THE INFLUENCE OF FEAR OF MISSING OUT, SOCIAL MEDIA ADDICTION, AND BOREDOM PRONENESS ON PHUBBING BEHAVIOUR AMONG YOUNG ADULTS IN MALAYSIA

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Declaration

We declare that the material contained in this paper is the end result of our own work and that due acknowledgement has been given in the bibliography and references to ALL sources be they printed, electronic or personal.

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The research paper attached here, entitled "The Influence of Fear of Missing Out, Social Media Addiction, and Boredom Proneness on Phubbing Behaviour among Young Adults in Malaysia." prepared and submitted by Cheong Jing Yan, Chong Sze Foong and HU, LANGMINGYUE in partial fulfilment of the requirements for the Bachelor of Social Science (Honours) Psychology is hereby accepted.

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Abstract

Phubbing behaviour has become increasingly prevalent throughout the years with the significant increase of smartphone users. The present study examined the relationship between fear of missing out (FoMO), social media addiction (SMA), boredom proneness and phubbing among young adults in Malaysia. A quantitative research design was used with 66 young adults aged 18 and 25 from Malaysia. The participants completed an online survey that consisted of the Fear of Missing Out Scale, Bergen Social Media Addiction Scale, Shortened Boredom Proneness Scale and Phubbing Scale. Correlation analysis showed that FoMO, SMA, and boredom proneness have a positive relationship with phubbing behaviour among young adults in Malaysia. Multiple Linear Regression analysis showed SMA is the stronger predictor against phubbing behaviour, in comparison to the other two variables. This study can serve as a reference for future research on similar topics, as well as contribute to developing interventions to overcome this phubbing behaviour in young adults.

Keywords: social media addiction, boredom proneness, fear of missing out, young adults, phubbing behaviour

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List of Abbreviations

BSMAS	Bergen Social Media Addiction Scale
CD	Cook's Distance
CIUT	Compensatory Internet Use Theory
CL	Centered Leverage
FoMO	Fear of Missing Out
FoMOS	Fear of Missing Out Scale
IBM	International Business Machines
K-S	Kolmogorov-Smirnow
MCMC	Malaysian Communications and Multimedia Commission
MD	Mahalanobis Distance
MLR	Multiple Linear Regression
OFT	Optimal Flow Theory
PS	Phubbing Scale
Q-Q	Quantile-Quantile
QR	Quick Response
SBPS	Shortened Boredom Proneness Scale
SERC	Scientific and Ethical Review Committee
SMA	Social Media Addiction
SPSS	Statistical Package for Social Sciences
UGT	Uses and Gratification Theory
UTAR	Universiti Tunku Abdul Rahman
VIF	Variance Inflation Factor
α	Cronbach's Alpha
H	Hypothesis

M	Mean
n	Number of respondents
p	Significance level
r	Correlation coefficient
R^2	Coefficient of determination
SD	Standard Deviation

Chapter 1

Introduction

Background of Study

Smartphones have become an essential part of daily life. According to Statista, the number of smartphone users in Malaysia is expected to increase by 1.6 million between 2024 and 2029, reflecting a growth of 4.85% (Degenhard, 2024). In 2023, Malaysians spent 26.7% of their time on social media platforms like Instagram and Facebook (Siddharta, 2024b). While smartphones offer various features that enhance convenience and entertainment, they have also contributed to the emergence of problematic behaviours, notably phubbing (Verma et al., 2019). Phubbing, a term derived from "phone" and "snubbing," refers to the act of ignoring those around you in order to pay attention to the smartphone (*Phubbing*, 2024). This behaviour has become increasingly common, particularly among young people (Verma et al., 2019) and cannot be solely explained by smartphone addiction (Yam & İlhan, 2020). Research indicates that phubbing is prevalent among young adults due to factors like personality traits and relationship satisfaction (Chi et al., 2022; Karaman & Arslan, 2024). Consistently, studies have shown that fear of missing out, social media addiction, and boredom proneness are significant predictors of phubbing behaviour (Al-Saggaf, 2021; Tandon et al., 2022; Younas et al., 2022).

Fear of Missing Out (FoMO) refers to a fear that others may be having a rewarding experience that they are not, and it represents a negative emotional state arising from unmet social needs (Przybylski et al., 2013). FoMO is often linked to social media dependence (Gupta & Sharma, 2021), as people with high levels of FoMO are more likely to actively seek out and participate in social media interactions (Przybylski et al., 2013). The more severe the FoMO, the more likely people are to be dependent on their smartphones, and in turn, the more likely they are to exhibit phubbing behaviour (Balcerowska et al., 2020). Because

people use frequent smartphone or internet use as a way to reduce their fear of missing out, this approach may ultimately increase phubbing behaviour. (Chi et al., 2022). Therefore, it can be expected that FoMO is positively correlated with phubbing behaviour.

The development of smartphones has made social networks accessible at any time, leading to an increased reliance on mobile devices for real-time social interaction (Karadağ et al., 2015). Social media addiction (SMA) is a form of internet addiction characterized by unhealthy and excessive use of social platforms and is closely related to phubbing behaviour (Rachman, 2021). Social media addicts tend to be overly focused on social media (Hou et al., 2019), driven by the need for emotional support and social bonding (Wang & Wang, 2013). This can lead to people becoming psychologically dependent on social media; therefore, increasing the amount of time spent on social media, which leads to SMA, and eventually leading to behaviours like phubbing (Rachman, 2021; Salehan & Negahban, 2013). Therefore, it can be predicted that SMA is associated with phubbing behaviour.

Additionally, boredom proneness is another factor associated with phubbing behaviour. Individuals who are prone to boredom have a greater need to crave environmental stimuli to alleviate their feelings of restlessness (Struk et al., 2017). Smartphones provide an ideal medium for stimulation due to their convenience, affordability, rich functionality, and connectivity (Gao et al., 2023b). Boredom is a common phenomenon among college students (Gao et al., 2023b), and college students with high boredom tendencies have symptoms of frequent and excessive use of smartphones (Lv & Wang, 2023). Past studies have shown that boredom can directly predict phubbing behaviour, while FoMO can act as a mediator, leading college students to overuse smartphones and social media (Gao et al., 2023b; Lv & Wang, 2023).

Problem Statement

The modernisation of technology has significantly enhanced convenience in daily life, but it has also introduced challenges, such as phubbing, a new phenomenon linked to excessive smartphone usage (Nazir & Bulut, 2019). This behaviour has affected both the phubber and the person who is being ignored (Chotpitayasunondh & Douglas, 2016). Phubbing not only affects individuals socially, psychologically, and emotionally (Thabassum, 2021) but also damages social relationships as phubbing is perceived as disrespectful and impolite (Karadağ et al., 2015).

In Malaysia, the phenomenon of phubbing is becoming increasingly prevalent. A report by the Malaysian Communications and Multimedia Commission [MCMC] (2018) highlighted that over half of mobile phone users admitted to using their phones during meals with others, a common context for phubbing. More alarmingly, there have been real-world consequences. Recently, an incident occurred in which a Malaysian mother's distraction with her phone led to her neglecting a dangerous situation where his son pushed and locked his sisters into the washing machine (Dhar, 2023). Similarly, a few years back, a six-year-old girl in Singapore drowned in a public pool while her mother, a swimming coach, and two lifeguards were all distracted by their phones (Wong, 2019). In the US, several cases have been reported, including a mother who was arrested after her eight-month-old child drowned in a bathtub while she was on her phone for more than 20 minutes (McHardy, 2024), and a father regularly left his three children alone in the car and lead his two-year-old daughter died in a hot car while he was distracted by video games (Lenthang, 2024). The tragic cases show that this behaviour is happening globally, underscoring the urgency of addressing phubbing behaviour.

Beyond these social impacts, phubbing is also associated with mental health issues, including anxiety (Guazzini et al., 2019), depression (Ang et al., 2019; Roberts & David,

2016), and substance addiction (Ang et al., 2019). Besides, Roberts & David (2016) found out that phubbing can lead to lower romantic relationship satisfaction and lower life satisfaction. This can be explained by the fact that they often experience poorer quality interactions and a decreased sense of connectedness with their partners (Beukeboom & Pollmann, 2021; Davey et al., 2018; David & Roberts, 2017), further emphasizing the need to understand this behaviour. These incidents underscore the severe risks and the pervasive impact of phubbing on safety and well-being, making it essential to conduct this study to better comprehend its causes and develop effective interventions.

Despite the growing body of studies have shown that FoMO, SMA, and boredom proneness are significant predictors of phubbing behaviour (Al-Saggaf, 2020; Al-Saggaf & O'Donnell, 2019a; Tandon et al., 2022; Younas et al., 2022), phubbing has hardly received scholarly attention in Malaysia. Ang et al. (2019) note the absence of official statistical data on phubbing in Malaysia. The majority of these studies have been conducted outside of Malaysia, limiting their applicability to the Malaysian context (Butt & Arshad, 2021; Meng & Xuan, 2023). This lack of localised research creates a gap in the literature regarding the effects of FoMO, SMA, and boredom proneness on phubbing among Malaysian young adults. Other than that, some of the available literature has made FOMO, SMA, and boredom proneness as mediators for the relationship between other variables and phubbing (Lv & Wang, 2023; Younas et al., 2022), indicating a need for research that examines these factors as predictors of phubbing behaviour.

Although some researchers have explored the phenomenon of FoMO within the Malaysian context, most studies have focused on its relationship with emotions such as anxiety and depression, as well as SMA (Asyraf et al., 2024; Ibrahim et al., 2022). However, there is limited research examining the connection between FoMO and phubbing behaviour in Malaysia. Similarly, while studies on SMA in the Malaysian context have primarily

concentrated on its effects on emotions, mental health, and academic performance (Fauzi et al., 2021; Lee et al., 2023; Zaw & Azenal, 2021), little attention has been given to its potential impact on phubbing behaviour. Finally, while boredom proneness has been studied in various global contexts, where it has been found to predict phubbing behaviour (Al- Saggaf & O'Donnell, 2019, Gao et al., 2023b; Lv & Wang, 2023), it has received minimal attention in Malaysia, where researcher particularly focused more on the effects of boredom proneness in the work environment (Teng et al., 2019, Teng et al., 2020).

Furthermore, most articles (Al-Saggaf et al., 2018; Bala et al., 2020; Ding & Si, 2024; Fang et al., 2020; Gao et al., 2023a; Lv & Wang, 2023; Meng & Xuan, 2023) focus on college students. However, this narrow focus may overlook other key demographics that are equally affected by phubbing. In Malaysia, the largest demographic of Facebook users falls within the age range of 25-34, comprising approximately 30% of the user base, followed by the 18-24 age group at 22% (Kemp, 2023). Similarly, TikTok usage skews heavily towards younger adults, with 50.3% of its viewers aged 18-24 and another 47.1% between 25-34 years old (Kemp, 2022), indicating the possibility of phubbing behaviour among young adults. Thus, there is an urgent need to expand the research focus beyond college students to include young adults in Malaysia, examining whether research on young adults also provides consistent findings as college students or not.

