THE MODERATORS AFFECT ON SOCIAL MEDIA ADDICTION GLOBALLY

LEONG SEE KEI

BACHELOR OF INTERNATIONAL BUSINESS (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT DEPARTMENT OF INTERNATIONAL BUSINESS

MAY 2023

THE MODERATORS AFFECT ON SOCIAL MEDIA
ADDICTION GLOBALLY

BY

LEONG SEE KEI

A final year project submitted in partial fulfillment of the
requirement for the degree of

BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT
DEPARTMENT OF INTERNATIONAL BUSINESS

MAY 2023

DECLARATION

I hereby declare that:

(1) This undergraduate FYP is the end result of my own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Sole contribution has been made by me in completing the FYP.

(4) The word count of this research report is 10,753.

Name of student: Student ID: Signature

Leong See Kei   1902581
_____   _____   _____

Date: 5 MAY 2023

ACKNOWLEDGEMENT

DEDICATION

This research project is dedicated to,

my respected supervisor, Dr Seah Choon Sen, and my respected second examiner, Dr Low Mei Peng. They have provided me useful feedback, assistance and encouragement with valuable insights throughout the Final Year Project journey.

And,

my beloved family members and friends for their encouragement throughout the progress. It would be challenging for me to accomplish this project without their supports.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

CC   Cost of Connection

SNS   Social Networking Sites

SPSS   Statistical Package for Social Science

SR   Stimulus-Response

TC   Type of Connection

LIST OF APPENDIX

PREFACE

The emergence of social media platforms has brought a fundamental shift in how human communicate with each other. Despite the benefits of social media, such as helping us to connect with each other, it brings harm at the same time if people started to get addict to it. As a student in pursuing Bachelor Degree in International Business, it would be a source of competitive advantage for understand deeper towards the global issues. Among various global issues and trends, social media addiction has been deemed as one of the notable trends as there are increasing adolescent started to develop addictive symptoms and behaviour.

Despite the factors, little is known about the moderators' influence on social media addiction. This final year project aims to explore how does the moderators' affect social media addiction globally. Through a thorough review of the literature and empirical research, this project seeks to understand the ways in which moderators impact social media addiction and identify potential solutions to the problem. Ultimately, the findings of this project may contribute to the development of more effective interventions to address social media addiction and improve the overall well-being of individuals who uses social media.

ABSTRACT

Social media addiction defined as being too worried about social networking sites and visiting it frequently on a daily basis in which this behavior started to interfere with one's social activity, interpersonal relationship and mental health as well as general wellbeing. Against these backgrounds, this study aims to determine the factors which would affect one's addiction level in social media. Besides, this study aims to identify does the demographic factors of an individual affect their level of addiction towards social media.

By using the secondary data obtained from Pew Research Centre (2021) for analysis, the findings indicate that the social networking sites, type of connection and the cost of connection could affect the level of addiction of an individual. Also, the result asserted that female, individual with lower education level and individual with lower income level are prone to have social media addiction.

The findings of this study have contributed some valuable insights and implications to the literature regarding the understanding of social media addiction.

Keywords: *social networking sites, connection, social media addiction, mental health.*

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This chapter discussed the background of the study, problem statement, research questions and objectives, scope of the study, as well as the significance of study.

1.1 Background of Study

Due to the rapid advancement of technology, the use of Internet has become widespread in the individuals' daily routines. Given the development of the accessibility of mobile data and the abundance of smartphone applications, the number of individuals who own a smartphone is with estimates ranging from 60% to 95% of young adults in both developing and developed countries owning one (Yang, Chen, Huang, Lin, & Chang, 2017).

Figure 1.0 shows the numbers of global social media users
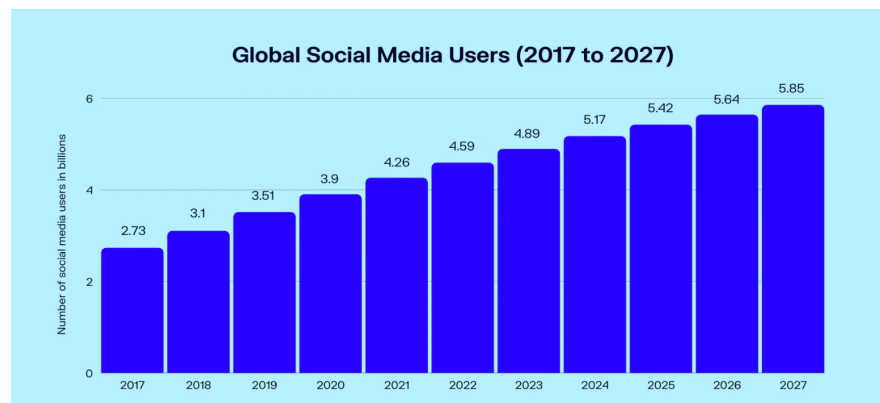
Source: Gaubys (2023)

By referring to figure 1.0, Gaubys (2023) mentioned that the latest figures of global social media users reaches 4.89 billion worldwide in 2023, a 6.5% increase from a year ago. Moving on, the growth rate is expected to plateau with the constant increase of the number of social media users. The average annual growth rate is forecast at 5% from the year 2023 to 2027. The expected number of social media users around the globe is expected to reach 5.85 billions in the year of 2027. Therefore, it is clear that social media will continue to be part of the daily lives of our community. The usage of social media has become one of the key leisure activity, allowing individuals to connect with one and another virtually regardless of time and geographical constraints. With smartphones and the Internet as the main driving force, such growing trend indicating the risk of social media addiction worldwide.

Apart from that, one of the fundamental needs of human being is to belongs and relate, which interpersonal communication is one of the key needs (Wang, 2018). In recent years, the rise of social media usage have drastically change the way people communicate in the community (Smith & Anderson, 2018; Stone, & Wang, 2018). The accessibility of social media brings the potential for social media addiction. This refers to the excessive and irrational use of social medias to an extent that interfere other aspects of one's daily life (Griffiths, 2012). Social media addiction can be also viewed in another terminology, which is Internet addiction. This occurs when individuals exhibit a compulsive use of social media (Starcevic, 2013). Individuals who are addicted to social media often overly concerned about social media and are driven by an uncontrollable urge to log on to and visit social media (Andreassen & Pallesen, 2014).

Moreover, in 2004, Facebook was launched as an online community for students at Harvard University and since then, it has become the world's most popular social networking sites (SNS) (Dolega, Rowe & Branagan, 2021). Many commentators have stated this trend to the diffusion of internet and social media. They mentioned that this has dramatically changed the way individuals spend their time and interact

with each other over time (Castellacci and Tveito, 2018). Therefore, this research is to investigate the factors influencing social media addiction with the demographic factors as the moderator.

A data analysis from the UK Millennium cohort, reported that 43% of female and 22% of male at age 14 browse social media for more than 3 hours everyday (Kelly et al., 2018). Besides, Dalvi-Esfahani et al. (2019) mentioned that students and adolescents from high and low income groups have different level of social media usage due to different level of access to the Internet. Also, according to Lepicnik-Vodopivec and Samec (2013) cited by Dong, Cao and Li (2020), parents with different educational level have different attitudes towards usage of technology and digital media towards their child development.

1.2 Problem Statement

Serious mental health concerns have been linked to specific types and patterns of usage in internet and social media, lead to the concept of "internet addiction" (Weinstein, 2015). The increment of availability, accessibility, and affordability of browsing social networking sites may lead to worsening of mental health. According to International Telecommunication Union (ITU), the internet usage increased from 1990 million to 3385 million from year 2010 to 2016 globally (ITU, 2019).

Furthermore, it is common to be noticed that users who often interacting with others in social media would have negative impact on their psychological state in which users face unpleasant events or comparing themselves with peers (Ruggieri et al., 2020). Social media platforms may trigger the development of mental health problems among users, especially when users have misconduct, misperception and presumptions behaviours of social media (Best et al., 2014). According to Orben and Przybylski (2019), the use of social media is negatively associated with the

mental well-being of people, especially on young adults. Also, according to Leung (2020), research has consistently shows that various online activities may be potentially addictive to individuals particularly adolescents and emerging adults. Some of the Internet addictive behaviour are such as the use of social media, online gaming and online gambling. Besides, Islam et al. (2021) mentioned that the misconduct behaviour on social media-related activities are increasing day-by-day such as suicide and gang-rape live streaming. This is due to the reason that there is a strong relationship between mental health issues with the high occurrence of crimes and misconduct behaviours (Haque et al., 2020; Taylor, 2004).

Other than that, time spent on social media generally equates to time not spent on alternative activities which known to have beneficial impacts on mental health such as physical exercise and sleep (Viner et al., 2019). Studies have shown that the symptoms of social media addiction can be manifested in cognition, emotional, mood, physical reactions, and interpersonal and psychological problems (Hou et al., 2019). For example, social media addiction positively related to depressive symptoms among high schools students in the United States (Chi, Lin & Zhang, 2016). For example, the prevalence of common mental disorders and self-harm in the United Kingdom (UK) rose between 2000-2014, particularly among 16-24 year old females (McManus & Gunnell, 2020). Research found that different demographic and background might have differences in perception towards the social media addiction. Due to the increasing mental health concerns among social media users, therefore, it is important to investigate the factors which contribute to social media addiction with demographics including gender, education level and income as moderator.

1.3 Research Question

In light of the aforementioned problem statements, the present study aims to answer the following research questions:

1. What are the factors affecting social media addiction?
2. How does gender, education level and income level moderate the affect between the factors and social media addiction?

1.4 Research Objectives

With the research questions raised, the objective of this research can be further illustrate as following,

1. To determine the factors affecting social media addiction.
2. To identify the moderators affect towards the social media addiction.

1.5 Scope of Study

In depth, this study will be focusing on whether the moderators: gender, education level and income level, affect the level of social media addiction globally. Therefore, all adults who uses smartphone and landline telephone in the United States will be included in this study while the rest will be excluded.

1.6 Significance of Study

Existing study attempt to investigate and understand how the demographic factor would affect the social media addiction. With many studies have examined the factors affecting social media addiction, mainly focusing on emotional symptoms and mental health, including the factors of loneliness, perceived enjoyment and perceived ease of use. Few include the demographic factor in moderating the relationship between the variables. Therefore, this research seek to close the research gap.

It is vital that appropriate measures are taken to reduce the extent of social media addiction. The findings of this research wishes to contribute to several sector to cope the issue of social media addiction. Authorities could make use of this study to understand deeper on social media addiction other than just its factors. For example, companies may limit the access to the Internet at non-working spaces such as the pantry and the common area. Also, corporations and managers may utilize this research to observe their employees or subordinates. If they poses symptoms of addictive behaviour such as overdependence and compulsive usage of social media, the human resources management could make use of this research to develop trainings and awareness campaign that is focus on certain demographics. For instance, online test on social media addiction may be provided for employees to evaluate themselves to increase the awareness of social media addiction. This may help them to restraint themselves from being further addict into the world of social media.

Furthermore, this research may assist government and authorities to reduce social media addictions among nations. Government clinics and public health experts may need to focus more on certain demographic in order to assist them with self-regulation to prevent using social media excessively. For instances, government may revise the policy on social media companies to set up circuit-breaker features.

Warnings and messages may be displayed as a gently reminder if the users have been on social media for a long period.

Besides, according to D'Arienzo, Boursier and Griffiths (2019), the social media addiction behaviour of a parent appear to actively influencing and contribute to their children's addictive behaviour. Meanwhile, this could greatly influence the next generation as well as their later lives. The regulatory bodies may make use of this research and put some techniques by controlling the servers at particular timing to limit the potential addictive usage. Government and authorities are able to use this research to tackle heavy social media users with specific demographic, especially parents, to increase the efficiency of action plans and campaigns. With adequate importance given by the government, psychotherapists from clinics may have more awareness of this addictive behaviour. Ultimately, this research could be served as a reference for several sectors in order to cope with social media addiction for the mental health of the population.

CHAPTER 2: LITERATURE REVIEW

2.1 Underlying Theory

Stimulus Response Theory is suitable and being used to explain this research. According to the theory of Stimulus-Response (SR) proposed by Thorndike (1898) to observe his cat's behaviour. The environmental factors play a stimulating role (S), which leads to their behavioural responses (R). The S-R framework has been widely used to predict online behaviour such as social media usage (Kamboj et al., 2018). This theory is further adopted and adapted in investigating compulsive use of mobile social networking sites as shown in figure 1.1 below. In the presence of stimulus, the response may become compulsive when it occur most frequently when the condition of the stimulus are repeated (Wang & Lee, 2020).

