



Faculty of Cognitive Science and Human Development

THE RELATIONSHIP BETWEEN SMARTPHONE DEPENDENCY AND SOCIAL ANXIETY AMONG UNIMAS AND UITM STUDENT

AMOS TING QI TAO

2024

Bachelor of Counselling
(Honours)

2024

THE RELATIONSHIP BETWEEN SMARTPHONE DEPENDENCY AND SOCIAL ANXIETY AMONG UNIMAS AND UITM STUDENT

AMOS TING QI TAO

This project is one of the criteria
for
Bachelor of Counselling (Honours)

2024

Faculty of Cognitive Sciences and Human Development

UNIVERSITY MALAYSIA SARAWAK

The title of the project is " The Relationship between Smartphone Dependency and Social Anxiety among UNIMAS and UITM Student" conducted by Amos Ting Qi Tao and submitted to the Faculty of Cognitive Science and Human Development to meet the criteria for a Bachelor of Counseling (Honours).

Received and Reviewed by :

.....

(Puan Samsiah Binti Jayos)

Date

.....

Grade

ACKNOWLEDGE

Respectful Greetings,

First and foremost, I would like to express my deepest gratitude to God for giving me the strength, patience, and determination to complete this final year project. This project could not have been completed successfully without His divine direction and graces.

I would like to extend my sincere thanks to my supervisor, Dr Samsiah Binti Jayos, for the crucial advice, encouragement, and support given during my research. Your knowledge, helpful criticism, and unflinching patience have been crucial in determining the calibre and course of this research. I sincerely appreciate you taking the time and making the effort to help me improve my concepts and approaches.

I want to express my sincere gratitude to my parents, Paul Ting Huat Ung and Chua Chai Ling, in especially for their unfailing love, prayers, and support. Your unwavering confidence in my skills has given me constant strength and drive over my academic career. They have given me the foundation I need to succeed academically and flourish personally because of their sacrifices and unshakeable belief in my abilities. I am incredibly grateful for their unwavering presence, which has given me the fortitude to keep going when things become tough in addition to providing me with emotional support.

I want to thank the UNIMAS and UITM students who took part in this research. Without your participation, this project would not have been possible. Your willingness to share your time and expertise has been vital.

In addition, I would like to thank my friends and classmates, whose considerate comments, encouragement, and emotional support have been invaluable to me during the difficulties of this project. I am really grateful for your support during these difficult times.

Finally, I am also appreciative of the Faculty of Cognitive Sciences and Human Development at UNIMAS and UITM for providing me with the tools and chance to conduct this study. I would especially like to thank Dr Samsiah Binti Jayos for the enlightening conversations and extra help during my academic career.

That is all, thank you.

TABLE CONTENT

	Muka Surat
Acknowledge	i
Table of Content	ii-iii
Figures	iv
Tables	v
Short-Term List	vi
Appendix	vii
Abstrak	viii

Chapter 1 –INTRODUCTION

1.0	Introduction	1
1.1	Background of Study	2
1.2	Problem Statement	3- 4
1.3	Research Objective	5
1.4	Research Question	5
1.5	Reseaech Hypothesis	5
1.6	Conceptual Framework	5-8
1.7	Theoretical Framework	9-10
1.8	Significan of Research	11-12
1.9	Defination of Terms	13-15
1.10	Limitation of Research	16-17
1.11	Conclusion	17

Chapter 2 – LITERATURE REVIEW

2.0	Introduction	18
2.1	Journal Data Collection	18
2.2	Literature Review	19-25
2.3	Conclusion	26

Chapter 3 – RESEARCH METHODOLOGY

3.0	Introduction	27
3.1	Research Design	27-28
3.2	Population	29
3.3	Sample	29
3.4	Sampling Procedure	29
3.5	Intrumentation	30
3.6	Pilot Study	30-31

3.7	Data Collection Procedure	31
3.8	Research Ethic	32
3.9	Data Analysis Procedure	33-34
3.10	Conclusion	35

Chapter 4 –RESEARCH FINDINGS AND DATA ANALYSIS

4.0	Introduction	36
4.1	Pilot Study	36
4.2	Demographic	37-38
4.3	Overall Mean and Standard Deviation	39-40
4.4	T-Test	41

Chapter 5 –DISCUSSION, IMPLICATIONS, RECOMMENDATIONSDATIONS AND CONCLUSIONS

5.0	Introduction	42
5.1	Discussion	42-45
5.2	Implications for Mental Health Support and University Counselling Services	46
5.3	Recommendation	47
5.4	Conclusion	48

REFERENCE	49-60
------------------	-------

FIGURES

Figure 1.1 Conceptual Framework	7
Figure 3.1 Study Framework	34

SHORT-FORM LIST

UNIMAS	<i>University Malaysia Sarawak</i>
UITM	<i>University Technology MARA</i>
APA	<i>American Psychological Association</i>
CBT	<i>Cognitive-Behavioral Model</i>
PSU	<i>Problematic Smartphone Use</i>
SMU	<i>Social Media Use</i>
IA	<i>Internet Addiction</i>
SA	<i>Social Anxiety</i>
SNS	<i>Social Networking Site</i>

ABSTRACT

THE RELATIONSHIP BETWEEN SMARTPHONE DEPENDENCY AND SOCIAL ANXIETY AMONG UNIMAS AND UITM STUDENT

AMOS TING QI TAO

This study investigates the relationship between smartphone dependency and social anxiety among university students from Universiti Malaysia Sarawak (UNIMAS) and Universiti Teknologi MARA (UiTM). As smartphone usage becomes increasingly prevalent among young adults, concerns have emerged regarding its psychological impact, particularly in relation to mental health and interpersonal functioning. Utilizing a quantitative correlational research design, this study collected data from a sample of undergraduate students from both institutions through standardized questionnaires measuring levels of smartphone dependency and social anxiety. The findings reveal a significant positive correlation between smartphone dependency and social anxiety, indicating that higher levels of dependency are associated with increased social anxiety symptoms. Additionally, comparative analysis highlights any notable differences between the two universities in terms of dependency patterns and anxiety levels. The study underscores the importance of promoting balanced smartphone use and developing strategies to mitigate its potential negative psychological effects among university students. Implications for mental health awareness and digital well-being initiatives are also discussed.

Keywords: Smartphone Dependency, Social Anxiety, Student

CHAPTER 1

INTRODUCTION

1.0 Introduction

This study seeks to explore the relationship between smartphone dependency and social anxiety among university students, particularly those at UNIMAS and UITM. Concerns over the psychological effects of smartphones' growing use in daily life have been highlighted, especially in light of mental health conditions like social anxiety. Therefore, in this Chapter 1, the researcher will discuss the background of the study, problem statement, research objectives, research questions, conceptual framework, theoretical framework, significance of the study, definition of terms, and the limitations of the study. This chapter lays the groundwork for a thorough examination of the potential connections between university students' use of smartphones and social anxiety.

1.1 Background Of Study

In recent year, the widespread use of smartphones has fundamentally changed how people communicate and engage, especially with young adults and college students (Miller et al., 2021). Smartphones are now essential tools for social media engagement, information access, peer connections, and daily activity management. Recent data indicates that a sizable portion of college students use their smartphones for many hours every day, raising concerns about smartphone dependency (Fook et al., 2021). Excessive or obsessive smartphone use is a defining feature of this habit, which frequently has detrimental effects on a person's mental health and general wellbeing.

Social anxiety, defined as the intense fear of social situations and the possibility of being judged or scrutinized by others, is increasingly prevalent among university students (Mohammadi et al., 2020). With its own social dynamics and pressures, the collegiate setting can make anxiety worse, especially when interacting with others. Research has demonstrated a link between social anxiety and smartphone use, indicating that although smartphones can help with communication, they can also make in-person encounters more difficult, which can exacerbate feelings of loneliness and anxiety (Annoni et al., 2021).

Particularly pertinent to Malaysian campuses like University Malaysia Sarawak (UNIMAS) and University Technology MARA (UITM) is the connection between smartphone dependence and social anxiety. These institutions serve a diverse student population, many of whom navigate the dual challenges of academic demands and social interactions (Bukhari et al., 2020). Knowing how social anxiety is impacted by smartphone dependency among students at these universities can help develop therapies and mental health services that are specifically suited to their requirements.

1.2 Problem Statement

In the last few years, smartphones have become an essential component of daily life. Although smartphones provide connectedness and convenience, an over-reliance on them has sparked worries about possible harm to mental health (Csibi et al., 2021). Social anxiety is one of the many psychological problems that have been connected to smartphone addiction. According to Haugan (2023), the fear of social circumstances that can involve criticism or scrutiny from others is known as social anxiety, and it can have a detrimental effect on students' social relationships, academic achievement, and general well-being.

Despite mounting evidence linking smartphone use to social anxiety, the majority of research on the topic focuses on particular circumstances or broad demographics, which leaves Malaysian institutions with a lack of knowledge on the subject (Turgeman et al., 2020). There is a dearth of research on the connection between social anxiety and smartphone dependency among Malaysian university students, especially those attending University Malaysia Sarawak (UNIMAS) and University Technology MARA (UITM).

Apart from that, a study addressing this topic was conducted in Craiova, Romania, by Pera (2020), indicating a geographical gap in the research. This gap in the literature emphasizes the necessity for targeted studies on the relationship between social interaction anxiety and smartphone dependency in this particular Malaysian student population. Closing this gap could yield important information for creating focused interventions to assist the professional growth and emotional health of university students.

Additionally, the article “The Relation Between College Students’ Social Anxiety and Mobile Phone Addiction: The Mediating Role of Regulatory Emotional Self-Efficacy and Subjective Well-Being” by Xiao and Huang (2022) does not explicitly detail the method used to collect respondents, which can leave some ambiguity regarding the study's sampling techniques and data collection processes. This ambiguity emphasizes how crucial it is to specify the research technique in my own study. By giving a thorough explanation of the techniques used to collect data, I hope to guarantee openness and accuracy in my study. I will use the Smartphone Addiction Scale (SAS) and Social Interaction Scale (SIAS) to measure the relationship between smartphone dependency and social anxiety.

Given the widespread use of smartphones among university students and the potential mental health challenges it may pose, it is crucial to examine whether a significant relationship exists between smartphone dependency and social anxiety within this specific population. By comprehending this relationship, university counselling services and mental health initiatives may gain important insights that will improve student assistance.

1.3 Research Objectives

1. To investigate the relationship between smartphone dependency and social interaction anxiety among UNIMAS and UITM students.
2. To investigate the effect of smartphone dependency on social interaction anxiety among UNIMAS and UITM students.

1.4 Research Questions

1. What is the level of smartphone dependency and social anxiety among UNIMAS and UITM students?
2. Is there a significant relationship between smartphone dependency and social anxiety among students at UNIMAS and UITM?
3. Does the level of smartphone dependency predict the severity of social anxiety among UNIMAS and UiTM students?

1.5 Research Hypothesis

H0 There is no significant relationship between social anxiety and smartphone dependency among UNIMAS and UTM students

H1 There is a significant relationship between social anxiety and smartphone dependency among UNIMAS and UTM students

1.6 Conceptual Framework

The conceptual framework for this study investigates the relationship between social anxiety and smartphone dependency among UNIMAS and UTM students. This framework offers an organized method for comprehending how smartphone dependence may affect social anxiety in university students, especially in their social and academic settings.

1.6.1 Key Concept

The first key concept, smartphone dependency, serves as the independent variable. It refers to the excessive use of smartphones to the extent that it impacts daily life, behavior, and well-being (Fryman & Romine, 2021). This dependence can show itself in a number of ways, such as how frequently students use their smartphones—constantly using them for entertainment, social networking, or messaging. Emotional reliance is another factor, when smartphones are used as a coping strategy to deal with loneliness, stress, or anxiety. Another significant factor is compulsive behaviour, where students struggle to stop their smartphone use, especially when it gets in the way of their social or academic relationships (Meena et al., 2021). The demand for social media and communication can lead to smartphone dependency, as students depend on their gadgets to maintain their social life and stay in touch with their friends.