This study aims to address these gaps by focusing on young adults in Malaysia, providing insights into the predictors of phubbing behaviour, and contributing to the Malaysian literature gap on phubbing. For this study, a quantitative analysis is done with the distribution of questionnaires to young adults in Malaysia. While this study tackles the literature gap in the Malaysian context, it may also be used as a reference in future studies.

Research Questions

1. Is there any relationship between Fear of Missing Out (FoMO) and phubbing behaviour among young adults in Malaysia?
2. Is there any relationship between social media addiction (SMA) and phubbing behaviour among young adults in Malaysia?
3. Is there any relationship between boredom proneness and phubbing behaviour among young adults in Malaysia?
4. What is the strongest predictor of phubbing behaviour among young adults in Malaysia?

General Objectives

To determine the relationship between Fear of Missing Out (FoMO), social media addiction (SMA), boredom proneness and phubbing among young adults in Malaysia.

Specific Objectives

1. To determine the relationship between Fear of Missing Out (FoMO) and phubbing behaviour among young adults in Malaysia.
2. To determine the relationship between social media addiction (SMA) and phubbing behaviour among young adults in Malaysia.
3. To determine the relationship between boredom proneness and phubbing behaviour among young adults in Malaysia.
4. To determine which variable has the strongest relationship with phubbing behaviour among young adults in Malaysia.

Research Hypotheses

1. There is a relationship between Fear of Missing Out (FoMO) and phubbing behaviour among young adults in Malaysia.
2. There is a relationship between social media addiction (SMA) and phubbing behaviour among young adults in Malaysia.
3. There is a relationship between boredom proneness and phubbing behaviour among young adults in Malaysia.
4. Social media addiction (SMA) has the strongest relationship with phubbing behaviour among young adults in Malaysia.

Significance of Study

This study holds significant value in several areas. Firstly, it addresses a clear gap by focusing on the relationship between FoMO, SMA, boredom proneness, and phubbing behaviour within the Malaysian context. While phubbing has been extensively studied globally, particularly in Western and Chinese contexts (Al-Saggaf et al., 2018; Al-Saggaf, 2020; Al-Saggaf & O'Donnell, 2019a; Ding & Si, 2024; Gao et al., 2023a; Lv & Wang, 2023), there is a lack of research specific to Malaysia. By exploring this behaviour among Malaysian young adults, this study provides more culturally and contextually relevant insights, thereby contributing to a deeper understanding of how these variables interact within this population. The results of this research can serve as a foundation for future studies in Malaysia and similar contexts. It can also help determine whether the predictors identified in this study are consistent across different cultural settings or if they vary significantly.

Secondly, the findings from this study could have practical implications for addressing phubbing behaviour, which has become increasingly common and can negatively affect social interactions and relationships (Han et al., 2022). Understanding the underlying

factors and predictors of phubbing could inform the development of targeted interventions or awareness campaigns aimed at reducing this behaviour, particularly in settings where face-to-face communication is critical, such as educational institutions, workplaces, and social gatherings. For example, counsellors and psychologists could use these insights to develop strategies, interventions, behavioural therapies, or workshops that help individuals manage their smartphone use, ultimately improving social interactions and reducing the prevalence of phubbing.

Additionally, this study has the potential to raise public awareness about the impact of phubbing behaviour, which is becoming increasingly prevalent in modern society. For instance, in South Korea, over 300 signboards have been installed to warn pedestrians against phubbing, but the effectiveness of these warnings is limited as many people are too absorbed in their smartphones to notice the signs (Yoon, 2016). By highlighting the prevalence of phubbing, this study aims to increase awareness not only among the general public but also among relevant authorities. It is hoped that the findings will prompt the government to take more proactive measures, such as launching "Stop Phubbing" campaigns in Malaysia, to educate people about the risks of phubbing and encourage more mindful smartphone use.

Conceptual Definitions

Fear of Missing Out

Fear of Missing Out, or FoMO, refers to the persistent anxiety that others might be engaging in enjoyable or fulfilling activities from which one is excluded. This phenomenon is characterized by a strong desire to stay perpetually connected and updated on the activities and experiences of others, driven by the fear of missing out on something rewarding or significant (Przybylski et al., 2013).

Social Media Addiction

Social media addiction (SMA) is a behavioural addiction where users compulsively engage with social media platforms (Kuss & Griffiths, 2017), often spend excessive time on these platforms, and feel an uncontrollable urge to use them (Andreassen & Pallesen, 2014).

Boredom Proneness

Boredom proneness is a stable personality trait where an individual consistently experiences boredom in various circumstances (Struk et al., 2017), it involves both frequent and intense feelings of boredom (Mugon et al., 2020).

Phubbing Behaviour

"Phubbing," a term derived from "phone" and "snubbing," refers to the act of ignoring someone in a social setting by focusing on one's phone instead of engaging with them directly (Nazir, 2017).

Young Adults

Young adult refers to a period of distinctive development in adults between the ages of 18 and 25 years as they transition from adolescence to adulthood (Higley, 2019).

Operational Definitions

Fear of Missing Out

The Fear of Missing Out scale (FoMOS), developed by Przybylski and his colleagues in 2013, is a self-report questionnaire most widely used recently to assess FoMO (Cashmi et al., 2023). It evaluates how strongly individuals fear missing social activities, especially those involving their friends, and their tendency to stay excessively connected through social media (Przybylski et al., 2013).

Social Media Addiction

Social Media Addiction (SMA) is assessed using the Bergen Social Media Addiction Scale (BSMAS), a six-item self-report measure developed by Andreassen et al. (2016) to evaluate problematic social media use over 12 months. Higher scores indicate a greater risk of SMA, and a score over 19 suggests a significant risk of developing problematic social media use (Bányai et al., 2017).

Boredom Proneness

Boredom proneness is measured using the Shortened Boredom Proneness Scale (SBPS), a commonly used measure developed by Struk et al. (2017). This self-report questionnaire assesses an individual's tendency to experience boredom. High scores indicate a high propensity for boredom.

Phubbing Behaviour

Phubbing behaviour is assessed using the Phubbing Scale (PS) developed by Karadağ et al. (2015). This scale assesses the extent of phubbing behaviour through self-reported responses, focusing on how mobile phone use disrupts face-to-face interactions and the compulsive need for the phone during social interactions. Higher scores indicate more severe phubbing behaviour (Karadağ et al., 2016).

Young Adults

Young adults in this study were Malaysian individuals in the age range between 18 and 25 years.

Chapter 2

Literature Review

Phubbing in Malaysia

In 2023, the penetration of smartphone users in Malaysia was projected to exceed 89 per cent, surpassing the overall smartphone adoption rate of 76 per cent in the Asia-Pacific region in 2022 (Siddharta, 2024a). Malaysia also ranks third globally for the highest rate of smartphone usage addiction among its population (Sanusi, 2023). These findings indicate that smartphone addiction is a significant issue in Malaysia, likely contributing to the rise of phubbing behaviour. However, there is a lack of research addressing the phubbing behaviour within the country.

For one, Mahmud et al. (2023) focused on the effects of phubbing within relationships. In a survey of 150 smartphone users in Malaysia, it was found that partner-phubbing, where one partner feels neglected due to the other's smartphone use, leads to increased smartphone conflicts. These conflicts negatively impact relationship satisfaction, which in turn affects life satisfaction, despite not directly impacting communication quality. Another study by Onn (2024) explored the determinants of phubbing behaviour in Malaysia, including FoMO, nomophobia (fear of being without a mobile phone), self-control, and attitudes toward smartphone use. The study, which involved 201 participants, found that all factors except self-control had a positive and significant impact on phubbing behaviour.

Further, T'ng et al. (2018) examined the relationship between Big Five personality traits, coping styles, internet addiction, and phubbing behaviour among 405 undergraduate students in Malaysia. They found that negative emotionality, open-mindedness, and internet addiction are significant factors in phubbing behaviour. Ang et al. (2019b) conducted a mixed-method study to analyse the impact of phubbing on social connectedness among Malaysian adolescents. With 568 participants in quantitative surveys and 6 participants in

follow-up focus group interviews, the study reaffirmed that phubbing predicts social disconnectedness, signalling the need for preventive measures to address this growing issue. Lastly, Khodabakhsh and Ong (2021) explored the relationship between partner phubbing and marital quality among 390 married adults in Kuala Lumpur. Their findings indicated that partner phubbing negatively impacts marital quality, with the effect being more pronounced among women and younger adults. These studies underscore the numerous determinants and multifaceted impact of phubbing in Malaysia, highlighting the need for continued research and intervention strategies to address its consequences.

The existing studies on phubbing in Malaysia provide a foundational understanding of the behaviour and its impact on different demographics, including undergraduates, married adults, and adolescents. Although Onn (2024) found a relationship between FoMO and phubbing, there is a noticeable gap in research focusing specifically and comprehensively on the relationship between phubbing and its predictors, FoMO, SMA and boredom proneness among young adults in Malaysia. While previous research has touched on different psychological traits related to phubbing (T'ng et al., 2018), boredom proneness remains underexplored. Addressing this gap, our study aims to investigate the influence of FoMO, SMA, and boredom proneness on phubbing behaviour among young adults in Malaysia, thereby contributing to the existing body of knowledge.

Fear of Missing Out and Phubbing

Past research has shown that FoMO can positively predict phubbing behaviour (Balta et al., 2018; Chi et al., 2022; Gao et al., 2023b). Sandjaja and Syahputra (2019) surveyed secondary school students and found that an increase in FoMO led to a corresponding increase in students' phubbing behaviour. Similarly, a large-scale survey by Franchina et al.

(2018) among Flemish adolescents demonstrated that FoMO can predict phubbing behaviour either directly or indirectly through problematic social media use.

According to Ansari et al. (2024), the association between phubbing behaviour and FoMO is prevalent because social media platforms facilitate constant connection and information sharing. Social media provides users with a vast amount of information and stimulation, which triggers FoMO when individuals feel that others are engaging in activities without them. This fear, coupled with the pervasiveness of smartphones and immersive social media environments, is closely linked to phubbing behaviour.

Tandon et al. (2022) found a significant relationship between FoMO and workplace phubbing behaviour in a study of employees in the United States. This result suggests that FoMO is a clear causative factor in increasing employees' phubbing behaviours via smartphones during working hours (Tandon et al., 2022). Additionally, a study of 400 millennials in Pakistan by Yaseen et al. (2021) revealed a significant positive correlation between FoMO and phubbing behaviour. The study also found no gender effect on the relationship between FoMO and phubbing. Furthermore, Younas et al. (2022) confirmed that FoMO can directly predict phubbing behaviour in young Pakistanis aged 20-35.

Notably, young adults emerged as the dominant age group among mobile phone owners, reflecting the prevalence of the concepts of phubbing and FoMO (Ansari et al., 2024). Therefore, there is a need to investigate the association between FoMO and phubbing behaviour in young adults. In a meta-analysis (Ansari et al., 2024), it was shown that geographic factors are also likely to have an impact on the relationship between phubbing behaviour and FoMO, and there is a lack of research on such issues in Malaysia, which makes it essential to conduct this study.

