens who usage social media considered it good for communication because it aids them keep contact with others (Anderson & Jiang, 2018). Many of the respondents opined that they can connect with new people and maintain communication with family and friends easily through the media. On the other hand, through the Internet a person can communicate virtually with other at any place and any time globally. Synthesizing the views of technology experts and scholars, Anderson and Rainie (2018) showed that connectedness is the top most advantage of the Internet use. Through connectedness they mentioned individual's ability to communicate with family, friends and fellows to share information, knowledge, education, entertainment and many more at anytime and anywhere without any restrictions. Besides comparatively old-style email services, now people across the globe can enjoy real-time communication facilities through messenger services, chat-

rooms and, audio-visual conferencing. With the support of various SNS, people can very easily share their thoughts, ideas, opinions as well as values and culture and establish global friendship. All ages of people, youths in particular, communicate and express their opinions with others irrespective of their races, religions, nations and cultures. Even people who are hesitant to express their identity can also use the Net anonymously (Miah, 2008). Wide-ranging usage facilities of the Internet through multiple devices make it more convenient compared to other traditional communication systems. 'Better communication is the main benefits of Internet use,' said as much as 89% respondents who usage the Internet for keeping contact with family and friends, especially who are living abroad (Dwivedi et al., 2007).

5.7.2.3 Help education

Nearly one third of the current study participants admitted the Internet as an essential tool of education. Numerous studies (Dwivedi et al., 2007; Jobayer et al., 2017; Pew Research Centre, 2015) stated that use of the Internet for education is pervasive. A Pew Research Centre (2015) study in 32 developing countries across the globe, including Bangladesh, found that the Internet is considered as an advantage for education by 64% of the respondents age over 18 years and older. Internet has opened a new horizon for offline and online education worldwide. Many previous studies (Isman & Dabaj, 2004; Usun, 2003) found that the Internet is easier than using the library. With the rapid dissemination of the Internet, some universities and other educational institutions offer virtual courses on varieties of subjects for students across the world. These virtual courses are especially advantageous for students who reside in a different country or not able to attend in a formal education. It is also convenient for working students who could enjoy the teaching without troubling their routine. Since the global spread of Corona virus pandemic in February 2020, Internet has been used effectively for online

education amid the closure of educational institutions to avoid physical contact. Moreover, students can use online libraries and get online resources through the Internet.

5.7.2.4 Source of knowledge

A little than one third of the respondent of this study stated the Internet as source of knowledge. In the present time, Internet is termed as the source of both information and knowledge (Aydemir et al., 2013). Zack (1999) defined information as meaningful interpretation of data whereas knowledge as meaningful accumulation of information by an individual. Information is stored in the web servers. People collect and use required information by browsing particular website or application servers to make it knowledgeable. According to Aydemir et al. (2013), in various forms and positions Internet has now become a prerequisite for acquiring knowledge.

5.7.2.5 Strengthen social relations

More than a quarter of respondents believed that communication via online social networks sites strengthens social relationships. According to studies, young people use various social networking platforms for a variety of purposes. Draganovic (2020) observed that Internet can enhance positive impact on youths through building interpersonal relationships, consolidating community feelings and engaging civic and political events. In addition, new media use may foster one's social skills through enhancing social interactions (Ito et al., 2008; 2010).

Despite mixed opinions about the Internet's impact on social relations, Anderson and Jinag (2018) found that 40% of the American teens who usage social media though that it has a positive impact on them because it helps them keep in touch and interact with others. Moreover, youths can easily connect with new people and communicate with

family and friends through social media which was supported by previous studies (Anderson & Jiang, 2018; Anderson & Rainie, 2018; Draganovic, 2020; George et al., 2019; Ito et al., 2008; Jobayer et al., 2017).

5.7.2.6 Good for entertainment

More than a quarter youths considered entertainment facilities of Internet as an advantage. Studies (Dwivedi et al., 2006; Miah 2008) found that for many people entertainment is the only reason for using the Internet while others use it to relive stress and pass time. Entertainment is one of the popular activities of Internet especially for children and young people. It was found that apart from studies, students use Internet for the purpose of entertainment and social networking.

5.7.2.7 Free expression of opinion

With no surprise, about a quarter young respondents said that Internet facilitate them to express their opinion freely. Internet is an important means to exercise freedom of expression (International Commission of Jurists, 2019). Freedom of expression is a fundamental human rights and Internet ensures this right through free flow of opinion.

5.7.2.8 Save time and money

About one-fifth of the youths in this study believed that Internet save their time and money as they can get many services instantly without physical appearance. In many ways Internet saves time and money now a days. For example, one can buy a product or service from a convenient place anytime from anywhere using various online platforms. According to an Oxera.com (2015) report, Internet reduce the production and distribution cost of goods and services through simplifying the whole process for the greater convenience of the consumers. Online shopping, e-banking, online education and telemedicine are a few examples of saving time and money with the advantage of

Internet. Previous studies (Begum, 2019; George et al., 2019) showed that use of Internet in daily activities increased speed in work reducing time and cost.

5.7.3 Disadvantages of Internet use

5.7.3.1 Waste of time

Surprisingly, the majority of respondents in the current study stated that excessive Internet use forced them to waste valuable time from their lives. People of all ages, particularly teenagers and young adults, waste a lot of time on the Internet for no good reason. Playing games, chatting, watching pornography, and aimless surfing are some of the activities that people engage in that waste a lot of their valuable time with no positive outcome. This finding was supported by recent studies (Begum, 2019; Draganovic, 2020; Jobayer et al., 2017; Scheerder et al., 2019), which concluded that uncontrolled and voluntary Internet use was a waste of time from the users' perspective. Draganovic (2020) observed that time-wasting due to unlimited daily Internet usage may interfere with study or work.

The Internet wastes resources and time in other ways as well. In addition to hundreds of thousands of merchants and businesses, each of the several billions of Internet users can now create and publish content on the web. With the benefit of low-cost Internet and smart devices, as well as technological advancement, many content providers purposefully create and disseminate "Internet junk," while others flood the Internet with fake, misleading, and unwanted content, making it difficult for users to find what they want (Miah, 2008). As a result, Internet users believe that finding 'real content' requires a significant amount of time and effort.

5.7.3.2 Information overload, misinformation and fake news

While more than half of the current study's respondents considered the Internet to be a good source of information, roughly one-third of them believed that the Internet's massive amounts of information also had a negative impact on people. According to the respondents the major demerits are information overload, misinformation and fake news. This sort of perception of the respondents found in previous studies (Allcott & Gentzkow, 2017; Cook et al., 2015; Jobayer et al., 2017; Lewandowsky et al., 2012; Mavridis, 2018; Miah, 2008; Quaglio & Millar, 2020; Scheerder et al., 2019). Due to absence of conventional gatekeeping mechanism, the Internet facilitate the spread of misinformation, a term used for information which is primarily found to be true but later evidenced to be false (Cook et al., 2015; Lewandowsky et al., 2012

Information overload is the overflow or flooding of information on a specific issue, making it difficult for information seekers to understand and make a decision. The appearance of a large number of related links when searching on a single topic makes it difficult and confusing to find accurate information (Miah, 2008). Furthermore, information overload caused a variety of mental conditions, such as loss of control, decreased intellectual performance, and decreased personal development (Quaglio & Millar, 2020; Scheerder et al., 2019).

Fake news is a major issue in today's information age, especially with the rise of social media, which has become a fertile ground for the rapid generation and dissemination of fake news. Fake news breeds distrust and perplexity among Internet users, who have a difficult time distinguishing between fake and real news (Scheerder et al., 2019). In Greece, 96% of Internet users blamed Facebook for spreading false information (Mavridis, 2018). The production and dissemination of fake news is driven by two

main motivations ((Allcott & Gentzkow, 2017; Mavridis, 2018). Firstly, content providers profit from the spread of outrageous and false stories that go viral. Second, some fake news promotes the producers' ideology by discrediting others.

5.7.3.3 Internet addiction

More than a quarter of the participants of this study believed that addiction towards the Internet is a serious disadvantage of this technology. Details on the Internet addiction, which is termed in this study as CIU discussed earlier sighting numerous studies on the harmful effects on Internet worldwide.

5.7.3.4 Hamper education and work

More than a quarter of respondents in the current study believed that their excessive and unsolicited use of the Internet hampered their studies and work. Because the majority of the participants in this study were students, they were preoccupied with their studies. Several previous studies (Abbas et al., 2018; Begum, 2019; Draganovic, 2020; George et al., 2019; Jobayer et al., 2017; Quaglio & Millar, 2020) found that participants believed that unsupervised and uncontrolled Internet use hampered education, work environment, and productivity. Draganovic (2020) observed that some people engaged in inappropriate Internet use to avoid study and work, resulting in significant personal and institutional loss. Abbas et al. (2018) discovered similar results when students used the Internet abandoning their learning and employed people used the Internet at work avoiding duty.

5.7.3.5 Cyber-bullying and violation of privacy

{In this study, more than a quarter of the participants viewed the most common form of harm Internet users face as cyberbullying and the violation of one's privacy and security. Cyberbullying, sexting and harassment are the most common and high-risk

uses of the Internet, particularly social media. This finding was supported by numerous previous studies (Draganovic, 2020; Anderson & Rainie, 2018; George et al., 2019; Quaglio & Millar, 2020; Safaria, 2016; Livingstone & Brake, 2010; Livingstone & Helsper, 2007). To avoid being caught, most cyberbullies sought anonymity to hide their identities from the victims they bullied (Safaria, 2016). Youth and students who use social media primarily for chatting, rather than academic purposes, are more likely to become victims of cyberbullying than their peers who do not use social media for this purpose (Safaria, 2016).

5.7.3.6 Cybercrime and breaching of trust and security

About a quarter of the young respondents in this study believed that, cybercrime and breaches of trust in Internet transactions pose a serious threat to people's lives and livelihood in various ways. Cybercrime and cyber-attacks are major concerns for Internet users all over the world. Taking advantage of the Internet's anonymous nature, some criminals use the platform for political and religious radicalization, while others use it to rob money by breaking security codes or hacking, or by exploiting people's trust (Al-Badi et al., 2016; Amit et al., 2020; Asianet Broadband, n.d.; Miah, 2008; Quaglio & Millar, 2020; Scheerder et al., 2019). Cybercriminals are now using new ways to make the cyberworld dangerous for people who don't pay attention. Cybercriminals often hack into people's accounts to get their data and banking information (Asianet Broadband, n.d.).

Furthermore, cybercrime can take the form of spamming and virus distribution. Internet users can be attacked by viruses by opening an email and downloading a file or software; unauthorized access to website data and intruding personal information such as name, address, credit card number, and spamming unwanted mail. According to a

recent study, students who use the Internet frequently may be more vulnerable to online radicalization than those who do not (Amit et al., 2020). Many people have used the anonymity of the Internet to access various websites, forums, and chatrooms under fictitious identities, eventually cheating and abusing those they meet (Al-Badi et al., 2016; Amit et al., 2020).