The second key concept is social anxiety, the dependent variable in this study. The psychological disorder known as social anxiety is typified by extreme uneasiness or worry in social settings because of the fear of embarrassment or judgment (Figueiredo et al., 2023). Students who experience extreme worry about how other people see them may exhibit this anxiety as a dread of receiving a poor grade. Students may withdraw from social circumstances in order to avoid the anxiety that these events bring, which can result in an avoidance of social contacts. Furthermore, when confronted with social situations, social anxiety frequently manifests as bodily symptoms as perspiration, shaking, or elevated heart rate (Tang et al., 2022). The research's main goal is to comprehend how smartphone dependency may cause or worsen social anxiety.

1.6.2 Relationship Between Concepts

According to the conceptual framework, there is a cyclical relationship between smartphone dependency and the onset or worsening of social anxiety, especially when students rely on their gadgets to help them navigate or avoid situations that make them anxious. The premise that excessive smartphone use

may either cause or worsen social anxiety is the foundation for the link between these two ideas. Compulsive checking, extended use, and an emotional reliance on smartphones for entertainment, social contact, or stress reduction are all signs of smartphone dependency (Sharma et al., 2022). This over-reliance may eventually make pupils more socially anxious by impairing their capacity to interact with others in person. Students may use virtual communication to escape social situations that cause discomfort in real life as they grow increasingly reliant on their smartphones (Morales Rodríguez et al., 2020). As a result of this avoidance behaviour, social anxiety may worsen, leading to a vicious cycle in which reliance on smartphones is both a symptom and a coping strategy for their anxiety.

1.6.3 Conceptual Framework Diagram

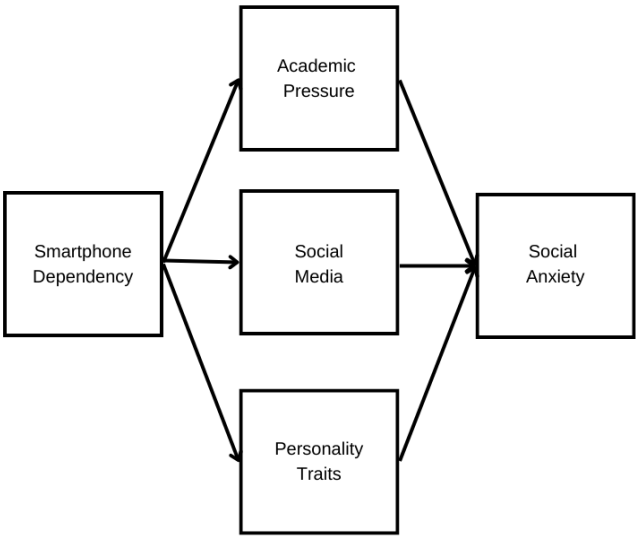


Diagram 1.1 Conceptual Framework

The conceptual framework diagram investigates the relationship between university students' social anxiety and smartphone dependence. In this paradigm, smartphone dependency—the main idea—is positioned as the independent variable. It alludes to how much students rely on their smartphones for a variety of

purposes, including entertainment, social media interaction, and communication. Students' social and psychological health may be significantly impacted by this conduct, especially if they suffer from social anxiety.

The diagram highlights three important moderating factors that may influence how smartphone dependency impacts social anxiety. Academic pressure, or the stress and expectations that students encounter while pursuing their academic goals, is the first contributing component. Students may use their smartphones as a coping strategy to momentarily escape or ease stress when faced with demanding academic requirements (Wang et al., 2020). Social media, which has two functions in this theory, is the second moderating component. On the one hand, students who are dependent on their smartphones might use social media more frequently in order to interact with their peers, share content, or look for approval (Gritti et al., 2023). However, when students compare themselves to others or feel pressured to project an idealized self-image, excessive social media use can exacerbate feelings of inadequacy. The third moderating component is personality traits, which have an impact on social anxiety and smartphone dependency. Students who exhibit traits like introversion, anxiety, or low self-esteem may be more likely to use their smartphones as a substitute for in-person social contacts (Rahim et al., 2021).

The final concept in the framework is social anxiety, which is the dependent variable. The graphic illustrates how smartphone dependence, especially when tempered by variables like personality traits, social media use, and academic pressure, can directly cause or exacerbate social anxiety. The growing reliance on smartphones exacerbates social anxiety, which can show itself as avoidance behaviours in social situations, social discomfort, or an overwhelming fear of being judged.

1.7 Theoretical Framework

The theoretical framework for the study is grounded in the Cognitive-Behavioral Model (CBT). CBT is a widely recognized psychological framework that explains how thoughts, feelings, and behaviors interact. It makes the argument that psychological problems might result from maladaptive ideas or cognitive distortions that have a detrimental impact on emotional states and behaviours. People can enhance their emotional and behavioural reactions by recognizing and changing these cognitive habits (Alaiti et al., 2022). CBT offers a perspective through which to view the cognitive, emotional, and behavioural processes that link social anxiety and smartphone dependency in the context of this study.

Smartphone dependency refers to the compulsive use of smartphones to the extent that it interferes with daily functioning and well-being. According to cognitive behavioural therapy, this dependence could be caused by illogical assumptions or warped ideas about the need for continual social affirmation and connectivity (Khalily et al., 2021). Compulsive phone use, for instance, can result from ideas like "I need to check my phone constantly to stay connected" or "If I don't reply immediately, people will think I'm ignoring them." These cognitive distortions lead to emotional repercussions like tension and worry as well as actions like obsessive phone checking. As students feel pressured to stay connected via their smartphones at all times in order to prevent unfavourable social consequences, these actions eventually strengthen smartphone dependency.

Conversely, social anxiety is defined by extreme dread or anxiety associated with social settings, frequently brought on by a fear of being rejected, judged, or embarrassed. Cognitive distortions such as mind-reading (thinking others are evaluating them badly) and catastrophizing (thinking the worst) are common among students with social anxiety. Avoidance habits, such reducing in-person encounters in favour of social media or smartphone communication, are influenced by these attitudes. According to cognitive behavioural therapy, these avoidance techniques are viewed as "safety behaviours" that momentarily lessen

anxiety but keep people from facing their anxieties, which eventually makes social anxiety and smartphone dependency worse (Kindred et al., 2022).

The relationship between smartphone dependency and social anxiety can be explained using the CBT framework, which shows that students with social anxiety use smartphones to avoid difficult social interactions. For example, students may use social media or texting as a coping mechanism for their nervousness instead of interacting with others in person. Although this gives them short-term respite, it also exacerbates their social anxiety and strengthens their reliance on smartphones, resulting in a vicious cycle (Korkmazer et al., 2022). Additionally, using a smartphone constantly can cause worry, such as the fear of losing connectivity or missing essential messages, which in turn leads to greater smartphone use and anxiety.

CBT offers a thorough theoretical foundation for comprehending the connection between university students' social anxiety and smartphone dependency. It highlights the need for focused interventions by demonstrating how avoidance behaviours and cognitive distortions contribute to both illnesses. This study can offer important insights on lowering smartphone dependency and easing social anxiety in student populations by addressing the underlying cognitive patterns and behaviours.

1.8 Significance Of Research

The study of the relationship between smartphone dependency and social interaction anxiety among UNIMAS and UITM students holds significant importance to university students, society, and the field of psychology and counseling.

1.8.1 University Student

For students themselves, this study can play a crucial role in raising awareness about the potential negative consequences that excessive smartphone use may have on their mental health, particularly in terms of increasing the risk of social anxiety (Celikkalp et al., 2020). The study may act as a wake-up call, urging students to consider their present smartphone usage patterns by emphasizing the link between their usage patterns and the onset or worsening of social anxiety. Students may adopt more mindful and health-conscious digital habits as a result of their increased awareness, giving them the ability to make wise decisions that support more balanced lifestyles and improved mental health.

1.8.2 Society

The growing problem of smartphone addiction and its possible effects on mental health, especially social anxiety, might be brought to the public's attention by this research. Understanding the social repercussions of excessive smartphone use can promote healthy technology use among various populations and improve mental health practices as smartphones become more ingrained in daily life (Ratan et al., 2021). The study's findings about the connection between social anxiety and smartphone dependence should help guide mental health treatments and public health campaigns that target the underlying causes of anxiety in the current digital era. This could result in the creation of national campaigns or community initiatives that teach people how to use technology responsibly and

lessen its detrimental effects on mental health.

1.8.3 Field Of Psychology And Counseling

By illuminating its implications in the context of higher education, the study will make a substantial contribution to the growing corpus of research on the psychological repercussions of smartphone dependency. This study can offer a thorough grasp of how technology affects mental health at a crucial developmental period by investigating the precise connection between excessive smartphone use and social anxiety among college students. Additionally, the results of this study can be a useful starting point for future investigations, providing opportunities to examine additional mental health conditions like depression, loneliness, attention difficulties, and sleep disruptions that are linked to technology use. In order to better address the numerous issues raised by excessive use of digital devices in contemporary society, this study may also serve as an inspiration for multidisciplinary research that combines perspectives from psychology, education, and technology.

1.9 Defination Of Terms

1.9.1 Smartphone Dependency

Conceptual Defination:

Smartphone dependency is the overuse of smartphones that impairs a person's ability to think, feel, and act. It involves an obsessive need to use smartphones for a variety of purposes, including entertainment, social engagement, and information access (Gentina & Rowe, 2020). This can cause problems with time management, focus, and interpersonal relationships. Addiction-like symptoms, like withdrawal when cut off from the device, reduced productivity, and disruption of day-to-day activities, can arise from this dependence.

Operational Defination:

Smartphone dependency, in an operational definition, refers to the measurable behaviours and patterns of excessive smartphone use that disrupt daily life. This can be assessed through the frequency of use, such as the number of hours spent on the device, and compulsive behaviours like the inability to resist checking the phone frequently. It also includes emotional responses, such as feelings of anxiety, irritability, or discomfort when access to the smartphone is restricted. The dependency often leads to interference with personal, academic, or professional responsibilities, and withdrawal symptoms, such as physical or psychological distress, may occur when the smartphone is unavailable (Lee, 2022). These aspects can be quantified through scales or surveys to evaluate the extent of dependency.

.

1.9.2 Social Anxiety

Conceptual Defination:

Social anxiety is a mental health condition characterized by an intense fear or discomfort in social situations, where individuals worry about being judged,

embarrassed, or humiliated by others. Excessive self-consciousness, dread of being negatively judged, and avoiding social situations are common symptoms of social anxiety that can affect a person's everyday activities, relationships, and general well-being (Nishikawa et al., 2022). In addition to cognitive symptoms like overanalysing or a persistent dread of rejection, physical symptoms like sweating, shaking, or a fast heartbeat can also be signs of anxiety. A person's social functioning may be greatly impacted by social anxiety, which can range from minor to severe.

Operational Defination:

According to an operational definition, social anxiety encompasses the quantifiable and visible actions, ideas, and bodily reactions associated with the fear of social situations. Avoidance behaviours, such avoiding social gatherings or public speaking, might be used to identify it. Sweating, shaking, a fast heartbeat, or flushing are examples of physical symptoms that can be observed in social settings. Cognitive indicators, such as enduring feelings of embarrassment or condemnation, are frequently evaluated using self-report questionnaires. Indicators also include emotional reactions, such as extreme social discomfort or distress, and the extent to which these symptoms affect day-to-day functioning, interpersonal relationships, or professional performance (Prarcey et al., 2021). To gauge the degree of social anxiety, these factors can be assessed via scales, clinical evaluations, or physiological monitoring.

1.9.3 University Student

Conceptual Defination:

A university student is a person who is enrolled in a college or university with the purpose of obtaining professional or academic credentials. They pursue a degree in a particular field of study by participating in research, attending lectures or tutorials, and engaging in formal learning (Nieuwoudt & Pedler,

2023). University students are frequently in a phase of intellectual and personal development where they are honing their critical thinking, problem-solving, and specialized knowledge in order to get ready for future academic endeavours or professional employment.