Social Media Addiction and Phubbing

Social media use and phubbing behaviour are closely interconnected, with individuals who spend excessive time on social media more likely to exhibit phubbing behaviour (Tanhan et al., 2023). Multiple studies have established a significant relationship between SMA and phubbing behaviour, suggesting that SMA is a determining factor in the prevalence of phubbing (Błachnio & Przepiorka, 2018; Chi et al., 2022; Nazir & Bulut, 2019; Rachman, 2021). Excessive social media use often leads to increased time spent on mobile phones, which can reduce real-life communication with others. When a person has limited face-to-face interaction, they are more likely to engage in phubbing behaviour (Rachman, 2021).

Karadağ et al. (2015) conducted a study among Turkish university students and found a positive correlation between SMA and phubbing behaviour. This relationship was further confirmed in a study by Błachnio and Przepiorka (2018) involving mobile phone users in Poland aged 16-78. The latter study indicates that SMA, particularly Facebook intrusion, was identified as a predictor of phubbing behaviour. These findings align with those of Al- Saggaf and O'Donnell (2019), who also demonstrated that technology addictions, such as SMA, can predict phubbing behaviour. In Indonesia, Rachman (2021) reported similar results, showing that higher levels of SMA among students led to an increase in phubbing behaviour. Additionally, a survey in India revealed that SMA is a major determinant of phubbing behaviour among millennials (Verma et al., 2019).

The connection between social media use and phubbing is further supported by research indicating that emotional support from social media may trigger phubbing behaviour in college students (Fang et al., 2020). As students seek emotional support through social media, they become more engrossed in it, leading to over-indulgence and subsequent phubbing behaviour (Ryan et al., 2014). While research from various cultural contexts, such as Turkey (Karadağ et al., 2015), Poland (Błachnio & Przepiorka, 2018), and Indonesia

(Rachman, 2021), consistently shows a positive correlation between SMA and phubbing, it is essential to consider how cultural norms around social media use might influence these findings. Despite the extensive research on SMA and phubbing globally, such as in Western countries (Błachnio & Przepiorka, 2018; Karadağ et al., 2015), and Asian countries (Rachman, 2021; Verma et al., 2019), there is a notable gap in studies specific to Malaysian context, so there is a need to fill this gap. It is also worth noting that much of the existing literature has focused more on university students (Karadağ et al., 2015; Rachman, 2021). However, young adults have become the main demographic of mobile phone users (Ansari et al., 2024), so studies targeting young adults are also necessary. This study aims to fill these gaps by exploring the relationship between SMA and phubbing among young adults in Malaysia, providing insights that are both culturally and contextually relevant.

Boredom and Phubbing

Boredom proneness has been extensively studied throughout recent years, particularly about its impact on various behavioural patterns. Gao et al. (2023b) study found that boredom proneness positively predicts phubbing, suggesting that individuals who frequently experience boredom are more likely to engage in phubbing as a coping mechanism. This finding is supported by several studies that have linked boredom proneness to various problematic behaviours, including smartphone addiction (Zhang et al., 2023; Zhao et al., 2021), alcohol and gambling addiction, and substance abuse (Fein et al., 2010). Karadağ et al. (2015) identified phubbing as a behaviour encompassing various addictive activities involving smartphones, the internet, and gaming. Besides, boredom drives people to use their mobile phones to alleviate boredom (Zhang et al., 2023; Wegmann et al.,2018), thereby increasing the likelihood of phubbing (Gupta & Nagar, 2024). These results imply that boredom proneness might serve as a warning signal for some physiological, psychological,

and social issues, with phubbing sharing risk factors similar to other behavioural and substance addictions (Gao et al., 2023b). Moreover, individual dispositional factors like boredom proneness, alongside negative emotions such as a lack of interest, are crucial in triggering addictive behaviours like phubbing, and are further reinforced by the pleasure derived from these actions (Brand et al., 2019).

The consistent findings across various studies underline the robustness of the relationship between boredom proneness and phubbing behaviour. For example, Abi Doumit et al. (2023) found a significant positive correlation between boredom proneness and phubbing, aligning with findings from other research that associates boredom with problematic smartphone use (Elhai et al., 2017a; Wegmann et al., 2018), which is a key indicator of phubbing (Erzen et al., 2021). Similarly, Meng and Xuan (2023) demonstrated that individuals with higher boredom traits are more likely to engage in phubbing. Duradoni et al. (2023) also reported a positive correlation between boredom and phubbing, suggesting that those who feel more bored are prone to phub more frequently. Supporting these findings, several other studies have consistently shown that boredom proneness is positively correlated to phubbing behaviour (Al-Saggaf, 2020; Al-Saggaf & O'Donnell, 2019b; Ding & Si, 2024; Gupta & Nagar, 2024; Lv & Wang, 2023). Struk et al. (2017) further explained that individuals with high boredom proneness have an increased need for environmental stimuli, which drives them to immerse in activities like phubbing to satisfy this craving (Lv & Wang, 2023). Overall, these studies collectively suggest that boredom proneness is a reliable predictor of phubbing behaviour. Therefore, we hypothesize that boredom proneness positively predicts phubbing behaviour.

While the existing literature provides strong evidence of the relationship between boredom proneness and phubbing, there are gaps in understanding how this relationship might vary across different cultural contexts. Most existing studies have been conducted in

specific regions, such as China (Ding & Si, 2024; Gao et al., 2023b; Lv & Wang, 2023), Australia (Al-Saggaf, 2020; Al-Saggaf & O'Donnell, 2019b), and other Western countries (Al-Saggaf et al., 2018), with a noticeable absence of research within Malaysian or other Southeast Asian contexts. Additionally, many of these studies focus on college student populations (Al-Saggaf et al., 2018; Ding & Si, 2024; Gao et al., 2023b; Lv & Wang, 2023; Meng & Xuan, 2023) or permanent employees (Duradoni et al., 2023). While these studies provide valuable insights, their findings may not fully capture the experiences of young adults outside academic settings. Al-Saggaf et al. (2018) found no significant difference in phubbing frequency based on participants' education levels, suggesting that education may not be a critical factor in this behaviour. Therefore, this study targets a broader young adult demographic, it offers a unique perspective on how boredom proneness influences phubbing behaviour in a larger population.

Theoretical Framework

The Uses and Gratification Theory (UGT) by Katz and Blumler (1974) can be used to explain the relationship between FoMO and boredom proneness with phubbing behaviour (Al-Saggaf, 2020; Butt & Arshad, 2021; Chi et al., 2022; Tandon et al., 2022). The theory explains the need for people to stay updated on information and keep in touch with peers, while others use it as a way to alleviate boredom (Ding & Si, 2024). The UGT emphasizes that people consume certain media because they may gain something from it. In other words, the fear of missing out, and even feeling bored is the reason for a person to excessively use social media, through phubbing, since this behaviour allows them to be updated on information and peer activities while diminishing the feeling of boredom.

The relationship between FoMO and phubbing can be better explained with Compensatory Internet Use Theory (CIUT) by Kardefelt-Winther (2014) as it mentions how

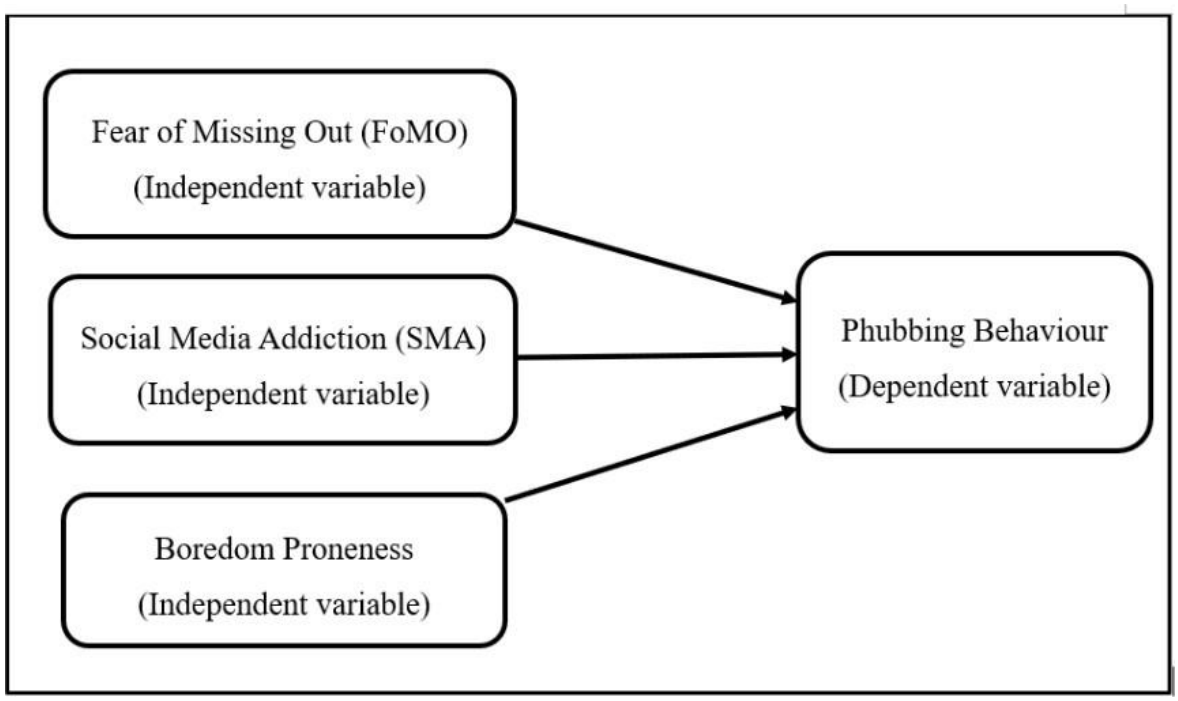
people use the internet as a coping mechanism against negative feelings (Akbari et al., 2021; Ding & Si, 2024; Tandon et al., 2022). In the context of FoMO, a person may experience anxiety from missing social media updates, thus, leading them to use their smartphone excessively in social events, therefore engaging in phubbing (Tandon et al., 2022) and this can be further supported by Ding & Si (2024) that phubbing is a habitual behaviour to alleviate the feeling of FoMO. However, phubbing due to FoMO can become worse as social media apps can trigger more negative feelings, and even more FoMO thoughts of others having a better time than oneself (Akbari et al., 2021).

The relationship between SMA and phubbing can be explained by Optimal Flow Theory (OFT) by Csikszentmihalyi (2014). This theory suggests that information technology can foster addiction in individuals. The person finds the encounter so delightful that they will make an effort to keep it up, even if it is costly (Salehan & Negahban, 2013). People find social media to be so enjoyable that they may use it excessively, which ultimately results in phubbing behaviour (Chi et al., 2022; Salehan & Negahban, 2013). The benefits of social media (e.g. social support, fulfilling social and psychological needs) which lead people to frequently check their phone to update and stay updated on everything, which inevitably results in phubbing behaviour (Chi et al., 2022).

Conceptual Framework

Figure 2.1

The conceptual framework of "The Influence of Fear of Missing Out (FoMO), Social Media Addiction (SMA), and Boredom Proneness towards Phubbing Behaviour among Young Adults in Malaysia.