5.7.3.7 Pornography and immorality

The findings indicated that approximately a quarter of youth viewed pornography and immoral behaviour as having a negative impact on their Internet use. Previous research (Draganovic, 2020; Miah, 2008; Pew Research Centre, 2015; Quaglio & Millar, 2020; Scheerder et al., 2019) corroborated the findings, indicating that depression and social isolation caused by excessive Internet use may also contribute to risky sexual behaviours. Exposure to sexual content, vulgarity, and disparaging of women are some of the Internet's offensive and harmful consequences (Scheerder et al., 2019). Pornographic and immoral content on the Internet can taint the young generation's character. Numerous websites display text, images, and videos that undermine the moral values of children who are not mature enough to control their desire for sexual attraction. Simultaneously, some adolescents may be at risk of engaging in unprotected and unwanted sex with their peers as a result of the influence of vulgar films accessed via the Internet (Abbas et al., 2018; Al-Badi et al., 2016).

5.7.3.8 Deteriorate family and social relations

The study's findings indicated that approximately one-fifth of respondents believed that Internet use can sometimes erode family ties and isolate social relationships due to decreased interaction in interpersonal and social involvement. Anderson and Rainie (2018) observed that, as a result of their over-reliance on the Internet, some people

deliberately avoid face-to-face social interactions and attention to "real life." Because, interacting with people online is vastly different from interacting in person. The depth of emotion and thought expressed in social interactions cannot be replicated online. Neglecting family and friends, as well as avoiding social events, eventually alienates people from their loved ones, as they believe they are being left behind by web technology. Furthermore, depressed social media users may experience social isolation as well as aggressive behaviour (Draganovic, 2020).

Scheerder et al. (2019) did, however, report an intriguing finding regarding the social pressures associated with Internet use. Some people believed that by remaining online, they were obligated to respond immediately to all messages received from family and friends, as well as other social contacts. This type of social pressure has compelled them to stay connected constantly in the face of mental stress and irritation, out of fear of missing out. Another intriguing fact is that some people remained absorbed in their Internet devices during numerous family and social gatherings, rather than engaging in conversation with others. In line with the preceding observation, Abbas et al. (2018) observed that family members asked young respondents to limit their Internet use.

5.7.3.9 Physical and mental distress

One-fifth of study participants mentioned physical and mental complexities as a result of Internet use. Numerous studies have looked into the Internet's negative impact on people's physical and mental health and concluded that uncontrolled Internet use plays a significant role in this. Recent studies (Abbas et al., 2018; Anderson & Rainie, 2018; George et al., 2019; Scheerder et al., 2019) that investigated various aspects of the Internet's impact on physical and mental health supported the current study's findings.

According to Abbas et al. (2018), the Internet has a significant impact on health and can have both positive and negative effects on youth behavioural change. Internet use, according to Anderson & Rainie (2018), can increase stress and anxiety and decrease sleep time. Additionally, people are losing their patience and concentration as a result of an unhealthy reliance on the Internet rather than critical thinking. Begum (2019) discovered that 70% of respondents believed that the Internet harmed an individual's mental development, 64% believed that the Internet had a negative effect on human psychology, and 75% believed that the Internet had a negative effect on physical health. Interestingly, those who searched for medical information online reported experiencing mental stress or anxiety and were categorized as serious patients (Scheerder et al., 2019). According to a study conducted by George et al. (2019), 72% of Internet users suffered from eye strain, 54% from sleep problems, and 21% from backache.

5.7.3.10 Bad for children

Nearly one-fifth of youths in this study expressed concern about the Internet's negative impact on their younger family members, stating that the Internet is bad for children. Even when used for educational purposes, the Internet can be abused to promote laziness. In contrast to a library, where information can only be read, the Internet allows for the copying of content. Some students simply copy and paste information from the Internet when completing a university assignment or school homework. Students will never learn the fundamental concepts underlying Internet information as a result of such an action. There is evidence that prolonged Internet use can harm children's cognitive development, including the development of memory skills, attention span, critical reasoning abilities, language acquisition, reading, and learning. There are a plethora of games available on the Internet, which has caused the majority of children to avoid all outdoor activity. Without physical activity, children are at risk

of developing a variety of lifestyle-related diseases, such as obesity, in addition to failing to develop interpersonal skills. Apart from these factors, prolonged exposure to an electronic device can cause serious damage to eyes and strain neck and shoulders. Children are in their formative years, and these factors have the potential to cause them life-long problems. Quaglio and Millar (2020) noted that children have developed an unhealthy dependence on the Internet for daily life, an addiction to sensuality and pornography, and an inability to communicate with others offline. In another study (Begum, 2019), 55% of respondents believed that the Internet has made it easier for children to access age-restricted content in the modern era.

5.8 Analysis based on theories

The research was conducted on the base of the theoretical essences of Uses and Gratification Theory and Social Cognitive theory. The following section discussed the analysis of the findings based on the theories.

5.8.1 Uses and Gratifications Theory

The Uses and Gratifications theory elucidates how and why people use media to meet their needs, as well as the gratifications they derive from media. The current study's Internet use patterns detailed how the respondents use the Internet to meet their various media needs. The purposes of Internet and SNS use provided a detailed picture of why and to what extent respondents use the Internet to meet various needs via 26 Internet activities such as information, communication, education, and entertainment, as well as SNS activities. These activities fulfilled three gratifications: content gratification, process gratification and social gratification. The current study revealed that Internet uses motivation of the highest percentage of participants of this study were content gratifications followed by social gratifications. Process gratification was the least

chosen motivation for Internet usage by the youths in Bangladesh. The three types of gratification motivations influence respondents' attitudes towards the Internet use. According to Peters et al. (2007), when these motivations are satisfied, some people develop positive attitudes toward the Internet, resulting in increased acceptance, while others develop negative attitudes toward it, resulting in rejection of its use. The main purpose of SNS usage of the participants of this study was to maintain relationships that basically gratify information and communications needs. People's media choices were influenced by their uses and gratifications, which were determined by the ease of use, availability, and affordability of various media. Respondents in the current study were found to use the Internet the most of any information retrieval system, including television, newspapers, radio, and family and friends.

5.8.2 Social Cognitive Theory

Social cognitive theory can assist individuals in determining how they begin using media platforms, how they select content from those options, how they continue to use media, and how they discontinue using previously selected media (LaRose, 2009). In this process, respondents to this research identified the Internet as their primary source of information, eclipsing traditional media such as television, radio, and newspapers. Additionally, the Internet had also displaced time spent on other media, as people must now balance their time between new and traditional media.

According to SCT, if a person observes another person engaging in a behaviour and associates it with a perceived negative outcome, they are more likely to restrict their own behaviour. Positive reinforcement, on the other hand, can be used to encourage both positive and negative behaviour as long as the behaviour does not result in a negative outcome (Smith et al., 2017). In the current study, the majority of respondents

were seen to have positive attitudes toward using the Internet and thus engaged in Internet use. Participants had to use the Internet in both positive and negative ways, despite having positive reinforcement for Internet use. Those who reinforced a negative consequence of vicarious learning, on the other hand, were seen as hesitant of using the Internet, resulting in rejection of its use.

In the SCT, the self-regulation construct talks about how people keep an eye on their own behaviour, judge it against their own and other people's standards, and use self-reactive incentives to control their own reactions. When self-regulation doesn't work, it expects more media consumption, which is thought of as bad self-regulation and bad habits. Internet addictions and other problems with Internet use were caused by a lack of self-control when using the Internet (LaRose & Eastin, 2004). In the present study more than a quarter respondents were found as Internet addicts or compulsive Internet users.

SCT determined that people's actions are influenced by their perceptions of the world, their own consciousness, their goals, and their intentions. People's actions are therefore influenced by their thoughts, beliefs, and emotions (Bandura, 1986; 1989; 1999). In this study, respondents' perceptions of the benefits and drawbacks of Internet use were used to determine their level of awareness and consciousness regarding Internet use. It was realized that respondents' thoughts, beliefs, behavior and emotions toward the Internet are consistent with their own experiences and vicarious learning.

CHAPTER SIX

Conclusions and Recommendations

6.1 Introduction

This final chapter attempts to bring the study to a close by summarizing the overall conclusions of this investigation. In this section, the findings of the research objectives and research questions were justified with a brief overview of the study's contribution and relevance in the field of ICT. This section delivers a robust overview of the study topic. In addition to describing the findings, the chapter pointed out the study's limitations, made suggestions for future studies, and made recommendations for policymakers and stockholders.

6.2 An overview of the results

6.2.1 Findings based on research objectives

The purpose of this study was to examine three distinct elements: Bangladeshi youths' Internet usage patterns, their attitudes toward Internet use, and their compulsive Internet use behavior and its effect on everyday activities. The study has seven specific objectives that focus on the study's major components and overall objectives. The following section will summarize the study's objectives and demonstrate how they were met.

- To understand the general patterns of Internet use among young people

The patterns of Internet use among young people were revealed through the analysis of a questionnaire survey. The investigation was conducted by asking respondents about the device they use to access the Internet, the frequency of use, the duration of use, the experience of use, and the location of Internet use. Respondents were also asked about

their Internet spending, location of Internet use, and types of Internet access. In addition, the youths were asked if they use the Internet anonymously. The demographic data of the youths, including gender, marital status, age, education level, profession, monthly family income, and residential status, were discussed to get a clear picture of their Internet use pattern.

- To investigate the purposes of Internet use by youths

Multiple methods were used to ascertain the purpose of youth Internet use. To begin, respondents were asked to select as many Internet use purposes as they desired from a list of 26 distinct activities. Second, a questionnaire was created to rank 15 common social networking sites (SNS) activities that youth engaged in on the Internet.

- To study the impact of Internet use on youths

To investigate the effects of Internet use, a series of questions was created to compare the Internet to other forms of traditional media. Additionally, a variety of routine activities were quantified and compared to determine whether Internet use supplants these activities. A questionnaire was used to ascertain how youths communicated with their family and friends via offline and online channels. Additionally, a set of questionnaires was used to assess youths' concerns about Internet privacy and security.

- To comprehend the Internet attitudes of young people

The study used a 26-item reliable attitudes scale to assess youth Internet attitudes. Inferential statistical tools were used to examine the relationship between demographic and Internet-related characteristics, as well as Internet attitudes.

- To explore young people's compulsive or addictive Internet use behavior

The study used a 14-item validated and reliable scale developed by Meerkerk et al. (2009) to assess compulsive Internet use. Inferential statistical tools were used to examine the relationship between demographic and Internet use-related characteristics and compulsive Internet use.

- To determine the relationship between Internet attitude and compulsive Internet use

The relationship between Internet attitudes and compulsive Internet use was investigated using statistical analysis. Between the two variables, the study found a significant positive relationship.

- To know youths' perceptions about the benefits and harms of Internet use

Finally, two open-ended questions were used to elicit the perceptions of young people on the advantages and disadvantages of using the Internet. A concept map reflecting the respondents' perceptions was created in addition to the respondents' thematic concepts.