Figure 1.1 shows the proposed SR theory framework by Wang & Lee (2020)
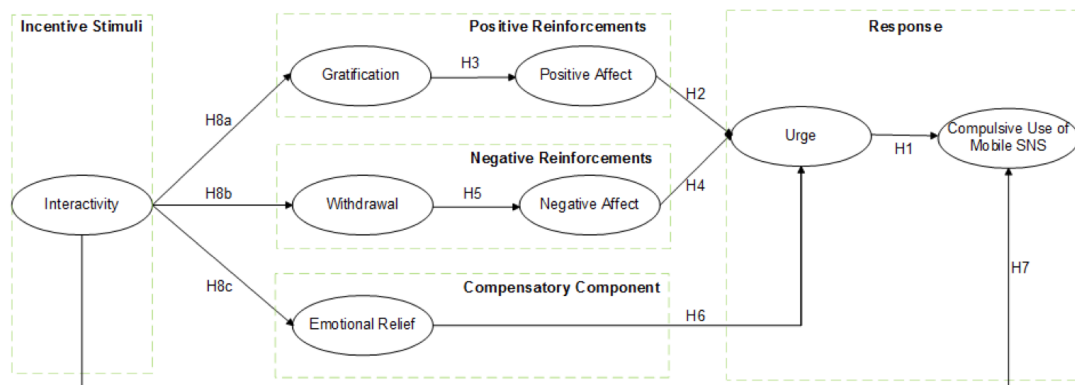
Source: Wang & Lee (2020)

In this research, the stimulus (S) are the social networking sites, type of connection and the cost of connection; while the response (R) is their degree of social media addiction. Explaining SR theory in this context, the users were able to perform 'responses' without voluntary attention and sometimes even triggered unknowingly by the 'stimulus'. The SR theory is linked with the context when users are said to develop addictive symptoms such as frequent visit to social media and gets

discomfort when they could not do so. The user is considered as addictive when it becomes an habit to visit social media even without the intention to socialise with others. The habit explanations emphasize repetition and automaticity of social media use. This are considered as a product of basic stimulus-response (SR) theory, and the emergence of visiting social media are often performed as a routines without reflection. Hence, the environmental stimulus motivates the responses which cause users to addict to social media (Wu, 2022).

2.2 Variables

2.2.1 Social Networking Sites

Social networking sites is defined as the various internet networks that allow users to interact as well as communicate with others, both verbally and visually (Keles, McCrae, & Grealish, 2020). It is a web capabilities of creating, exchanging, and collaborating on content online (Kuss & Griffiths, 2017). It includes a broad range of applications, including web blogs, content and social networking sites as well as virtual game communities (Kuss & Griffiths, 2017). Most of the social media platform do not require any payment to access (Whiting & Williams, 2013). It includes Facebook, YouTube, Twitter, and Instagram. Over the years, social media has emerged and gradually increasing in popularity, particularly among the younger generations. Also, one of the contribution of social networking sites is its instant messaging feature. The most popular messaging services are WhatsApp and Facebook Messenger with 1000 million active users each (Kuss & Griffiths, 2017).

2.2.2 Type of Connection

This will be categorised by whether the user are subscribing dial-up internet or a broadband service such as such as Wi-Fi router, cable, or fibre optic service. Beside, smartphone ownership and home broadband subscriptions have an increasing trend among American adults from 81% to 85%, and 73% to 77% from year 2019 to 2021 respectively (Pew Research Centre, 2021). Though modest, both increases are statistically significant, and it reach to a point which majority of Americans say the internet has been important to them personally. Also, 91% of adults report having at least one of these technologies with them.

The type of connections will determine the users' ease of access to the internet (Beaunoyer, 2020). The type of connections will differs user from those who are able to access internet from home and those who connect to Internet from public spaces such as schools, libraries or Wi-Fi at coffee shops (Beaunoyer, 2020). Also, it is mentioned that the type of connection affect user's autonomy of use. This includes the location where the internet is accessed as well as the perceive freedom to use it as wanted. In short, type of connection differentiate users experience due to the different internet speed, accessibility and autonomy of using internet and social media.

2.2.3 Cost of Connection

Cost of connection refers to the cost of subscribing to the internet. This is vary according to countries. This factor is not affecting everyone in the same degree, depending on the cost of Internet subscription of each area and countries. Household with relatively lower income may not be able to afford internet subscription bundle or have the best connection both in terms of internet speed and the data usage limit (Beaunoyer, 2020). Some of the household needs to sacrifice essential spendings in order to have stable and reliable access to the internet (Beaunoyer, 2020).

2.2.4 Gender

Gender is known as an optional element that is usually applied according to cultural convention in society (Lindqvist et al., 2021). This is due to the fact that gender is culturally and historically distinct and changeable. According to Cartwright & Nancarrow (2022), gender is usually interchangeable and interchangeable in a specific country. Also defined is the fact that gender is an element that is not necessarily identified in legal documents. Further defined, gender is an element that parents will always identify by the time the child is born; only when the child is grown will they find that their gender should not be identified in this way and they will identify themselves differently (Cartwright & Nancarrow, 2022).

2.2.5 Education Level

Education is known as a method to share knowledge, ease the learning process, and motivate individuals to innovate (Guo et al., 2019). It is very crucial for the growth of both individuals and society. Education categories are different in different counties. However, the majority of countries have three main levels of education: primary, secondary, and tertiary. (Manna & Ul Hag, 2020). Education level can be a measurement for a lot of things. Education level can be used to assess social problems, mental and physical health, income, and family life. (Tebar et al., 2022). Besides being a measurement, education level is also useful to eliminate poverty and promote wealth. The higher the education level, the lower the poverty. (Guo et al., 2019).

2.2.6 Income

Income is a simple indicator that shows one's ability to make purchase on what they are demanding (Pereira, 2019). Specifically, it is the financial resources that have an important influence on their purchases. Income is likely to reflect one's affordability and accessibility in purchase, especially in a low-income household (Puzzolo, 2019). Income are commonly grouped three income levels, which are low-, medium- and high-income groups. Lower income households may need supportive financing in order to afford ongoing and unexpected expenses (Puzzolo, 2019). The increasing income will eventually increase the availability of affordable goods, therefore, this will increase their sense of community and their life satisfaction in the society (Lim et al., 2020).

2.2.7 Social Media Addiction

According to Andreassen and Pallesen (2014), social media addiction is defined as being too anxious about social networking sites, driven by a strong incentive to visit social media, devoting enormous effort and time. It often disturb users in which social media interfere with their social activities, studies or work, interpersonal relationships, as well as their mental health and wellbeing. Reflecting on disordered use of the social media, the term disorder is an improvement over social media addiction because persons might become addicted to certain online channels (Duke & Montag, 2017). Also, according to Woodward (2023), people who spend over 5 hours on social media per day are considered as addicted. It is said that teenagers may spend up to 9 hours every single day on social media.

According to Dalvi-Esfahani (2019), researchers argue that social media addicts often spend their spare time thinking about social media and how they could spend more time to gain attachment via these sites and applications. Research mentioned that they spend more time on such media than the initial intention. Thus, they often feels that there is an urgent need for increasing the use of social media to achieve

the same level of enjoyment. Users who are addicted mainly use social media to modify their moods. Some individual perceived social media as a safe haven and a comfortable platform for seeking the sense of belonging (D'Arienzo, Boursier & Griffiths, 2019). Social media is able to reduce anxiety, guiltiness, restlessness, and depression, as well as to forgo personal issues that they are facing in real life. However, this is the symptoms of social media addiction as if using social media is prohibited, users would be distracted, disturbed, or feel restless, and uncomfortable when they cannot engage onto social media.

2.3 Hypothesis Development

2.3.1 Social Networking Sites

There is a growing scientific evidence prove that excessive use of social networking sites leads to symptoms associated with addictions (Andreassen, 2015). The symptoms of social media addiction have been explained as salience, mood modification, withdrawal, relapse, and conflict regards to behavioural addictions. The study also indicate that social networking sites is used by users not mainly to interact with others, but to alleviate their feelings of being alone. Users who have excess usage of social networking sites appeals to have high attachment anxiety, which is considered as one of the symptoms of social media addiction (Monacis et al., 2017).

H_1: There is a relationship between social networking sites and social media addiction

2.3.2 Type of Connection

Due to the emerging of mobile technologies, this has widen the functionality and utility of the Internet (Wong, Yuen, and Li, 2015). This provides people with an easily accessible and immediate means in order to satisfy their needs and urges. The type of connection of using whether mobile data or home broadband possibly augmenting the emergence of excessive and addictive of users towards social media. While another research found that majority of Americans say they browse social media frequently as they rarely or never have issues getting online at home (Pew Research Centre, 2021).

H_2: There is a relationship between type of connection and social media addiction

2.3.3 Cost of Connection

According to Baticulon et al. (2021), the internet costs have significant influence on the users' access to online contents and platforms. In the case of Nigeria, Adeoye, Adanikin and Adanikin (2020) mentioned that the cost of subscribing the internet, whether a home blasé or a dial-up service, is high for the locals. It mentioned that some of the respondents are privilege to have a laptop, but are not able to access to internet frequently as it attract extra costs which they cannot afford. Also, Shaw and Kesharwani (2019) indicate that economic factors such as internet services fees and internet connection charges influencing consumers' intention to adopt mobile banking, which refers to the consumers' intention to access social media in this study.

H_3: There is a relationship between cost of connection and social media addiction

2.3.4 Gender

For the aim of achieving gender parity, it is reported that gender is powerful enough to play a significant role in influencing online addiction behaviour, such as mobile addiction (Aparicio-Martínez, 2020; Chung, 2011). In this sense, similar as previous study, gender differences play an important role in social media addiction as differences in gender poses different sociopsychological factors. Hence, the following hypotheses is formulated:

H_{4a} : Gender moderate the relationship between social networking sites and social media addiction.

H_{4b} : Gender moderate the relationship between type of connection and social media addiction.

H_{4c} : Gender moderate the relationship between cost of connection and social media addiction.

2.3.5 Education Level

According to Boer et al. (2020a), ones who have intense social media usage will fall behind with their schoolwork and involve lesser in school activities. The loss of control over social media will impair their ability to regulate schoolwork responsibilities (Salmela-Aro, 2017). As a result, heavy user of social media may displace schoolwork. This would negatively affect their ability to perform in academic, as well as their intention to further studies. Besides, Barnes, Pressey and Scornavacca (2019) stated that social media addiction varies by educational attainment. They specifically highlighted that their research found out the users with the lowest level of education attainment exhibited the highest levels of addiction towards social media. Therefore, the following hypotheses is formulated for this study.

H_{5a} : Education level moderate the relationship between social networking sites and social media addiction.

H_{5b} : Education level moderate the relationship between type of connection and social media addiction.

H_{5c} : Education level moderate the relationship between cost of connection and social media addiction.

2.3.6 Income

Turan et al. (2020) mentioned that low-income levels are one of the factors that boost an individual's loneliness. Meanwhile, the research found significant positive correlation between loneliness, life satisfaction with internet addiction. This indicate that low-income levels society tend to have a higher level of internet addiction. Apart from that, Wu et al. (2016) stressed that adolescents with high annual incomes had a higher probability of social media addiction. Also, Dalvi-Esfahani et al. (2019) found out that high-income school students were more likely to display higher addiction towards social media. It is said that individuals with lower socioeconomic backgrounds have less access to the internet. Adolescents from lower income family may have to work and take additional responsibility within their families, and therefore having leisure time for social media (Yujia, Jiao & Liqiong, 2017). Hence, the hypotheses for this study are formulated as follow:

H_{6a} : Income moderate the relationship between social networking sites and social media addiction.

H_{6b} : Income moderate the relationship between type of connection and social media addiction.

H_{6c} : Income moderate the relationship between cost of connection and social media addiction.

2.4 Proposed Research Framework

Figure 2.0 shows the proposed framework of this study
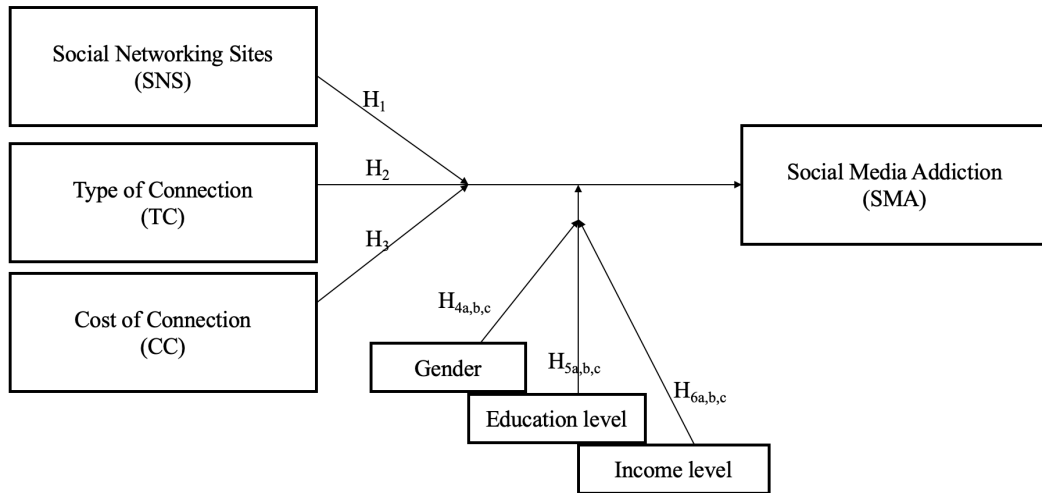
Source: Developed for the research

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter will discuss about the research methodology that is used in achieving and validating the research objectives and hypotheses in this study. Secondary data will be used to conduct this research.