This study examines three independent variables: Fear of Missing Out (FoMO), Social Media Addiction (SMA), and boredom proneness with phubbing behaviour as the dependent variable. The study focuses on analysing the strength and direction of the relationships between these variables. Additionally, it aims to determine which of these predictors is the strongest predictor of phubbing behaviour through multiple regression analysis.

Chapter 3

Methodology

Research Design

Quantitative survey research method was adopted in this study, it is a statistical technique to assess and analyse numerical data, aiming to identify patterns, relationships, and validate the measurements obtained (Watson, 2015). Meanwhile, this study used a cross-sectional survey design to investigate the influence of FoMO, SMA, and boredom proneness on phubbing behaviour among young adults in Malaysia. This is because cross-sectional design is used in population-based surveys and studies can usually be conducted relatively quickly and inexpensively (Setia, 2019). In addition, the questionnaires were distributed to participants through the online media platform.

Sampling Procedures

Sampling Method

The population of this study was young adults in Malaysia. A convenience sampling method was employed, which is a non-probability sampling technique that is cost-effective, easy to implement, and allows for easy access to participants. It allows researchers to gather data from readily available individuals (Etikan et al., 2016). This approach was appropriate for targeting the desired population. According to a survey (Kemp, 2024), 28.68 million Malaysians above 18 years old use social media; therefore, our finding of the target population through social media is feasible. The questionnaire, created using Qualtrics, was distributed via social media channels such as Instagram, Facebook, WhatsApp, and WeChat to reach young adults in Malaysia, inviting them to participate in the questionnaire.

Location of Study

This study was conducted in Malaysia, which consists of West and East Malaysia. There are 13 states and three federal territories. Specifically, 11 states (Selangor, Penang, Pahang, Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Perak, Perlis, and Terengganu) and 2 federal territories (Kuala Lumpur and Putrajaya) in West Malaysia; two states (Sabah and Sarawak) and a federal territory (Labuan) are situated in East Malaysia.

Ethical Clearance Approval

Present study received approval from the SERC, also known as the Scientific and Ethical Review Committee of the University Tunku Abdul Rahman (UTAR) with the approval number U/SERC/78-370/2024 (refer to Appendix A). Ethical review is a key part of a research project to comply with ethical guidelines and requirements. This is to ensure that the research fully complies with the guidelines while minimising potential risks and protecting participants. Therefore, ethical review approval was applied for this study before the commencement of the study, so the study was conducted in a responsible, appropriate, and ethically sound manner.

Sample Size

The average of three different correlation coefficients, .500, .750 and .760 collected from different studies (Butt & Arshad, 2021, Ding & Si, 2024, Younas et al, 2022) were used to calculate the effect size (refer to Appendix B). Then, the computer software, G*Power version 3.1.9.4 (Faul et al., 2007) was used to calculate sample size with parameters of three (3) predictors, effect size = .995 (large), alpha = .05 and power = .95 (refer to Appendix C). The minimum sample size was 22 but this study collected 200% more, which was 66

samples, to consider missing and incomplete data. In this study, 80 samples have been collected.

Data Collection Procedure

Ethical approval was obtained from the SERC of UTAR. This approval is necessary as the research involves human subjects, allowing the study to be done appropriately and clear of any potential risks. The target sample was young adults in Malaysia, between 18 to 25 years old with smartphones who can understand the English language. An online survey was made using Qualtrics which was then shared on social media as a form of links and QR codes. The questionnaire consisted of a consent form on the first page, then continued with each of the scale measuring the variables of FoMO, SMA, boredom proneness and phubbing (refer to Appendix D).

The collected data was screened, and data cleaning was done to ensure that the data collected was usable (i.e. consented, completed, and fit the requirement) while the unusable ones were removed. Pearson Correlation Coefficient was used to determine the correlation among the variables. The dependent variable is phubbing behaviour while the independent variables are FoMO, SMA and boredom proneness. The remaining data was run through a software package called IBM SPSS Statistics 23 to analyse the assumption of normality and assumption of multiple linear regression, together with other analyses.

Instruments

Fear of Missing Out Scale

Fear of Missing Out Scale (FoMOS) by Przybylski et al. (2013) was used to measure FOMO. This unidimensional scale comprises 10 items and uses a 5-point Likert scale format to assess the extent of individuals' fear of missing out on social experiences. Sample items include, “Sometimes I wonder if I spend too much time keeping up with what is going on,” “When I have a good time, it is important for me to share the details online,” and “I fear others have more rewarding experiences than me.” Response options range from "Not at all true of me" (1) to "Extremely true of me" (5), resulting in total scores between 10 and 50. Scores are calculated by averaging the responses, with higher scores reflecting greater levels of FoMO. The scale has demonstrated strong reliability, with a Cronbach's alpha of 0.89 (Przybylski et al., 2013). Further study by Lai et al. (2016), have confirmed its reliability (α = 0.87), making it a valid tool for assessing FoMO among young adults in Malaysia.

Bergen Social Media Addiction Scale

The Bergen Social Media Addiction Scale (BSMAS) was applied to measure SMA. This six-item self-report instrument evaluates SMA based on six core criteria which are salience, mood modification, tolerance, withdrawal, conflict, and relapse (Andreassen et al., 2016). Sample items include: "You spend a lot of time thinking about social media or planning how to use it," "You feel an urge to use social media more and more," and "You use social media to forget about personal problems." Responses are recorded on a five-point Likert scale, ranging from "very rarely" (1) to "very often" (5), resulting in total scores between 6 and 30. Higher scores indicate a greater risk of SMA, with scores above 19 suggesting a risk of problematic social media use (Bányai et al., 2017). BSMAS has shown strong reliability, reporting the value of Cronbach's alpha being .88 (Andreassen et al., 2016).

Zarate et al. (2023) also reported strong reliability (α = .88) and McDonald's ω = .88. Multiple studies have validated the BSMAS internal consistency, as well as its convergent and divergent validity (Bányai et al., 2017; Chen et al., 2020; Shin, 2022).

Shortened Boredom Proneness Scale

Boredom Proneness in the current study was measured by the Shortened Boredom Proneness Scale (SBPS). It is an 8-item tool designed to assess an individual's tendency to feel bored. Sample items include statements like "Many things I have to do are repetitive and monotonous," "It takes more stimulation to get me going than most people," and "I do not feel motivated by most things that I do." Participants rate their responses on a 7-point Likert scale, with 1 representing strong disagreement and 7 representing strong agreement, and higher scores reflect a greater propensity for boredom. The SBPS has shown excellent internal consistency, and construct validity, with a reported Cronbach's alpha of .88. (Drody et al., 2022; Elhai et al., 2017b; Struk et al., 2017; Wegmann et al., 2018).

Phubbing Scale

The Phubbing Scale (PS) by Karadağ et al. (2015) was utilized to measure the extent of individuals' engagement in phubbing behaviour. The PS comprises 10 items divided into two factors, which are communication disturbance and phone obsession. Communication Disturbance evaluates how mobile phone use disrupts face-to-face interactions, while Phone Obsession gauges the level of preoccupation with mobile phones when not engaged in direct social interactions. Sample items include: "My eyes start wandering to my phone when I'm with others," "I am always busy with my mobile phone when I'm with my friends," and "People complain about me dealing with my mobile phone." Respondents rate each item using a five-point Likert scale, where 1 represents "never" and 5 signifies "always", with

overall scores ranging from 10 to 50. The scoring method of this scale is that a score of 40 or higher indicates a significant level of phubbing behaviour. The scale has demonstrated strong reliability (α = .87) (Karadağ et al., 2016).

Pilot Study

A pilot study is a trial run of a larger study to check if the planned methods work well before committing to a full-scale study (Arain et al., 2010). The main purpose of a pilot study is to allow researchers to better understand their study before conducting it as a large-scale study, and to minimise the risk of costly design flaws, both in terms of time and resources (Polit & Beck, 2017). A small sample size of the pilot study was conducted to evaluate the data collection instruments, optimize participant recruitment strategies, and test research techniques. Conducting this preliminary phase was essential to identify potential challenges, refine methodologies, and confirm the feasibility of the larger study (Hassan et al., 2006).

Guidelines for pilot studies suggest a minimum of 30 participants (Conroy, 2015). In this study, a questionnaire was prepared and then distributed via social media in the form of a link and QR code, which took around 5 to 10 minutes to complete. As presented in Table 3.1, 34 respondents were recruited in this pilot study, and the recorded data were cleaned and analysed using IBM SPSS Statistics version 23. 2 cases were excluded due to incomplete data: one participant was identified as non-Malaysian, and the other did not complete the SMA scale. Thus, a total of 32 participants participated in this pilot study. The Cronbach's Alpha reliability of the instruments was tested with the results presented in Table 3.2.

Background of Pilot Study's Participants

The pilot study sample consisted of 32 Malaysians aged between 18 and 25. Among them, 75% (*n* = 24) were female, and 25% (*n* = 8) were male. The racial composition was predominantly Chinese (87.5%), with 6.3% identifying as Malay, and 6.3% as Indian. Regarding employment status, 78.1% (*n* = 25) were students, 15.6% (*n* = 5) were employed, and 6.3% (*n* = 2) were unemployed. The age group with the highest representation was 22 years old, making up 37.5% of the sample, following by 21 years old participants (21.9%). All participants identified themselves as Malaysian (100%).

Table 3.1

Pilot Study's Demographic Information of Sample (n = 32)

	n		*M*	*SD*
Gender				
Male	8	25.00		
Female	24	75.00		
Age			21.84	1.55
Race				
Chinese	28	87.50		
Indian	2	6.30		
Malay	2	6.30		
Occupation				
Student	25	78.10		
Employed	5	15.60		
Unemployed	2	6.30		

Note. *M* = Mean, *SD* = Standard Deviation

Actual Study

After the reliability of the pilot study was checked, the actual study proceeded. The procedures of the actual study were the same as the pilot study. A sufficient number of participants were collected (n = 80), and the recorded data were cleaned and analysed using IBM SPSS Statistics version 23 computer software. After removing cases with missing data, the total number of the present study is 66 cases.

Reliability of the Instruments

Cronbach's alpha (α) is a measure of reliability or internal consistency, evaluating how closely related the items in a test are (Tavakol & Dennick, 2011). It is often used to assess the reliability of multi-item Likert scale surveys. A high alpha value suggests that the survey items are well-correlated and measure a single construct, while a low alpha might suggest too few items or poor interrelatedness among questions (*Cronbach's alpha*, 2023). According to the rule of thumb, an alpha below .50 is considered unacceptable, values between .50 and .60 are deemed poor, between .60 to .70 are questionable, .70 to .80 are acceptable, .80 to .90 are good, and above .90 indicates excellent reliability (*Cronbach's alpha*, 2023). However, Raharjanti et al. (2022) stated that a Cronbach's alpha between .60 to .80 is acceptable.