Operarional Defination:

University student is a person who is enrolled in classes or academic programs and is officially registered at an accredited institution. Verifying enrolment records, course registration, attendance at lectures or tests, and assignment fulfilment are ways to gauge this status. They must also follow university regulations and fulfil certain institutional requirements, such keeping a minimum amount of credits or course load to stay enrolled (Weatherton & Schussler, 2021). Those who meet these quantifiable requirements can be classified as university students.

.

1.10 Limitations Of Research

1.10.1 Biases

Self-report biases are a significant limitation in research on smartphone dependency and social anxiety, as they rely heavily on participants' personal accounts of their behaviors and feelings. Participants in these kinds of studies may modify their answers to conform to socially acceptable norms or their ideas of what is "normal." For example, students may claim lower levels of social anxiety to avoid the stigma attached to worry, or they may underreport their smartphone use to avoid appearing unduly dependent. This type of bias, also known as social desirability bias, might skew results by giving a false impression of the actual connection between social anxiety and smartphone dependence (Każmierczak et al., 2023). Another aspect is recall bias, which makes it difficult for participants to recall the precise frequency or type of smartphone use, especially for habits or unconscious actions. When combined, these biases weaken the validity of self-reported data since the measures may not fairly represent social anxiety symptoms or true levels of smartphone dependency. As a result, results from self-report measures might be limited, and researchers should think about adding objective behavioural tracking or observational techniques to self-report data to improve

1.10.2 Confounding Variables

Confounding variables are a major limitation when researching the connection between social anxiety and smartphone dependency because different outside influences may have an impact on both illnesses. Personality qualities such as introversion or neuroticism, for instance, may make students more likely to experience social anxiety and rely more on smartphones for comfort or social connections. Students may use smartphones as a coping strategy as a result of increased anxiety brought on by academic stress, which may obscure the underlying nature of their dependency. While social support levels, such as the presence of close friends or mentors, can influence how students perceive and manage anxiety, family history, including socioeconomic position or parental

participation, may also have an impact on smartphone use and mental health. Since these factors interact in intricate ways that may distort findings and interpretations, it is difficult to identify smartphone dependency as a primary cause of social anxiety.

1.10.3 Comparative Analysis and Data Integrity

Researching the relationship between social anxiety and smartphone dependency among UNIMAS and UiTM students is limited by issues with data integrity and comparative analysis. Potential variations in campus culture, academic demands, and social settings must be carefully taken into account when comparing two institutions because they may have an effect on social anxiety levels and smartphone use. It becomes challenging to make meaningful comparisons if these contextual elements are not appropriately taken into consideration since observed differences could be ascribed to cultural or environmental variances rather than the variables being studied. Furthermore, variables like uneven data collection techniques or differences in survey replies between the two campuses may jeopardize data integrity, which could affect the trustworthiness of the results. Ensuring data consistency and addressing these contextual influences are crucial to avoid misinterpretations that could obscure the true relationship between smartphone dependency and social anxiety in each university setting (Duggineni, 2023).

1.11 Conclusion

In conclusion, for chapter 1 in this study, it explains the background of the study, problem statement, research objectives, research questions, conceptual framework, theoretical framework, the importance of the study, the definition of terms, and the limitations of the study. In chapter 2, the researcher will discuss about the literature review where it will be discussed in more detail from chapter 1.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter explains the importance of choosing and reading relevant reading sources carefully. Books and journals are two common types of sources used by researchers. In the meantime, the reader will see the theory applied in this study as well as the research findings carried out by the researchers from here on out. Chapter 2 is important as the researcher has explained what the researcher wants to bring in the research problem in this study.

2.1 Journal Data Collection

In this research, the researcher also used sources from journals that are research from past researchers to support data findings and as proof of the study. The researcher will analyze the previous study because the research topic has been done by other researchers who can be a reference for the researcher when doing research. This will make the study more interesting that has new information or findings.

2.2 Literature Review

2.2.1 Smartphone Dependency

A study by Linden, Nawaz and Mitchell (2021) found that no significant link between smartphone dependency and gender or parental status. This contradicts some previous studies, such as those conducted in India, which found men to be more dependent on their smartphones than women. Conversely, research in Taiwan and China indicated that women are more dependent on their smartphones. The Australian study's finding of no gender-based dependency difference might be due to a more balanced gender distribution among participants, cultural differences, or the fact that technology has become more integrated into daily life, potentially leading to equal reliance on smartphones across genders. Interestingly, the study did discover a strong correlation between smartphone dependency and age, especially for people 51 and older. This result is consistent with the finding that smartphone dependency was strongly associated with the Retired occupational category, which probably overlaps heavily with the 51+ age group. This implies that smartphone dependency may be influenced by age, life stage, and daily habits. The study also discovered a strong correlation between higher degrees of reliance and self-reported smartphone usage that is higher than that of peers. However, there was no discernible difference in reliance between participants who reported usage levels comparable to those of their friends. This emphasizes how crucial perceived usage is when considering one's social network. The study discovered a considerable correlation between social media use and increased consumption and reliance when looking at particular smartphone activities. This is consistent with studies conducted in the USA and Switzerland that also discovered a connection between greater smartphone use and dependency and more time spent on social media apps. On the other hand, lesser usage and dependency were linked to activities like texting and making phone calls. This implies that the type of smartphone uses and the degree of social interaction that goes along with it may have an impact on dependency.

Apart from that, based on the study by Hwa and Peck (2020), the researcher examines the effects of smartphone use on social interactions and relationships among Malaysian youth, ages 11 to 18. The researchers chose students in this age group because

their generation has a close relationship with digital technologies. In addition, 93.5% of Malaysian smartphone users were under the age of twenty. New information and communication technologies (ICTs) that promote interpersonal connections are the specific focus of this study. Different aspects of smartphone use and its varied impacts on young people who are enmeshed in electronic communication are captured by the researcher. Through a survey, this study gathers information on a number of aspects of smartphone use among young Malaysians. Information on the frequency and length of smartphone use, the cost of mobile phone services, and the particular motivations behind young people's smartphone use will all be gathered. The study will also look at the variables that affect young people's smartphone purchasing decisions. Brand preferences, cost concerns, the impact of social circumstances, and perceived convenience are some of the topics that will be covered.

According to Chan, Yeo and Handayani (2023), the researcher demonstrates how certain forms of smartphone use are more closely linked to Problematic Smartphone Use (PSU). The study found a significant positive correlation between PSU and chatting/texting, video/phone calls, watching videos/television/movies, and listening to music/podcasts/radio, while activities such as social networking, instant messaging, gaming, web browsing, and educational learning showed inconsistent relationships with PSU. This implies that teenagers who participate in these activities frequently may be more susceptible to PSU. Given the paucity of data on these activities, the study highlights the need for additional research into the effects of music, podcasts, radio, and video and phone calls on PSU. Notably, the study found that using social networking sites and gaming are two particular content genres that may contribute to PSU. This emphasizes how crucial it is to comprehend how various forms of content consumption could support PSU development.

According to Wang, Hsieh and Kung et al. (2023), academic performance was positively connected with smartphone use behaviour, including utilizing smartphones for information searches, leisure, and interpersonal communication. Additionally, the study discovered that pupils who used smartphones more frequently outperformed those who used them less in terms of their academic performance. This implies that having access to smartphones could improve learning chances. The researchers postulated that student self-

regulation, parental control, and academic success are all mediated by smartphone behaviour. The researchers used structural equation modelling to demonstrate that, with regard to academic achievement, smartphone use has a partial mediating influence on student self-control and a full mediating effect on parental control. These results imply that it is more crucial to comprehend how kids use their smartphones than it is to regulate smartphone use.

Based on the analysis by D'souza & Sharma (2020), academic performance may be impacted by a number of factors, however there is no statistically significant correlation between smartphone addiction and academic achievement. Using GPA as the only indicator of academic success is one option. Although GPA gives a broad picture of a student's academic status, it might not fully account for the subtleties of smartphone addiction's possible effects on certain assignments or classes. For example, certain students may need more concentrated attention and be more easily distracted by smartphone use, which could result in differences in performance that are not seen through GPA alone. Furthermore, the study may not have been able to identify modest variations in performance linked to smartphone addiction because it divided GPA into two broad categories (2.00–3.00 and 3.01–4.0). A more thorough explanation of the link may be possible with a more thorough examination of academic performance, taking into account performance on particular assignments or individual course grades. Furthermore, the outcomes may be impacted by individual variations in students' self-control and smartphone usage management skills. While some students may find it more difficult to deal with more serious distractions, others may be better at separating their smartphone use and reducing its influence on their academic performance. To investigate these options and offer a more complex view of the connection between smartphone addiction and academic performance, more study is required.

2.2.2 Social Anxiety

According to O'Day & Heimberg (2021), . People who are lonely and socially nervous prefer to communicate online, use social media more frequently, and have trouble with social media use (SMU). However, because of suppressed behaviors and unfavorable social comparisons, they could not gain socially from SMU. Although there is no proof that problematic SMU causes loneliness, loneliness is a risk factor for problematic SMU. To identify the causal processes underlying these connections, more investigation is required, especially experimental and longitudinal studies. To further understand the distinct effects of SMU, study should also look at its many forms, including active and passive usage.

Futhermore, a study by Chiu, Clark & Leigh (2021) explores the connection between peer functioning and social anxiety in adolescents through a systematic review and meta-analysis of 23 studies. The analysis reveals a bidirectional link between social anxiety and three aspects of peer functioning: friendship quality, peer rejection, and peer victimization. In particular, greater friendships among teenagers are associated with lower levels of social anxiety in later life, whereas higher levels of social anxiety are associated with poorer connections. Peer rejection and victimization follow the same pattern: having these problems foretells future social anxiety, and vice versa. Peer approval, however, did not significantly correlate with social anxiety. Interestingly, the study reveals that, when compared to other peer characteristics, peer victimization is the most potent predictor of subsequent social anxiety. According to the authors, these connections might result from the behavioural effects of social anxieties, which cause people to behave in ways that damage their relationships with their peers, as well as the influence of bad peer experiences on one's perceptions of social acceptance. In order to lower adolescents' risk of developing social anxiety, the study emphasizes the significance of early treatments aimed at fostering better peer connections and resolving peer victimization.

According to Ifenthaler et al. (2023), students' social anxiety levels in digital learning environments varied significantly based on their country of origin and gender. Latvian

students had the lowest degrees of social anxiety, whereas Turkish female students had the highest. Particularly when it came to contacts with their classmates, female students often reported higher levels of social anxiety than male students. For all three of the Learner-Learner sub-scale's dimensions—negative appraisal, physical symptoms, and avoidance of interaction—this difference was statistically significant. It's interesting to note that as compared to interactions with instructors, Latvian students were the only group to indicate higher levels of social anxiety in peer relationships. These findings imply that students' experiences with social anxiety in online learning environments are significantly shaped by gender and cultural context.

A research study by Leigh, Chiu and Ballard (2023) found that there was a trend-level correlation between social anxiety and suicidal thoughts. Numerous research indicate that the correlation between social anxiety and suicidality cannot be exclusively ascribed to depressive symptoms, even though the study was unable to quantitatively investigate the role of depression in this relationship due to a lack of data. The authors stress that although the results point to a connection, they are constrained by the small number of studies, the high degree of study variability, and the inconsistent calibre of the research. To better examine this link, comprehend its temporality, and look into possible underlying mechanisms, they urge more excellent, prospective research.

2.2.3 Relationship Between Smartphone Dependency and Social Interaction Anxiety

According to Korniienko & Barchi (2020), the study found a positive correlation between social anxiety levels and smartphone addiction in both male and female participants, and that the time spent using smartphones daily was a significant predictor of social anxiety in both genders. The authors conclude that smartphone addiction is a growing problem among young people and can have negative consequences for mental health. For female participants, both NMP-Q and SAS-SV scores were significant predictors of social anxiety, while only NMP-Q scores were significant predictors for male participants.

In addition to this, research by Ye et al. (2021) found that Chinese college students who had IA (Internet Addiction) had greater SA (Social Anxiety) levels than those who didn't. Additionally, the study discovered that lower levels of SA and IA were linked to increased physical exercise involvement. Furthermore, it was discovered that a number of academic and demographic factors influenced both SA and IA: male students were more likely to experience IA, whereas female students reported higher levels of SA. Compared to children with siblings, children who were alone had lower SA levels. Sports majors were more likely to experience IA, although students majoring in the arts and sports had lower SA levels than those majoring in the scientific and social sciences. Additionally, the study found that students in the midst of their academic careers were more likely to have IA than those at the start.