3.1 Data Collection Method

Secondary data are ones that were obtained in the past by someone unrelated to the study project for a different purpose and at a different period (Martins et al., 2018). In simple terms, secondary data is every dataset or analysis of data that is not gathered and obtained by the author of the current research (Boslaugh, 2007). If the researcher makes use of these data, they become secondary data for existing users (Kotler & Kevin, 2012). The purpose of data collection is to ensure the data collected are useful, sufficiently accurate for the reason of collection.

3.1.1 Accessing Secondary Data

One should carefully read every single details about the secondary data before committing to use it for the current research. Secondary database are available online, and it can be available with or without papers from the research centre (Bohanon, 2016). There must be enough information relating to the topic of interest offered in the secondary raw dataset and transcript for the sake of the secondary research questions to be deemed accessible to respond to. This is because the degree and amount of detail in the secondary data will have a significant impact on how

much latest information can be gleaned during a secondary analysis (Charmaz, 2006).

3.1.2 Process of Analysing Secondary Data

As usual, the process of analyzing secondary data must be taken with care. This is due to the fact that problems may arise when there are faults or mismatches between the theoretical target of the original and new study (Martins, 2018). This may possibly influence the interpretation of the data. According to Martins (2018), it would be the most responsible to understand and carefully analyze the limitation of the original study before adopting it. This is able to make sure the data is statistically useful for providing adequate information and evidence for the new research and study.

3.1.3 Nature of Secondary Data

Secondary data include data that has been gathered previously, and is under consideration to be reused for new research, for which the data gathered was not originally intended (Vartanian, 2010). Referring to the case in Falaster et al., (2018) as an example, a group of researchers would like to analyse the influence of regional institution to the choice of location for cross-border acquisitions. They could gather data first-hand from multiple countries. However, this may take time, and it will be easier to adopt a ready-to-use data that are at least the subset of the intended data. This enable the researcher to optimize their research with the minimal cost and time needed.

3.1.4 Metadata of Data

The secondary data is published by Pew Research Centre in CSV format. It is authorised by Open Database License in the file size of 112 bytes.

3.2 Sources of Secondary Data

According to Martins (2018), a secondary data could be obtained from governmental sources or from private entities and agencies. Before accessing it, it is a must to make sure the data are come from a transparent and trustworthy government or either private agencies. Some of the agencies run surveys and only collect data that are beneficial for them.

The source of the secondary data used in this study is from Pew Research Centre. This research centre founded in 2004, located at Washington, District of Columbia, United States. They claimed themselves is a nonpartisan fact tank that informs the public regarding all the current issues, attitudes and trends that shapes the world (Pew Research Centre, 2023). It is a non-profit organization under The Pew Charitable Trusts that does not take policy positions. They specialized in conducting survey research, global surveys, data science, public opinion and online news research internationally. Other than these, they conduct researches such as public opinion polling, demographic research, media content analysis as well as empirical social science research.

Pew Research Centre aims to generate a foundation of facts that is enriched with the public dialogues which could support sound decision-making (Pew Research Centre, 2023). They provide wide range of research and topics to help the public to enhance their understanding and address challenging problems. They ensure all their research and dataset are committed to manner that is open-minded, impartial, and meets the standards of methodological integrity.

3.3 Sampling Design

Once the data collection method is developed, the sampling design will be discussed. According to Muhammad and Kabir (2016), sampling design is the process of formulating a target population of interest and reviewing of data from the chosen community. To get the most accurate response, the target sample must be well selected.

3.3.1 Target Population

The target population must be well chosen as they are the set of respondents who have similar traits and satisfy the requirement of the study (Muhammad & Kabir, 2016). Adults who live in the United States are the target respondent in this research. As of 2020, the U.S Census Bureau recorded more than three-quarters or 258.3 million (77.9%) were adults, 18 years old or older (Ogunwole, 2022). A screening question to weed out ineligible respondents is required to meet this.

3.3.2 Sampling Frame & Sampling Location

A sampling frame is a list of samples that is drawn from in the population. In this study, respondents who uses either smart phone or landline telephone, age 18 and above, are the sampling frame of the secondary data used. Besides, the sampling location of this study was in the U.S. states and the District of Columbia.

3.3.3 Sampling Technique

There are two categories of sampling technique which are probability and non-probability sampling. Firstly, probability sampling are defined as randomization implying that the targeted population sample has a known, and have an equal and a non-zero chance of being chosen as the respondent (Wiśniowski, 2020). In contrast, non-probability sampling is where the choice of being selected as a respondent are unknown (Pace, 2021).

In this research, probability sampling technique is adhered with the chosen approach, simple random sample. This indicate that every person in the target population has a fair chance of being selected, which is what is meant by simple random sampling. Firstly, a list of samples by the Pew Research Centre were provided by Dynata, the world's largest first-party data company, according to the specification set by a global research leader, Abt Associates. Hence, probability sampling technique is used in this study. Besides, the sample used a combination of landline and cell phone of random-digit-dial. All respondents in the landline and cell phone sample were then selected randomly. Therefore, a simple random sampling technique is used here. This technique consists in providing an equal chance to every member within the sample frame because they are being drawn in a straight forward manner (Kolb, 2011). This could make sure the fairness, validity and the simplicity of the analysis of study (Pace, 2021).

3.3.4 Sample Size

A research study may have a small, medium, or high sample size, depending on the type of research (Vasileiou et al., 2018). In this study, the sample size collected by the source of the secondary data by Pew Research Centre is 1502 respondents, with 95% level of confidence.

3.4 Research Instruments

A total of 17 questions that is related to this study are picked from the original questionnaire of the secondary data from Pew research Centre. The number of items for each construct are listed as table 3.0. The construct of type of connection have only 1 item as in the original questionnaire.

Table 3.0 shows the number of items for each construct

Constructs	No. of Items	Source
Social Networking Sites	5	Pew Research Centre (2021)
Types of Connection	1	Pew Research Centre (2021)
Cost of Connections	5	Pew Research Centre (2021)
Social Media Addiction	6	Pew Research Centre (2021)

Source: Pew Research Centre (2021)

The original questionnaire consists of filtering question and demographic question such as gender, education level and income level. Meanwhile, the other questions as listed in table 3.1 mainly capture respondents' opinion on the type of connection, cost of connection as well as their usage in social media.

Table 3.1 shows the contracts measurement

Construct	Items	Operational Definition	Source
Social Networking Sites	WEB1a	Do you ever use Twitter?	Pew Research Centre (2021)
	WEB1b	Do you ever use Instagram?	
	WEB1c	Do you ever use Facebook?	
	WEB1d	Do you ever use Snapchat?	
	WEB1e	Do you ever use YouTube?	
Type of Connection	BBHOME1	Do you subscribe to dial-up internet service or higher-speed broadband service at home?	Pew Research Centre (2021)
Cost of Connection	BBSMART3a	Is the monthly cost of a home broadband subscription is too expensive?	Pew Research Centre (2021)
	BBSMART3b	Is the cost of computer is too expensive?	
	PAYa	Have you had trouble for paying your cell phone service?	
	PAYb	Have you had trouble for paying your high-speed internet service at home?	
	PAYc	Have you had trouble for paying your cable or satellite subscription?	
Social Media Addiction	INTFREQ	About how often do you use the internet?	Pew Research Centre (2021)
	SNS2a	Thinking about the social media sites you use Twitter. About how often do you visit or use?	
	SNS2b	Thinking about the social media sites you use Instagram. About how often do you visit or use?	

SNS2c	Thinking about the social media sites you use Facebook. About how often do you visit or use?
SNS2d	Thinking about the social media sites you use Snapchat. About how often do you visit or use?
SNS2e	Thinking about the social media sites you use YouTube. About how often do you visit or use?

Source: Pew Research Centre (2021)

3.5 Analysis of Data

In this step, the acquired data need to be examined to check if it address the research objective of this study. If the data found is not able to fulfil all the objective, it is required to perform more data searching and data reviewing procedure until the suitable dataset is being obtained. The quality of the acquired data may be assessed by the following guidance.

Firstly, it is important to identify the purpose of the previous author in conducting the research. Secondly, there will be the attempt to determine the credentials of the source. This includes the date of the data, prior published writings and reports by the party and the coverage of the report. These are due to the fact that a well-referenced and a trustable dataset may prove the quality and validity of the information.

3.6 Data Processing

Before conducting analysis, some data processing steps must be taken. The procedure of data checking, editing, coding, transcribing, and cleaning must be carried out after obtaining all of the information from the respondents (Sekaran & Bougie, 2013). Since secondary data will be used for this study, all the data processing procedure has been done by the Pew Research Centre before it is publish. However, data checking and data editing will still be conducted as not all items and construct in the original questionnaire are suitable for this study. After the data processing procedure, the data are then transcribed into the IBM SPSS software for analysis purpose.

3.6.1 Data Checking

Data checking is done to identify errors and take corrective action if needed. In this step, it involves removing questionnaires that are unsuitable for my study such as type of device used to access to internet, ethnicity, and numbers of family members. This is to make sure the questionnaires adopted are representative to the current study.

3.6.2 Data Editing

Data editing consists increasing the data accuracy by amending and reducing the error of the data set. This step must be completed before the analysis process begins. Any incomplete responses that could compromise the accuracy of the data analysis will be eliminated. In this study, this is apply especially to those that are irrational or unanswered responses that could skew the analysis's findings, such as the responses that recorded as 'don't know' and 'rather not to say'.

3.7 Proposed Data Analysis Techniques

Data analysis is the process of comprehending the collected data by statistical or logical techniques. Data analysis is an important step because inappropriate statistical analysis will have a different impact on the research that could misled the public (Molly, 2020).

IBM SPSS statistics software was used for descriptive and inferential analysis to evaluate the data obtained from Pew Research Centre. It includes descriptive analysis, Pearson correlation coefficient, and multiple linear regression and moderation analysis. However, the reliability analysis which is determined by Cronbach's alpha will not be conducted in this study as the questionnaires are adopted from the original questionnaires provided by the source of secondary data, Pew Research Centre.

3.7.1 Descriptive Analysis

Descriptive analysis is one of the data analysis that helps show, describe, and constructively summarize data points. It was conducted to illustrate and describe the data in a simplified manner. Information such as the demographic information of the respondents, their preferred social networking sites, type of connection used, their ability to subscribe to internet, as well as their social media usage recorded in this study were presented in tables, charts and graphs.

3.7.2 Inferential Analysis

The inferential analysis is to examine the hypothesis formed in Chapter 2 using two analysis method, namely Pearson correlation coefficient analysis and multiple regression analysis.

3.7.2.1 Pearson's Correlation Coefficient

Pearson's Correlation Coefficient is used to measure the statistical relationship and the association between independent variable and the dependent variable. If the correlation coefficient are in negative value, there will be an inverse relationship between the variables. However, of the correlation coefficient is in a positive value, it indicates a positive correlation relationship. The threshold for correlation coefficient is as tabulated as table 3.2.

Table 3.2 shows the threshold for correlation coefficient

Correlation Coefficient	Correlation's Strength
±0.81 - ±1.00	Very Strong
±0.61 - ±0.80	Strong
±0.41 - ±0.60	Moderate
±0.21 - ±0.40	Low
±0.00 - ±0.20	Slight

Source: Sekaran & Bougie (2013)

3.7.2.2 Multiple Regression Analysis

Multiple Regression Analysis is to analyse the linear relationship by the computed coefficients of multiple regression equation using independent variables or linear association measures (Saunders et al., 2009). The general equation for this analysis is:

$$Y=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3$$

Whereby,

Y: Dependent variable

X: Independent variable

B: Beta Coefficient

β_0: y-intercept

This analysis is used in this study. Hence the regression equation for this study is formulated below:

$$SMA= \beta_0 + \beta_1 SNS + \beta_2 TC + \beta_3 CC$$

Whereby,

SMA: Social Media Addiction

SNS: Social Networking Sites

TC: Type of Connection

CC: Cost of Connection

3.8 Chapter Summary

In this chapter, the method for data collection is covered, that was adopting the secondary data from Pew Research Centre. The nature and sources of secondary data are also explained. Next, this chapter explains the sampling design and technique, namely adults in the United States as the target population for this research, United States as the sampling location with the sample size of 1502 respondents. Also, the procedure of data processing are explained. Furthermore, the approach for conducting this research and the proposed analysis tools are justified in this chapter.