6.2.2 Findings based on research questions

This section gives an overview of the study's findings, following research questions based on the objectives of the study. The research findings described in this section address these six research questions.

6.2.2.1 Research question one

How do young people use the Internet and for what purposes do they use it?

The majority (79 percent) of the respondents were very frequent (seven days in a week) Internet users. Most of the participants (40.6 percent) had 4 to 8 year Internet use experience, followed by 21.2 percent having 8 year and above experience and 19.6

percent had 2 to 4 years Internet use experience. There was a significant difference between male and female relating to experience of Internet usage. Males had more year of Internet usage experience compared to females. The majority 29.0 percent spent 1-2 hours on Internet followed by 25.7 percent who spent 3-4 hours daily on the Internet. Male participants spent significantly longer time on the Internet than female participants, who spent significantly less time.

90.8 percent of young people used a touch screen mobile or smartphone to access the Internet, and there was no significant gender difference in smartphone use as Internet access device. Regarding types of Internet access, 95.8 percent of respondents reported using a mobile phone network to access the Internet, while 48.9 percent reported using Wi-Fi or cable connections. There was no significant difference between men and women in terms of mobile Internet access. The majority of the respondents, 93.8 percent had used the Internet at home. Females used the Internet at home more than males with 48.2 percent of females using the Internet at home compared to 45.5 percent of males. Males used the Internet more than females in all other locations except school and university where there were no significant differences. These findings indicated that females used the Internet less outside the home compared to male. The majority (52.7 percent) of the young people spent Tk. 100 to < Tk. 500 for their monthly Internet use, followed by 25.2 percent respondents who spent less than Tk. 100 per month. Males spent significantly more money on the Internet than females.

The Internet is used for a variety of purposes that are determined by the needs of the users, which vary depending on their demographics and other Internet-related characteristics. The ten most common reasons for youth Internet use were as follows: news and information, chatting, academic learning, browsing social network sites

(SNS), watching YouTube, music and movies, watching videos, job information, sports, and playing online games. Respondents used the Internet to achieve three types of gratification: content gratification, process gratification, and social gratification. The most common were content gratifications, followed by social gratifications and process gratifications.

One of the most common reasons for using the Internet was to access SNS, which was investigated separately. 88.2% respondents used SNS very frequently (seven days a week) and male had used SNS significantly more frequently than female. The top five SNS activities were chatting, communication with family and friends, communication for study and research, looking up old friends, and changing profile pictures. There was a statistically significant difference between males and females in terms of their use of SNS for chatting and searching for old friends, with men chatting and searching for old friends more frequently than females. On the other hand, there was no significant difference between male and female SNS users in terms of changing profile pictures, communicating with family and friends, and educational and research purposes. However, males and females differed significantly in their use of social media platforms to play online games. Males were almost twice as likely as females to use social media to play games with their friends. Except for online gaming, SNS use activities did not differ significantly by age group among youths. When it came to social media gaming, there was a statistically significant difference between younger and older age groups, with younger age groups of 15-19 and 20-24 played more games compared to the older age groups of 25-29 and 30-35.

6.2.2.2 Research question two

How does the use of the Internet affect young people's activities and attitudes?

The Internet was chosen as the information source by the vast majority of respondents (90.4 percent), followed by 61.8 percent television, 54.0 percent newspaper, 13.8 percent radio, and 20.1 percent family and friends. Again, Internet (M = 4.58) was preferred as the most important among all media or channels in terms of respondents' media preferences for getting up-to-date news and information. It was followed by television (M = 4.32), newspapers (M = 4.28), family and friends (M = 3.24), and radio (M = 2.92).

In order to assess the impact of Internet use, participants were asked if they had noticed any change in certain activities after starting to use the Internet. It was found that watching television had the lowest mean score (M = 1.93) of the eight activities, indicating that television watching decreased the most after starting Internet use. Spending time with family, on the other hand, received the highest mean score (M = 2.74), indicating a less decrease or no change in activities.

Significant relationships were found between daily time spent (duration of hours) on the Internet usage and changes in watching television, changes in reading time and changes in sleeping time. However, no significant association was found between time spent online and changes in newspaper reading, changes in making phone calls, changes in family outings, changes in spending time with family, and changes in spending time with friends. The aforesaid findings clearly showed that, among the eight activities investigated, watching television, reading time (both academic and recreational), and sleeping time have all decreased, and the reductions were statistically significant.

The Internet has a significant influence on young people's attitudes toward offline and online communication with family and friends. Analysis showed that the highest percentage of youths (90.2%) had communicated with their family members; friends and peers over the phone, while 55.8 percent exchanged SMS via mobile phone for this purpose. Approximately three-fourths (73.2 percent) of respondents communicated via instant message through the use of SNS, while 58.7 percent made video calls using these platforms. Email was the least used online communication channel, with only 12.1 percent of respondents using the online system. Offline communication also had a significant share, with 58.7 percent of respondents visiting their family and friends in person and 47.1 percent saying their family and friends visit them even after online communication.

How the participants' level of apprehension affect the Internet use was measured on a five-point likert scale. The mean scores showed that hacking (M = 4.04) ranked at the top of the apprehension list of Internet users, password theft was the second most feared by respondents (M = 3.88), disclosure of personal information (M = 3.79) ranked third in the apprehension list of the respondents, email and social networking account's security ranked fourth in Internet apprehension (M = 3.77), fear of a virus attack (M = 3.69) ranked fifth, content theft (M = 3.62), ranked last among Internet apprehension issues.

Anonymous Internet use had severe impact in online communication. More than a fifth (20.1 percent) of those responded to the survey said they used the Internet anonymously, while the remaining 79.9 percent said they didn't. Gender and age were found to have significant correlations with anonymous Internet use. Males were more likely to be used anonymously than females. Youths of junior age group used the Internet anonymously more than their seniors, suggesting a statistically significant

relationship between age and anonymous Internet use. Coompulsive Internet users had more anonymous Internet usage than the non-compulsive users.

6.2.2.3 Research question three

What are the attitudes of young people toward the use of Internet?

By and large, the study's participants, both males and females, had favourable attitudes toward Internet use. There was, however, a statistically significant gender difference in Internet attitudes, with males having a higher mean score than females. Marital and residential status had no discernible effect on attitudes toward Internet use. There were no significant differences in Internet attitudes based on age, education level, profession, monthly family income, or Internet use experience, according to the study. As a result, these variables have no bearing on the participants' attitudes toward the Internet. On the other hand, the mean scores of Internet attitudes relating to frequency of Internet use, duration of Internet use, expenses of Internet use, and frequency of SNS use were found to be significantly different. Those who used the Internet very frequently had a significantly higher mean score than those who used it occasionally, and those who used the Internet frequently had a significantly higher mean score than those who used it rarely.

According to the analysis, a statistically significant difference in Internet attitude score was found in terms of duration of Internet use. Participants who used the Internet for less than an hour had statistically significantly lower mean scores than those who used it for 3 - 4 hours, 5 - 6 hours, or 7- 8 hours. Additionally, there was a significant difference between those who used the Internet for 1-2 hours and those who used it for 3-4 hours, 5-6 hours, and 7-8 hours. There were statistically significant differences in Internet attitude scores when participants' Internet use expenses were considered. The

mean Internet attitude scores of Group 1 (those who spent less than Tk. 100) were significantly lower than those of Group 2 (those who spent between Tk. 100 and Tk. 500) and Group 4 (those who spent more than Tk. 1000). The study found a statistically significant relationship between attitude scores and SNS use, with those who used SNS very frequently having a higher mean score than those who used SNS frequently, rarely, or never.

However, multiple hierarchical regression analysis revealed that two predictor variables for Internet attitudes were statistically significant: SNS use activities and gender.

6.2.2.4 Research question four

How and to what extent do youths involve in compulsive or addictive Internet use?

The 14-item CIUS, developed by Meerkerk et al., (2009) was used to assess the respondents' compulsive or addictive Internet use. According to the CIUS's cut-off point, 74.11 percent of respondents were non-compulsive Internet users, while 25.89 percent were indeed compulsive Internet users. Compulsive Internet users accounted for 15.85 percent of males and 10.04 percent of females.

Gender had a significant influence on the CIU score of the participants, with more males being CIU than females, according to the findings. Marital status also had a significant impact on CIU, with unmarried people scoring significantly higher than married people. Residential status also had a significant impact on CIU, as the mean score of those who live with family was significantly lower than that of those who live without family. Age, profession, frequency of Internet use, duration of Internet use, expenditure of Internet use, and frequency of SNS use all had significant differences in mean CIU scores. The analysis discovered statistically significant differences in the mean CIU scores of four age groups. The mean CIU scores of 15-19 year olds, 20-24

year olds, and 25-29 year olds were statistically significantly higher than 30-35 year olds. There were statistically significant differences in the mean CIU score of respondents' profession, indicating that profession had a significant impact on Internet users. The average CIU score of students was significantly higher than that of employed people and people in other professions.

The mean CIU score and frequency of Internet use differed in a statistically significant way. Those who used the Internet very frequently had a higher mean score than those who used it only frequently and rarely. Again, those who used the Internet frequently had a significant impact over those who used it only occasionally or rarely. There were statistically significant differences in the mean CIU scores based on the duration of Internet use. Individuals who spent less than an hour on the Internet performed worse than those who spent 1-2 hours, 3-4 hours, 5-6 hours, and 7-8 hours on the Internet. There were also significant differences between those who spent 1-2 hours, 3-4 hours, 5-6 hours, and 7-8 hours on the Internet, as well as those who spent 3 to 4 hours and 7 to 8 hours. When monthly Internet use expenditure was taken into account, the mean CIU scores of respondents were statistically significant. Those who spent less than Tk. 100 had significantly lower mean Internet use scores than those who spent Tk. 100 to Tk. 500 and Tk. 500 to Tk. 1000. The analysis discovered a statistically significant difference between CIU scores and the frequency of SNS use. Those who used SNS very frequently had a higher mean score than those who used it frequently and rarely. However, no statistically significant differences were found between the mean CIU score and the participants' education status, family income, or Internet use experience.

Multiple hierarchical regression analysis revealed a significant model for predicting respondents' compulsive Internet use based on four variables (CIU). The model

explained 26% of the variance in total. Four predictor variables were found to be statistically significant in the final adjusted model, with SNS use activities having the highest Beta value, followed by Internet use duration, profession, and frequency of Internet use.

6.2.2.5 Research question five

Is there any association between Internet attitude and compulsive Internet use?

The Pearson product-moment correlation coefficient was used in the study to examine the relationship between the Internet Attitude Scale (IAS) and the Compulsive Internet Use Scale (CIUS), which assess respondents' Internet attitudes and compulsive or addictive Internet use, respectively. There was a significant positive, but weak, relationship between Internet attitudes and compulsive Internet use.

6.2.2.6 Research question six

How do youth perceive the advantages and disadvantages of using the Internet?