Based on the study by Zsido et al. (2021), rumination, catastrophizing, self-blame, and other-blame are examples of maladaptive emotion regulation techniques that mediated the association between social anxiety and inappropriate SNS (Social Networking Site) usage and PSU. Additionally, they found a strong correlation between problematic SNS use and social anxiety. The results of the study emphasize how crucial emotion control is in the development of problematic smartphone and SNS use. According to the study, people with social anxiety may use smartphones as an external tool to control their emotions, which could result in inappropriate use of social networking sites. The findings also lend credence to the compensatory internet use theory, which contends that using the internet to avoid unpleasant feelings and perceived issues is a compensating activity.

A study conducted by Gokce & Ozer (2021) at Inonu University in Turkey found that a significant relationship between longer daily cell phone use durations and problematic cell phone use. On the Problematic Mobile Phone Use Scale (PU), students who used their phones for eight or more hours a day scored noticeably higher. Additionally, the study found that smoking and problematic cell phone use were positively correlated. Additionally, students with much higher PU ratings were those who primarily utilized their phones for mobile games and social media. Additionally, the researchers discovered that students who lived in rural regions for the majority of their life had 2.09 times more problematic cell phone use than students who lived in urban areas. Additionally, the study found a little positive correlation between PU scores and Liebowitz Social Anxiety Scale (LSAS) scores, indicating a connection between social anxiety and problematic cell phone use. However, there was no discernible link between problematic cell phone use and Eating Attitudes Test (EAT) scores.

2.3 Conclusion

In conclusion, this chapter emphasizes how important it is to choose and carefully examine pertinent reading materials, including books and journals, in order to fortify the study's framework and put its conclusions in context. The researcher develops a comprehensive grasp of the subject by combining a variety of academic viewpoints. The literature study shed light on a number of smartphone dependency-related topics, including as its correlations with social interactions, demography, and possible negative effects like problematic usage. The examined research show that although the effects of smartphone use vary among populations, general patterns like age and social media use have a big impact on dependency levels. Furthermore, the connection between social anxiety and smartphone dependency highlights the complexity of how digital habits impact mental health, with research pointing to the critical roles played by social interactions and maladaptive emotion regulation. This thorough analysis finds gaps and new directions for research in addition to placing the current study into the larger academic conversation. Gaining an understanding of these dynamics is crucial to creating focused interventions and improving our comprehension of how technology affects social behaviours and mental health.

CHAPTER 3

RESEARCH METODOLOGY

3.0 Introduction

In this chapter, it provides an overview of the research methodology that was followed in this study. It provides details about the study's participants, including the criteria for participation, and the methods used to sample them. Also, it explains the selection of the research design and the rationale behind it for the goals of the study. The methods that will be followed in conducting this study are presented, as well as a description of the instruments that will be utilized for data collection. Moreover, it also discussed the procedures that will be followed to examine the collected information.

3.1 Research Design

A quantitative technique was used to examine the relationship between social interaction anxiety and smartphone dependency among UNIMAS and UITM students in order to meet the study's goals. This study used a quantitative approach to extrapolate the results to a broader sample, in this case UNIMAS and UITM students.

The primary data for this research will be collected by using a questionnaire that is distributed through Google Forms, shared online and through WhatsApp. The questionnaire consists of 38 questions to capture the demographic information and specific variables that are pertinent to the hypothesis. The primary data for this research will be collected by using a questionnaire that is distributed through Google Forms, shared online and through WhatsApp. The questionnaire consists of 59 questions to capture the demographic information and specific variables that are pertinent to the hypothesis.

Ethical considerations are paramount in this research. Firstly, informed consent will be obtained from all participants, ensuring that they are fully aware of the study's

purpose, involvement and their right to withdraw from the study at any time. Next, to protect participants' privacy, confidentiality will be strictly maintained with all personal data anonymized and securely stored.

SPSS version 26 software will be used to analyse quantitative data. To give an overview of the sample characteristics, descriptive statistics will summarize important demographic variables including gender, race, and years of study. To test the hypothesis and investigate links between the two variables, inferential statistics such as correlation will be employed. This will provide deeper insights into the data.

The study will follow a structured timeline, with specific phases for designing the questionnaire, data collection, and analysis. Each phase will be allocated sufficient time to ensure thoroughness and accuracy, although the overall time frame for data collection may be limited, potentially impacting the depth of the data gathered.

The study will adhere to a planned schedule, with distinct stages for developing the questionnaire, gathering data, and doing analysis. Although there will be enough time allocated to each phase to guarantee accuracy and completeness, there may be a limit on the total amount of time available for data collection, which could affect the quality of the information acquired.

The approach and scope of the investigation may impose certain limitations. There can be restrictions on the sample size and response diversity because of the brief time frame for data collecting. Additionally, biases like social desirability bias may be introduced when self-reported data is obtained through questionnaires. Notwithstanding these shortcomings, the study acknowledges the potential limitations of the results and makes an effort to provide meaningful insights.

3.2 Population

The population for this study consists of undergraduate students enrolled at Universiti Malaysia Sarawak (UNIMAS) and Universiti Teknologi MARA (UiTM) during the academic year. These students, who are usually in the 18–25 age range, were chosen because they are a group that uses smartphones extensively and may be at risk for social anxiety. In order to provide thorough insights into the connection between smartphone dependency and social anxiety among Malaysian university students, the study intends to include a varied sample that spans genders, ethnicities, and academic disciplines.

3.3 Sample

To guarantee equitable representation, a total of 150 participants will be gathered and split equally between the two universities. Participants must be full-time undergraduate students between the ages of 18 and 25 who frequently possess and use smartphones in order to meet the inclusion requirements. In order to reflect the demographic makeup of both schools, efforts will be made to guarantee diversity in terms of gender, ethnicity, and field of study. It is established that the sample size offers adequate statistical power to examine the connection between social anxiety and smartphone dependency.

3.4 Sampling Procedure

The sample size was determined using the Krejcie-Morgan approach. Krejcie and Morgan's approach includes a table and a formula that ease the process of estimating the optimum sample size for a particular population.

3.5 Instrumentation

3.5.1 Mobile Phone Problematic Use Scale-10 (MPPUS-10)

For this study, the instrumentation used to examine smartphone dependency was the Mobile Phone Problematic Use Scale-10 (MPPUS-10). The MPPUS-10 is a validated and widely used self-report questionnaire designed to measure the level of problematic smartphone use. It captures aspects including excessive use, emotional attachment, and interference with everyday activities through ten items rated on a Likert scale from 1 (not at all true) to 5 (extremely true). Higher scores indicate higher degrees of smartphone dependency. The overall score is calculated by adding the answers for each item. This measure was chosen because it is simple and reliable, making it appropriate for evaluating students' smartphone dependency.

3.5.2 Social Interaction Anxiety Scale (SIAS)

Social Interaction Anxiety was used to gauge the social interaction anxiety of UNIMAS and UITM students in the study "The Relationship between Smartphone Dependency and Social Interaction Anxiety among UNIMAS and UITM Students." Heimberg et al. (1992) developed the self-report Social Interaction Anxiety Scale (SIAS). Each of the SIAS's twenty items focuses on a distinct aspect of social interaction anxiety. Each item is rated by the participants using a 5-point Likert scale: 0 means that I am not at all characteristic or true of myself, 1 means that I am somewhat characteristic or true of myself, 2 means that I am moderately characteristic or true of myself, 3 means that I am very typical or true of myself, and 4 means that I am extremely characteristic or true of myself.

3.6 Pilot Study

The purpose of the pilot test is to assess the validity, clarity, and reliability of the study tools used to measure social anxiety and smartphone dependency. In order to guarantee a seamless implementation during the full-scale study, it also aims to pinpoint

possible problems with the survey design, calculate the time needed to complete it, and improve the data collection procedure. According to Gani et al. (2020), assessing the instruments' validity and reliability, making sure the instructions and questions are understandable to participate, figuring out whether the data collection procedure is feasible, and getting input to make the questionnaire better before the main study are the goals of the pilot test.

3.7 Data Collection Procedures

3.7.1 Simple Random Sampling

Simple random sampling will be used to select participants from the student populations of UNIMAS and UiTM. This method ensures that every student has an equal chance of participating. In both campuses, the researcher will haphazardly approach students in public spaces like study halls, cafeterias, and libraries. The researcher also will send the Google Form through WhatsApp or any social media tools. In order to maintain the process' objectivity and inclusivity, students will be asked to participate willingly. This method of random selection preserves the sampling's randomness while doing away with the requirement for preset lists or instruments.

3.7.2 Questionnaire

In order to encourage students to participate in the questionnaire, the researcher will randomly approach them in public areas. The questionnaire will also be distributed online via platforms such as Google Forms to ensure convenience for participants. A QR code linked to the form will also be made available at strategic locations.

3.8 Research Ethics

Researchers must adhere to a set of rules established by the American Psychological Association (APA) while conducting their study. To determine professional behaviour, researchers will refer to the American Psychological Association's code of ethics (Chenneville & Gabbidon, 2020). This is to protect the responders from any harm or violations. Respondents can be protected in situations where harm can be avoided by following the APA rules. The respondents in this study are university students.

3.8.1 Informed Consent

Informed consent is a fundamental aspect of this study to ensure that all participants are fully aware of their involvement (Bazzano et al., 2021). Through a Google Form, participants will receive a thorough and comprehensive explanation of the study's goals, methods, time frame, and their part in the investigation. Participants will be asked to electronically affirm their agreement in order to get written consent. This procedure guarantees that participants are aware of their freedom to leave the study at any moment without facing any repercussions.

3.8.2 Confidentiality And Anonymity

Anonymity and confidentiality are essential to this study in order to protect each participant's privacy and security. No identities, including names or student IDs, will be gathered or retained, and all participant data will be handled with the utmost confidentiality. Data will be anonymised throughout the analysis and reporting stages to further protect privacy, making it impossible to link individual responses to particular participants. Without disclosing any specific responses, the study's findings will be presented in aggregate form, emphasizing general trends and patterns.

3.9 Data Analysis Procedures

SPSS software will be used to analyze the data. A summary of demographic information and important factors will be provided by descriptive statistics, such as mean, standard deviation and frequency. Cronbach's Alpha will be used to assess the instruments' reliability. A coefficient of 0.7 or greater is the target. To ascertain the direction and degree of the association between social anxiety and smartphone dependency, a Pearson correlation analysis will be performed. The predicted association between social anxiety levels and smartphone dependent aspects can also be investigated using multiple regression analysis.

3.10 Study Framework

This quantitative study examines the connection between social anxiety and smartphone dependence in students at UNIMAS and UiTM. Structured questionnaires intended to gauge social anxiety and smartphone dependency will be used to gather data. In order to find trends and correlations that fulfil the goals of the study, the replies will be statistically examined. To evaluate the data and ascertain the degree and importance of the link between the two variables, descriptive and inferential statistical techniques will be used. To make sure the study meets its goals and stays relevant, further data may be gathered if preliminary analyses show discrepancies or gaps. The study framework offers an organized method for methodically looking at this link, as shown in Figure 3.1.