CHAPTER 4: RESULTS & FINDINGS

4.1 Introduction

In this chapter, the data analysis result will be presented. It contains data screening, descriptive analysis followed by inferential analysis.

4.2 Data Screening

In this study, a total of 1502 responses were collected as useful responses out of more than 10 thousands of population approached by researchers from Pew Research Centre. It is transferred and processed for descriptive analysis and inferential analysis.

4.3 Descriptive Analysis

4.3.1 Gender

Figure 4.0 shows the gender of the respondents
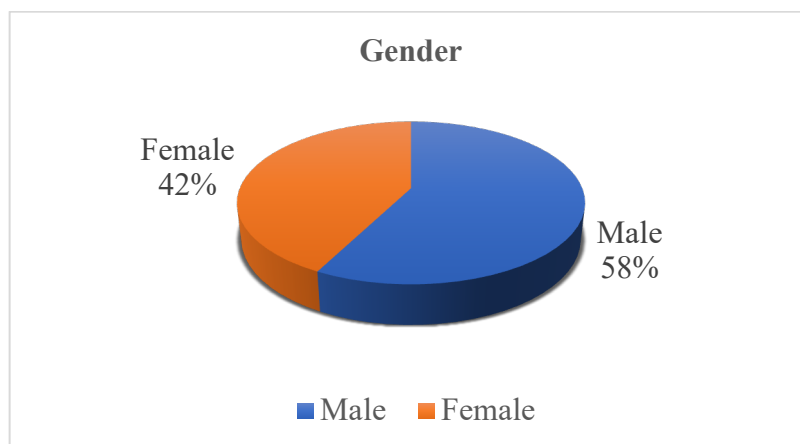
Source: Developed for this research

For the demographic profile of the respondent in terms of gender, the ratio between male and female are almost symmetrical in which 865 respondents (58%) are male and 637 respondents (42%) are female. The data are as illustrated as figure 4.0 above. This is able to reduce the bias in moderating effect.

4.3.2 Education Level

Figure 4.1 shows the education level of the respondents
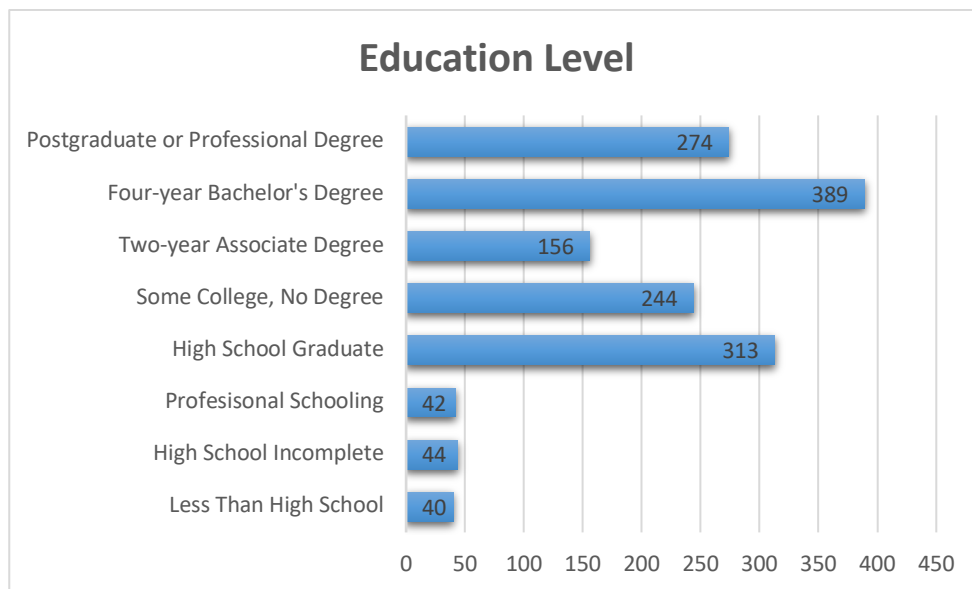
Source: Developed for this research

For education level, there are 389 respondents (25.9%) who have a four-year bachelor degree, which score the highest. Meanwhile, 313 respondents (20.84%) are high school graduates and 274 respondents (18.24%) are postgraduate or have a professional degree. Furthermore, it is followed by 244 respondents (16.25%) who have some college with no degree and 156 respondents who have a two-year associate degree. Lastly, the number of respondents who are professional schooled, high school incomplete, as well as less than high school, score averagely at 42 respondents (2.8%), 44 respondents (2.93%), 40 respondents (2.66%) respectively.

It can be concluded that among all 1502 respondents, most of them are educated as most of them are at least high school graduates. The details of the data are as illustrated as figure 4.1 above.

4.3.3 Income Level

Figure 4.2 shows the income level of the respondents
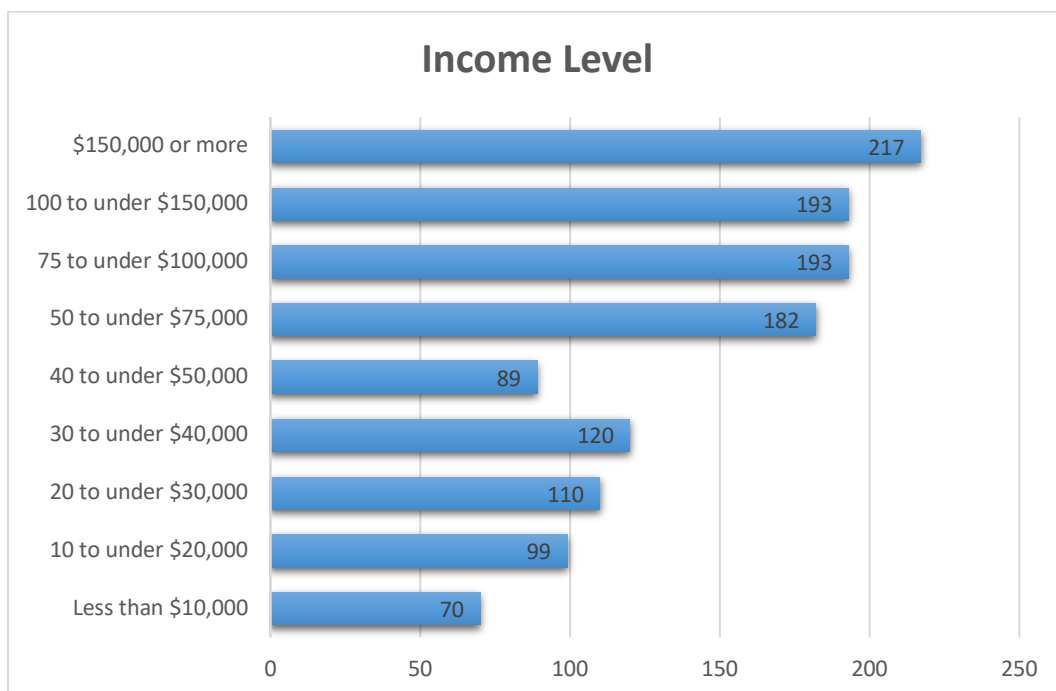
Source: Developed for this research

Referring to figure 4.2 above, in terms of income level, 217 respondents (14.45%) have an annual income of more than $150,000. Furthermore, respondents who have the annual income of $100,000 to $150,000, and $75,000 to $100,000 have the same amount of respondents which are 193 respondents (12.85%) for each category. Besides, 182 respondents (12.12%) earns between $50,000 to $75,000 per annual. It is followed by respondents who have the annual income of $40,000 to $50,000, $30,000 to $40,000 and $20,000, to $30,000 as well as $10,000 to $20,000 which have 89 respondents (5.93%), 120 respondents (7.99%), 110 respondents (7.32%)

and 99 respondents (6.59%) respectively. Lastly, the least category in terms of income level is less than $10,000 in which only 70 respondents (4.66%) out of 1502 respondents are from this category. In short, most of the respondents have an annual income of at least $50,000.

4.4 Inferential Analysis

In this study, Pearson correlation analysis and multiple regression analysis is used to investigate the relationship between independent variables and the dependent variable.

4.4.1 Pearson Correlation Analysis

Table 4.0 shows the correlation of IVs and DV

		SNS_mean	TC_mean	CC_mean	SMA_mean
		Correlations			
SMA_mean	Pearson Correlation	0.187**	0.159**	0.057*	1
	Sig. (2-tailed)	0.000	0.000	0.030	

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

*. Correlation is significant at the 0,05 level (2-tailed).

Source: Developed for the research

According to table 4.0, an inferential statistic done by SPSS shown the result of Pearson correlation analysis between the independent variables (Social Networking Sites, Type of Connection and Cost of Connection) and the dependent variable (Social Media Addiction).

All independent variables are significant and have a positive relationship to the dependent variables as the Pearson correlation is between 0.057 and 0.187, at the significant level of 0.05. Thus, all variables in this study are positively correlated.

According to the result shown in table 4.0, the independent variable – Social Networking Sites (SNS) has the strongest prediction power among all variables, with the Pearson correlation value of 0.187, towards the dependent variable – Social Media Addiction (SMA). Furthermore, the Type of Connection (TC) have the correlation value of 0.159, followed by Cost of Connection (CC) which have the least correlation value of 0.057 to the dependent variable.

4.4.2 Multiple Regression Analysis

Table 4.1 shows the model summary of IVs and DV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.225[a]	0.051	0.048	0.83938

a. Predictors: (Constant), SNS_mean, TC_mean, CC_mean

Source: Developed for the research

Based on the table 4.1, the R-value is 0.225; R Square is 0.051; and Adjusted R Square is 0.048. From the outcome of R Square, 5.1% of the variation in the dependent variable is influenced by the independent variables, another 94.9% remain uninfluenced. In other words, the independent variables in this study will still affect the dependent variables.

Table 4.2 shows the Anova of IVs and DV

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.665	3	15.888	22.551	.000ᵇ
	Residual	893.38	1268	0.705		
	Total	941.045	1271			

a. Dependent Variable: SMA_mean

b. Predictors: (Constant), SNS_mean, TC_mean, CC_mean

Source: Developed for the research

Table 4.2 has shown the F value of 22.551 at 0.000 significant level, this result has represented that the suitability of the model is achieved. Furthermore, all the three independent variables used in this study have meaningful relationship and are significant to explain the dependent variable.

Table 4.3 shows the coefficients of IVs

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.306	0.147		8.875	0.000
	SNS_mean	0.359	0.067	0.148	5.399	0.000
	TC_mean	0.126	0.023	0.148	5.4	0.000
	CC_mean	0.103	0.052	0.054	1.966	0.049

a. Dependent Variable: SMA_Mean

Source: Developed for the research

The table 4.3 has shown the coefficients result of the research. The standardized coefficient aims for examining the most important independent variable. Whereas the unstandardized coefficient is used to determine what effect one unit change in the independent variable towards the dependent variable.

To interpret the result of unstandardized coefficients, 0.359 changes of Social Networking Sites when there is a unit change in the Social Media Addiction. Secondly, there will be 0.126 changes of Type of Connection (TC) when there is a unit change in the Social Media Addiction. Thirdly, 0.103 changes of Cost of Connection (CC) when there is a unit change in the Social Media Addiction (SMA).

Besides, both independent variables, Social Networking Sites (SNS) and Type of Connection (TC), are significantly proven affecting the dependent variable, Social Media Addiction (SMA), at the standardized coefficient beta level of 0.148. The result represented that these both variables are equally important in influencing the dependent variable followed by the Cost of Connection (CC) at the standardized coefficient beta level of 0.054, which have the lowest influencing power towards Social Media Addiction (SMA).

Below has illustrated the equation of multiple regression,

$$SMA = \beta 0 + \beta 1 SNS + \beta 2 TC + \beta 3 CC$$

Therefore, the equation of multiple regression for this study has designed as below:

Social Media Addiction = (1.306) + (0.359) (Social Networking Sites)+ (0.126) (Type of Connection) + (0.103) (Cost of Connection)

4.5 Hypothesis Testing

H₁: There is a relationship between social networking sites and social media addiction

According to table 4.3, the p-value of Social Networking Sites (SNS) is 0.000 which is lower than the significant level of 0.05. Thus, H1 is accepted. There is a relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA).

H₂: There is a relationship between type of connection and social media addiction

Based on table 4.3, the p-value of Type of Connection (TC) is 0.000, which is lower than the significant level of 0.05. Thus, H2 is accepted. There is a relationship between Type of Connection (TC) and Social Media Addiction (SMA).