Examination of the responses revealed that the majority of respondents viewed Internet use as both advantageous and disadvantageous. While respondents viewed Internet use as beneficial, they were also critical of Internet misuse as detrimental. While the majority of respondents mentioned both positive and negative consequences of Internet use, only a few mentioned either an advantage or a disadvantage of Internet use. The Internet was mentioned as a source of limitless information by the greatest percentage of respondents when asked about the benefits of using it. More than half of respondents agreed that the Internet facilitates communication with people both at home and abroad. Among the disadvantages mentioned by respondents, the majority believed that the Internet was a waste of valuable time, while about a third believed that Internet-generated information resulted in information overload, misinformation, and fake news.

Another disadvantage mentioned by more than a quarter of respondents is Internet addiction.

6.2.3 Findings based on demographic data

This section provides a quick overview of the demographics of the study's participants. The demographic data collected from the respondents included gender, marital status, age, educational background, profession, monthly family income, and residential status. The gender distribution of participants was equal for males and females, i.e., 50 percent for each gender. There were 448 respondents in total, 224 males and 224 females. According to the data, 81.3 percent of all respondents were unmarried, while 18.7 percent were married. There were 29.7 percent of respondents in the 15-19 year age group, 28.6 percent in the 20-24 year age group, 27.5 percent in the 25-29 year age group, and 14.2 percent in the 30-35 year age group.

A total of 30.1 percent of the participants had completed or were still pursuing a higher secondary education, 41.7 percent had graduated or were still graduate students, and 28.1 percent had completed or were still pursuing postgraduate education. Students made up 69.0 percent of the participants, while employed youths made up 24.6 percent and others made up 6.5 percent. According to the data, 34.9 percent of the respondents were in the less than Tk 20000 income bracket, 35.1 percent in the Tk 20000 to Tk 40000 income bracket, 17.6 percent in the Tk 40000 to Tk 60000 income bracket, and 12.3 percent in the Tk 60000 and above income bracket. Seventy-four percent of participants live with their families, while 27.6 percent live without family.

6.3 Research contributions

The study has made a number of contributions to the field of Internet research. Firstly, the study contributed to the empirical understanding of young people’s overall Internet

use patterns, particularly their attitudes towards the use of Internet, addictive nature of Internet use and relationship between Internet attitude and Internet addiction. A detailed picture of how Bangladeshi youths use ICT in their daily lives was provided in the study by analysing the patterns and purposes of Internet use, rather than relying on anecdotal information. SNS usage is now an integral part of Internet use, and SNS is used for a variety of purposes, particularly by youths. An analysis of SNS use was done to better understand its trends of use and relationships with demographic factors. Attitudes toward the Internet were assessed using a reliable IAS, which revealed a significant influence of demographic and Internet use-related factors based on the most comprehensive systematic review ever conducted in Bangladesh, to the best of the researcher's knowledge. In a nutshell, this study adds to the corpus of knowledge about Bangladeshi youth Internet use.

Second, while most previous studies on Internet addiction in Bangladesh used Young's (1998) 20-item IAT, Meerkerk et al.'s (2009) 14-item Compulsive Internet Use Scale (CIUS) was used for the first time to measure addictive Internet use in this study. The reliability of the Bangla version of the CIUS was found to be excellent in this study. Furthermore, CIUS was comparable to other validated Internet addiction scales, as the results of this study corroborated nearly identical results from other scales' studies. Future researchers will be able to utilize this brief yet trustworthy scale for further investigation.

Third, to better understand how Internet use varies by age and profession, as well as other demographic factors, this study included a diverse group of young people aged 15 to 35 from various occupations, such as students, service holders, professionals, housewives, self-employed, and unemployed. While most previous studies in

Bangladesh chose students based on their suspicions that they were Internet addicts, this study rather empirically established that students in general, and younger youths (aged 15 to 24 years) in particular, were more susceptible to Internet addictions. Thus, the study equips educational institutions with the knowledge necessary to design the Internet optimally so that students do not become dependent on it.

Fourthly, the Internet has become the dominating source of information processing systems over all other traditional media, as well as interpersonal channels of communication. Moreover, the Internet has changed the overall lifestyles of young people, their media use patterns, time spent on routine activities, and communication with families, relatives, and friends. However, contrary to the popular belief that Internet use contributes significantly to the loss of social bonding, this study found no significant impact on time spent with family and friends. Policymakers can use the study's findings to design rules and regulations that encourage good use of the Internet rather than bad use.

Finally, this quantitative study adds significantly to the body of knowledge about young people's Internet use behaviours, attitudes toward Internet use, compulsive or addictive Internet use, the relationship between Internet attitudes and compulsive Internet use, and youth perceptions about the benefits and risks of Internet use. Researchers and policymakers may find the literature from this exploratory research useful in providing additional insights into the opportunities and problems associated with Internet use among Bangladeshi youths. Because Internet use among young people is now a part of everyday life, the Internet's influence on young people's lives necessitates more research, and this study may provide a foundation for future research in this field.

6.4 Limitations of the research

Combination of qualitative technique

The current quantitative study does not adequately explain the behavioural dimensions of Internet users. Some of the study's findings require explanations and interpretations based on the participants' own perspectives on their use or non-use of the Internet. A mixed method study using a combination of qualitative techniques such as focus group discussions or case studies could aid in explaining quantitative data.

Research sample

Although the study sample meets the sample size criteria, adding some additional samples could help to strengthen the study's findings. Due to the researcher collecting data in person with the assistance of four male and four female research assistants and the use of multi-stage stratified random sampling, the data collection process takes a long time to complete. Additionally, the researcher conducted the field study at his own expense, which made it tough to cover the costs of hotel accommodations, transportation, and pocket money for the research assistants. Home visits to respondents, refusal to respond, communication difficulties due to cultural and religious barriers, and, in some cases, female respondents' reluctance to speak with male interviewers all impede and prolong the data collection process.

Social desirability

Due to social desirability bias, some respondents, particularly adolescents and younger age groups, may provide unsolicited answers by concealing their original behaviour. It was noticed that some respondents were hesitant to answer questions about their use of adult sites, online games, and social networking sites.

Internet Attitude Scale

The Internet Attitude Scale that was used in this study was a combination of the two previous scales. In addition, some scale items were rewritten for clarity and simplicity. As a result, the scale's inter-item reliability has decreased. Despite the fact that there are numerous IAS relating to students, no specific scale for measuring youths' Internet attitudes has been identified. As a result, general Internet attitude items were added to the scale to make it more accessible to youths.

Non response to open ended question

A large portion of the respondents ignored the open-ended questions despite reminder during the interview. Some respondents only provide partial answers to the open-ended question. As such, views of all the participants could not be ascertained through free questions.

6.5 Further Research

Several significant issues regarding young people's Internet use emerged during the course of this research, necessitating additional investigation. In order to gain a better understanding of youth digital technology behaviour, this quantitative study looks into a variety of issues, including patterns and purposes of Internet use, Internet attitude, compulsive Internet use, and the relationships between Internet attitudes and CIU. Some of the study's findings require more in-depth investigation to explain their underlying causes. With the rapid advancement of new areas of Internet use that evolve at the speed of time, new issues emerge alongside old issues. As a result, the current study's findings and limitations pave the way for future research involving young people, who are the primary Internet users. The following section highlights a number of issues for further research, but does not limit the areas of investigation.

- In-depth and qualitative studies are required to explain behavioural issues related to Internet attitude and addictive Internet use, as quantitative studies do not adequately explain contradictory findings, such as how adolescent Internet addiction develops despite limited Internet use.
- As is the case in the majority of developing countries, Bangladesh has a digital divide between men and women, rural and urban areas, and people with higher and lower incomes in general, as well as among youth. This divide results in disparities in Internet use as a result of lack of access, a lack of skills, and a lack of awareness about the benefits and risks of Internet use, all of which require special attention. Additional research is needed to determine the extent of the digital divide and to develop solutions to ensure universal Internet access.
- Despite a favourable attitude toward Internet use for educational purposes, students were found to be more susceptible to Internet addiction. Online gaming has been identified as one of the most addictive uses of the Internet. Specific research is required to determine which types of games contribute to Internet addiction and how to overcome this problem.

6.6 Recommendations

1. As technology advances, access to the Internet and its use among youths has become unavoidable. Instead of focusing on Internet restrictions, it would be more prudent to seek strategies to encourage youths to make safer and potentially beneficial use of this cutting-edge facility.

2. During the questionnaire survey, it was observed that some parents restrict their children's access to the Internet, particularly girls', due to a lack of understanding about the benefits of the Internet. Restricting Internet use may cause academic

learning abilities and performance to lag. As a result, special awareness programmes are required to mobilize parents about the advantages of digital technology.

3. Internet access should be made affordable to all by lowering data costs for both mobile and broadband Internet services. Special Internet incentive packages should be made available to rural and insolvent residents. All Internet access devices, including smartphones, should be less expensive.

4. It is crucial to launch digital literacy programmes for both parents and children to educate them about the importance of new media as well as its negative consequences. There should be a training programme on how to navigate the benefits and risks associated with Internet use on an individual, community, and national level. In this regard, various international campaigns promoting safe Internet use should be promoted in Bangladesh.

5. The native language of a user can be found in digital content. The open-ended questions in the study raise concerns about the content of their own language. When digital content is not in the user's native language, language appears to be an impediment to its use. As a result, everyone, especially less educated youth, should have access to adequate native content as well as browsing options in Bengali.

6. The government and its regulatory body, the Bangladesh Telecommunications Regulatory Commission (BTRC), should have a mechanism in place to restrict unwanted, illegal, and morally deteriorating websites, particularly those that contain pornographic, vulgar, or otherwise objectionable online games.

7. The emergency cyber response unit should be made more visible and effective so that cyber victims can immediately report incidents and the unit can hold perpetrators accountable.

8. The government should enact an Online Privacy and Safety Protection Act that requires concerned bodies to disclose their privacy policies on their websites and obtain consent before collecting personal information such as name, address, and phone number, credit card number, national identification number, and passport number. Additionally, anti-fraud legislation should be enacted to protect the interests of individuals involved in cyber transactions.
9. During the study's questionnaire survey, it was found out that majority of the youths used home Internet in their bedrooms. The bedroom culture of Internet use is regarded as problematic, affecting not only personal life but also academic and professional performance. As a result, young people who are studying should use the Internet in a public place rather than in their individual bedrooms. Late-night Internet use by students should be monitored by parents.

6.7 Wind-up

This study aims to provide a comprehensive picture of Internet use trends and their implications for Bangladeshi youth. Additionally, it attempts to fill in gaps in the literature on ICT use in Bangladesh, emphasizing the critical importance of ICT use in all sectors of the country for overall national development. Several areas of investigation could be opened up by the findings of this study. It will pave the path for future research in this burgeoning area with the goal of closing existing policy and implementation gaps. The study's recommendations will assist government policymakers in improving existing ICT policies to ensure more successful implementation of Internet use in all spheres of human activity.

Youth are the most frequent Internet users, thus policies and programmes aimed at them should be prioritized when it comes to the implementation of the Internet for educational purposes and the productive use of it. This study pointed out that young people have unique perception about the advantageous and disadvantageous usages of the Internet. Disadvantageous use of the Internet can only be limited through growing awareness among the Internet users as well as formulation and implementation of proper rules and regulations for using Internet for the betterment of life. Any negative use of the Internet should be checked at from family to institutional level for reaping full advantages of the digital technology which bring fourth industrial revolution at our doorstep.