The reliability of the data collected for the present study was assessed using the SPSS version 23. In the pilot study, Cronbach's alpha values were as follows: .93 for the FoMOS, .86 for the BSMAS, .89 for the SBPS, and .60 for the PS (see Appendix E). In the actual study, alpha values were .84 for FoMOS, .80 for BSMAS, .90 for SBPS, and .80 for PS (see Appendix E). These results indicate that FoMOS, BSMAS, SBPS, and PS all demonstrate good and acceptable reliability in both the pilot and actual studies.

Table 3.2

Reliability of the Instruments

Variable	No of items	Cronbach Alpha		
		Past Study	Pilot Study (n = 32)	Actual Study (n = 66)
Fear of Missing Out Scale (FoMOS)	10	.89	.93	.84
Bergen Social Media Addiction Scale (BSMAS)	6	.88	.86	.80
Shortened Boredom Proneness Scale (SBPS)	8	.88	.89	.90
Phubbing Scale (PS)	10	.87	.60	.80

Chapter 4

Result

Data Cleaning

Data cleaning is a necessary step in research involving identifying and removing missing data to ensure the dataset's accuracy, reliability, and validity (Jain, 2021). One of the most common types of missing data in a survey is missing responses, which occur when participants skip questions or drop out partway through the survey. Such behaviour is often attributed to survey fatigue, where respondents lose interest or motivation to complete the questionnaire as it progresses (Popovich, 2024).

In this study, missing data was cleaned and removed from the data set by using IBM SPSS Statistics version 23. Cases that did not meet the inclusion criteria were removed. Specifically, two cases were excluded from the data set because their reported ages, 26 and 35, fell outside the age range of 18 to 25 years. Additionally, one participant was excluded for not consenting to this study. Further exclusions were made due to incomplete responses. Of the 11 cases removed for this reason, four participants discontinued from the age section onward, three stopped after the nationality section, two left the FoMO scale incomplete, one failed to complete the SMA scale, and another did not finish the phubbing scale. In sum, a total of 14 cases representing 17.5% of the initial data set contained missing values, and they were removed from the data set.

Defining and Processing of Statistical Outliers

Multivariate outliers refer to a combination of unusual values on at least two variables, which can influence statistical outcomes and distort research findings. It often arises from factors such as incorrect data entry or responses that cause data to contain extreme cases. Multivariate outliers are usually analysed when conducting statistical analyses involving two or more independent or dependent variables (El-Masri et al., 2020). To identify

multivariate outliers in this study, three statistical measures were employed, which are the Mahalanobis Distance (MD), the Cook's Distance (CD), and the Centered Leverage (CL). A case was considered a multivariate outlier if it met any of the following criteria: an MD p-value below .001 (Barnett et al., 1979), a CD exceeding 1 (Cook & Weisberg, 1984), or a CL value breaching the threshold of 0.18, which was obtained by the calculation of $\frac{3(3+1)}{66}$ (Ellis & Morgenthaler, 1992). Based on these benchmarks, no cases were identified as multivariate outliers in this study (see Appendix F).

Test of Normality

A normality test is generally performed to assess if the sample data originates from a population that follows a normal distribution (Mishra et al., 2019). In this study, normality was assessed using five methods: histogram, Quantile-Quantile plots, skewness and kurtosis, and the Kolmogorov-Smirnov test.

Histogram

A histogram is commonly used to visualise the frequency distribution of data. A symmetric, bell-shaped curve with a single peak centred over the mean value represents an ideal normal distribution (Das, 2016). In this study, all histograms for each variable displayed a bell-shaped curve, and the distribution was close to its mean, indicating the data were normally distributed (see Appendix G). This result suggested that there were no violations of the normality assumption, and the histogram assumption was successfully met.

Quantile-Quantile Plot

The quantile-quantile plot, or Q-Q plot is a graphical method used to evaluate if a dataset follows a specific probability distribution (Ford, 2015). It involves plotting two sets of

quantiles against each other in a scatterplot. When the expected and observed cumulative distributions match perfectly, a diagonal line can be drawn, showing an ideal normal distribution (Das, 2016). In this study, the assumption of normality was supported by the Q-Q plots for each variable, as the points were closely aligned along the diagonal line (see Appendix H). This alignment indicated that the data for each variable were normally distributed, meeting the normality assumption.

Skewness and Kurtosis

Skewness measures the asymmetry of a distribution (Kim, 2013). A positive skewness value indicates most data points cluster at the lower end of the scale, while a negative skewness value indicates clustering at the higher end. A value of zero indicates a perfect symmetry. Ideally, skewness should be zero or close to zero in a normal distribution, although values between -2 and 2 are also acceptable (Lomax & Hahs- Vaughn, 2013). Kurtosis, on the other hand, measures the shape of the distribution, particularly about the tails and peakedness (Kim, 2013). Positive values suggest heavier tails, while negative values indicate lighter tails. A kurtosis value of zero signifies normality; however, values between -2 and 2 are also within the acceptable range (Lomax & Hahs-Vaughn, 2013).

Table 4.1 shows that the skewness and kurtosis values for most of the variables fell within the acceptable range, except for the kurtosis of phubbing behaviour, which slightly exceeds the threshold. The normality assumption is generally met for skewness and kurtosis across the variables, with phubbing behaviour being the only variable showing a mild deviation from normality. Therefore, it can be concluded that the normality assumption for kurtosis was not fully met.

Table 4.1

Skewness and Kurtosis

Variable	Skewness	Kurtosis
FoMO	.54	-.10
SMA	-.01	-.00
Boredom Proneness	.07	-.75
Phubbing Behaviour *	.95	2.35

* Violate Kurtosis test

Kolmogorov-Smirnov test

The Kolmogorov-Smirnow (K-S) test is a formal statistical test employed to determine if a dataset significantly deviates from a specified theoretical distribution (Chakravart et al., 1967). According to Mishra et al., (2019), a *p*-value more than .05 in the K-S test is considered not significant, which further implies that the sample does not differ much from the normal distribution and the data can be considered normally distributed. As shown in Table 4.2, the K-S test results for FoMO, SMA, and boredom proneness were found greater than the significant level, indicating that the normality assumption was met for these variables. However, the phubbing behaviour variable violated this test, as its *p*-value was smaller than .05. Therefore, the K-S tests for normality were not fully met for phubbing behaviour.

Table 4.2

Results of the K-S test

Variable	*p*-value
FoMO	.08
SMA	.18
Boredom Proneness	.20

Phubbing Behaviour *	.00

* Violate K-S test

Summary for Assumptions of Normality

The five indicators of normality (Q-Q plot, histogram, skewness, kurtosis, and K-S test) were evaluated in this study. FoMO, SMA, and Boredom Proneness met all normality criteria, confirming that their distributions were normal, while Phubbing Behaviour met three indicators of normality out of five. Peat and Barton (2005) stated that the Kolmogorov-Smirnov test may have low power due to its sensitivity to extreme values, and its results should not be given serious consideration when assessing normality in this context. Moreover, broader guidelines provided by Hair et al. (2010) and Bryne (2016) suggest that data is still considered normal when kurtosis falls between - 7 and +7. Hence, the normality assumption for phubbing behaviour was considered met.

Descriptive Statistic

Demographic Characteristics

The final sample consisted of 66 Malaysians between 18 and 25 years old. Among them, 18.2% (*n* = 12) were male, and 81.8% (*n* = 54) were female. The racial composition was predominantly Chinese (84.8%), with 4.5% identifying as Malay, and 10.6% as Indian. Regarding employment status, 81.8% (*n* = 54) were students, 13.6% (*n* = 9) were employed, and 4.5% (*n* = 3) were unemployed. The age group with the highest representation was 22 years old, making up 34.8% of the sample.

Table 4.3

Participants Demographics (n = 66)

	n		*M*	*SD*
Gender				
Male	12	18.20		
Female	54	81.80		
Age			21.80	1.48
Race				
Chinese	56	84.80		
Indian	7	10.60		
Malay	3	4.50		
Occupation				
Student	54	81.80		
Employed	9	13.60		
Unemployed	3	4.50		

Note. *M* = Mean, *SD* = Standard Deviation

Topic-specific Characteristics

For this study, the mean score for the FoMO variable was 23.48 (*SD* = 7.21), it showed that the majority of the participants experienced a low level of FoMO. The mean score for SMA was 16.74 (*SD* = 4.46), suggesting a low level of addiction among most participants. For boredom proneness, the mean score was 29.39 (*SD* = 9.96), suggesting a moderated level of boredom proneness among participants. Finally, the mean score for phubbing behaviour was 28.47 (*SD* = 6.11), indicating a low level of phubbing behaviour.

Table 4.4

Topic-Specific Characteristics (n=66)

	Mean	*Standard Deviation*
FoMO	23.48	7.21
SMA	16.74	4.46
Boredom Proneness	29.39	9.96
Phubbing	28.47	6.11

Correlation Analysis

Pearson Correlation Coefficient is a statistical tool that helps researchers evaluate both the strength and direction of a relationship between two continuous variables. It helps to understand how variations in one variable link to changes in another, giving insights into the magnitude and direction of the relationship (Obilor & Amadi, 2018). The coefficient (r) ranges from -1 to +1, and $r = 0$ signifies no linear relationship between both variables. A positive correlation ($0 < r \leq 1$) means when one variable increases, the other also increases, whereas a negative correlation ($-1 \leq r < 0$) means when one variable increases, the other also decreases (Schober et al., 2018). Furthermore, the strength of the correlation can be interpreted using the rule of thumb: correlations ranging from ±0.91 to ±1.00 indicate a very high relationship, ±0.71 to ±0.90 suggest a high relationship, ±0.41 to ±0.70 represent a moderate relationship, ±0.21 to ±0.40 represent a low relationship, and ±0.00 to ±0.20 reflect negligible relationship (Schober et al., 2018).

In this study, the Pearson Correlation Coefficient was employed to explore the relationships between FoMO, SMA, Boredom Proneness (independent variable), and Phubbing Behaviour (dependent variable). The correlation analysis was conducted to test the

three hypotheses of this study, which are *H*1: There is a relationship between FoMO and phubbing behaviour among young adults in Malaysia, *H*2: There is a relationship between SMA and phubbing behaviour among young adults in Malaysia and *H*3: There is a relationship between boredom proneness and phubbing behaviour among young adults in Malaysia.

The findings revealed a positive correlation between FoMO, SMA, boredom proneness, and phubbing behaviour (refer to Appendix I). Specifically, FoMO showed a moderate positive correlation with phubbing behaviour ($r = .43$, $p < .01$), indicating that individuals experiencing higher levels of FoMO are likely to exhibit increased phubbing behaviour. SMA demonstrated a moderate positive correlation with phubbing behaviour ($r = .62$, $p < .01$), suggesting that greater SMA is associated with higher levels of phubbing. Similarly, boredom proneness exhibited a moderate positive correlation with phubbing behaviour ($r = .52$, $p < .01$), highlighting that individuals with greater tendencies toward boredom are more likely to engage in phubbing. Table 4.5 shows the correlations for all study variables.

In conclusion, as presented in Table 4.6, hypothesis 1 (There is a relationship between FoMO and phubbing behaviour among young adults in Malaysia) is supported, hypothesis 2 (There is a relationship between SMA and phubbing behaviour among young adults in Malaysia) is supported, and hypothesis 3 (There is a relationship between boredom proneness and phubbing behaviour among young adults in Malaysia) is supported in the present study.