H₃: There is a relationship between cost of connection and social media addiction

Referring to table 4.3, the p-value of Cost of Connection (CC) is 0.049, which is lower than the significant level of 0.05. Thus, H3 is accepted. There is a relationship between Cost of Connection (CC) and Social Media Addiction (SMA).

Table 4.4 shows the coefficients of gender in moderating SNS and SMA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.472	0.111		13.239	0.000
	SNS_mean	0.565	0.071	0.221	8.007	0.000
	INT_SNS_gender	-0.086	0.024	-0.100	-3.625	0.000

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H4a : Gender moderate the relationship between social networking sites and social media addiction.

Referring to table 4.4, the p-value of the interaction term of gender as the moderator on the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA) is 0.000, which is lower than the significant level of 0.05. Thus, H4a is accepted. Gender moderate the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA).

Table 4.5 shows the coefficients of gender in moderating TC and SMA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.029	0.067		35.661	0.000
	TC_mean	0.136	0.025	0.160	5.770	0.000
	INT_TC_gender	-0.018	0.024	-0.020	-0.729	0.466

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H4b : Gender moderate the relationship between type of connection and social media addiction.

Referring to table 4.5, the p-value of the interaction term of gender as the moderator on the relationship between Type of Connection (TC) and Social Media Addiction (SMA) is 0.466, which is higher than the significant level of 0.05. Thus, H4b is rejected. Gender does not moderate the relationship between Type of Connection (TC) and Social Media Addiction (SMA).

Table 4.6 shows the coefficients of gender in moderating CC and SMA

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.178	0.099		22.023	0.000
	CC_mean	0.086	0.051	0.046	1.708	0.088
	INT_CC_gender	-0.057	0.027	-0.057	-2.122	0.034

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H4c : Gender moderate the relationship between cost of connection and social media addiction.

Referring to table 4.6, the p-value of the interaction term of gender as the moderator on the relationship between Cost of Connection (CC) and Social Media Addiction (SMA) is 0.034, which is lower than the significant level of 0.05. Thus, H4c is accepted. Gender moderate the relationship between Cost of Connection (CC) and Social Media Addiction (SMA).

Table 4.7 shows the coefficients of education level in moderating SNS and SMA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.149	0.123		9.325	0.000
	SNS_mean	0.785	0.079	0.307	9.983	0.000
	INT_SNS_edu	-0.042	0.006	-0.214	-6.877	0.000

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H_{5a} : Education level moderate the relationship between social networking sites and social media addiction.

Referring to table 4.7, the p-value of the interaction term of education level as the moderator on the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA) is 0.000, which is lower than the significant level of 0.05. Thus, H5a is accepted. Education level moderate the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA).

Table 4.8 shows the coefficients of education level in moderating TC and SMA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.032	0.057		35.515	0.000
	TC_mean	0.134	0.024	0.158	5.666	0.000
	INT_TC_edu	0.004	0.014	0.009	0.322	0.748

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H₅ᵦ : Education level moderate the relationship between type of connection and social media addiction.

Referring to table 4.8, the p-value of the interaction term of education level as the moderator on the relationship between Type of Connection (TC) and Social Media Addiction (SMA) is 0.748, which is higher than the significant level of 0.05. Thus, H5b is rejected. Education level does not moderate the relationship between Type of Connection (TC) and Social Media Addiction (SMA).

Table 4.9 shows the coefficients of education level in moderating CC and SMA

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.150	0.125		17.194	0.000
	CC_mean	0.102	0.065	0.047	1.564	0.118
	INT_CC_edu	0.002	0.007	0.007	0.242	0.809

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H₅ᵨ : Education level moderate the relationship between cost of connection and social media addiction.

Referring to table 4.9, the p-value of the interaction term of education level as the moderator on the relationship between Cost of Connection (CC) and Social Media Addiction (SMA) is 0.809, which is higher than the significant level of 0.05. Thus, H5c is rejected. Education level does not moderate the relationship between Cost of Connection (CC) and Social Media Addiction (SMA).

Table 4.10 shows the coefficients of income level in moderating SNS and SMA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.374	0.113		12.156	0.000
	SNS_mean	0.636	0.072	0.249	8.787	0.000
	INT_SNS_income	-0.130	0.024	-0.151	-5.323	0.000

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H6a : Income moderate the relationship between social networking sites and social media addiction.

Referring to table 4.10, the p-value of the interaction term of income level as the moderator on the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA) is 0.000, which is lower than the significant level of 0.05. Thus, H6a is accepted. Income moderate the relationship between Social Networking Sites (SNS) and Social Media Addiction (SMA).

Table 4.11 shows the coefficients of income level in moderating TC and SMA

Source: Developed for the research

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.027	0.057		35.711	0.000
	TC_mean	0.136	0.023	0.160	5.786	0.000
	INT_TC_income	-0.054	0.023	-0.065	-2.335	0.020

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H6b : Income moderate the relationship between type of connection and social media addiction.

Referring to table 4.11, the p-value of the interaction term of income level as the moderator on the relationship between Type of Connection (TC) and Social Media Addiction (SMA) is 0.020, which is lower than the significant level of 0.05. Thus, H6b is accepted. Income moderate the relationship between Type of Connection (TC) and Social Media Addiction (SMA).

Table 4.12 shows the coefficients of income level in moderating CC and SMA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.131	0.097		21.864	0.000
	CC_mean	0.115	0.050	0.061	2.310	0.021
	INT_CC_income	-0.030	0.020	-0.040	-1.493	0.136

a. Dependent Variable: SMA_Mean

Source: Developed for the research

H6c : Income moderate the relationship between cost of connection and social media addiction.

Referring to table 4.12, the p-value of the interaction term of income level as the moderator on the relationship between Cost of Connection (CC) and Social Media Addiction (SMA) is 0.136, which is higher than the significant level of 0.05. Thus, H6c is rejected. Income does not moderate the relationship between Cost of Connection (CC) and Social Media Addiction (SMA).

4.6 Conclusion

In short, this chapter has justified the results according to the data analysis method. Furthermore, the summary of findings and further explanation will be discussed in the following chapter. In addition, the conclusions of this research will be written in Chapter 5.

CHAPTER 5: DISCUSSION & CONCLUSION

5.1 Introduction

In this chapter, the result gathered in Chapter 4 will be discussed to further elaborate on the main findings regarding the research questions and objectives. Besides, the implications, limitations of this study as well as the recommendations for future studies will be outlined in this chapter.

5.2 Discussion on Research Objectives

5.2.1 Research Objective 1

The first objective of this study is to determine the factors affecting social media addiction. To achieve this objective, a dataset that capture information about social media was adopted from Pew Research Centre.

Different social networking sites users will have different level of addiction towards each sites. Based on the data provided by Pew Research Centre, a majority of Facebook, Snapchat and Instagram users mentioned that they visit these platforms on a daily basis. Figure 5.0 illustrates the respondent's usage towards five most commonly used social networking sites in the United States.

Figure 5.0 shows the respondent usage on each SNS

	Several times a day	About once a day	Less frequently
Facebook	49	22	29
Snapchat	45	14	40
Instagram	38	21	41
YouTube	36	18	45
Twitter	30	16	53
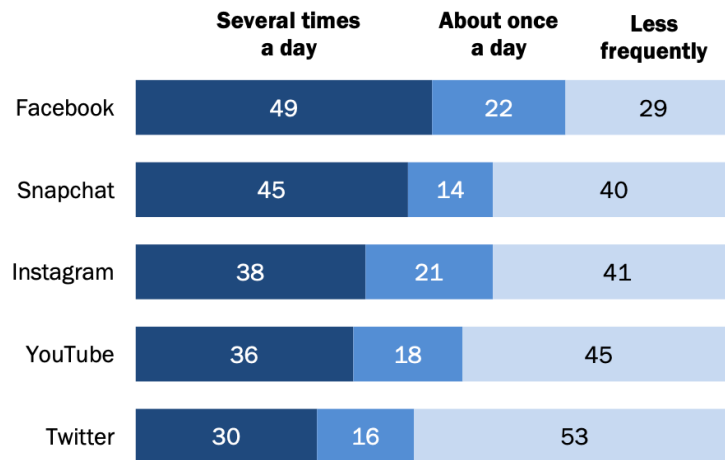
Source: Pew Research Centre (2021)

Based on the figure 5.0 above, Facebook users remain active on the platform despite the increasing popularity of the other social networking sites. This study shows that 49% of the Facebook users mentioned that they use the site several times a day while 22% of them use about once a day, with the remaining 29% are the less frequent user of Facebook. Next, smaller shares, but there are still 45% of Snapchat users report visiting the sites several times a day while 14% of them use about once daily, with the 40% of them do not use Snapchat frequently. Other than these social networking sites, 41%, 45% and 53% of Instagram, YouTube and Twitter users respectively, claim that they are less frequent in visiting these sites. It is observed that individual who are less frequent in visiting Instagram, YouTube and Twitter are more than individual who visiting them several times a day.

According to D'Arienzo, Boursier and Griffiths (2019), different social networking sites will have different general social media activity. This refers to the different online feedback from each social networking sites, including the commenting, liking and social behaviour, which affect the attachment needs of each individuals. Apart from that, the researcher further mentioned that individuals who are anxious about being lonely and have strong need for reassurance will spend more time on social networking sites, especially Facebook. They will have high attachment on Facebook to search for the worthy of love. This research is align with the result of

this study as most of the respondents spend most of their time on Facebook platform compared to the other social networking sites.

In addition, based on the data, individuals who uses mobile data to visit social media are more than individuals who subscribe to home broadband, with the data of 85% and 77% respectively. Some of the respondents recorded that they subscribe to both mobile data and home broadband to browse the social media, while some of the respondents subscribe to neither mobile data, nor home broadband as they have other option to browse social media, such as accessing it at public spaces and workplace. The type of connection of an individual affects one's social media addiction as the type of connection will influence their experience of visiting social media.

Moreover, according to Boer et al. (2020b), some countries or area may have different accessibility and the reliability of internet connection speed. Countries with poor telecommunication management have no coverage of mobile data network in every area and parts of the street. This significantly affects the time and speed of browsing social media and downloading capabilities as well as the accessibility of Internet. Therefore, the type of connection influence the social media addiction level of an individual as the reliability of the Internet affect their experience in visiting social networking sites.

Figure 5.1 shows the reasons why respondents not subscribing home broadband
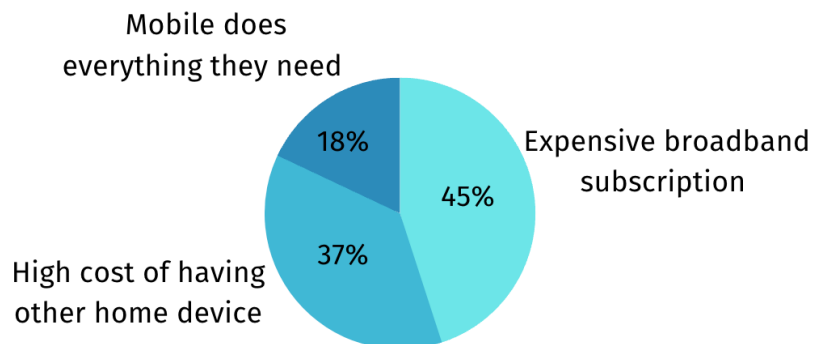
Source: Developed for the research

Furthermore, some of the individual forgo high-speed broadband internet connection. The non-broadband adopters cite financial constraint as one of the most important reasons why they forgo these services. Data shows that 45% of them find the monthly cost of subscribing home broadband is too expensive while 37% say the same about the cost of having multiple home device, such as computer and tablet. This indicate that they do not require a home broadband as they only accessing Internet using a device, which is their smartphone. The rest cite having only a smartphone as the device and mobile data can does everything online they need as a reason of not subscribing to broadband connection at home. For example, in the case of Nigeria, they have challenges from irregular power supply, high broadband subscription cost and poor Internet coverage issue (Adeoye, Adanikin & Adanikin, 2020). The high cost of mobile data and broadband makes them encounter difficulties in paying Internet bills. This makes them difficult to adopt e-learning, let alone addictive to social media. Some of the Internet user may have issue getting online at home. Instead, they rely on the opened Internet access which is available for public not everyone are could access to social media whenever and wherever they want.

This study had identified 3 factors, Social Networking Sites, Type of Connection and Cost of Connection, which affecting the social media addiction level of an individual. The Social Networking Sites and Type of Connection are equally significant among the determined factors, while the Cost of Connection has a weaker affect to the social media addiction level of an individual.