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Internet Use in Bangladesh: A Study of the Activities and Attitudes of Youths

APPENDIXES

Appendix 1

(Questionnaire Survey)

Internet Use in Bangladesh: A Study of Activities and Attiudes of Youths

The interviewer fill-up this part of the questionnaire		
Ward/Village:	Thana/Upazila:	District:
Division:	City	Suburb
Name of Interviewer:	Signature of Interviewer:	Date of Interview:

Dear Participant,

This questionnaire is designed to validate the young people's Internet use trends in Bangladesh. Personal information gathered through the survey will remain confidential and use only for research purposes. Thank you for participating in this survey on Internet use.

1. Do you use computer or laptop?

1. Yes	0. No

2. Do you use mobile phone?

1. Yes	0. No

3. Do you use Internet?

1. Yes	0. No

(If the interviewee is not an Internet user and not in the age range of 15-35 year the interview should be terminated here)

4. What devices do you use for Internet? (Answer may be more than one)

1. Desktop computer	2. Laptop	3. Tablet	4. Touch screen mobile
5. Feature mobile	6. Smart TV		

5. How often do you use the Internet?

1. Always connected	2. Everyday	3. 4-6 days in a week
4. 1-3 days in a week	5. Once in a while	6. Other (specify) …

6. How long are you using Internet?

1. Three (03) months	2. Six (06) months	3. 1 year	4. 2 years
5. 4 years	6. 8 years		

7. How many hours usually do you use Internet in a day?

1. Less than 1 hour	2. 1-2 hour	3. 3-4 hour	4. 5-6 hour
5. 7-8 hour	6. More than 8 hours		

8. For what purpose(s) do you use Internet?

1. Academic learning	10. Performing office work	19. Passing time
2. Browsing news and info	11. Social Network Sites	20. Playing games
3. Chatting	12. Browsing for email	21. To watch videos
4. Watching YouTube	13. Road instructions and Maps	22. Weather info
5. Sports	14. Online shopping	23. Job info

6. Adult Pictures and Videos	15. Cooking Recipes	24. Health and Fitness
7. Religious Matters	16. Tourism and Travels	25. Politics and Election
8. Music and Movie	17. Business and Financial	26. Freelancing
9. Hiring Vehicles (Like Uber)	18. Internet telephony	27.Other … …

9. How much money do you spent yourself monthly for using the Internet?

1. Do not use any money	2. Less than Tk 100	3. Tk 100 to less than Tk 200
4. Tk 200 to less than Tk 300	5. Tk 300 to less than Tk 400	6. Tk 400 to less than Tk 500
7. Tk 500 to less than Tk 600	8. Tk 600 to less than Tk 700	9. Tk 700 to less than Tk 800
10. Tk 800 to less than Tk 900	11. Tk 900 to less than Tk 1000	12. More than Tk 1000

10. Who pays for your Internet access (please check all that apply)

1. Parents	2. School	3. College
4. University	5. Office	6. Self
7. Other (Specify) … …		

11. Where do you use the Internet? (Answer may be more than one)

1. Home	2. Office	3. School
4. College	5. University	6. Cybercafé/Restaurant
7. Place of friend or relatives	8. On the move or during travel	9. Other (specify) …

12. At home where do you use Internet most?

1. Reading room	2. Drawing room	3. Bedroom	4. Dining room	5. Other …

13. What kind of Internet access do you have? (Answer may be more than one)?

1. Wireless/Wifi	2. Mobile phone	3. Cable/Dial up	4. All of these

14. Which media do you use most to obtain reliable information about ongoing events and news?

1. Internet	2 . TV	3. Radio
4. Newspaper	5. Friends or relatives	

15. How important are the following media as the means of obtaining information for you?

	5. Very Important	4. To Some extend Important	3. Undecided	2. Less Important	1. Not Important at all
a. Internet					
b. TV					
c. Radio					
d. Newspaper					
e. Friends or Relatives					

16. Comparing before using the Internet, what change do you notice of the following activities after you started Internet use?

	5. Significantly increased	4. Somewhat increased	3. Unchanged	2. Somewhat decreased	1. Significantly decreased

a. Watching TV					
b. Reading Newspaper					
c. Making phone calls					
d. Reading time					
e. Sleeping time					
f. Going out with family for leisure					
g. Spending time with family					
h. Spending time with friends					

17. Do you leave out any of the following activities for using Internet?

	5. Always	4. Sometimes	3. Unchanged	2. Rarely	1. Never
a. Watching TV					
b. Reading Newspaper					
c. Making phone calls					
d. Reading time					
e. Sleeping time					
f. Going out with family for leisure					
g. Spending time with family					
h. Spending time with friends					

18. Do you agree or disagree with the following statements?

	5 Strongly Agree	4 Agree	3 undecided	2 Disagree	1 Strongly Disagree
a. Internet is an important tool for academic study					
b. Internet is an effective means of conducting research					
c. Internet is helpful for job					
d. Internet makes life easier					
e. Internet creates opportunities to introduce new people					
f. Internet is an easy means of exhibiting oneself to other people					
g. Internet is effective means of efficient use of time					
h. Internet helps keep communication					

with other people					
i. Internet is a means of passing idle time					
j. Internet helps escape unpleasant things					
k. Internet is an excellent means of communication to avoid face-to-face contact					
l. Internet decreases face-to-face contact with family and friends					
m. Internet decreases physical activity like exercises and sports					
n. Internet use is confusing because it is a mine of information					
o. Internet makes it difficult to find accurate information in the midst of sea of irrelevant and unverified data					
p. Internet provides a huge amount of immoral material					
q. Internet-based relationships are trustworthy					
r. Internet influenced me to adopt alien culture					
s. Internet creates a cultural dilemma					
t. Internet is an efficient means of finding information					
u. Internet does not make me feel lonely					
v. Internet is an easy source for acquiring knowledge					
w. Internet intensifies social relations					
x. Internet gives me unlimited freedom					
y. Internet helps with innovative works					
z. Internet creates some sort of addiction					

19. While you are online, do you do other activities such as watching TV, making a phone call or reading at the same time?

5. Always	4. Sometimes	3. Undecided	2. Rarely	1. Never

20. What do you use more for communication with others?

1. Email	2. Instant message	3. Both the same	4. None of these	5. Undecided

21. How often do you check your e-mail?

1. Always connected	2. Daily	3. 2-5 times daily	4. More than 5 times daily
5. Several days in a week	6. Rarely	7. Never	

22. How often do you use your social media sites?

1. Always connected	2. Daily	3. 2-5 times daily	4. More than 5 times daily
5. Several days in a week	6. Rarely	7. Never	

23. Have you ever met someone in person whom introduce through online?

1. Yes	0. No	2. Undecided

24. Do you remember the number of friends whom you have seen in person after you met them online?

1. Number of friends:	2. None	3. Undecided

25. Have you ever found a friend or acquaintance online who you have not seen for a long time?

1. Yes	0. No	3. Undecided

26. How do you communicate with your family or friends?

1. You visit them	2. They visit you	3. Contact them over phone
4. Email them	5. Text messaging (SMS)	6. Make video call
7. Sent message through SNS (facebook or messenger)		

27. While using social network sites Facebook or any other, how often do you do each of the following activity?

	5. Always	4. Sometimes	3. Undecided	2. Rarely	1. Never
a. Chatting					
b. Changing profile pix					
c. Shopping					
d. Know news of friends					
e. Making new friends					
f. Updating status					
g. Sharing favorites videos, movie, songs					
h. Upload photos and videos					
i. Play online games					
j. Create or join events					
k. Group activities					

l. Looking for find out old friends					
m. Conduct surveys or research					
n. Letting people know talents					
o. Creating movement or Activism					

28. How interested would you in social, political and cultural activities?

	5. Very Interested	4. Some extend Interested	3. Undecided	2. Less Interested	1. Not Interested at all
Social					
Political					
Cultural					

29. Do you use Internet for the following purposes?

	5. Always	4. Sometimes	3. Undecided	2. Rarely	1. Never
Social					
Political					
Cultural					

30. Have you done any of the following on social, political and cultural issues?

1. Comment/ share/ like on social media	2. Post something on SNS	3. Write something on blog
4. Comment on a blog	5. Conduct group or event	

31. Have you attended any social/ political/cultural activities upon getting information from social sites?

1. Yes	0. No	2. Undecided

32. For some reasons do you like to anonymous while using Internet?

1. Yes	2. No

33. How much do you worry about the following for the Internet?

	5. Very High	4. High	3. Neither	2. Low	1. Very low
a. Security of mail of social media					
b. Disclosure of personal information					
c. Virus attack					
d. Contents stolen					
e. Password stolen					
f. Hacking					

34. Have you get help from anybody if you face any difficulty when using the Internet?

1. from family and friends	2. from people at work	3. from people at education institution
4. from people at library	5. from people at Internet cafe	6. Paid someone to help
7. Taken training courses to solve problem	8. Other (Specify) …	

35. Has the usage of the Internet influenced your life any way?

	1. Positive	2. Negative	3. Both	4. None	5. Undecided
a. In daily activities					
b. In Financial matters					
c. In social life					
d. In family life					
e. In mental life					

36. What is your perception about the Internet?

1. It is very important valuable and efficient tool	2 It is separateable part of life	3. It is totally uncessary
4. In the current world life is impossible without Internet	5. Present civilization is depended on Internet	6. It is possible to live without Internet
7. Use of Internet play positive role in human thinking and creativity	8. Proper use of Internet depends on human	9. Use of Internet play a negative role in human thinking and creativity

37. Mention some good characteristics of Internet use.

38. Mention some bad characteristics of Internet use.

39. Do you think you are addicted to Internet use?

1. Yes	0. No	2. Undecided

40. How often do you find it difficult to stop using the Internet when you are online?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

41. How often do you continue to use the Internet despite your intention to stop?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

42. How often do others (e.g. parents, friends) say you should use the Internet less?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

43. How often do you prefer to use the Internet instead of spending time with others (e.g. parents, friends)?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

44. How often are you short of sleep because of the Internet?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

45. How often do you think about the Internet, even when not online?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

46. How often do you look forward to your next Internet session?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

47. How often do you think you should use the Internet less often?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

48. How often have you unsuccessfully tried to spend less time on the Internet?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

49. How often do you rush through your (home) work in order to go on the Internet?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

50. How often do you neglect your daily obligations (work or school) because you prefer to go on the Internet?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