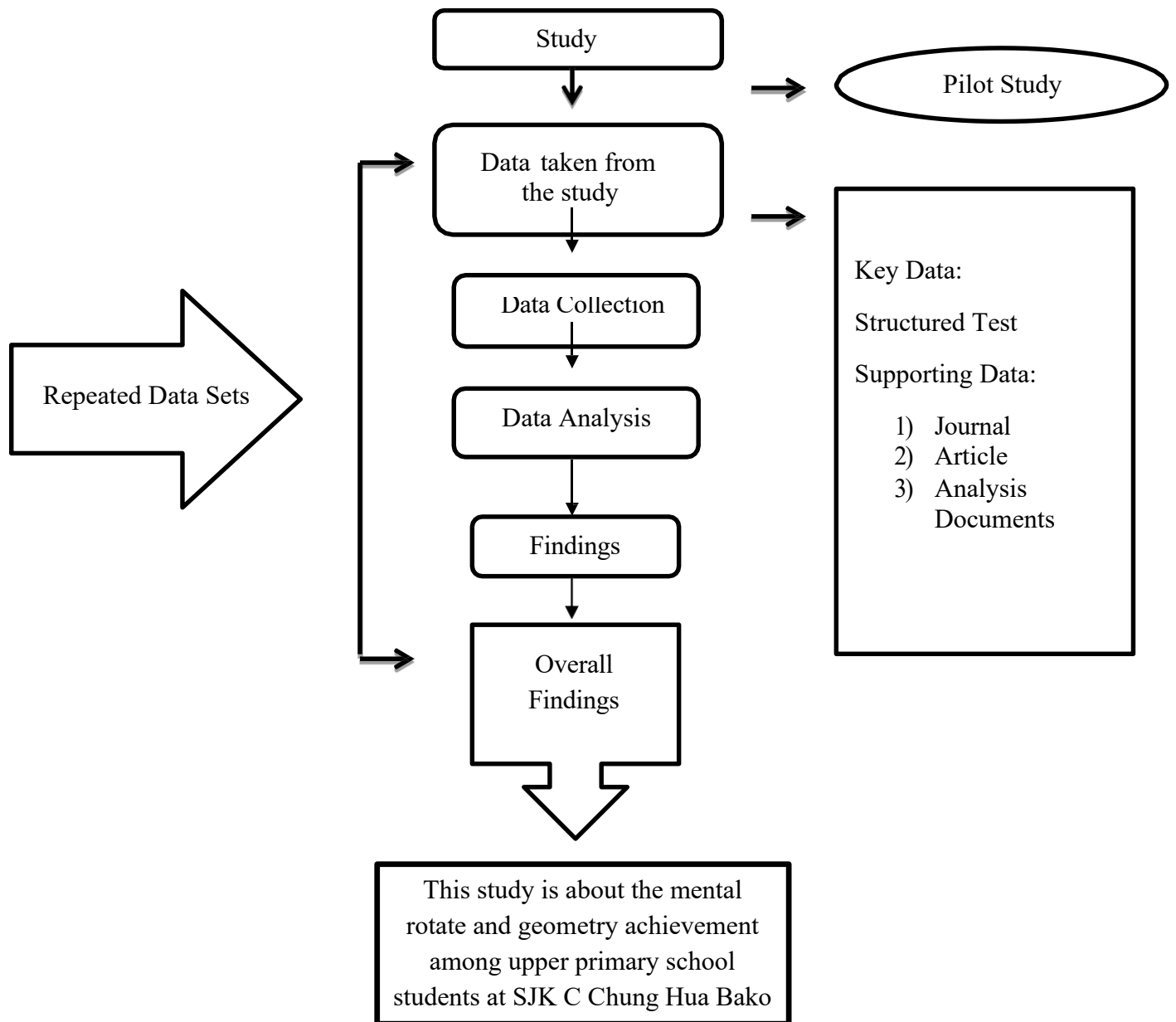


Figure 3.1: Study Framework

3.11 Conclusion

In conclusion, this chapter 3 explains the methodology used by the researcher, which includes the study design, population, sample and sampling procedures, pilot study, data collection procedures, data analysis procedures, conceptual framework and instruments in the study.

CHAPTER 4

RESEARCH FINDINGS AND DATA ANALYSIS

4.0 Introduction

In this chapter, the researcher will discuss the demographic of the participants and analyze data obtained from Google Form conducted with participants, which followed standard operating procedures.

4.1 Pilot Study

60 participants from the UNIMAS and UITM participated in the pilot study to evaluate the validity of the Social Interaction Anxiety Scale (SIAS) and Mobile Phone Problematic Use Scale-10 (MPPUS-10) questionnaires. Using SPSS, Cronbach's Alpha is utilized to assess the questionnaire items' reliability.

Table 1.1. Mobile Phone Problematic Use Scale-10 (MPPUS-10)

Reliability Statistics	
Cronbach's Alpha	N of Items
.924	10

With a Cronbach's Alpha of 0.924, MPPUS-10 surpasses the 0.7 requirement. The questionnaire is perfect for references because it has a high level of internal consistency. As a result, the MPPUS-10 questionnaire is trustworthy and appropriate for usage.

Table 1.2. Cronbach's Alpha for Social Interaction Anxiety Scale (SIAS)

Reliability Statistics	
Cronbach's Alpha	N of Items
.931	20

With a Cronbach's Alpha of 0.931, SIAS surpasses the 0.7 requirement. The questionnaire is perfect for references because of its extremely high internal consistency. As a result, a SIAS questionnaire is trustworthy and appropriate for use.

4.2 Demographic

Table 2.1 Frequency and Percentage of Respondents According to University, Year, Age, Gender, Race and Religion (n=300)

Responden's Demographic

		Frequency	Percentage
University	Unimas	150	50%
	UITM	150	50%
Year	Year 1	33	11%
	Year 2	43	14.3%
	Year 3	119	39.7%
	Year 4	105	35%
	Year 5	0	0%
Age	20	84	28%
	21	33	11%
	22	36	12%
	23	89	29.7%
	24	58	19.3%
Gender	Male	173	57.7%
	Female	127	42.3%
Race	Malay	97	32.3%
	Iban	56	18.7%
	Chinese	82	27.3%
	Indian	21	7%
	Bidayuh	44	14.7%
Religion	Islam	97	32.3%
	Buddha	53	17.7%
	Christian	74	24.7%
	Hindu	21	7%
	Catholic	55	18.3%
	Other	0	0%

The data table above displays six demographic categories: university, year, age, gender, race and religion. A total of 300 students have responded to the questions, according to the table that is presented. The data is further categorized into frequency and percentage.

The data for the student's gender is categorized into two distinct categories: male and female. 173 male students, or 57.7% of the 300 students that completed the questionnaire, and 127 female students, or 42.3% of the total respondents, are shown in the numbers above.

A variable distribution between university categories is also revealed by the statistics. The data for this category also categorized into two: Unimas and UITM. In order to obtain more accurate experimental results, the same number of students were interviewed

from both universities, that is 150 students from each university.

The distribution of students by academic year reveals a significant concentration in Year 3, with 119 students making up 39.7% of all respondents. After that, Year 1 has 33 students (11%), Year 2 has 43 students (14.3%), and Year 4 has 105 students (35%). According to the data, there are more students in their third year of study, which could be a reflection of cohort sizes or academic program progression rates.

The data shows that pupils who were surveyed had a diverse distribution of ages. The vast majority are between the ages of 20 and 23. In particular, the largest cohort consists of students who are 23 years of age or older (89 students, or 29.7% of the total responses). Next in line are 84 students who are 20 years old (28%) and 33 students who are 21 years old (11%). With a sizable percentage in their early twenties, the distribution across these age groups points to a normal age range for program participants.

Analysis of the racial composition among surveyed students indicates a predominant Malay representation, comprising 97 students or 32.3% of the total respondents. Chinese students come in second with 82 (27.3%), while other ethnic groups including Indians (21 students, 7%), Ibans (56 students, 18.7%), Bidayuh (44 students, 14.7%). With Malay students making up the largest single group, the distribution highlights the ethnic variety within the student community.

Finally, the analysis of religious affiliation shows that Islam is the predominant faith among the surveyed students, with 32.3% identifying as Muslims. With 24.7% of the student body, Christians make up the second-largest group, followed by Catholic with 18.3%. Buddha and Hindus make up 17.7% and 7% of the population, respectively. The multicultural and multireligious atmosphere within the student body is highlighted by this religious diversity.

In conclusion, the examination of university, academic year, age, race, and religion offers a thorough picture of the students' demographic makeup. The information provides useful insights for educational planning and policy creation by highlighting trends in academic performance, age distribution, academic year progression, and ethnic diversity among the student body.

4.3 Overall Mean and Standard Deviation

Table 3.1. Descriptive Statistic of Mobile Phone Problematic Use Scale-10 (MPPUS-10)

Descriptive Statistics

	N	Mean	Std. Deviation
Overallmean_MPPUS-10	300	3.8373	.82589
Valid N (listwise)	300		

According to Table 3.1, the descriptive statistics table indicates that the average score for the Mobile Phone Problematic Use Scale-10 (MPPUS-10) is 3.837. The standard deviation for responses to the MPPUS-10 is 0.826.

Table 3.2. Descriptive Statistics of Social Interaction Anxiety Scale (SIAS)

Descriptive Statistics

	N	Mean	Std. Deviation
Overallmean_SIAS	300	2.1490	.74391
Valid N (listwise)	300		

According to Table 3.2, the descriptive statistics table indicates that the average score for the Social Interaction Anxiety Scale (SIAS) is 2.149. The standard deviation for responses to the SIAS is 0.744.

Test of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overallmean_MPPUS-10	.062	300	.200	.987	300	.319
Overallmean_SIAS	.056	300	.200	.993	300	.987

To assess the dataset and ascertain its distribution, a normality test was conducted. Kolmogorov-Smirnov analysis indicated that the Social Interaction Anxiety Scale (SIAS) and the Mobile Phone Problematic Use Scale-10 (MPPUS-10) questionnaires are

normally distributed because their p-values are identical ($p=0.200$).

Table 3.3. Social Interactive Anxiety V.S. Smartphone Dependency

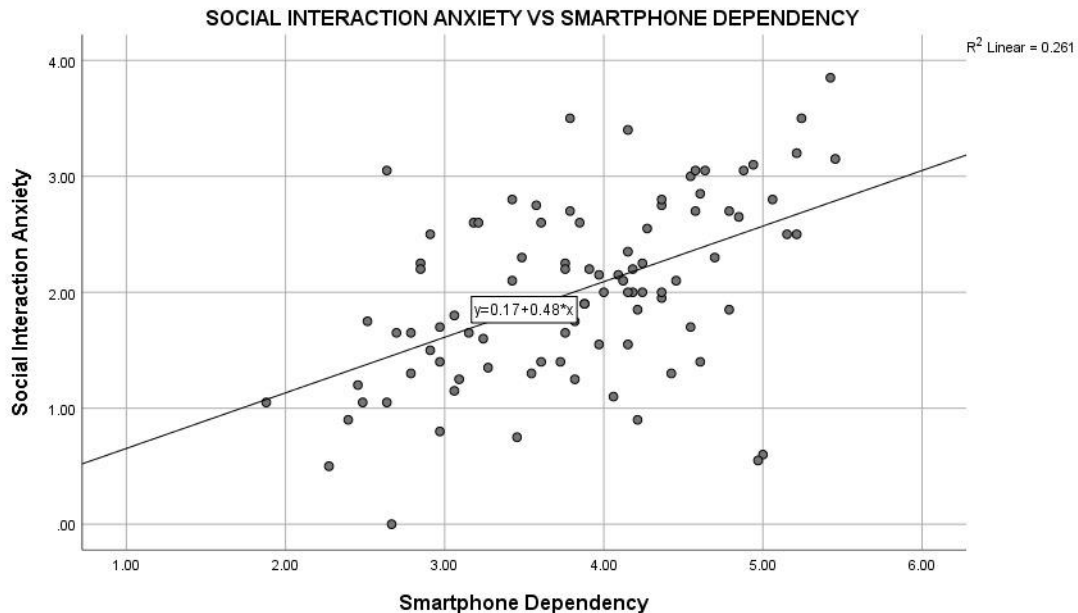


Table 3.4 Correlations of Mobile Phone Problematic Use Scale-10 (MPPUS-10) and Social Interaction Anxiety Scale (SIAS)

Correlations

		Overallmean_MPPUS-10	Overallmean SIAS
Overallmean_MPPUS-10	Pearson Correlation	1	.522
	Sig (2-tailed)		<.001
	N	300	300
Overallmean SIAS	Pearson Correlation	.522	1
	Sig (2-tailed)	<.001	
	N	300	300

A Pearson product-moment correlation was computed to assess linear relationship between smartphone dependency and social interaction anxiety among UNIMAS and UITM students. Students' social interaction anxiety and smartphone dependency had a statistically significant moderately positive connection ($r=0.522$, $n=300$, $p<0.001$). We have sufficient evidence to reject the null hypothesis since $p<0.05$. As result, among

UNIMAS and UITM students, smartphone dependence and social anxiety are significantly correlated. In conclusion, among UNIMAS and UITM students, there was a correlation between the rise in social interaction anxiety and in smartphone dependency.