Table 4.5

Correlations for study variables

	1	2	3	4
1. FoMO	1			
2. SMA	.52**	1		
3. Boredom Proneness	.33**	.50**	1	
4. Phubbing	.43**	.62**	.52**	1
Mean	23.48	16.74	29.39	28.47
Standard Deviation	7.21	4.46	9.96	6.11

**. Correlation is significant at the .01 level (2-tailed).

Assumption of Multiple Linear Regression

Multiple linear regression (MLR) is a technique used to statistically predict the outcome of a dependent variable based on two or more independent variables. It allows researchers to assess the model's variability and determine the contribution of each independent variable to the overall variance (Hayes, 2024). In the present study, MLR assumptions were employed to investigate the predictive effect of FoMO, SMA, and Boredom Proneness on Phubbing Behaviour. To ensure the validity of the MLR model, key assumptions were tested, including normality of residuals, linearity, independence of error, multicollinearity, and homoscedasticity. A significance level of .05 was set as the threshold for all statistical analyses.

Variable Types

All variables in this study were continuous variables, allowing for the use of MLR analysis. This continuous nature of the variables meets the MLR assumption, which requires quantitative data to predict changes in the outcome variables. Utilizing continuous variables enabled a thorough investigation into the relationship between the variables (Berry, 1993).

Multicollinearity

Multicollinearity is an issue where two or more independent variables are highly correlated, making it challenging to determine the effect of each variable on the dependent variable, leading to unreliable results (Glen, 2015). In this study, multicollinearity was assessed to ensure the predictors are independent. Pallant (2020) has a threshold confirming the absence of multicollinearity, that is a tolerance value of .10 or higher and a Variance Inflation Factor (VIF) below 10. Results showed that multicollinearity is not presented (refer to Appendix J).

Independence of Errors

The independence of error refers to the assumption that residuals are independent and uncorrelated with each other (Ernst & Albers, 2017). In this study, the Durbin-Watson test was used to assess this assumption, with an acceptable range typically between 1 and 3 (Durbin & Watson, 1951). As noted by Chen (2016), a value near 2 indicates that the independence assumption is met. The Durbin-Watson value of 1.816 obtained in this study falls within the acceptable range and is close to 2, confirming that the assumption was satisfied and no violation of independence (refer to Appendix J).

Normality of Residuals, Linearity, and Homoscedasticity

When residuals on a scatterplot seem regularly distributed, randomly scattered, and evenly spread about the zero line, the conditions of linearity, homoscedasticity, and residual normality are satisfied (Osborne & Waters. 2019). In this study, the scatterplot shows that the majority of residuals are evenly spread around the horizontal line, confirming that the normality assumption was not violated (see Appendix J). While some outliers were observed, further investigation using the Mahalanobis Distance, Cook's Distance, and Centered Leverage revealed no cases were identified as multivariate outliers (see Appendix F). Thus, these outliers do not affect the validity of the assumptions.

Summary of Findings

In the current study, MLR analysis was conducted to examine the influence of FoMO, SMA, and boredom proneness on phubbing behaviour among young adults in Malaysia. To make sure there were no violations of the assumptions of linearity, homoscedasticity, normality of residuals, independence of errors, normality of multicollinearity, and multivariate outliers, a preliminary analysis was conducted. The model was significant, F (3, 62) = 16.917, $p < .001$, and accounted for 42.40% of the variance (see Appendix J). This study gained an R^2 value of .424, indicating a large effect size as the value is greater than .26 (Cohen, 1988). The outcome revealed that SMA has the strongest contribution to phubbing behaviour ($\beta = .423$, $p = .001$). Hence, $H4$ is accepted, SMA has the strongest relationship with phubbing behaviour among young adults in Malaysia.

Table 4.6

Summary of Findings

Hypotheses	Decision
*H*1: There is a relationship between FoMO and phubbing behaviour among young adults in Malaysia	Supported
*H*2: There is a relationship between SMA and phubbing behaviour among young adults in Malaysia	Supported
*H*3: There is a relationship between boredom proneness and phubbing behaviour among young adults in Malaysia	Supported
*H*4: Social media addiction (SMA) has the strongest relationship with phubbing behaviour among young adults in Malaysia.	Supported

Chapter 5

Discussion and Conclusion

Fear of Missing Out and Phubbing Behaviour.

The purpose of this study was to find out if young adults in Malaysia who experience FOMO also engage in phubbing behaviour. In this study, the hypothesis posited that there is a relationship between FoMO and phubbing behaviour. The results supported this hypothesis as it showed a positive relationship between both variables, which is also consistent with several previous studies (Ansari et al., 2024; Balta et al., 2018; Chi et al., 2022; Franchina et al., 2018; Gao et al., 2023a; Schneider & Hitzfeld, 2019; Tandon et al., 2022; Younas et al., 2022).

One possible explanation for this relationship is that the fear and frustration generated by FoMO push individuals to stay connected to their social networks, leading them to frequently check their mobile phones to stay updated. This habit of checking for updates repeatedly can lead to phubbing behaviour, where an individual prioritizes their phone over in-person interactions (Dangri & Arya, 2023).

According to the Uses and Gratification Theory (Blumler et al., 1974), individuals who suffer from FoMO are more inclined to seek out social media and rely on their smartphones to meet their social needs (gratification) (Chi et al., 2022). They often turn to their smartphones to feel connected and updated, which increases the likelihood of engaging in phubbing behaviours (Balta et al., 2018). Additionally, this theory also emphasises the active role of the individual in digital media interactions (Katz et al., 1973), suggesting that people intentionally engage in phubbing to satisfy their digital social needs, which can, in turn, intensify their FoMO (Ansari et al., 2024). This creates a cycle where FoMO drives individuals to use social media for information frequently, leading to phubbing behaviour.

Compensatory Internet Use Theory further elaborates on this dynamic, proposing that individuals often turn to the Internet to compensate for negative states and emotions in offline life, such as loneliness and social anxiety (Kardefelt-Winther, 2014). For those with FoMO, the desire to stay informed and avoid missing out leads them to rely heavily on their phones as a key source of connection to the outside world (Gao et al., 2023a). The fear of missing out results in habitual phone checking and a reliance on social media to alleviate this anxiety. Over time, this compulsive behaviour may make it harder for individuals to resist the urge to check their phones, further increasing the likelihood of phubbing behaviour and potentially leading to negative outcomes such as reduced social engagement or underachievement (Paul et al., 2023).

Social Media Addiction and Phubbing Behaviour.

The study's findings confirmed the second hypothesis, which states that there is a positive relationship between SMA and phubbing behaviour. This result aligns with the earlier research (Chi et al., 2022; Karadağ et al., 2015; Rachman, 2021; Tanhan et al., 2023; Tarigan et al., 2024; Younas et al., 2022).

Due to rapid advancement in technology, individuals are increasingly choosing virtual communication over face-to-face interactions. Platforms such as Facebook, Twitter, Instagram, and LinkedIn have become primary modes of communication, often at the expense of direct social engagement (Verma et al., 2019). As the frequency of social media use intensifies, it typically reduces the amount of in-person communication, making individuals more likely to engage in phubbing behaviour (Rachman, 2021). Besides, social media is often used as a coping mechanism. Many individuals turn to these platforms to entertain themselves, avoid interacting with others, escape from real-life problems, or alleviate negative emotions (Tarigan et al., 2024). Social media enable users to live in a

virtual world where they can forget about their immediate surroundings (Nazir & Bulut, 2019). This frequent use of smartphones to stay connected on social media can foster phubbing behaviour, as users become engrossed in their virtual interactions and neglect the social environment around them.

According to Optimal Flow Theory, people experience a deep sense of immersion, concentration and enjoyment when engaged in an activity (Csikszentmihalyi, 2014). Flow, often referred to as 'entering the state,' individuals in this state are most likely to be engaged in something so enjoyable that they stay in that state (Paul et al., 2023). In the case of SMA, people turn to social media to reduce negative emotions, such as anxiety, or to boost their mood (Prado et al., 2023). Social media can provide emotional satisfaction and constant validation online to keep people with SMA attached to their devices (Fang et al., 2020). The immersive nature of social media, where individuals are engrossed in their virtual experiences, makes it harder to disengage from their devices, thus contributing to phubbing behaviour (Chi et al., 2022).

Boredom Proneness and Phubbing Behaviour

The hypothesis suggested that boredom proneness is associated with phubbing behaviour was confirmed in this study, reinforcing findings from previous studies that also highlighted this relationship (Al-Saggaf et al., 2018; Duradoni et al., 2023; Gao et al., 2023, Liu, et al., 2023; Lv & Wang, 2023; Meng & Xuan, 2023; Yam & Kumcagiz, 2020).

Li et al. (2023) found that individuals experiencing boredom often turn to their smartphones as a means to combat this state. These individuals spend more time using their devices, seeking ways to alleviate their boredom. Moreover, individuals with high boredom proneness tend to have low interest in their surroundings and are continuously seeking activities or stimuli to satisfy their need for engagement (Struk et al., 2017). Therefore,

phubbing becomes a common behaviour for such individuals, as they favour their smartphone more to fulfil the need for stimulation (Lv & Wang, 2023). Duradoni et al. (2023) further elaborated that those who are often bored in social situations use their smartphones more frequently to escape this 'negative' state, resulting in phubbing behaviour.

The Uses and Gratification Theory offers a theoretical lens to explain this connection (Blumler et al., 1974). According to the theory, people seek media to satisfy specific needs and desires such as psychological and emotional satisfaction. Thus, for those with high boredom proneness, smartphones and online activities become primary tools to meet such needs, thereby increasing the likelihood of phubbing behaviour (Duradoni et al., 2023).

SMA has the Strongest Relationship with Phubbing Behaviour

The findings of the current study revealed that SMA exhibited the strongest relationship with phubbing behaviour out of the other two independent variables. This result is consistent with previous research, which similarly emphasized the significant link between SMA and phubbing (Chi et al., 2022). Karadağ et al. (2015) also noted that while many factors contribute to phubbing behaviour, SMA stands out as a particularly influential predictor.

SMA occurs when social media use takes such a serious toll on an individual's life that they are unable to control their behaviour (Dalvi-Esfahani et al., 2019). As the use of social media is required through a smartphone, phubbing behaviours are formed for social media addicts who may unconsciously pick up their phones to browse social media in some social situations (Karadağ et al., 2015). Thus, it can be concluded that phubbing activity and social media addiction are tightly related.

The widespread usage of smartphones and social media in Malaysia has resulted in a rise in the prevalence of social media addiction. One study found that 73.71% of students in

Selangor have suffered from social media addiction (Badawi et al., 2024). Based on a previous study by Karadağ et al. (2015), SMA leads to an increase in phubbing behaviours, therefore, the relationship between SMA and phubbing behaviours is strongest in the Malaysian context.