51. How often do you go on the Internet when you are feeling down?

4. Always	3. Often	2. Sometimes	1. Rarely	0. Never

52. How often do you use the Internet to escape from your sorrows or get relief from negative feelings?

4. Always	3. Often	3. Sometimes	4. Rarely	0. Never

53. How often do you feel restless, frustrated, or irritated when you cannot use the Internet?

4. Always	3. Often	3. Sometimes	4. Rarely	0. Never

Personal Information of the interviewee

Gender:	1. Male 2. Female 3. Other
Marital Status:	1. Unmarried 2. Married 3. Other
Age:	1. 15-19 years 2. 20-24 years 3. 25-29 years 4. 30-35 years
Educational background:	1. Primary 2. Secondary 3. Higher Secondary 4. Graduate 5. Post graduate 6. Others
Profession:	1. Student 2. Unemployed 3. Self-employed 4. Housewife 5. Service 6. Professional 7. Others
Monthly family income:	1. Less than Tk 10,000 2. Tk 10,000 to less than Tk 20,000 3. Tk 20,000 to less than Tk 30,000 4. Tk 30,000 to less than Tk 40,000 5. Tk 40,000 to less than Tk 50,000 6. Tk 50,000 to less than Tk 60,000 7. Tk 60,000 to less than Tk 70,000 8. Tk 70,000 to less than Tk 80,000 9. Tk 80,000 to less than Tk 90,000 10. Tk 90,000 to less than Tk 1,00,000 11. More than Tk 1,00,000
Residential Status	1. With family 2. Single 3. Other … …

Thank you

Appendix 2

বাংলাদেশে ইন্টারনেট ব্যবহার: তরুণদের কর্মকাণ্ড ও দৃষ্টিভঙ্গির ওপর একটি সমীক্ষা শীর্ষক জরিপ প্রশ্নমালা

* প্রশ্নপত্রের এই অংশ সাক্ষাৎকার গ্রহণকারী পূরণ করবেন		
ওয়ার্ড/গ্রাম:	থানা/উপজেলা:	জেলা:
বিভাগ:	নগর	মফস্বল
সাক্ষাৎকার গ্রহিতার নাম:	সাক্ষাৎকার গ্রহিতার স্বাক্ষর:	সাক্ষাৎকার গ্রহণের তারিখ:

প্রিয় অংশগ্রহণকারী,

এই প্রশ্নমালাটি বাংলাদেশে যুব সমাজের ইন্টারনেট ব্যবহার প্রবণতা যাচাইযের জন্য তৈরি করা হয়েছে। এ জরিপের মাধ্যমে প্রাপ্ত ব্যক্তিগত তথ্য গোপন রাখা হবে এবং শুধূমাত্র গবেষণার কাজে এটি ব্যবহার করা হবে। ইন্টারনেট ব্যবহার সংক্রান্ত এ জরিপে অংশগ্রহণের জন আপনাকে অশেষ ধন্যবাদ।

১. আপনি কি কম্পিউটার বা ল্যাপটপ ব্যবহার করেন? (যে কোন একটিতে ঠিক চিহ্ন দিন)

১. হ্যাঁ	০. না

২. আপনি কি মোবাইল ফোন ব্যবহার করেন?

১. হ্যাঁ	০. না

৩. আপনি কি ইন্টারনেট ব্যবহার করেন?

১. হ্যাঁ	০. না

(সাক্ষাৎকারদাতা ইন্টারনেট ব্যবহারকারী না হলে এবং বয়স ১৫-৩৫ এর মধ্যে না হলে সাক্ষাৎকার এখানেই শেষ করতে হবে।)

৪. ইন্টারনেটের জন্য আপনি কোন মাধ্যম বা কৌশল ব্যবহার করেন? (উত্তর একাধিক হতে পারে)

১. ডেস্কটপ কম্পিউটার	২. ল্যাপটপ	৩. ট্যাব	৪. টাচ্-স্কিন মোবাইল
৫. সাধারণ মোবাইল	৬. স্মার্ট টিভি		

৫. আপনি কত ঘন ঘন ইন্টারনেট ব্যবহার করেন?

১. সবসময় সংযুক্ত থাকি	২. প্রতিদিন	৩. সপ্তাহে ৪-৬ দিন
৪. সপ্তাহে ১-৩ দিন	৫. কদাচিৎ	৬. অন্যান্য (উল্লেখ করুন):

৬. আপনি কত দিন যাবত ইন্টারনেট ব্যবহার করেন?

১. ৩ মাস	২. ৬ মাস	৩. ১ বছর	৪. ২ বছর
৫. ৪ বছর	৬. ৮ বছর		

৭. আপনি দৈনিক কত ঘণ্টা ইন্টারনেট ব্যবহার করেন?

১. ১ ঘণ্টার কম	২. ১-২ ঘণ্টা	৩. ৩-৪ ঘণ্টা	৪. ৫-৬ ঘণ্টা
৫. ৭-৮ ঘণ্টা	৬. ৮ ঘণ্টার বেশি		

৮. আপনি কি কাজে ইন্টারনেট ব্যবহার করেন? (উত্তর একাধিক হতে পারে)

১. শিক্ষায়তনিক জ্ঞান অর্জন	১০. দাপ্তরিক কাজ সমাধা	১৯. সময়ক্ষেপণ
২. সংবাদ ও তথ্য জানা	১১. সামাজিক যোগযোগ	২০. গেম খেলা
৩. চ্যাট করা	১২. ই-মেইল যোগাযোগ	২১. ভিডিও দেখা
৪. ইউটিউব দেখা	১৩. চলাচল সংক্রান্ত নির্দেশনা ও ম্যাপ	২২. আবহাওয়া তথ্য
৫. খেলাধুলা	১৪. অনলাইন শপিং	২৩. চাকরি সংক্রান্ত তথ্য
৬. প্রাপ্তবয়স্ক ছবি ও ভিডিও দেখা	১৫. রান্নাবান্নার রেসিপি	২৪. স্বাস্থ্যসেবা ও ফিটনেস
৭. ধর্মীয় বিষয়	১৬. দর্শনীয় স্থান ও ভ্রমণ সংক্রান্ত	২৫. রাজনীতি ও নির্বাচন
৮. মিউজিক ও ম্যুভি	১৭. ব্যবসা ও আর্থিক বিষয়	২৬. ফিল্যান্সিং
৯.গাড়ি ভাড়া (যেমন:উবার, পাঠাও)	১৮. ইন্টারনেট টেলিফোন	২৭. অন্যান্য:

৯. ইন্টারনেট ব্যবহারের জন্য আপনি নিজে প্রতি মাসে আনুমানিক কত টাকা খরচ করেন?

১. কোন খরচ করেন না	২. ১০০ টাকার কম	৩. ১০০ হতে ২০০ টাকা
৪. ২০০ হতে ৩০০ টাকা	৫. ৩০০ হতে ৪০০ টাকা	৬. ৪০০ হতে ৫০০ টাকা
৭. ৫০০ হতে ৬০০ টাকা	৮. ৬০০ হতে ৭০০ টাকা	৯. ৭০০ হতে ৮০০ টাকা
১০. ৮০০ হতে ৯০০ টাকা	১১. ৯০০ হতে ১০০০ টাকা	১২. ১০০০ টাকার বেশি

১০. আপনার ইন্টারনেট ব্যবহারের খরচ কে পরিশোধ করে? (উত্তর একাধিক হতে পারে)

১. অভিভাবক	২. স্কুল	৩. কলেজ
৪. বিশ্ববিদ্যালয়	৫. অফিস	৬. নিজে
৭. অন্যান্য (উল্লেখ করুন):		

১১. আপনি কোথায় ইন্টারনেট ব্যবহার করেন? (উত্তর একাধিক হতে পারে)

১. বাড়িতে	২. অফিসে	৩. স্কুলে
৪. কলেজে	৫. বিশ্ববিদ্যালয়ে	৬. সাইবার ক্যাফে/রেস্টুরেন্টে
৭. বন্ধু বা আত্মীয়ের বাসায়	৮. যাত্রাপথে বা ভ্রমণে	৯. অন্যান্য:

১২. আপনি বাড়িতে বেশিরভাগ সময়ে কোথায় ইন্টারনেট ব্যবহার করেন?

১. রিডিং রুমে	২. ড্রয়িং রুমে	৩. বেড রুমে	৪. ডাউনিং রুমে	৫. অন্যান্য:

১৩. আপনার কোন ধরণের ইন্টারনেট ব্যবহারের সুবিধা আছে? (উত্তর একাধিক হতে পারে)

১. ওয়্যারলেস/ওয়াইফাই	২. মোবাইল ফোন	৩. ক্যাবল বা ডায়াল আপ	৪. সবগুলোই

১৪. চলমান কোনো সংবাদ বা ঘটনার হালনাগাদ তথ্য পেতে আপনি কোন তথ্যসূত্র ব্যবহার করেন? (উত্তর একাধিক হতে পারে)

১. ইন্টারনেট	২. টেলিভিশন	৩. রেডিও
৪. সংবাদপত্র	৫. বন্ধু বা আত্মীয়স্বজন	

১৫. চলমান কোনো সংবাদ বা ঘটনার নির্ভরযোগ্য তথ্য পেতে নিচের কোন তথ্যসূত্রটি আপনার কাছে কতটুকু গুরুত্বপূর্ণ?

	৫.বেশ গুরুত্বপূর্ণ	৪.মোটামুটি গুরুত্বপূর্ণ	৩. অনিশ্চিত	২. কম গুরুত্বপূর্ণ	১. মোটেও গুরুত্বপূর্ণ নয়
ক. ইন্টারনেট					
খ. টেলিভিশন					
গ. রেডিও					
ঘ. সংবাদপত্র					
ঙ. বন্ধু বা আত্মীয়					

১৬. ইন্টারনেট ব্যবহারের আগের তুলনায় ইন্টারনেট ব্যবহার শুরু করার পর আপনার নিচের কর্মকান্ডগুলোতে কেমন পরিবর্তন হয়েছে?

	৫. বেশ বেড়েছে	৪. কিছুটা বেড়েছে	৩. অপরিবর্তিত	২. কিছুটা কমেছে	১. বেশ কমেছে
ক. টেলিভিশন দেখা					
খ. সংবাদপত্র পড়া					
গ. ফোন করা					
ঘ. পড়াশুনার সময়					
ঙ. ঘুমের সময়					
চ. পরিবারের সদস্যদের নিয়ে বাইরে বেড়ানো					
ছ. পরিবারের সদস্যদের সাথে সময় কাটানো					
জ. বন্ধুদের সাথে সময় কাটানো					

১৭. ইন্টারনেট ব্যবহারের কারণে আপনার নিচের কর্মকান্ডগুলোর কোনটা বাদ দিতে হয় কী?

	৫.সবসময়	৪. মাঝে মধ্যে	৩. অপরিবর্তিত	২. খুব কম	১. কখনো নয়
ক. টেলিভিশন দেখা					
খ. সংবাদপত্র পড়া					
গ. ফোন করা					
ঘ. পড়াশুনার সময়					
ঙ. ঘুমের সময়					
চ. পরিবারের সদস্যদের নিয়ে বাইরে বেড়ানো					
ছ. পরিবারের সদস্যদের সাথে সময় কাটানো					
জ. বন্ধুদের সাথে সময় কাটানো					

১৮. আপনি নিচের বক্তব্যগুলোর সাথে কতটুক একমত বা ভিন্নমত পোষণ করেন?