4.4 T-Test

	University	N	Mean	Std. Deviation	Std. Error
Smartphone					Mead
Dependency	UNIMAS	150	3.4675	2.64655	47828
	UITM	150	2.8756	2.47723	35289

	University	N	Mean	Std. Deviation	Std. Error
Social					Mead
Anxiety	UNIMAS	150	3.2347	2.90938	72168
	UITM	150	3.0616	2.70958	69797

Based on the independent sample t-test results, students from UNIMAS reported higher levels of smartphone dependency ($M = 3.4675$, $SD = 2.64655$) compared to students from UiTM ($M = 2.8756$, $SD = 2.47723$). Similarly, UNIMAS students also showed slightly higher levels of social anxiety ($M = 3.2347$, $SD = 2.90938$) than UiTM students ($M = 3.0616$, $SD = 2.70958$). These findings suggest that UNIMAS students tend to experience greater smartphone dependency and social anxiety compared to their UiTM counterparts. The data may indicate a potential relationship where higher smartphone dependency is associated with higher social anxiety levels among university students.

CHAPTER 5

DISCUSSION, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSIONS

5.0 Introduction

The researcher will go over the study's results in this chapter. Based on the study's results, the information can be summed up and backed up by findings from other studies.

5.1 Discussion

The researcher will discuss three selected themes, namely The Impact of Smartphone Dependency on Students' Social Anxiety Levels, Institutional Differences, and Implications for Mental Health Support and University Counseling Services.

5.1.1 The Impact of Smartphone Dependency on Students' Social Anxiety Levels

The current conversation looks at the relationship between students' levels of social anxiety and their varied smartphone dependency. Higher degrees of smartphone dependency appear to be positively correlated with more feelings of social anxiety, according to the findings. High smartphone users frequently express anxiety, uneasiness, and fear in social settings, suggesting that their dependence on digital communication may be connected to a diminished level of confidence in in-person encounters (Wei et al., 2023). This trend reflects a rising worry that smartphones may impede the development of critical interpersonal skills even while they provide convenience and connectivity. Students may start to feel less at ease navigating real-life discussions that call for spontaneity, emotional expression, and non-verbal cues as they get increasingly used to talking via text messages, social media, or other digital platforms. This may eventually result in a decreased capacity to establish or sustain social connections in real-world situations. Constant smartphone use may also lessen the quantity and calibre of in-person encounters. For example, instead of taking part in group projects or in-person interactions, students can choose to spend their leisure time playing video games or browsing social media (Jan & Li, 2024). This preference for virtual interaction might strengthen the idea that face-to-face encounters are less rewarding or more daunting, as well as cause a sense

of alienation from peers. Students may become less assured of their social skills as a result, which would make them even more anxious in social situations.

Notably, students who rely more on their smartphones are more likely to shy away from face-to-face interaction in favour of the security and control that come with virtual communication. Those who are anxious in social situations in real life may find solace in the anonymity and distance that the digital world provides (Gordon, 2022). Students can take their time crafting responses, revising their words, and presenting a filtered version of themselves through social media and messaging apps, which helps alleviate the immediate pressure and unpredictability that are frequently connected with face-to-face communication. Real-world discussions, which need for instant feedback, emotional openness, and the capacity to understand non-verbal clues, are very different from this controlled connection and can be daunting for people with social anxiety. Students who rely too much on their smartphones may consequently start to completely shun face-to-face communication. This avoidance frequently stems from a deeper fear of being questioned, rejected, or misinterpreted rather than just being a convenience. Students may become extremely anxious in social situations like public speaking, teamwork, or simply informal discussions, which makes them withdraw into the comfort of their electronics (Verduyn et al., 2021). In severe situations, this behaviour shows itself as social disengagement, in which people avoid social gatherings, detach from their peers, and only communicate online. Although this could offer short-term respite, in the long run, it exacerbates feelings of inadequacy and loneliness, making them more reliant on virtual connection as a coping mechanism.

5.1.2 Institutional Differences

The findings showed a strong positive correlation between social anxiety and smartphone dependency, which is in line with earlier research. Social anxiety was higher among students who reported using smartphones more frequently. The idea that excessive smartphone use might lead to avoidant social behaviours, elevated self-consciousness, and heightened fear of social judgment all of which are important markers of social anxiety is supported by this.

While the study found a consistent positive relationship between smartphone dependency and social anxiety among students from both UNIMAS and UiTM, some noteworthy differences were observed in the degree of these experiences. While the study found a consistent positive relationship between smartphone dependency and social anxiety among students from both UNIMAS and UiTM, some noteworthy differences were observed in the degree of these experiences. One possible factor contributing to this difference is the institutional culture and academic environment. Students at UNIMAS could encounter various academic demands, instructional philosophies, or evaluation techniques that promote more solitary study and less group engagement. This might result in more people using smartphones for entertainment, academic communication, or stress relief, which over time may lead to dependency. Spending more time on cell phones might also cause people to avoid social situations in person, which can exacerbate social anxiety symptoms (Yasan-Ak & Yildirim, 2024).

Furthermore, the university's social engagement culture might be involved. Students at UiTM may benefit from greater social support if they participate in campus events, organizations, or peer programs that encourage face-to-face interaction more regularly. This will lessen the possibility that they will become overly dependent on cell phones and acquire social anxiety. However, UNIMAS students may be more inclined to use digital platforms to satisfy their social requirements if they feel more alone in their social or academic routines.

Another possibility lies in personality and behavioural norms that differ between student bodies. Students at UNIMAS, for instance, might have greater inclinations toward emotional sensitivity or introversion, which could make them more susceptible to social anxiety, particularly when using smartphones takes the place of in-person interactions. This pattern of behaviour can lead to a vicious cycle in which students become more and more reliant on digital communication, avoid in-person interactions, and consequently become more anxious in social situations (Hong et al., 2021).

In conclusion, the higher levels seen among UNIMAS students point to the necessity for university-specific measures, even though both institutions mirror the larger trend of smartphone dependency causing social anxiety. These could include enhancing peer

interaction opportunities, promoting healthy digital habits, and improving emotional support services to reduce the psychological burden on students.

5.1.3 Psychological and Behavioral Impacts

Smartphone overuse has been increasingly linked to various psychological and behavioural consequences among university students. One significant impact is on attention span. Students who are heavily dependent on smartphones may find it difficult to concentrate for extended periods, particularly during academic activities such as studying or attending lectures. The frequent checking of notifications, switching between apps, or multitasking can fragment focus and reduce cognitive efficiency (Siyami et al., 2023). Over time, this can lead to reduced academic performance and increased mental fatigue.

In terms of emotional well-being, students with high smartphone dependency often experience fluctuations in mood. They may become irritable or restless when they are unable to use their phones, a condition known as nomophobia (the fear of being without a mobile phone) (Notara et al., 2021). Additionally, social media platforms may contribute to feelings of inadequacy or low self-esteem, as students constantly compare their lives to the curated images and achievements of others. This comparison, when combined with academic pressure and social expectations, can increase emotional distress and heighten symptoms of anxiety or depression.

Social anxiety also significantly influences students' behaviour in digital environments. Students who struggle with face-to-face interactions may find comfort in communicating through messaging apps or social media, where they feel more in control of their image and responses. They often spend more time crafting their messages, worrying about how they will be perceived, or avoiding social media posts due to fear of judgment. On the other hand, some may become excessively reliant on online interactions to feel socially connected, leading to increased time spent online and a stronger dependency on digital platforms for social validation.

In conclusion, the psychological and behavioural impacts of smartphone dependency are multidimensional, affecting students' focus, emotional well-being, sleep, and daily

functioning. While smartphones can offer a sense of connection and escape, their overuse especially among socially anxious students may contribute to a worsening of mental health conditions. Recognizing these patterns is essential in promoting healthier digital habits and designing interventions that support students' emotional resilience and academic success.

5.2 Implications for Mental Health Support and University Counselling Services

The findings of this study highlight a significant relationship between smartphone dependency and social anxiety among students from UNIMAS and UiTM. These results have important implications for the development of targeted mental health support services within university settings. Firstly, the growing reliance on smartphones as a coping mechanism or social substitute suggests the need for counselling services to incorporate digital behaviour assessments in their intake evaluations (Banerjee, 2022). Understanding students' patterns of smartphone use can help identify those at risk of developing or exacerbating social anxiety symptoms. It is possible to identify students who are at risk of acquiring or worsening social anxiety symptoms by analysing their smartphone usage patterns.

Moreover, mental health initiatives should prioritize psychoeducation campaigns that raise awareness about the psychological effects of excessive smartphone use, particularly its potential to contribute to social withdrawal and anxiety in real-life interactions (Tanşu & Ünsal, 2023). In order to lessen reliance on internet communication for social validation, group therapy or peer support programs might be created to promote in-person social skills.

Counsellors and student affairs departments are also encouraged to collaborate with academic staff to implement workshops and intervention modules focused on digital well-being, time management, and healthy social habits. Customized assistance plans that incorporate digital detoxification methods and cognitive-behavioural techniques may be especially helpful for students exhibiting symptoms of smartphone addiction (Ansari et al., 2024).

In the end, this study emphasizes the value of a proactive, preventative strategy in addressing how technology use and students' mental health are connected. By including

digital wellness, emotional resilience, and mental health literacy into their larger framework for student development, universities such as UNIMAS and UiTM may play a crucial role.

5.3 Recommendation

5.3.1 Students

Students must understand the possible psychological effects of excessive smartphone use. More students need to participate in awareness-raising events or seminars that could teach them how to see the warning signs of smartphone addiction and how it may be related to social anxiety. Students are urged to put digital well-being techniques like screen time limitations, offline social interactions, and getting professional assistance when worry overwhelms them into practice (Roffarello & De Russis, 2023).

5.3.2 Universities

Universities should consider integrating digital literacy and mental health education into student development programs (Kurki et al., 2021). Creating targeted interventions that address smartphone misuse and its psychological impacts may also be beneficial for counselling units. Additionally, encouraging peer support groups and making mental health resources more easily accessible could aid in lowering students' levels of social anxiety.

5.3.3 Future Researchers

This study offers a fundamental understanding of the connection between social anxiety and smartphone dependency. Future studies could investigate causality in this relationship by employing longitudinal approaches (Audulv et al., 2022). In order to better understand students' experiences and coping strategies, it is also advised that future research employ a more varied sample, take into account moderating factors like gender, personality traits, or academic achievement, and employ a combination of methodologies. Future research could benefit from qualitative or mixed-methodologies designs, even though this study used quantitative methods. In-depth information about students' individual experiences, the reasons for their smartphone use, and the ways in which technology impacts their social and emotional wellbeing may be obtained through focus groups, interviews, or open-ended surveys. This would assist in capturing subtleties that may be missed by quantitative data (Mgejwa, 2024).

5.4 Conclusion

This study explored the relationship between smartphone dependency and social anxiety among university students at UNIMAS and UiTM. The findings revealed a significant positive correlation between high levels of smartphone dependency and increased levels of social anxiety. This suggests that students who rely excessively on smartphones may be more likely to experience difficulties in face-to-face social interactions, emotional discomfort in social situations, and a tendency to withdraw from social engagement.

Although this study provides important insights, it also has limitations, including its cross-sectional design, limited sample scope, and reliance on self-reported data. Nevertheless, the results emphasize the need for increased awareness, support systems, and targeted interventions within universities to help students develop healthier relationships with technology and manage social anxiety effectively.

In conclusion, understanding the link between smartphone dependency and social anxiety is crucial in fostering better mental well-being among university students. In conclusion, understanding the link between smartphone dependency and social anxiety is crucial in fostering better mental well-being among university students.