Implications

Theoretical Implication

Some of the theories used in this study are the Uses and Gratification Theory and Compensatory Internet Use Theory, which explain the relationship between FoMO, boredom proneness and phubbing. Both theories have a similar explanation that people use social media to fulfil their personal needs or as a coping mechanism (Butt & Arshad, 2021; Chi et al., 2022; Tandon et al., 2022). Then, the connection between SMA and phubbing is explained using Optimal Flow Theory which emphasises that the experience of the media user affects the usage of the said media (Chi et al., 2022; Salehan & Negahban, 2013).

The theories are backed up by this study itself, which proved that FoMO, SMA and boredom proneness have a significant relationship with phubbing behaviour. The relationship can be explained by using the definitions of the theories, that is people use social media excessively as it allows users to feel that they are not missing out on anything while getting entertained, which is a pleasant feeling for them, thus making them more prone to phubbing behaviour. As the results and theories complement each other, consideration can be made to employ these theories for future research.

As these theories were applied in this study, which was conducted in Malaysia, any future related studies done in the Malaysian context may be able to use these theories as well. This study could also help the theories to reach a different setting as before since the related theories were used in Western settings in a lot of the past research.

Practical Implication

As mentioned in the literature review, most of the studies related to phubbing behaviour are done in the West, lacking Malaysian context. This study not only covers the mentioned literature gap but also highlights the potential factors, while also mentioning the risks of phubbing behaviour in young adults, thus, it sets the stage for further exploration of this topic in the Malaysian context.

Other than that, the study may also be used as a reference for public or private organisations. Specifically, the analysis from this study has highlighted that SMA has the strongest relationship with phubbing, followed by boredom proneness and FoMO. Using this information, authorities from the government and private sector can collaborate to develop and implement interventions and/or strategies to raise awareness surrounding the potential risks of phubbing behaviour. For instance, authorities can design educational programs that promote responsible smartphone use, emphasize the risks of excessive social media engagement, and encourage alternative ways of coping with boredom and social anxieties.

In addition, this study can also be used as a reference for future researchers who plan to pursue the topic of phubbing behaviour in the Malaysian context, to further enrich the body of knowledge for more effective strategies to address phubbing behaviour for Malaysian researchers. In summary, the practical implication of this research paper not only covers the literature side of Malaysia but also attempts to reduce the prevalence of phubbing behaviour of smartphone users, fostering a healthier digital habit in the process.

Limitations

One significant limitation of this study is the reliance on self-reported questionnaires. Respondents may consciously or unconsciously provide inaccurate information when reporting their own experiences (Devaux & Sassi, 2015). This phenomenon is known as

social desirability bias, where individuals tend to answer in ways that are perceived as socially acceptable rather than answer truthfully. Specifically, individuals are more likely to underreport socially unfavourable behaviours while overreporting socially desirable ones (Larson, 2019). For example, respondents might have downplayed symptoms related to FoMO, SMA, boredom proneness, and phubbing because these variables are often associated with problematic experiences and negative outcomes (Altuwairiqi et al., 2019; Ducharme, 2018; Pellegrino et al., 2022; Tam et al., 2021). Moreover, phubbing has been described as one of the most pervasive and insidious forms of unconscious bias (Goodman, 2018). As a result, the self-reported data might lack accuracy, potentially affecting the study's findings. Veselý and Klöckner (2020) state that social desirability bias can significantly impact research outcomes by distorting mean scores, inflating or suppressing correlations thereby undermining the reliability and validity of research outcomes.

Another limitation of this study is the uneven distribution of respondents in terms of both ethnicity and gender. The sample was predominantly Chinese, comprising 87.5% of the participants, while Malay and Indian respondents were only 6.3%. Additionally, female participants accounted for 75% of the sample, compared to only 25% of male participants. This lack of diversity can introduce biases, thereby affecting the generalizability and validity of the findings, because this study is unable to reflect the Malaysian population accurately (Shea et al., 2022). For example, the overrepresentation of Chinese participants may disproportionately reflect the cultures and practices of this specific racial group, overlooking the challenges and viewpoints of other racial groups within Malaysia. At the same time, the gender imbalance may affect the results, with a stronger emphasis on the experiences of female participants, while underrepresenting those of males. However, analysing racial or gender disparities in phubbing behaviour was not the primary objective of this study. Future research aiming to explore differences across racial or gender groups should strive for a more

proportionate and representative sample to ensure equitable opportunity for participation and provide a more comprehensive understanding.

Furthermore, the generalizability of current findings to a broader Malaysian population is limited due to the relatively small sample size (n = 66), which may not be representative of the entire young adult population in Malaysia. As of January 2024, Malaysia's population stood at 34.49 million, with 11.2% falling within the 18 to 24 age group (Kemp, 2024). Given the substantial size of this demographic, the current sample is insufficient to capture the variability and complexity of the entire young adult population. Hence, this limitation likely reduces the applicability of the study's results to the wider population (Gumili & Das, 2022).

Recommendations

Future research can employ a mixed-methods approach, integrating quantitative measures with qualitative interviews or observations to reduce social desirability bias (Dawadi et al., 2021). Specifically, incorporating behavioural measures like sceen time tracking, peer evaluations, and observational studies can provide more holistic understanding and uncover patterns of phubbing behaviour that individuals may not consciously recognize. For example, screen time tracking provides objective data on phone usage patterns, highlighting the frequency and duration of potential SMA and FoMO. Peer evaluations can capture the perceptions and reactions of others in social settings of phubbing, effectively reducing social desirability bias. Observational studies allow researchers to document real-time interactions (Ramji, 2022), offering insights into the situational triggers and contexts that foster phubbing. This approach is valuable because individuals may not even realize they are engaging in phubbing, as phone usage has become habitual and unconscious behaviour

(Price, 2023). Over time, phubbing can become so ingrained that individuals fail to recognize the signs (Bröning & Wartberg, 2022).

Moreover, if future research aims to explore differences across racial or gender groups in phubbing behaviour, researchers should adopt more inclusive and targeted sampling strategies to achieve a proportionate and representative sample. One effective approach is stratified sampling, which ensures proportional representation of Malaysia's major ethnic groups (Malay, Chinese, and Indian) and gender are adequately represented. This method involves subgroups of the population based on key characteristics and sampling from each subgroup independently (Howell et al., 2020). This method can better reflect the diversity of the population and reduce potential sampling biases, thereby improving the accuracy and reliability of the findings (Elfil & Negida, 2017). Moreover, future studies could also focus on underrepresented ethnic minorities in Malaysia, such as Melanau, Kadazan, and Bumiputera, to explore their specific experiences with FoMO, SMA, boredom proneness, and phubbing behaviour.

Furthermore, future studies can prioritise larger and more diverse samples to improve the representativeness and generalizability of the findings. Expanding the sample size and ensuring a broader demographic range, including variations in gender, ethnicity, and socioeconomic status, can provide a more comprehensive understanding of phubbing behaviour. To achieve this, researchers can collaborate with universities, community organizations, or online platforms to recruit participants from diverse regions and demographic groups. Additionally, offering incentives such as cash rewards, gift vouchers, or other forms of appreciation can help attract more participants and boost their motivation to complete the study.

Conclusion

In conclusion, this study supported all four hypotheses: There is a relationship between FoMO (*H*1), SMA (*H*2), boredom proneness (*H*3) and phubbing behaviour among young adults in Malaysia, and SMA has the strongest relationship with phubbing behaviour among young adults in Malaysia (H4). The findings indicate that FoMO, SMA, and boredom proneness have a positive relationship with phubbing behaviour. In addition to highlighting the possibility of creating intervention programs to address this habit in the future, this study offers insightful information about the major predictors of phubbing. While the study acknowledges limitations such as a small sample size and study design constraints, it emphasizes the importance of further research that employs diverse methodologies and larger, more representative samples to gain a comprehensive understanding of the predictors on phubbing behaviour. Future studies could draw from the findings of this research to explore additional factors that influence phubbing behaviour and deepen the understanding of its psychological and social implications.

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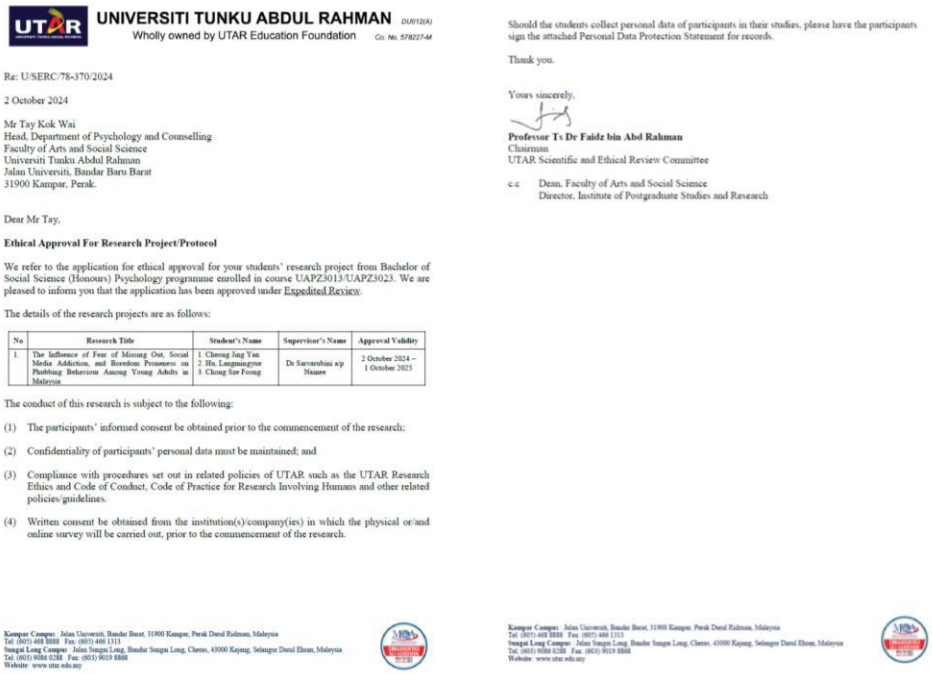
Appendix A

Ethical Clearance Approval



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Re: U/SERC/78-370/2024

2 October 2024

Mr Tay Kok Wai
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Mr Tay,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3013/UAPZ3023. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	The Influence of Fear of Missing Out, Social Media Addiction, and Boredom Proneness on Phubbing Behaviour Among Young Adults in Malaysia	1. Cheong Jing Yan 2. Ha, Langmangyoe 3. Chong Sze Foong	Dr Sarvarubini a/p Nainee	2 October 2024 – 1 October 2025

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

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Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Arts and Social Science
Director, Institute of Postgraduate Studies and Research

Kampar Campus : Jalan Universiti, Bandar Baru, 31900 Kampar, Perak Darul Ridzuan, Malaysia
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Tel: (603) 9086 0288 Fax: (603) 9019 8868
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Figure A1: Ethical approval letter with the approval number U/SERC/78-370/2024.