5.2.2 Research Objective 2

The second objective of this study is to identify the moderators affect towards the social media addiction. To achieve this objective, the demographic factor that collected from the original author is being utilised in this study as the moderator and further validated by SPSS. The summary of the hypothesis development is tabulated as table 5.0 below:

Table 5.0 shows the summary of hypotheses result

Hypothesis Testing	Result	Accepted/ Rejected	Standardized Coefficients Beta
H_1: There is a relationship between social networking sites and social media addiction	0.000< 0.05	Accepted	0.148
H_2: There is a relationship between type of connection and social media addiction	0.000 < 0.05	Accepted	0.148
H_3: There is a relationship between cost of connection and social media addiction	0.049 < 0.05	Accepted	0.054
H_{4a} : Gender moderate the relationship between social networking sites and social media addiction.	0.000<0.05	Accepted	-0.100
H_{4b} : Gender moderate the relationship between type of connection and social media addiction.	0.466>0.05	Rejected	-0.020

H_{4c} : Gender moderate the relationship between cost of connection and social media addiction.	0.034<0.05	Accepted	-0.057
H_{5a} : Education level moderate the relationship between social networking sites and social media addiction.	0.000<0.05	Accepted	-0.214
H_{5b} : Education level moderate the relationship between type of connection and social media addiction.	0.748>0.05	Rejected	0.009
H_{5c} : Education level moderate the relationship between cost of connection and social media addiction.	0.809>0.05	Rejected	0.007
H_{6a} : Income moderate the relationship between social networking sites and social media addiction.	0.000<0.05	Accepted	-0.151
H_{6b} : Income moderate the relationship between type of connection and social media addiction.	0.020<0.05	Accepted	-0.065
H_{6c} : Income moderate the relationship between cost of connection and social media addiction.	0.136>0.05	Rejected	-0.04

Source: Developed for the research

Firstly, findings from the above indicate that in terms of gender, the hypotheses of H4a and H4c are accepted with the standardized coefficients beta recorded as -0.100 and -0.057 respectively. Since the respondents are contributed more by the male than the female, which accounted for 58% and 42% respectively; thus, the negative beta value represents the female. This indicate that female are more likely to addict to social media due to the social networking sites that they visit, and the cost of connection of the Internet. This is study shows the same with the research done by Boursier, Gioia and Griffiths (2020). The research mentioned that female appears to develop more problematic symptoms to social media addiction. Females are more worried than males regarding their social activity engagement. This makes them to develop ore social anxiety in which they need to access more to social media to gain more social attachment.

Furthermore, for education level as the moderator, only H5a is accepted. Due to the fact that most of the respondent are educated; therefore, with the negative value of standardized coefficient beta of -0.214, this indicate that individual with lower education level are prone to addict to social media mainly due to the social networking sites that they browse. Based on research by Barnes, Pressey and Scornavacca (2019), they also found that individual with the lowest level of educational attainment exhibited the highest addiction level towards social media. Specifically, we found that users with the lowest level of educational attainment exhibited the highest levels of social media addiction. Perhaps this group of individual has a lower capacity to self-regulate their compulsive behaviour.

Moreover, when comes to income level as the moderator, H6a and H6b are both accepted in this study. Since most of the respondents are from a higher income group; therefore, the negative standardized coefficient beta of -0.151 and -0.065 for H6a and H6b represents the lower income group. This shows that this study has proven that individual with lower income level tend to have addictive behaviour towards social media due to the social networking sites that they browse and the type of connection that they subscribe. This may due to the reason that mentioned by Turan et al. (2020) in which lower-income group will require more access to the

social media to ease their level of loneliness. Besides, lower income group will have more time to spend on the social media due to the different level and amount of task to perform on a daily basis.

In short, these hypotheses are proven significant in which the moderator have effect on the relationship between the independent variables and the dependent variable.

5.3 Implications of Study

The present study investigated how does the moderators affect on the social media addiction. With this, numerous implications were contributed. Other than focusing on the factors affecting social media addiction, this research discussed on how gender, education level and income level in moderating the variables.

First of all, with many studies have examined the factors affecting social media addiction, mainly focusing on emotional symptoms and mental health. Few have investigate regarding the difference of social networking sites, the type of connection they used as well as the cost of the local Internet connection which could directly affect their user experience in visiting social media. In addition, the demographic factor of respondents are overlooked in the research. Therefore, with the data adopted from Pew Research Centre, this study is able to use the demographic of the respondent in examining the moderator effects on the social media addiction.

The result of the present study have practical implications. Since the rise of social media have become an indispensable aspect of everyday life for many people, we need to embrace what the technology while not misusing it. This contribute to the policy and practice, especially for government and authorities.

The government and regulatory bodies may put some techniques by controlling the community guideline for each social networking sites as well as the cost of accessing to the Internet to limit the potentially addictive usage. Community guideline of social networking sites are able to make sure that the content of the sites are healthy and does not bring negative emotions and instead, informative post to the public to reduce the unhealthy addictive behaviour to social media on meaningless postings. Other than these, government should give adequate importance to this matter to protect the mental health of population. This study may contribute to psychotherapists in searching for ideas while providing therapy, especially to the highlighted demographic users from the findings.

Moreover, authorities many develop further practical application to assist users with problematic social media usage. Perhaps authorities or social media company may develop a new application or function which records the application usage to its user. This informative function may provide guidance and support to help user with self-regulation. Besides, social media may develop notifications and quiz that carry health warnings and concerns of addictive behaviour among users. This may increase the awareness of social media addiction as some of the user may not aware that they have started to develop symptoms of social media addiction. Authorities should treat this as an opportunity to enhance the corporate governance by leveraging the demographic factor to helps heavy social media users, especially female, lower-education level and lower-income users. This may further motive heavy social media users to emphasise and evaluate the time they spent on social media with the satisfaction or information they gain from it.

5.4 Limitation of Study

Despite the significant findings, the present study has few drawbacks to take into consideration.

5.4.1 Data Collection Method

Based on the data obtained from Pew Research Centre (2021), all raw data from the respondents were collected in two weeks period from 25 January to 8 February 2021. However, addictive behaviour change across time due to the external environment (Boffo, 2019). The difference of the external stimulus will generate different responses across period. Therefore, capturing the perception and addictive behaviour from the respondent from a longer time period would generate more insightful information.

Furthermore, the previous researchers collect information from the respondents via phone calls. The researchers from Pew Research Centre mentioned that they looked for the youngest members who is homed at the moment during landline phone calls. This may be the limitation as the youngest members at home may be different across household from generation Z to baby boomers. Although phone calls may enhance the clarity of the questions being asked, but researchers may be able to reach more respondents if the research is being done online. An online survey may distribute more effectively and more efficiently as it is easier to set filtering questions to capture responses from certain age group.

5.4.2 Research Method

Notably, the data is acquired from information from a set of questionnaires asked via phone calls during the research. Due to the fact that addiction behaviour are more abstract and difficult to be measured as it is not quantifiable. It relates to an individual's mental and emotional state which includes one's depressive and anxious symptoms. It is not easily to be observed and record via a quantitative research. Quantitative research mostly fails to ascertain deeper underlying meanings and explanations (Rahman, 2020). In short, it overlooks the respondents' experiences and perspectives in a extreme controlled settings. The data obtaining method will be objective as there are lack of direct connection between the researcher and the respondents during data collection.

5.4.3 Limited Coverage

From the data obtained from Pew Research Centre (2021), the data contained representative survey of from 1,502 adults in America, which includes the United States and the District of Columbia. There was lack of diversity in terms of nationality of the respondents. Although it is a fact that United States is a home to people from many racial and ethnics groups due to their birth policy. Anyone who born in the United States are eligible to acquire citizenship at birth. However, social media addiction is a rising trend and issue across the globe. Therefore, researchers may want to take consideration on the global trends and national factors which may affect the social media addiction of respondents across countries, which could reduce the biasness of the results.

5.5 Recommendations

Against the limitations mentioned above, the following subsections propose few recommendations for future studies.

5.5.1 Longitudinal Study

Referring to Van den Eijnden et al (2018), it is proven that the problems arise from excessive social media usage impair life satisfaction over time. Therefore, longitudinal study is suggested for researches in the future. Research by Boer et al. (2020a) mentioned that the problem arise due to social media usage from adolescents increased to an impulsive level in another phase. It stated that the higher the usage of social media, the higher their addictive levels by observing their addictive symptoms. By adopting longitudinal study, the study will then be able to capture the changes of an individual over time (Saunders, Lewis & Thornhill, 2019). In short, adhering to the longitudinal study enable researchers to have more valuable insights and yield a better result as compared to cross-sectional study.

5.5.2 Qualitative Research

Firstly, qualitative research approach produces very detailed description of the respondents' inner experience, feelings, and opinions that could better interpret the meanings of their actions. (Rahman, 2020). Recognizing the fact that addictive behaviour is more towards the inner experience of an individual, a qualitative research should be used for future studies. According to Buchan and Daly (2016), qualitative research allow researchers to discover more on how the culture and the external stimulus shape their inner feelings. Due to the nature of the various trends and the dynamic phenomenon of social media, addictive behaviour may be affected by numerous factors outside of research focus (Rahman, 2020). Qualitative approaches employed to achieve deeper insights into issues related to interpreting

and the assessment of the experience, feelings, interpretation and the emotion of an individual. Therefore, in this respect, researchers may combine both quantitative and qualitative research approach to capture these dynamics in order to have deeper insights from the information obtained from the respondents.

5.5.3 Extend to other countries or regions

Lastly, this research can be extend to other countries and regions to capture more insights on the social media addiction behaviour from a different perspective. By the emerged of social media addiction, this rises the another global concern, with researchers around the world conducting studies to evaluate the problem. According to Cheng et al. (2021), the prevalence rates of social media addiction reported vary dramatically across regions. Different geographical area establishes cultural differences which cause them to have different values and norms. Researchers may extend this research to other countries to the multiple countries from the other region and continents such as the country of Philippines, South Africa and Brazil. Based on Augustin (2023), the Philippines is the leader when comes to browsing social media, with 10 hours 23 minutes spent on each day on the Internet. South Africa comes the second followed by Brazil, with 10 hours 19 minutes and 9 hours 56 minutes browsing time spent respectively. Researcher may find deeper insights from these countries as the proportion of citizens' exposure to the social media is higher than citizens from other countries.

5.6 Conclusion

The present study attempted to understand social media addiction around the globe. The factors affecting the social media addiction is studied with gender, education level and income as the moderator. Based on the results, all three independent variables (Social Networking Sites, Type of Connection and Cost of Connection) are crucial to the social media addiction level. Also, it is found that 5 out of 9 hypotheses of the moderator in moderating the relationship between independent variable and the dependent variable are accepted and proven significant.

Other than the discussion of the objectives, this chapter also identified and discussed the implications, limitations, and recommendations for future research. In short, despite the limitations mentioned, the findings of this study are insightful and provide implications to the society towards understanding social media addiction.

References

Adeoye, I. A., Adanikin, A. F., & Adanikin, A. (2020). COVID-19 and E-learning: Nigeria tertiary education system experience.

Andreassen, C. S., & Pallesen, S. (2014). Social network site addiction-an overview. Current Pharmaceutical Design, 20. Available at: https://doi.org/10.2174/138161281131 99990616 retrieved on 5th February, 2020.

Andreassen, C. S., and Pallesen, S. (2014). Social network site addiction-an overview. Current Pharmaceutical Design, 20(25), 4053-4061.

Andreassen, C. S. (2015). Online social network site addiction: a comprehensive review. Curr. Addict. Rep. 2, 175–184.

Aparicio-Martínez, P., Ruiz-Rubio, M., Perea-Moreno, A. J., Martínez-Jiménez, M. P., Pagliari, C., Redel-Macías, M. D., & Vaquero-Abellán, M. (2020). Gender differences in the addiction to social networks in the Southern Spanish university students. Telematics and Informatics, 46, 101304.

Augustin, R. (2023). These are the countries that are most addicted to social media. Yahoo! Retrieved May 4, 2023, from https://sg.style.yahoo.com/countries-most-addicted-social-media-100045022.html

Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. Computers in Human Behavior, 90, 246-258.

Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. Computers in Human Behavior, 90, 246-258.

Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., ... & Reyes, J. C. B. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. Medical science educator, 31, 615-626.

Beaunoyer, E., Dupéré, S., & Guitton, M. J. (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. Computers in human behavior, 111, 106424.

Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. Children and Youth Services Review, 41, 27–36. https://doi.org/10.1016/j.childyouth.2014.03.001

Boer, M., Stevens, G., Finkenauer, C., & van den Eijnden, R. (2020a). Attention deficit hyperactivity disorder-symptoms, social media use intensity, and social media use problems in adolescents: Investigating directionality. Child development, 91(4), e853-e865.

Boer, M., Van Den Eijnden, R. J., Boniel-Nissim, M., Wong, S. L., Inchley, J. C., Badura, P., ... & Stevens, G. W. (2020b). Adolescents' intense and problematic social media use and their well-being in 29 countries. Journal of adolescent health, 66(6), S89-S99.