Referencens

American Psychological Association. (2010). APA (2010). *Ethical principles of psychologists and code of conduct*.

Alaiti, R. K., Castro, J., Lee, H., Caneiro, J. P., Vlaeyen, J. W., Kamper, S. J., & Da Costa, M. F. (2022). What Are the Mechanisms of Action of Cognitive–Behavioral, Mind–Body, and Exercise-based Interventions for Pain and Disability in People With Chronic Primary Musculoskeletal Pain?: A Systematic Review of Mediation Studies From Randomized Controlled Trials. *The Clinical Journal of Pain*, 38(7), 502-509. <https://doi.org/10.1097/AJP.0000000000001047>

Annoni, A. M., Petrocchi, S., Camerini, A. L., & Marciano, L. (2021). The relationship between social anxiety, smartphone use, dispositional trust, and problematic smartphone use: A moderated mediation model. *International journal of environmental research and public health*, 18(5), 2452. <https://doi.org/10.3390/ijerph18052452>

Ansari, S., Iqbal, N., Azeem, A., & Danyal, K. (2024). Improving Well-Being Through Digital Detoxification Among Social Media Users: A Systematic Review and Meta-Analysis. *Cyberpsychology, Behavior, and Social Networking*, 27(11), 753-770. <https://doi.org/10.1089/cyber.2023.0742>

Audulv, Å., Hall, E. O., Kneck, Å., Westergren, T., Fegran, L., Pedersen, M. K., ... & Ludvigsen, M. S. (2022). Qualitative longitudinal research in health research: a method study. *BMC Medical Research Methodology*, 22(1), 255. <https://doi.org/10.1186/s12874-022-01732-4>

Banerjee, M. (2022). The digital divide and smartphone reliance for disadvantaged students in higher education. *Journal of Systemics, Cybernetics and Informatics*, 20(3), 31-39. <https://doi.org/10.54808/JSCI.20.03.31>

Bazzano, L. A., Durant, J., & Brantley, P. R. (2021). A modern history of informed consent and the role of key information. *Ochsner Journal*, 21(1), 81-85. <https://doi.org/10.31486/toj.19.0105>

Bukhari, S., Hamid, S., Ravana, S. D., Kurnia, S., Chang, S., Norman, A. A., & Abdul Ghani, N. (2020). The use of facebook by international students for information-seeking in Malaysia: a social network analysis. *Libri*, 70(3), 251-268. <https://doi.org/10.1515/libri-2019-0033>

Celikkalp, U., Bilgic, S., Temel, M., & Varol, G. (2020). The smartphone addiction levels and the association with communication skills in nursing and medical school students. *Journal of Nursing Research*, 28(3), 93. <http://doi.org/10.1097/jnr.0000000000000370>

Chan, S. J., Yeo, K. J., & Handayani, L. (2023). Types of smartphone usage and problematic smartphone use among adolescents: A review of literature. *International Journal of Evaluation and Research in Education*, 12(2), 563-570. <http://doi.org/10.11591/ijere.v12i2.22909>

Chenneville, T., & Gabbidon, K. (2020). Application of the APA ethics code for

psychologists working in integrated care settings: Potential conflicts and resolutions. *Ethics & Behavior*, 30(4), 264-274.
<https://doi.org/10.1080/10508422.2019.1683739>

Chiu, K., Clark, D. M., & Leigh, E. (2021). Prospective associations between peer functioning and social anxiety in adolescents: A systematic review and meta-analysis. *Journal of affective disorders*, 279, 650-661.
<https://doi.org/10.1016/j.jad.2020.10.055>

Csibi, S., Griffiths, M. D., Demetrovics, Z., & Szabo, A. (2021). Analysis of problematic smartphone use across different age groups within the ‘components model of addiction’. *International Journal of Mental Health and Addiction*, 19, 616-631.
<https://doi.org/10.1007/s11469-019-00095-0>

D'souza, J. B., & Sharma, S. (2020). Smartphone addiction in relation to academic performance of students in Thailand. *Journal of Community Development Research (Humanities and Social Sciences)*, 13(2), 31-41. <https://doi.org/10.14456/jcdr-hs.2020.13>

Duggineni, S. (2023). Impact of controls on data integrity and information systems. *Science and Technology*, 13(2), 29-35. <http://doi.org/10.5923/j.scit.20231302.04>

Figueiredo, D. V., Vagos, P., Ganho-Ávila, A., do Céu Salvador, M., Nobre-Lima, L., & Rijo, D. (2023). WHAT EXPLAINS SOCIAL ANXIETY IN ADOLESCENTS WITH SOCIAL ANXIETY DISORDER AND HEALTHY CONTROLS? THE

APPLICABILITY OF THE CLARK AND WELLS' MODEL. *Journal of Evidence-Based Psychotherapies*, 23, 15-35. <https://jebp.psychotherapy.ro/wp-content/uploads/2023/04/03-1.pdf>

Fook, C. Y., Narasuman, S., Abdul Aziz, N., & Tau Han, C. (2021). Smartphone usage among university students. *Asian Journal of University Education (AJUE)*, 7(1), 282-291. <https://ir.uitm.edu.my/id/eprint/53696/>

Fryman, S., & Romine, W. (2021). Measuring smartphone dependency and exploration of consequences and comorbidities. *Computers in Human Behavior Reports*, 4, 100-108. <https://doi.org/10.1016/j.chbr.2021.100108>

Gani, A., Imtiaz, N., Rathakrishnan, M., & Krishnasamy, H. N. (2020). A pilot test for establishing validity and reliability of qualitative interview in the blended learning English proficiency course. *Journal of critical reviews*, 7(05), 140-143. <http://dx.doi.org/10.31838/jcr.07.05.23>

Gentina, E., & Rowe, F. (2020). Effects of materialism on problematic smartphone dependency among adolescents: The role of gender and gratifications. *International Journal of Information Management*, 54, 102-134. <https://doi.org/10.1016/j.ijinfomgt.2020.102134>

Gokce, A., & Ozer, A. (2021). The relationship between problematic cell phone use, eating disorders and social anxiety among university students. *Pakistan journal of medical*

sciences, 37(4), 1201. <https://doi.org/10.12669/pjms.37.4.4124>

Gordon, M. (2022). Solitude and privacy: How technology is destroying our aloneness and why it matters. *Technology in Society*, 68, 101-158. <https://doi.org/10.1016/j.techsoc.2021.101858>

Gritti, E. S., Bornstein, R. F., & Barbot, B. (2023). The smartphone as a “significant other”: interpersonal dependency and attachment in maladaptive smartphone and social networks use. *BMC psychology*, 11(1), 296. <https://doi.org/10.1186/s40359-023-01339-4>

Haugan, T. (2023). Social anxiety in modern societies from an evolutionary perspective. *Discover Psychology*, 3(1), 12. <https://doi.org/10.1007/s44202-023-00074-6>

Hong, F. Y., Lin, C. C., Lin, T. J., & Huang, D. H. (2021). The relationship among the social norms of college students, and their interpersonal relationships, smartphone use, and smartphone addiction. *Behaviour & Information Technology*, 40(4), 415-426. <https://doi.org/10.1080/0144929X.2019.1699959>

Hwa, S. P., & Peck, W. K. (2020). Exploring the Smartphone Usage among Malaysian Youth: A Theoretical Framework. *International Journal of Advanced Research in Education and Society*, 2(2), 142-155. <https://myjms.mohe.gov.my/index.php/ijares/article/view/10185>

Ifenthaler, D., Cooper, M., Daniela, L., & Sahin, M. (2023). Social anxiety in digital learning

environments: an international perspective and call to action. *International Journal of Educational Technology in Higher Education*, 20(1), 50. <https://doi.org/10.1186/s41239-023-00419-0>

Jan, A., & Li, E. Y. (2024). What you see isn't what it is: Understanding the impact of smartphones on interpersonal connections. . *ICEB 2024 Proceedings*, 16, 832-845. <https://aisel.aisnet.org/iceb2024/16/>

Kaźmierczak, I., Zajenkowska, A., Rogoza, R., Jonason, P. K., & Ścigala, D. (2023). Self-selection biases in psychological studies: Personality and affective disorders are prevalent among participants. *Plos one*, 18(3), 246-281. <https://doi.org/10.1371/journal.pone.0281046>

Khalily, M. T., Bhatti, M. M., Ahmad, I., Saleem, T., Hallahan, B., Ali, S. A. E. Z., ... & Hussain, B. (2021). Indigenously adapted cognitive-behavioral therapy for excessive smartphone use (IACBT-ESU): A randomized controlled trial. *Psychology of Addictive Behaviors*, 35(1), 93. <https://psycnet.apa.org/doi/10.1037/adb0000677>

Kindred, R., Bates, G. W., & McBride, N. L. (2022). Long-term outcomes of cognitive behavioural therapy for social anxiety disorder: A meta-analysis of randomised controlled trials. *Journal of anxiety disorders*, 92, 102-140. <https://doi.org/10.1016/j.janxdis.2022.102640>

Korkmazer, B., Yurdakul, F., Özer, Ş., Yeşil, Ö., Coşkuntuncel, C., Sualp, B., ... & Şahin, E. M. (2022). A cross-sectional study on the relationship between smartphone addiction and

depression, anxiety and social appearance anxiety in young adults. *Journal of Istanbul Faculty of Medicine*, 85(1), 91-97. <https://doi.org/10.26650/IUITFD.907719>

Korniienko, I. O., & Barchi, B. V. (2020). The relationship between problematic use of smartphones and social anxiety. *Journal of Intellectual Disability - Diagnosis and Treatment*, 8(2), 133-141. <https://doi.org/10.6000/2292-2598.2020.08.02.7>

Kurki, M., Gilbert, S., Mishina, K., Lempinen, L., Luntamo, T., Hinkka-Yli-Salomäki, S., ... & Sourander, A. (2021). Digital mental health literacy-program for the first-year medical students' wellbeing: a one group quasi-experimental study. *BMC medical education*, 21, 1-11. <https://doi.org/10.1186/s12909-021-02990-4>

Lee, B. (2022). The relationship between smartphone overdependence and the adolescents' smartphone use time during tasks: Moderating effects of purposeful use for tasks. *Robotics & AI Ethics*, 7(1), 1-9. <http://doi.org/10.22471/ai.2022.7.1.01>

Leigh, E., Chiu, K., & Ballard, E. D. (2023). Social anxiety and suicidality in youth: a systematic review and meta-analysis. *Research on child and adolescent psychopathology*, 51(4), 441-454. <https://doi.org/10.1007/s10802-022-00996-0>

Linden, T., Nawaz, S., & Mitchell, M. (2021). Adults' perspectives on smartphone usage and dependency in Australia. *Computers in Human Behavior Reports*, 3, 100-160. <https://doi.org/10.1016/j.chbr.2021.100060>

Meena, M. E., Kang, S., Nguchu, B. A., Milly, N., Makwetta, J. J., & Fomude, A. H. (2021). Empirical analysis of factors contributing to smartphone addiction. *Open Journal of Business and Management*, 9(1), 213. <https://doi.org/10.4236/ojbm.2021.91012>

Mgejwa, J. S. (2024). Factors Influencing Application of Mixed Research Designs Among Graduate Students: A Case Study of Master's Degree Students at The Institute of Accountancy Arusha, Dar Es Salaam Campus. *The Accountancy and Business Review*, 16(4). <https://doi.org/10.59645/abr.v16i4.381>

Miller, D., Abed Rabho, L., Awondo, P., de Vries, M., Duque, M., Garvey, P., ... & Wang, X. (2021). *The global smartphone: Beyond a youth technology*. UCL Press.