	৫. জোরালো একমত	৪. একমত	৩. অনিশ্চিত	২. ভিন্নমত	১.জোরালো ভিন্নমত
ক. ইন্টারনেট একাডেমিক পড়াশুনা জন্য একটি গুরুত্বপূর্ণ উপকরণ					
খ. ইন্টারনেট গবেষণা কার্যক্রম পরিচালনার জন্য একটি কার্যকর উপায়					
গ. ইন্টারনেট চাকুরির জন্য সহায়ক					
ঘ. ইন্টারনেট জীবনকে সহজতর করে					
ঙ. ইন্টারনেট নতুন মানুষজনের সাথে পরচিয়ের সুযোগ তৈরি করে					
চ. ইন্টারনেট অন্যদের কাছে নিজেকে তুলে ধরার একটি সহজ উপায়					
ছ. ইন্টারনেট সময়ের যথাযথ ব্যবহারের জন্য কার্যকর মাধ্যম					
জ. ইন্টারনেট অন্যদের সাথে যোগাযোগ রাখার জন্য সহায়ক					
ঝ. ইন্টারনেট অলস সময় কাটানোর একটি মাধ্যম					
ঞ. ইন্টরনেট অপছন্দের বিষয় থেকে পালিয়ে থাকার জন্য সহায়ক					
ট. ইন্টারনেট মুখোমুখি সাক্ষাত এড়িয়ে যোগাযোগের জন্য একটি দারুণ মাধ্যম					
ঠ. ইন্টারনেট পরিবার ও বন্ধুবান্ধবের সাথে মুখোমুখি যোগাযোগ কমিয়ে দেয়					
ড. ইন্টারনেট শারীরিক কর্মকান্ড যেমন খেলাধুলা ও ব্যায়াম কমিয়ে দেয়					
ঢ. ইন্টারনেটে প্রাপ্ত বিপুল পরিমাণ তথ্যের ব্যবহার বিভ্রান্তিকর					
ণ. ইন্টারনেটে অপ্রাসঙ্গিক ও অযাচাইকৃত তথ্যের ভিড়ে অনুসন্ধানকৃত প্রকৃত তথ্য পাওয়া কঠিন					
ত. ইন্টারনেট প্রচুর পরিমাণে অনৈতিক উপাদান সরবরাহ করে					

থ. ইন্টারনেটে যোগাযোগের মাধ্যমে সৃষ্ট সম্পর্কের ওপর আস্থা রাখা যায়					
দ. ইন্টারনেট আমাকে ভিন্ন সংস্কৃতি গ্রহণে উদ্বুদ্ধ করে					
ধ. ইন্টারনেট সাংস্কৃতিক সমস্যা তৈরি করে					
ন. ইন্টারনেট তথ্য পাবার একটি কার্যকর মাধ্যম					
প. ইন্টারনেট ব্যবহারের সময় আমি একাকিত্ববোধ হয় না					
ফ. ইন্টারনেট জ্ঞানার্জনের একটি সহজ মাধ্যম					
ব. ইন্টারনেট সামাজিক সম্পর্ক জোরদার করে					
ভ. ইন্টারনেট আমাকে অসীম স্বাধীনতা দেয়					
ম. ইন্টারনেট কল্পনাশক্তি নির্ভর কাজে সহায়তা করে					
য. ইন্টারনেট এক ধরনের আসক্তি তৈরি করে					

১৯. আপনি অনলাইনে থাকা অবস্থায় অন্যান্য কাজ; যেমন টেলিভিশন দেখা, ফোন করা বা পড়া একইসাথে চালিয়ে যান কি?

৫. সবসময়	৪. মাঝে মধ্যে	৩. অনিশ্চিত	২. খুব কম	১. কখনো নয়

২০. আপনি অন্যদের সাথে যোগাযোগের ক্ষেত্রে কোনটি বেশি ব্যবহার করেন?

১. ই-মেইল	২. ইনস্ট্যন্ট মেসেজ	৩. দুটিই	৪. কোনটিই নয়	৫. অনিশ্চিত

২১. আপনি কত ঘন ঘন ই-মেইল চেক করেন?

১. সব সময় সংযুক্ত থাকি	২. প্রতিদিন	৩. দিনে ২ থেকে ৫ বার	৪. দিনে ৫ বারের বেশি
৫. সপ্তাহে কয়েকবার	৬. খুব কম	৭. কখনো নয়	

২২. আপনি কত ঘন ঘন সামাজিক যোগাযোগ মাধ্যম ব্যবহার করেন?

১. সব সময় সংযুক্ত থাকি	২. প্রতিদিন	৩. দিনে ২ থেকে ৫ বার	৪. দিনে ৫ বারের বেশি
৫. সপ্তাহে কয়েকবার	৬. খুব কম	৭. কখনো নয়	

২৩. অনলাইনে পরিচিত হওয়া কারো সাথে কি কখনো আপনি ব্যক্তিগতভাবে সাক্ষাৎ করেছেন?

১. হ্যাঁ	২. না	৩. অনিশ্চিত

২৪. অনলাইনে পরিচয়ের পর ব্যক্তিগতভাবে সাক্ষাৎ হয়েছে আপনার এমন বন্ধুর সংখ্যা কি মনে করতে পারেন?

১. বন্ধুর সংখ্যা:	২. একজনও নয়	৩. অনিশ্চিত

২৫. দীর্ঘদিন যাবত যোগাযোগ নেই এমন কোনো বন্ধু বা পরিচিতজনকে কি অনলাইনে খুঁজে পেয়েছেন?

১. হ্যাঁ	২. না	৩. অনিশ্চিত

২৬. আপনি পরিবারের সদস্য বা বন্ধুর সাথে কিভাবে যোগাযোগ রাখেন? (উত্তর একাধিক হতে পারে)

১. আপনি তাদেরকে দেখতে যান	২. তারা আপনাকে দেখতে আসে	৩. ফোনে যোগাযোগ করেন
৪. ই-মেইল পাঠান	৫. এসএমএস পাঠান	৬. ভিডিও কল করেন
৭. সামাজিক মাধ্যমে ম্যাসেজ পাঠান যেমন ফেসবুক/মেসেঞ্জারে)	৮. অন্যান্য (উল্লেখ করুন):	

২৭. সামাজিক যোগাযোগ মাধ্যম ফেসবুক বা অন্যকিছু ব্যবহারের ক্ষেত্রে আপনি কিভাবে নিচের কাজগুলো করেন?

	৫.সবসময়	৪. মাঝে মধ্যে	৩. অনিশ্চিত	২. খুব কম	১. কখনো নয়
ক. চ্যাট করা					
খ. প্রোফাইল ছবি পরিবর্তন করা					

গ. শপিং করা					
ঘ. বন্ধুর সংবাদ জানা					
ঙ. নতুন বন্ধু সংযুক্ত করা					
চ. তথ্য হালনাগাদ করা					
ছ. প্রিয় ভিডিও, ছবি, গান শেয়ার করা					
জ.ভিডিও ও ছবি আপলোড করা					
ঝ. অনলাইন গেম খেলা					
ঞ. ইভেন্ট তৈরি বা ইভেন্টে অংশগ্রহণ					
ট. গ্রুপ কার্যক্রম পরিচালনা					
ঠ. পুরানো বন্ধুর খোজঁ করা					
ড. শিক্ষা বা গবেষণার জন্য যোগাযোগ					
ঢ. নিজের কাজ অন্যদের জানানো					
ণ. আন্দোলন গড়ে তোলা বা এক্টিভিসম					

২৮. আপনি সামাজিক, সাংস্কৃতিক বা রাজনৈতিক কার্যক্রমে কেমন আগ্রহী? (উত্তর একাধিক হতে পারে)

	৫. খুব বেশি আগ্রহী	৪. মোটামুটি আগ্রহী	৩. অনিশ্চিত	২. খুব কম আগ্রহী	১. মোটেই আগ্রহী নয়
সামাজিক					
রাজনৈতিক					
সাংস্কৃতিক					

২৯. সামাজিক, সাংস্কৃতিক বা রাজনৈতিক কার্যক্রম পরিচালনার উদ্দেশ্যে কি আপনি ইন্টারনেট ব্যবহার করেন?

	৫. সব সময়	৪. মাঝে মধ্যে	৩. অনিশ্চিত	২. খুব কম	১. কখনো নয়
সামাজিক					
রাজনৈতিক					
সাংস্কৃতিক					

৩০. আপনার আগ্রহের বিষয়ে কি আপনি নিচের কাজগুলো করেছেন? (উত্তর একাধিক হতে পারে)

১. সামাজিক মাধ্যমে মন্তব্য/শেয়ার/লাইক দিয়েছেন	২. সামাজিক মাধ্যমে কিছু লিখেছেন	৩. ব্লগে কিছু লিখেছেন
৪. ব্লগে মন্তব্য করেছেন	৫. গ্রুপ বা ইভেন্ট পরিচালনা করেছেন	

৩১. সামাজিক যোগাযোগ মাধ্যমে তথ্য পেয়ে আপনি কি কোন সামাজিক, সাংস্কৃতিক বা রাজনৈতিক কার্যক্রমে অংশ নিয়েছেন?

১. হ্যাঁ	০. না	২. অনিশ্চিত

৩২. কোন কারণে আপনি কি বেনামী একাউন্টের মাধ্যমে ইন্টারনেট ব্যবহার করেন?

১. হ্যাঁ	০. না

৩৩. ইন্টারনেটের ব্যবহার সংক্রান্ত নিচের বিষয়গুলো নিয়ে আপনি কতটুকু শংকিত?

	৫. খুব বেশি	৪. বেশি	৩. কোনটাই নয়	২. কম	১. খুব কম

ক. মেইল বা সামাজিক মাধ্যমের তথ্যের নিরাপত্তা					
খ. ব্যক্তিগত তথ্য অন্যদের কাছে প্রকাশ					
গ. ভাইরাস আক্রমণ					
ঘ. আধেয় বা কনটেন্ট চুরি					
ঙ. পাসওয়ার্ড চুরি					
চ. হ্যাঁক হওয়া					

৩৪. ইন্টারনেট ব্যবহারের ক্ষেত্রে সমস্যার মুখোমুখি হলে আপনি কার সহযোগিতা পেয়েছেন? (উত্তর একাধিক হতে পারে)

১. বন্ধু বা আত্মীয়স্বজনের	২. কর্মস্থলে দায়িত্বরতদের	৩. শিক্ষা প্রতিষ্ঠানে কর্তব্যরতদের
৪. লাইব্রেরিতে কর্তব্যরতদের	৫. ইন্টারনেট ক্যাফেতে দায়িত্বরতদের	৬. অর্থের বিনিময়ে কারো সেবা
৭. নিজেই প্রশিক্ষণ গ্রহণ করে	৮. অন্যান্য:	

৩৫. ইন্টারনেটের ব্যবহার কি আপনার জীবনে কি কোন ধরনের পরিবর্তন এনেছে?