Boffo, M., Zerhouni, O., Gronau, Q. F., van Beek, R. J., Nikolaou, K., Marsman, M., & Wiers, R. W. (2019). Cognitive bias modification for behavior change in alcohol and smoking addiction: Bayesian meta-analysis of individual participant data. Neuropsychology Review, 29, 52-78.

Bohannon J (2016) Who's downloading pirated papers? Everyone. Science 352(6285): 508–512. DOI: 10.1126/ science.352.6285.508.

Boslaugh, S. (2007). An introduction to secondary data analysis. Secondary data sources for Open and Big Data (pp. 253-273). IGI Global. public health: A practical guide, 2-10.

Boursier, V., Gioia, F., & Griffiths, M. D. (2020). Do selfie-expectancies and social appearance anxiety predict adolescents' problematic social media use?. Computers in Human Behavior, 110, 106395.

Cartwright, T., & Nancarrow, C. (2022). A Question of Gender: Gender classification in international research. International Journal of Market Research, 64(5), 575-593.

Castellacci, F., & Tveito, V. (2018). Internet use and well-being: A survey and a theoretical framework. Research policy, 47(1), 308-325.

Charmaz K. (2006) Constructing Grounded Theory: A Practical Guide through Qualitative Analysis. London: Sage Publications.

Cheng, C., Lau, Y. C., Chan, L., & Luk, J. W. (2021). Prevalence of social media addiction across 32 nations: Meta-analysis with subgroup analysis of classification schemes and cultural values. Addictive Behaviors, 117, 106845.

Chi, X., Lin, L., & Zhang, P. (2016). Internet addiction among college students in China: Prevalence and psychosocial correlates. Cyberpsychology, Behavior, and Social Networking, 19(9), 567-573.

Chung, N. (2011). Korean adolescent girls' addictive use of mobile phones to maintain interpersonal solidarity. Social Behavior and Personality: an international journal, 39(10), 1349-1358.

D'Arienzo, M. C., Boursier, V., & Griffiths, M. D. (2019). Addiction to social media and attachment styles: A systematic literature review. International Journal of Mental Health and Addiction, 17, 1094-1118.

Dalvi-Esfahani, M., Niknafs, A., Alaedini, Z., Ahmadabadi, H. B., Kuss, D. J., & Ramayah, T. (2021). Social Media Addiction and Empathy: Moderating impact of personality traits among high school students. Telematics and Informatics, 57, 101516.

Dalvi-Esfahani, M., Niknafs, A., Kuss, D. J., Nilashi, M., & Afrough, S. (2019). Social media addiction: Applying the DEMATEL approach. Telematics and Informatics, 43, 101250.

Dolega, L., Rowe, F., & Branagan, E. (2021). Going digital? The impact of social media marketing on retail website traffic, orders and sales. Journal of Retailing and Consumer Services, 60, 102501.

Dong, C., Cao, S., & Li, H. (2020). Young children's online learning during COVID-19 pandemic: Chinese parents' beliefs and attitudes. Children and youth services review, 118, 105440.

Duke, É., & Montag, C. (2017). Smartphone addiction and beyond: Initial insights on an emerging research topic and its relationship to Internet addiction. In C. Montag & M. Reuter (Eds.), Internet addiction: Neuroscientific approaches and therapeutical implications including smartphone addiction (pp. 359–372). Cham, Switzerland: Springer

Falaster, C., Martins, F. S., & Storopoli, J. E. (2018). The influence of regional institutions in location choice of cross-border acquisitions. European Journal of Scientific Research, 148(2), 188-200.

Gaubys, J. (2023, January). How many people use Social Media in 2023? Oberlo. Retrieved May 4, 2023, from https://www.oberlo.com/statistics/how-many-people-use-social-media

Griffiths, M. D. (2012). Facebook addiction: Concerns, criticism, and recommendations: A response to Andreassen and colleagues. Psychological Reports, 110, available at: https://doi.org/10.2466/01.07.18.PR0.110.2.518-520 retrieved on 5th February, 2020

Guo, L., Huang, J., & Zhang, Y. (2019). Education development in China: Education return, quality, and equity. Sustainability, 11(13), 3750.

Haque, I. E., Haque, M., & Muniruzzaman, M. D. (2020). Young age and crime in society: A study on youth prisoners in Bangladesh. International Journal of Social Science Studies, 8(3), 90–104. https://doi.org/10.11114/ijsss. v8i3.4779

Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. Cyberpsychology: Journal of psychosocial research on cyberspace, 13(1).

International Telocommunication Union (2019). Internet Users by Region and Country, 2010–2016. Available online: https://www.itu.int/en/ITUD/Statistics/ Pages/stat/Treemap.aspx (accessed on 20 December 2019).

Islam, M. R., Qusar, M. M. A. S., & Islam, M. S. (2021). The first necrophilia incident in a morgue of Bangladesh: Evidence from media reports. Current Research in Behavioral Sciences, 2, 100020. https://doi.org/10.1016/j.crbeha.2021.100020

Kamboj, S., Sarmah, B., Gupta, S., & Dwivedi, Y. (2018). Examining branding co-creation in brand communities on social media: Applying the paradigm of Stimulus-Organism-Response. International Journal of Information Management, 39, 169-185.

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. International Journal of Adolescence and Youth, 25(1), 79-93.

Kelly, Y., Zilanawala, A., Booker, C., & Sacker, A. (2018). Social media use and adolescent mental health: Findings from the UK Millennium Cohort Study. EClinicalMedicine, 6, 59-68.

Kolb, B. (2011). Determining Probability Samples. In Marketing Research (pp. 177-193). SAGE Publications. https://doi.org/https://dx.doi.org/10.4135/9780857028013

Kotler, P. and Kevin L. K. (2012). Marketing Management. (14th edition). New Jersey: Prentice Hall International.

Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. International journal of environmental research and public health, 8(9), 3528-3552.

Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. International journal of environmental research and public health, 14(3), 311.

Lepicnik-Vodopivec, J., & Samec, P. (2013). Communication technology in the home environment of four-year-old children (Slovenia). Comunicar, 20(40), 119–126.https://doi.org/10.3916/C40-2013-03-02.

Leung, H., Pakpour, A. H., Strong, C., Lin, Y. C., Tsai, M. C., Griffiths, M. D., ... & Chen, I. H. (2020). Measurement invariance across young adults from Hong Kong and Taiwan among three internet-related addiction scales: Bergen social media addiction scale (BSMAS), smartphone application-based addiction scale (SABAS), and internet gaming disorder scale-short form (IGDS-SF9)(study Part A). Addictive behaviors, 101, 105969.

Lim, H. E., Shaw, D., Liao, P. S., & Duan, H. (2020). The effects of income on happiness in East and South Asia: Societal values matter?. Journal of Happiness Studies, 21(2), 391-415.

Lindqvist, A., Sendén, M. G., & Renström, E. A. (2021). What is gender, anyway: a review of the options for operationalising gender. Psychology & sexuality, 12(4), 332-344.

Manaa, A., & Ul Haq, M. A. (2020). The Effects of SMEs, Population and Education level on Unemployment in Kingdom of Bahrain. iKSP Journal of Business and Economics, 1(2).

Martins, F. S., da Cunha, J. A. C., & Serra, F. A. R. (2018). Secondary data in research–uses and opportunities.PODIUM sport, leisure and tourism review, 7(3).

McManus, S., & Gunnell, D. (2020). Trends in mental health, non-suicidal self-harm and suicide attempts in 16–24-year old students and non-students in England, 2000–2014. Social Psychiatry and Psychiatric Epidemiology, 55(1), 125-128.

McManus, S., Gunnell, D., Cooper, C., Bebbington, P. E., Howard, L. M., Brugha, T., ... & Appleby, L. (2019). Prevalence of non-suicidal self-harm and service contact in England, 2000–14: repeated cross-sectional surveys of the general population. The Lancet Psychiatry, 6(7), 573-581.

Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology. the MIT Press.

Molly, T (2020) Introducing Indonesia's Motorcycle-Based E-hailing Service In Malaysia: A Study on Female Passengers' Ride Intention Towards Gojek (Doctoral dissertation, UTAR).

Monacis, L., De Palo, V., Griffiths, M. D., & Sinatra, M. (2017). Social networking addiction, attachment style, and validation of the Italian version of the Bergen Social Media Addiction Scale. Journal of Behavioral Addictions, 6(2), 178–186.

Muhammad, S., & Kabir, S. (2016). Sample and Sampling Designs. Basic Guidelines for Research: An Introductory Approach for All Disciplines, 168.

Ogunwole, S. U. (2022, March 25). Population under age 18 declined last decade. Census.gov. Retrieved May 4, 2023, from https://www.census.gov/library/stories/2021/08/united-states-adult-population-grew-faster-than-nations-total-population-from-2010-to-2020.html

Orben, A., & Przybylski, A. K. (2019). The association between adolescent well-being and digital technology use. Nature Human Behaviour, 3(2), 173–182. https://doi.org/10.1038/s41562-018-0506-1

Pace, D. S. (2021). Probability and non-probability sampling-an entry point for undergraduate researchers. International Journal of Quantitative and Qualitative Research Methods, 9(2), 1-15.

Pereira, B., Rosário, P., Silva, C., Figueiredo, G., Núñez, J. C., & Magalhães, P. (2019). The mediator and/or moderator role of complexity of knowledge about healthy eating and self-regulated behavior on the relation between family's income and children's obesity. International journal of environmental research and public health, 16(21), 4207.

Pew Research Centre. (021). 2021 Core Trends Survey. Retrieved March 25, 2023, from https://www.pewresearch.org/internet/dataset/2021-core-trends-survey/.

Pew Research Centre. (2023, February 17). About Pew Research Center. Pew Research Center. Retrieved May 4, 2023, from https://www.pewresearch.org/about/

Puzzolo, E., Zerriffi, H., Carter, E., Clemens, H., Stokes, H., Jagger, P., ... & Petach, H. (2019). Supply considerations for scaling up clean cooking fuels for household energy in low-and middle-income countries. GeoHealth, 3(12), 370-390.

Rahman, M. S. (2020). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "testing and assessment" research: A literature review.

Ruggieri, S., Santoro, G., Pace, U., Passanisi, A., & Schimmenti, A. (2020). Problematic Facebook use and anxiety concerning use of social media in mothers and their offspring: An actor–partner interdependence model. Addictive Behaviors. Reports, 11, 100256. https://doi.org/10.1016/j.abrep.2020.100256

Salmela-Aro, K., Upadyaya, K., Hakkarainen, K., Lonka, K., & Alho, K. (2017). The dark side of internet use: Two longitudinal studies of excessive internet use, depressive symptoms, school burnout and engagement among Finnish early and late adolescents. Journal of youth and adolescence, 46, 343-357.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students (5th ed.). Harlow, England: Prentice Hall.

Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for business students. Pearson education.

Sekaran, U. and Bougie, R. (2013). Research Methods for Business: A Skill Building Approach (6th ed.). New York, CA: John Wiley & Sons, Inc.

Shaw, B., & Kesharwani, A. (2019). Moderating effect of smartphone addiction on mobile wallet payment adoption. Journal of Internet Commerce, 18(3), 291-309.

Smith, A., & Anderson, M. (2018). Social media use in 2018. Available at: http://www. ewinternet.org/2018/03/01/social-media-use-in-2018/ retrieved on 5th February 2020.

Starcevic, V. (2013). Is Internet addiction a useful concept? Australian and New Zealand Journal of Psychiatry, 47, 16–19. https://doi.org/10.1177/0004867412461693

Stone, C. B., & Wang, Q. (2018). From conversations to digital communication: The mnemonic consequences of consuming and sharing information via social media. Topics in Cognitive Science. Available at: https://doi.org/10.1111/tops.12369 retrieved on 5th February, 2020.

Taylor, P. J. (2004). Mental disorder and crime. Criminal Behaviour and Mental Health, 14(Suppl 1), S31–S36. https://doi.org/10.1002/cbm.606

Tebar, W. R., Ritti-Dias, R. M., Fernandes, R. A., Damato, T. M., Barros, M. V. D., Mota, J., ... & Christofaro, D. G. (2022). Validity and reliability of the Baecke questionnaire against accelerometer-measured physical activity in community dwelling adults according to educational level. Plos one, 17(8), e0270265.

Thorndike, E. L. (1898). Animal intelligence: An experimental study of the associative processes in animals. The Psychological Review: Monograph Supplements, 2(4), i.

Turan, N., Durgun, H., Kaya, H., Aştı, T., Yilmaz, Y., Gündüz, G., ... & Ertaş, G. (2020). Relationship between nursing students' levels of internet addiction, loneliness, and life satisfaction. Perspectives in psychiatric care, 56(3), 598-604.