Mohammadi, M. R., Salehi, M., Khaleghi, A., Hooshyari, Z., Mostafavi, S. A., Ahmadi, N., ... & Amanat, M. (2020). Social anxiety disorder among children and adolescents: A nationwide survey of prevalence, socio-demographic characteristics, risk factors and comorbidities. *Journal of affective disorders*, 263, 450-457. <https://doi.org/10.1007/s11469-021-00510-5>

Morales Rodríguez, F. M., Lozano, J. M. G., Linares Mingorance, P., & Pérez-Mármol, J. M. (2020). Influence of smartphone use on emotional, cognitive and educational dimensions in university students. *Sustainability*, 12(16), 46-66. <https://doi.org/10.3390/su12166646>

Nieuwoudt, J. E., & Pedler, M. L. (2023). Student retention in higher education: Why students choose to remain at university. *Journal of College Student Retention: Research*,

Theory & Practice, 25(2), 326-349. <https://doi.org/10.1177/1521025120985228>

Nishikawa, Y., Fracalanza, K., Rector, N. A., & Laposa, J. M. (2022). Social anxiety and negative interpretations of positive social events: What role does intolerance of uncertainty play?. *Journal of Clinical Psychology*, 78(12), 2513-2524. <https://doi.org/10.1002/jclp.23363>

Notara, V., Vagka, E., Gnardellis, C., & Lagiou, A. (2021). The emerging phenomenon of nomophobia in young adults: a systematic review study. *Addiction & health*, 13(2), 120. <https://doi.org/10.22122/ahj.v13i2.309>

O'Day, E. B., & Heimberg, R. G. (2021). Social media use, social anxiety, and loneliness: A systematic review. *Computers in Human Behavior Reports*, 3, 100-170. <https://doi.org/10.1016/j.chbr.2021.100070>

Pearcey, S., Gordon, K., Chakrabarti, B., Dodd, H., Halldorsson, B., & Creswell, C. (2021). Research Review: The relationship between social anxiety and social cognition in children and adolescents: a systematic review and meta-analysis. *Journal of Child Psychology and Psychiatry*, 62(7), 805-821. <https://doi.org/10.1111/jcpp.13310>

Pera, A. (2020). The psychology of addictive smartphone behavior in young adults: Problematic use, social anxiety, and depressive stress. *Frontiers in psychiatry*, 11, 473-573. <https://doi.org/10.3389/fpsy.2020.573473>

- Rahim, N. A. A., Siah, Y. H., Tee, X. Y., & Siah, P. C. (2021). Smartphone Addiction: Its Relationships to Personality Traits and Types of Smartphone Use. *International Journal of Technology in Education and Science*, 5(1), 128-140. <https://doi.org/10.46328/ijtes.165>
- Ratan, Z. A., Parrish, A. M., Zaman, S. B., Alotaibi, M. S., & Hosseinzadeh, H. (2021). Smartphone addiction and associated health outcomes in adult populations: a systematic review. *International journal of environmental research and public health*, 18(22), 12257. <https://doi.org/10.3390/ijerph182212257>
- Roffarello, A. M., & De Russis, L. (2023). Achieving digital wellbeing through digital self-control tools: A systematic review and meta-analysis. *ACM Transactions on Computer-Human Interaction*, 30(4), 1-66. <https://dl.acm.org/doi/full/10.1145/3571810>
- Sharma, R., Vaidya, V., Rajan, R., ELDHOSE, A. T., Ratre, H., & RAI, H. L. (2022). Smartphone dependency and its impact on academics among medical and nursing students: A cross-sectional study. *Journal of Integrative Nursing*, 4(1), 30-35. http://doi.org/10.4103/jin.jin_44_21
- Siyami, M., Moghadam, M. R., & Avaz, K. A. (2023). Investigating the effect of mobile phone use on students' attention span and academic performance. *Journal of Fundamentals of Mental Health*, 25(4), 345-356. <https://openurl.ebsco.com/contentitem/gcd:173246238?sid=ebsco:plink:scholar&id=ebsco:gcd:173246238&crl=c>

- Tang, X., Liu, Q., Cai, F., Tian, H., Shi, X., & Tang, S. (2022). Prevalence of social anxiety disorder and symptoms among Chinese children, adolescents and young adults: A systematic review and meta-analysis. *Frontiers in Psychology*, 13, 792-856. <https://doi.org/10.3389/fpsyg.2022.792356>
- Tanşu, A., & Ünsal, G. (2023). Effectiveness of cognitive--behavioral-based psychoeducation in university students with smartphone addiction. *Journal of Psychiatric Nursing/Psikiyatri Hemsireleri Dernegi*, 14(2), 165-174. <http://doi.org/10.14744/phd.2022.05902>
- Turgeman, L., Hefner, I., Bazon, M., Yehoshua, O., & Weinstein, A. (2020). Studies on the relationship between social anxiety and excessive smartphone use and on the effects of abstinence and sensation seeking on excessive smartphone use. *International journal of environmental research and public health*, 17(4), 1262. <https://doi.org/10.3390/ijerph17041262>
- Verduyn, P., Schulte-Strathaus, J. C., Kross, E., & Hülshager, U. R. (2021). When do smartphones displace face-to-face interactions and what to do about it?. *Computers in Human Behavior*, 114, 106-150. <https://doi.org/10.1016/j.chb.2020.106550>
- Wang, J. C., Hsieh, C. Y., & Kung, S. H. (2023). The impact of smartphone use on learning effectiveness: A case study of primary school students. *Education and Information Technologies*, 28(6), 6287-6320. <https://doi.org/10.1007/s10639-022-11430-9>

- Wang, J. L., Rost, D. H., Qiao, R. J., & Monk, R. (2020). Academic stress and smartphone dependence among Chinese adolescents: A moderated mediation model. *Children and Youth Services Review*, 118, 105-129. <https://doi.org/10.1016/j.chldyouth.2020.105029>
- Weatherton, M., & Schussler, E. E. (2021). Success for all? A call to re-examine how student success is defined in higher education. *CBE—Life Sciences Education*, 20(1), 3. <https://doi.org/10.1187/cbe.20-09-0223>
- Wei, X. Y., Ren, L., Jiang, H. B., Liu, C., Wang, H. X., Geng, J. Y., ... & Lei, L. (2023). Does adolescents' social anxiety trigger problematic smartphone use, or vice versa? A comparison between problematic and unproblematic smartphone users. *Computers in Human Behavior*, 140, 107-162. <https://doi.org/10.1016/j.chb.2022.107602>
- Xiao, Z., & Huang, J. (2022). The relation between college students' social anxiety and mobile phone addiction: the mediating role of regulatory emotional self-efficacy and subjective well-being. *Frontiers in Psychology*, 13, 527-861. <https://doi.org/10.3389/fpsyg.2022.861527>
- Yasan-Ak, N., & Yildirim, S. (2024). An investigation into smartphone use of undergraduate students in the academic environment and its predictors. *Technology, Knowledge and Learning*, 29(2), 963-995. <https://doi.org/10.1007/s10758-023-09723-0>
- Ye, S., Cheng, H., Zhai, Z., & Liu, H. (2021). Relationship between social anxiety and internet addiction in Chinese college students controlling for the effects of physical exercise, demographic, and academic variables. *Frontiers in psychology*, 12, 698-748.

<https://doi.org/10.3389/fpsyg.2021.698748>

Zsido, A. N., Arato, N., Lang, A., Labadi, B., Stecina, D., & Bandi, S. A. (2021). The role of maladaptive cognitive emotion regulation strategies and social anxiety in problematic smartphone and social media use. *Personality and Individual Differences*, 173, 110-147.
<https://doi.org/10.1016/j.paid.2021.110647>

APPENDIX A

Informed Consent

Informed Consent

I have read and understood the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this study. I understand that study investigators, qualified monitors, and auditors may have access to my records to ensure the study's integrity and data accuracy. All personal information will be treated as **STRICTLY CONFIDENTIAL**.

☐ Yes, I agree.

APPENDIX B

Questionnaire

Section 1: Demography

UNIMAS or UITM Students? *

- ☐ UNIMAS
- ☐ UITM

YEAR *

- ☐ Year 1
- ☐ Year 2
- ☐ Year 3
- ☐ Year 4
- ☐ Year 5
- ☐ Other

GENDER *

- ☐ Male
- ☐ Female

RACE *

- ☐ Malay
- ☐ Iban
- ☐ Chinese
- ☐ Indian
- ☐ Bidayuh
- ☐ Other

RELIGION *

- ☐ Islam
- ☐ Buddha
- ☐ Christian
- ☐ Hindu
- ☐ Catholic
- ☐ Other

Section 2: Smartphone Dependency

The purpose of this section is to gather insights into your patterns of smartphone usage and your level of dependency through the **Mobile Phone Problematic Use Scale-10 (MPPUS-10)**. Please read each statement carefully and select the response that best reflects your experience or opinion.

You will be presented with a series of statements related to smartphone usage. For each statement, please indicate the extent to which you agree or disagree by selecting one of the following options:

- 1 – Not at all true
- 2 – Slightly true
- 3 – Moderately true
- 4 – Very true
- 5 – Extremely true

Mobile Phone Problematic Use Scale-10 (MPPUS-10) *

	Not at all true	Slightly true	Moderately true	Very true	Extremely true
I have used my mobile phone to make myself feel better when I was feeling down.	☐	☐	☐	☐	☐
When out of range for some time, I become preoccupied with the thought of missing a call.	☐	☐	☐	☐	☐
If I don't have a mobile phone, my friends would find it hard to get in touch with me.	☐	☐	☐	☐	☐

I feel anxious if I have not checked for messages or switched on my mobile phone for some time.	☐	☐	☐	☐	☐
My friends and family complain about my use of the mobile phone.	☐	☐	☐	☐	☐
I find myself engaged on the mobile phone for longer periods of time than intended.	☐	☐	☐	☐	☐
I am often late for appointments because I'm engaged on the mobile phone when I shouldn't be.	☐	☐	☐	☐	☐
I find it difficult to switch off my mobile phone.	☐	☐	☐	☐	☐
I have been told that I spend too much time on my mobile phone.	☐	☐	☐	☐	☐
I have received mobile phone bills I could not afford to pay.	☐	☐	☐	☐	☐

Section 3: Social Anxiety

The purpose of this section is to assess the level of social anxiety associated with your experience in various social interaction situations through the Social Interaction Anxiety Scale (SIAS). Please read each statement carefully and select the response that best reflects your own characteristics or is true for you.

You will be presented with a series of statements related to social anxiety. For each statement, please indicate the degree to which you feel the statement is characteristic or true for you by selecting one of the following options. The rating scale is as follows:

- **0 = Not at all** characteristic or true of me
- **1 = Slightly** characteristic or true of me
- **2 = Moderately** characteristic or true of me
- **3 = Very** characteristic or true of me
- **4 = Extremely** characteristic or true of me

Social Interaction Anxiety Scale (SIAS) *

	Not At All	Slightly	Moderately	Very	Extremely
I get nervous if I have to speak with someone in authority (teacher, boss, etc.).	☐	☐	☐	☐	☐
I have difficulty making eye contact with others.	☐	☐	☐	☐	☐
I become tense if I have to talk about myself or my feelings.	☐	☐	☐	☐	☐
I find it difficult to mix comfortably with the people I work with.	☐	☐	☐	☐	☐
I find it easy to make friends my own age.	☐	☐	☐	☐	☐
I tense up if I meet an acquaintance in the street.	☐	☐	☐	☐	☐
When mixing socially, I am uncomfortable.	☐	☐	☐	☐	☐
I feel tense if I am alone with just one other person.	☐	☐	☐	☐	☐
I am at ease meeting people at parties, etc.	☐	☐	☐	☐	☐
I have difficulty talking with other people.	☐	☐	☐	☐	☐
I find it easy to think of things to talk about.	☐	☐	☐	☐	☐
I worry about expressing myself in case I appear awkward.	☐	☐	☐	☐	☐
I find it difficult to disagree with another's point of view.	☐	☐	☐	☐	☐

I have difficulty talking to attractive persons of the opposite sex.	☐	☐	☐	☐	☐
I find myself worrying that I won't know what to say in social situations.	☐	☐	☐	☐	☐
I am nervous mixing with people I don't know well.	☐	☐	☐	☐	☐
I feel I'll say something embarrassing when talking.	☐	☐	☐	☐	☐
When mixing in a group, I find myself worrying I will be ignored.	☐	☐	☐	☐	☐
I am tense mixing in a group.	☐	☐	☐	☐	☐
I am unsure whether to greet someone I know only slightly.	☐	☐	☐	☐	☐