	১. ইতিবাচক	২. নেতিবাচক	৩. দুটোই	৪. কোনটিই নয়	৫. অনিশ্চিত
ক. দৈনন্দিন কাজকর্মে					
খ. আর্থিক ক্ষেত্রে					
গ. সামাজিক ক্ষেত্রে					
ঘ. পারিবারিক ক্ষেত্রে					
ঙ. মনোজগতে					

৩৬. ইন্টারনেট সর্ম্পকে আপনার অনুধাবন কি? (উত্তর একাধিক হতে পারে)

১. এটি খুবই প্রয়োজনীয়	২. এটি জীবনের অবিচ্ছেদ্য অংশ	৩. এটি একেবারেই অপ্রয়োজনীয়
৪. বর্তমান যুগে ইন্টারনেট ছাড়া বেঁচে থাকা অসম্ভব	৫. বর্তমান সভ্যতা ইন্টারনেটের ওপর নির্ভরশীল	৬. ইন্টারনেট ছাড়াও বেঁচে থাকা সম্ভব
৭. ইন্টারনেট ব্যবহার মানুষের চিন্তা শক্তি ও সৃজনশীলতার বিকাশে ইতিবাচক ভূমিকা রাখে	৮. মানুষের বিবেচনাবোধই ইন্টারনেটের সঠিক ব্যবহার নিশ্চিত করতে পারে	৯. ইন্টারনেট ব্যবহার মানুষের চিন্তা শক্তি ও সৃজনশীলতার বিকাশে নেতিবাচক ভূমিকা রাখে

৩৭. ইন্টারনেট ব্যবহারের কয়েকটি ভাল দিকের উল্লেখ করুন

৩৮. ইন্টারনেট ব্যবহারের কয়েকটি খারাপ দিকের উল্লেখ করুন

৩৯. আপনি কি ইন্টারনেট ব্যবহারের প্রতি আসক্ত?

১.হ্যাঁ	০. না	২. অনিশ্চিত

৪০. অনলাইনে থাকা অবস্থায় ইন্টারনেটের ব্যবহার বন্ধ করা আপনার কাছে কি কঠিন মনে হয়?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪১. ইন্টারনেট ব্যবহার বন্ধ করার ইচ্ছা হওয়া সত্ত্বেও আপনি কি কখনো এটির ব্যবহার চালিয়ে গেছেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪২. অন্যরা (যেমন পিতামাত বা বন্ধুবান্ধব) কি কখনো বলেছেন আপনার ইন্টারনেট ব্যবহার কমানো উচিত?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৩. অন্যদের (যেমন পিতামাত বা বন্ধু) সাথে সময় কাটানোর চেয়ে ইন্টারনেট ব্যবহারকে কি আপনি অগ্রাধিকার দেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৪. ইন্টারনেট ব্যবহারের কারণে কি কখনো আপনি কম ঘুমাতে পেরেছেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৫. যখন অনলাইনে থাকেন না তখনও ইন্টারনেট নিয়ে ভাবেন আপনার ক্ষেত্রে এমনটি কখনো হয়েছে?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৬. একবার ইন্টরনেট ব্যবহার শেষ করার পর পরের ইন্টারনেটে সেশনের জন্য আপনি কি অপেক্ষায় থাকেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৭. আপনি কি কখনো মনে করেন আপনার ইন্টারনেট ব্যবহার আরো কমানো উচিত?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৮. ইন্টারনেটে কম সময় ব্যবহারের চেষ্টা করেও তা করতে আপনি কি কখনো ব্যর্থ হয়েছেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৪৯. ইন্টারনেট ব্যবহারের উদ্দেশ্যে আপনি কি কখনো তাড়াহুড়া করে কর্মস্থলে বা বাড়িতে ফিরেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৫০. ইন্টারনেট ব্যবহারের অগ্রাধিকার দেওয়ার কারণে কি আপনি দৈনন্দিন দায়িত্ব পালনে গাফলাতি করেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৫১. মানসিক অবসাদের সময় আপনি কি ইন্টারনেট ব্যবহারের দিকে ঝুঁকে পড়েন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৫২. কোনো দু:খজনক পরিস্থিতি বা নেতিবাচক অনুভুতি থেকে মুক্তি পাওয়ার জন্য কি আপনি ইন্টারনেট ব্যবহার করেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

৫৩. যখন ইন্টারনেট ব্যবহার করতে পারেন না তখন কি আপনি অস্থিরতা, হতাশা এবং বিরক্তি অনুভব করেন?

৪. সব সময়	৩. প্রায়শ	২. মাঝে মধ্যে	১. খুব কম	০. কখনো নয়

অংশগ্রহণকারীর ব্যক্তিগত তথ্য

লিঙ্গ:	১. পুরুষ: ২: মহিলা ৩. অন্যান্য:.....
বৈবাহিক অবস্থা:	১. অবিবাহিত ২. বিবাহিত ৩. অন্যান্য:.....
বয়স:	১. ১৫-১৯ বছর ২. ২০-২৪ বছর ৩. ২৫-২৯ বছর ৪. ৩০-৩৫ বছর
শিক্ষা সংক্রান্ত তথ্য	১. প্রাথমিক ২. মাধ্যামক ৩. উচ্চ মাধ্যমিক ৪. স্নাতক ৫. স্নাতকোত্তর ৬. অন্যান্য:.....

পেশা	১. শিক্ষার্থী ২. বেকার ৩. স্ব-নিয়োজিত কর্ম ৪. গৃহিণী ৫. চাকুরিজীবী ৬. পেশাজীবী ৭. অন্যান্য:.....
মাসিক পারিবারিক আয়	১. ১০,০০০ টাকার কম ২. ১০,০০০ টাকা হতে অনূর্ধ্ব ২০,০০০ টাকা ৩. ২০,০০০ টাকা হতে অনূর্ধ্ব ৩০,০০০ টাকা ৪. ৩০,০০০ টাকা হতে অনূর্ধ্ব ৪০,০০০ টাকা ৫. ৪০,০০০ টাকা হতে অনূর্ধ্ব ৫০,০০০ টাকা ৬. ৫০,০০০ টাকা হতে অনূর্ধ্ব ৬০,০০০ টাকা ৭. ৬০,০০০ টাকা হতে অনূর্ধ্ব ৭০,০০০ টাকা ৮. ৭০,০০০ টাকা হতে অনূর্ধ্ব ৮০,০০০ টাকা ৯. ৮০,০০০ টাকা হতে অনূর্ধ্ব ৯০,০০০ টাকা ১০. ৯০,০০০ টাকা হতে অনূর্ধ্ব ১,০০,০০০ টাকা ১১. ১,০০,০০০ টাকার উর্ধ্বে (উল্লেখ করুন):.....
আবাসিক অবস্থা	১. পরিবারের সাথে ২. একাকী ৩. অন্যান্য: .....

== ধন্যবাদ==

Appendix 3

Permission to use CIUS in Bengali language

Dr. G.-J. Meerkerk Addiction Research Institute Rotterdam Heemraadssingel 194 3021 DM Rotterdam The Netherlands E-mail: meerkerk@ivo.nl

Dear Professor Mohammad Ali Asgar Chowdhury,

Thank you for your interest in our work. You can use the CIUS as long as there's no commercial interest and you provide the correct reference (Meerkerk, G.-J., Van Den Eijnden, R. J. J. M., Vermulst, A. A., & Garretsen, H. F. L. (2009). The Compulsive Internet Use Scale (CIUS): some psychometric properties. Cyberpsychology & Behavior, 12(1), 1-6.).

Furthermore, I would like to add some remarks. First of all, I don't really feel comfortable anymore with the term compulsive, I would rather say it is an impulse-control disorder or Addictive Disorder. This doesn't mean the items of the CIUS should be changed. The items largely meet the DSM(-IV) criteria for Addictive Disorders, except for craving which was included in the DSM-V, this aspect is not included in the current items.

Furthermore, the CIUS was designed to measure general compulsive internet use, which is more or less the same as what other researchers refer to as internet addiction, or problematic or pathological internet use etc. However, I currently think it makes

more sense to address the specific (problematic) online behavior more directly, e.g. online gaming (1), online pornography (2) or social media (3), to mention the probably most important areas of problematic internet use (maybe you could include online gambling as well). Therefore, you may consider not to use a general measure of problematic internet use like the CIUS, but instead focus on a particular online behavior and use a specialized measure.

1. Van Rooij, A. J., Schoenmakers, T. M., van den Eijnden, R. J. J. M., Vermulst, A. A., & van de Mheen, D. (2012). Video game addiction test: validity and psychometric characteristics. Cyberpsychology, Behavior and Social Networking, 15(9), 507-11. doi:10.1089/cyber.2012.0007
2. Downing, M. J., Antebi, N., & Schrimshaw, E. W. (2014). Compulsive Use of Internet-based Sexually Explicit Media: Adaptation and Validation of the Compulsive Internet Use Scale (CIUS). Addictive Behaviors. doi:10.1016/j.addbeh.2014.03.007
3. De Cock, R., Vangeel, J., Klein, A., Minotte, P., Rosas, O., & Meerkerk, G.-J. (2014). Compulsive use of social networking sites in Belgium: prevalence, profile, and the role of attitude toward work and school. Cyberpsychology, Behavior and Social Networking, 17(3), 166–71. doi:10.1089/cyber.2013.0029

For your convenience I've included the 'official' items of the CIUS. Scoring and interpretation is easy: scoring is just adding up all answers and interpretation is the higher the score the more serious the problem. One problem you will encounter is the lack of a validated cut-off point. The CIUS was developed to be used for correlational analyses in social epidemiological studies, and we did not define a cut-off point to differentiate between 'addictive' and 'non-addictive' use. However, you can have a look at how other authors dealt with this: e.g. Rumpf, H.-J., Vermulst, A. A., Bischof, A., Kastirke, N., Gürtler, D., Bischof, G., … Meyer, C. (2013). Occurence of Internet Addiction in a General Population Sample: A Latent Class Analysis. European Addiction Research, 20(4), 159–166. doi:10.1159/000354321. If you want a more simple solution you could use an average score higher than 2 (with items scoring from 0 to 4) as an indication for problems related to the use of the internet.

A shortened version of the CIUS was developed by colleagues in Germany, maybe this is interesting for you as well: Besser, B., Rumpf, H.-J., Bischof, A., Meerkerk, G.-J., Higuchi, S., & Bischof, G. (2017). Internet-Related Disorders: Development of the Short Compulsive Internet Use Scale. Cyberpsychology, Behavior, and Social Networking, 20(11), 709–717. https://doi.org/10.1089/cyber.2017.0260. Also, recently a cross-cultural validation study was published which may be interesting for you: Lopez-Fernandez, O., Griffiths, M. D., Kuss, D. J., Dawes, C., Pontes, H. M., Justice, L., … Billieux, J. (2019). Cross-Cultural Validation of the Compulsive Internet Use Scale in Four Forms and Eight Languages. Cyberpsychology, Behavior, and Social Networking, 22(7), 451–464. https://doi.org/10.1089/cyber.2018.0731.

Best wishes,

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