Van den Eijnden, R. J. J. M., Lemmens, J., & Valkenburg, P. M. (2016). The Social Media Disorder Scale: Validity and psychometric properties. Computers in Human Behavior, 61, 478–487. https://doi.org/10.1016/j.chb. 2016.03.038

Vartanian, T. P. (2010). Secondary data analysis. Oxford University Press.

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic

analysis of qualitative health research over a 15-year period. BMC medical research methodology, 18(1), 1-18.

Viner, R. M., Gireesh, A., Stiglic, N., Hudson, L. D., Goddings, A. L., Ward, J. L., & Nicholls, D. E. (2019). Roles of cyberbullying, sleep, and physical activity in mediating the effects of social media use on mental health and wellbeing among young people in England: a secondary analysis of longitudinal data. The Lancet Child & Adolescent Health, 3(10), 685-696.

Wang, C., & Lee, M. K. (2020). Why we cannot resist our smartphones: investigating compulsive use of mobile SNS from a Stimulus-Response-Reinforcement perspective. Journal of the Association for Information Systems, 21(1), 4.

Weinstein, A., Dorani, D., Elhadif, R., Bukovza, Y., Yarmulnik, A., & Dannon, P. (2015). Internet addiction is associated with social anxiety in young adults. Annals of clinical psychiatry, 27(1), 4-9.

Whiting, A., & Williams, D. (2013). Why people use social media: a uses and gratifications approach. Qualitative market research: an international journal, 16(4), 362-369.

Wiśniowski, A., Sakshaug, J. W., Perez Ruiz, D. A., & Blom, A. G. (2020). Integrating probability and nonprobability samples for survey inference. Journal of Survey Statistics and Methodology, 8(1), 120-147.

Woodward, M. (2023, April 28). *Social Media Addiction Statistics: Who is addicted and what are the consequences?*SearchLogistics. Retrieved May 4, 2023, from https://www.searchlogistics.com/learn/statistics/social-media-addiction-statistics/#:~:text=However%2C%20research%20shows%20that%20people, social%20media%20every%20single%20day!

Wong, T.Y., Yuen, K.S.L., & Li, W.O. (2015). A basic need theory approach to problematic Internet use and the mediating effect of psychological distress. Frontiers in Psychology, 5, 1562. http://dx.doi.org/10.3389/fpsyg.2014.01562.

Wu, M. (2022). What Drives People to Share Misinformation on Social Media during the COVID-19 Pandemic: A Stimulus-Organism-Response Perspective. International Journal of Environmental Research and Public Health, 19(18), 11752.

Wu, X. S., Zhang, Z. H., Zhao, F., Wang, W. J., Li, Y. F., Bi, L., ... & Sun, Y. H. (2016). Prevalence of Internet addiction and its association with social support and other related factors among adolescents in China. Journal of adolescence, 52, 103-111.

Yang, S.-Y., Chen, M.-D., Huang, Y.-C., Lin, C.-Y., & Chang, J.-H. (2017). Association between smartphone use and musculoskeletal discomfort in adolescent students. Journal of Community Health, 42, 423–430.

Yujia, R. E. N., Jiao, Y. A. N. G., & Liqiong, L. I. U. (2017). Social anxiety and internet addiction among rural left-behind children: the mediating effect of loneliness. Iranian journal of public health, 46(12), 1659.

APPENDIX

Pew Research / Abt Associates -- Internet Core Trends 2021 Update

Total n=1,502 U.S. adults age 18+
Field Dates: January 25 – February 8, 2021

LANDLINE INTRO:
Hello, I am _____ calling on behalf of the Pew Research Center. We are conducting a telephone opinion survey about some important issues today and we would like to include your household. May I please speak with the YOUNGEST **[RANDOMIZE: (MALE / FEMALE)]**, age 18 or older, who is now at home? **[IF NO MALE/FEMALE, ASK:** May I please speak with the YOUNGEST (FEMALE / MALE), age 18 or older, who is now at home?**]**
GO TO MAIN INTERVIEW

CELL PHONE INTRO:
Hello, I am _____ calling on behalf of the Pew Research Center. We are conducting a telephone opinion survey about some important issues today. I know I am calling you on a cell phone. If you would like to be reimbursed for your cell phone minutes, we will pay all eligible respondents $5 for participating in this survey. This is NOT a sales call.

> **[IF R SAYS DRIVING/UNABLE TO TAKE CALL:** Thank you. We will try you another time...**]**

> **VOICEMAIL MESSAGE [LEAVE ONLY ONCE -- THE FIRST TIME A CALL GOES TO VOICEMAIL:]** I am calling on behalf of the Pew Research Center. We are conducting a national opinion survey of cell phone users. This is NOT a sales call. We will try to reach you again.

CELL PHONE SCREENING INTERVIEW:
S1.   Are you under 18 years old, OR are you 18 or older?

> 1   Under 18
> 2   18 or older
> 9   Don't know/Refused

IF S1=2, CONTINUE WITH MAIN INTERVIEW
IF S1=1, THANK AND TERMINATE – RECORD AS <u>AGE INELIGIBLE</u>: This survey is limited to adults age 18 and over. I won't take any more of your time...
IF S1=9, THANK AND TERMINATE – RECORD AS <u>SCREENING REFUSAL</u>: This survey is limited to adults age 18 and over. I won't take any more of your time...

READ TO ALL CELL PHONE RESPONDENTS
INTRODUCTION TO MAIN INTERVIEW: If you are now driving a car or doing any activity requiring your full attention, I need to call you back later. The first question is...

INTERVIEWER: If R says it is not a good time, try to arrange a time to call back. Offer the toll-free call-in number they can use to complete the survey before ending the conversation.

[PROGRAMMER NOTE: PLEASE INCLUDE THE INTRODUCTION RANDOMIZATION VARIABLES IN THE ALL CONTACTS FILES. WE WOULD LIKE TO BE ABLE TO RUN RESPONSE RATES SEPARATELY FOR EACH VERSION OF THE INTRODUCTION FOR THE LANDLINE AND CELL FRAMES SEPARATELY. PLEASE RANDOMIZE INTRO LANGUAGE WITH ONE TREATMENT PER PHONE NUMBER NOT PER CALL.]

INTFREQ. About how often do you use the internet? **[READ]** {PIAL Trend, most recently February 2019}

    1   Almost constantly
    2   Several times a day
    3   About once a day
    4   Several times a week, OR
    5   Less often?
    8   **(VOL.)** Don't know
    9   **(VOL.)** Refused

BBHOME1. Do you subscribe to dial-up internet service at home... OR do you subscribe to a higher-speed broadband service such as DSL, cable, or fiber optic service? **[SATELLITE INTERNET SERVICE SHOULD BE CODED AS HIGHER-SPEED]** {Heavily modified PIAL Trend, most recently February 2019}

    1   Dial-up
    2   Higher-speed
    3   **(VOL.)** Both Slow-speed/Dial-up and Higher-speed/Broadband
    4   **(VOL.)** Access internet only using cell phone or tablet
    5   **(VOL.)** No home internet access
    8   **(VOL.)** Don't know
    9   **(VOL.)** Refused

DEVICE1a. Next, do you have a cell phone, or not? {PIAL Trend, most recently February 2019}

    1   Yes
    2   No
    8   **(VOL.)** Don't know
    9   **(VOL.)** Refused

ASK IF HAVE CELL PHONE (CELL PHONE SAMPLE OR DEVICE1a=1):
SMART2. Is your cell phone a smartphone, or not? {Modified PIAL Trend, most recently February 2019}

> 1 Yes, smartphone
> 2 No, not a smartphone
> 8 **(VOL.)** Don't know
> 9 **(VOL.)** Refused

BBSMART3. Please tell me whether any of the following are reasons why you do not have high-speed internet at home. First, how about **[INSERT ITEMS; RANDOMIZE]**? Is this a reason why you do not have high-speed internet at home? {February 2019}

> Next, what about **[INSERT NEXT ITEM]**? **[IF NECESSARY:** Is this a reason why you do not have broadband service at home?**]**

> a. The monthly cost of a home broadband subscription is too expensive
> b. The cost of a computer is too expensive

> **CATEGORIES**

> 1 Yes
> 2 No
> 8 **(VOL.)** Don't know
> 9 **(VOL.)** Refused

ASK ALL:
WEB1. Please tell me if you ever use any of the following. Do you ever use...
[INSERT ITEMS; RANDOMIZE ITEMS a-e FIRST AS A BLOCK, THEN RANDOMIZE ITEMS f-k AS A BLOCK]? {Slightly modified PIAL Trend, most recently February 2019}

> a. Twitter
> b. Instagram
> c. Facebook
> d. Snapchat
> e. YouTube

> **CATEGORIES**

> 1 Yes, do this
> 2 No, do not do this
> 8 **(VOL.)** Don't know
> 9 **(VOL.)** Refused

ASK USERS OF EACH SITE IN WEB1a-WEB1e (WEB1a=1 OR WEB1b=1 OR WEB1c=1 OR WEB1d=1 OR WEB1e=1):

SNS2.   Thinking about the social media sites you use... About how often do you visit
      or   use **[INSERT ITEMS; RANDOMIZE]**? **[READ CATEGORIES AS NECESSARY]** {Modified PIAL Trend, most recently February 2019}

        ASK a IF TWITTER USER (WEB1a=1):
        a.   Twitter
        ASK b IF INSTAGRAM USER (WEB1b=1):
        b.   Instagram
        ASK c IF FACEBOOK USER (WEB1c=1):
        c.   Facebook
        ASK d IF SNAPCHAT USER (WEB1d=1):
        d.   Snapchat
        ASK e IF YOUTUBE USER (WEB1e=1):
        e.   YouTube

        CATEGORIES

        1   Several times a day
        2   About once a day
        3   A few times a week
        4   Every few weeks
        5   Less often
        8   **(VOL.)** Don't know
        9   **(VOL.)** Refused

PAY.   During the coronavirus outbreak, have you had trouble paying for the following? **[INSERT ITEMS; RANDOMIZE]** {new}

        ASK IF CELL PHONE OWNER (CELL PHONE SAMPLE OR DEVICE1a=1):
        a. Your cell phone service
        ASK IF HOME BROADBAND USER (BBHOME1=2,3 OR BBHOME2=2):
        b. Your high-speed internet service at home
        ASK IF CABLE SUBSCRIBER (CABLE1=1):
        c. Your cable or satellite television subscription

        CATEGORIES

        1   Yes, have had trouble
        2   No, have not had trouble
        8   **(VOL.)** Don't know
        9   **(VOL.)** Refused

DEVICE1.   Please tell me if you happen to have each of the following items, or not. Do you have **[INSERT ITEMS; RANDOMIZE]**? {Modified PIAL Trend, most recently February 2019}

        b.   A tablet computer
        c.   A desktop or laptop computer
        d.   A game console

CATEGORIES

1   Yes
2   No
8   **(VOL.)** Don't know
9   **(VOL.)** Refused

DEMOGRAPHICS

[READ TO ALL:] A few last questions for statistical purposes only...

GENDER.   Do you describe yourself as a man, a woman or in some other way?

1   A man
2   A woman
3   In some other way
98   Don't know
99   Refused

EDUC2.   What is the highest level of school you have completed or the highest degree you have received? **[DO NOT READ] [INTERVIEWER NOTE: Enter code 3- HS grad if R completed training that did NOT count toward a degree]**

1   Less than high school (Grades 1-8 or no formal schooling)
2   High school incomplete (Grades 9-11 or Grade 12 with NO diploma)
3   High school graduate (Grade 12 with diploma or GED certificate)
4   Some college, no degree (includes some community college)
5   Two-year associate degree from a college or university
6   Four-year college or university degree/Bachelor's degree (e.g., BS, BA, AB)
7   Some postgraduate or professional schooling, no postgraduate degree (e.g. some graduate school)
8   Postgraduate or professional degree, including master's, doctorate, medical or law degree (e.g., MA, MS, PhD, MD, JD)
98   Don't know
99   Refused

[MAKE FULL NOTE AVAILABLE FOR INTERVIEWERS: Enter code 3-HS graduate if R completed vocational, business, technical, or training courses after high school that did NOT count toward an associate degree from a college, community college or university (e.g., training for a certificate or an apprenticeship)**]**

INC.   Last year -- that is in 2020 -- what was your total family income from all sources,   before taxes? Just stop me when I get to the right category...
[READ]

1	Less than $10,000
2	10 to under $20,000
3	20 to under $30,000
4	30 to under $40,000
5	40 to under $50,000
6	50 to under $75,000
7	75 to under $100,000
8	100 to under $150,000, OR
9	$150,000 or more?
98	**(VOL.)** Don't know
99	**(VOL.)** Refused