Appendix B

Effect Size Calculation

Table 2

Summary of Inter-Correlations, Means, and Standard Deviations for Scores on NeedSati, NeedFrus, FOMO, Phubb, ComDist, and PhObs (N = 240)

Variables	1	2	3	4	5	6	*M*	*SD*
1. NeedSati	–	−.50**	−.52**	−.44**	−.52**	−.20**	20.98	9.58
2. NeedFrus	–	–	.67**	59**	.58**	.46**	57.71	4.31
3. FOMO	-	–	–	.75**	.73**	.60**	46.80	3.54
4. Phubb	–	–	–	–	.95**	.84**	47.45	3.14
5. ComDis	–	–	–	–	–	.63**	23.13	2.22
6. PhObs	–	–	–	–	–	–	1.24	1.24

Note. ComDis = communication disturbance; FOMO = fear of missing out; NeedFrus = need frustration; NeedSati = need satisfaction; PhObs = phone obsession; Phubb = phubbing scale.

** $p < .01$.

Figure B1: Correlation between FoMO and Phubbing in the red box (Butt & Arshad, 2021).

$$r = 0.75$$

$$\square^2 = \frac{\square^2}{1 - \square^2}$$

$$= \frac{0.75^2}{1-0.75^2}$$

$$= 1.286$$

Table 2: Inter-correlations of Sociodemographic Characteristics Study and Variables (N = 150)

Variables	1	2	3	4	5	6	7	8	9
Gender	-	-.09	-.02	-.102	-.09	-.02	.40***	.31***	.31***
Age		-	.08	.30***	.35***	.08	-.06	-.11	-.13
Siblings			-	.09	.11	.23**	-.08	-.18*	-.07
Marital status				-	.20*	-.09	.00	-.08	-.06
Employment Status					-	.02	-.07	-.15	-.07
Price of the current device						-	.03	-.00	-.02
FOMO							-	.75***	.73***
SMAS								-	.76***
Phubbing									-

Note. *$p < .05$, **$p < .01$, *** $p < .001$

Figure B2: Correlation between Social Media Addiction and Phubbing in the red box (Younas et al., 2022).

$$r = 0.76$$

$$□^2 = \frac{□^2}{1 - □^2}$$

$$= \frac{0.76^2}{1-0.76^2}$$

$$= 1.367$$

Table 2. *Correlations Among Boredom Proneness, Fear of Missing Out, and Phubbing*

	1	2	3	4	5	6	7	8	9	10
1. Gender	1									
2. Boredom proneness	−.048	1								
3. Fear of missing out	−.025	.355**	1							
4. Fear of missing information	.012	.382**	.819**	1						
5. Fear of missing situations	−.054	.227**	.792**	.297**	1					
6. Phubbing	.019	.500**	.381**	.382**	.227**	1				
7. Problem acknowledgement	−.059	.364**	.264**	.203**	.223**	.674**	1			
8. Interpersonal conflict	−.031	.412**	.260**	.312**	.101**	.794**	.388**	1		
9. Self-isolation	.029	.431**	.258**	.336**	.071	.818**	.421**	.664**	1	
10. Nomophobia	.096**	.274**	.337**	.266**	.277**	.663**	.273**	.305**	.306**	1

Note. ** $p < .01$ (two-tailed).

Figure B3: Correlation between Boredom Proneness and Phubbing in the red box (Ding & Si, 2024).

$$r = 0.500$$

$$□^2 = \frac{□^2}{1 - □^2}$$

$$= \frac{0.500^2}{1-0.500^2}$$

$$= 0.333$$

Total effect size (Average f^2 value)

$$□□□□□□□□ \quad □^2 = \frac{(1.286 + 1.367 + 0.333)}{3}$$

$$= 2.986$$

$$= 0.995$$

Appendix C

G*Power

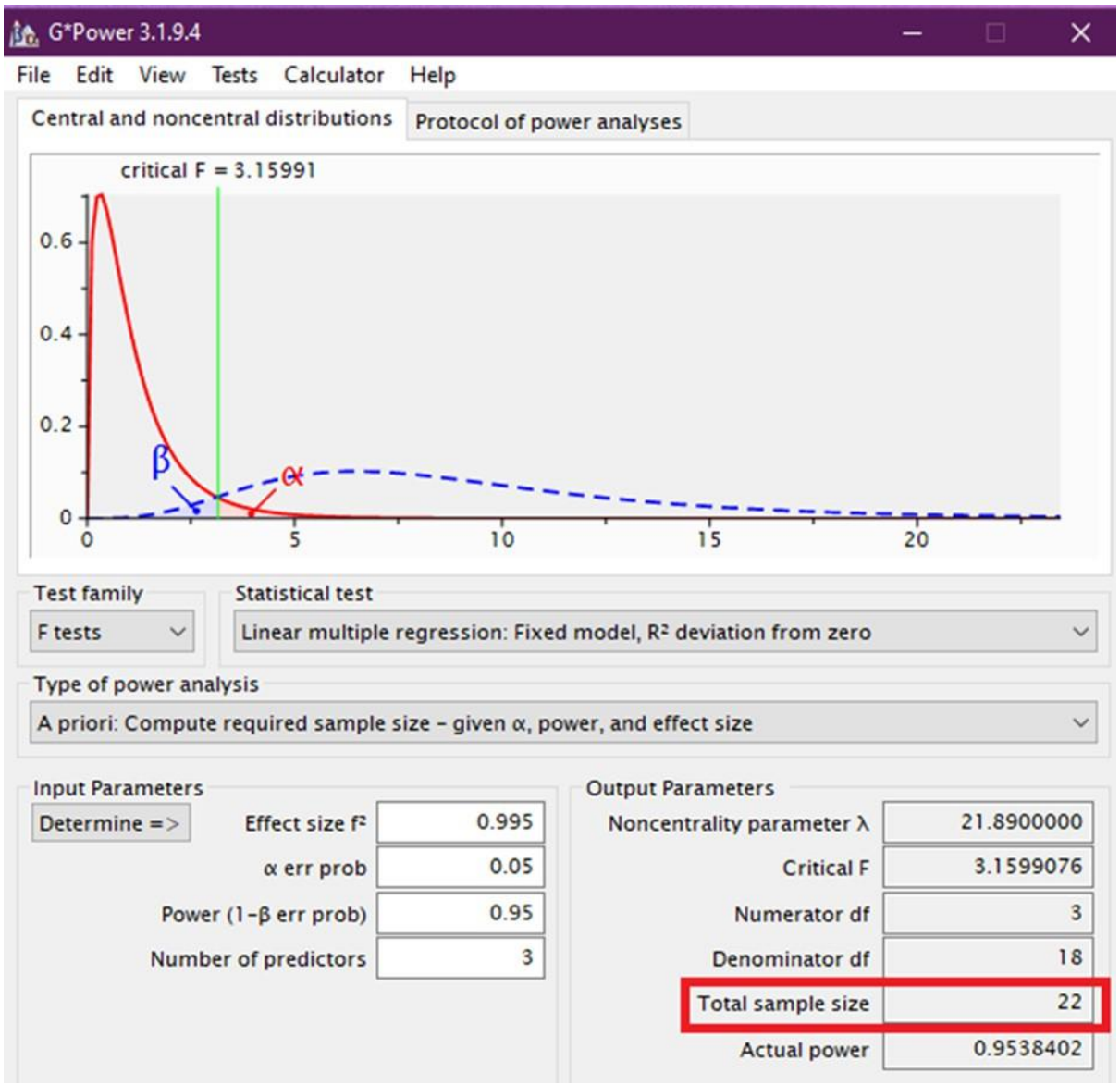

Figure C1: G*Power calculated the sample size in the red box.

Appendix D

Reliability of Instruments for Pilot Study and Actual Study

Pilot Study

Reliability Statistics

Cronbach's Alpha	N of Items
.928	10

Figure E1: Reliability for FoMO

Reliability Statistics

Cronbach's Alpha	N of Items
.859	6

Figure E2: Reliability for SMA

Reliability Statistics

Cronbach's Alpha	N of Items
.889	8

Figure E3: Reliability for boredom proneness

Reliability Statistics

Cronbach's Alpha	N of Items
.860	10

Figure E4: Reliability for phubbing behaviour

Actual Study

Reliability Statistics

Cronbach's Alpha	N of Items
.843	10

Figure E5: Reliability for FoMO

Reliability Statistics

Cronbach's Alpha	N of Items
.795	6

Figure E6: Reliability for SMA

Reliability Statistics

Cronbach's Alpha	N of Items
.898	8

Figure E7: Reliability for boredom proneness

Reliability Statistics

Cronbach's Alpha	N of Items
.798	10

Figure E8: Reliability for phubbing behaviour

Appendix E

Multivariate Outliers Assumption Checking

Case Summaries[a]

	Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
1	1	5.96863	.14384	.09183
2	2	7.99404	.00353	.12299
3	3	7.43825	.20634	.11443
4	4	2.67923	.01764	.04122
5	5	8.55797	.00006	.13166
6	6	2.97088	.00622	.04571
7	7	2.13641	.01625	.03287
8	8	5.47916	.01461	.08429
9	9	3.36819	.01009	.05182
10	10	3.02610	.01486	.04656
11	11	4.99933	.06975	.07691
12	12	2.51731	.00036	.03873
13	13	7.92631	.20905	.12194
14	14	3.75178	.00000	.05772
15	15	4.33769	.03199	.06673
16	16	3.25790	.00390	.05012
17	17	2.79277	.05777	.04297
18	18	.82920	.00307	.01276
19	19	1.16401	.00011	.01791
20	20	1.35266	.00203	.02081
21	21	4.13343	.00029	.06359
22	22	2.43918	.00012	.03753
23	23	.60695	.00000	.00934
24	24	3.09878	.00535	.04767
25	25	.40729	.00267	.00627
26	26	1.35581	.00003	.02086
27	27	.23914	.00001	.00368
28	28	.81421	.00230	.01253
29	29	.69567	.00673	.01070
30	30	1.95623	.00048	.03010
31	31	.99893	.00806	.01537
32	32	.87476	.00118	.01346
33	33	1.48916	.01701	.02291
34	34	.24857	.00097	.00382

	35	35	.56397	.00001	.00868
	36	36	2.83881	.02740	.04367
	37	37	3.11434	.00005	.04791
	38	38	5.96878	.08479	.09183
	39	39	1.32416	.00515	.02037
	40	40	3.08669	.00113	.04749
	41	41	3.05936	.01149	.04707
	42	42	.87278	.03248	.01343
	43	43	1.09128	.00351	.01679
	44	44	2.26774	.00588	.03489
	45	45	4.25685	.01602	.06549
	46	46	.56029	.03231	.00862
	47	47	1.74098	.00944	.02678
	48	48	1.65266	.00027	.02543
	49	49	4.23644	.01373	.06518
	50	50	1.46638	.00310	.02256
	51	51	.96283	.00766	.01481
	52	52	.73737	.00022	.01134
	53	53	.89434	.00388	.01376
	54	54	6.06152	.00031	.09325
	55	55	4.09709	.00408	.06303
	56	56	2.24602	.00497	.03455
	57	57	1.36789	.00211	.02104
	58	58	1.15444	.00768	.01776
	59	59	3.36710	.00437	.05180
	60	60	2.52409	.01284	.03883
	61	61	3.47415	.00080	.05345
	62	62	2.96253	.00487	.04558
	63	63	2.96548	.00112	.04562
	64	64	7.16914	.00731	.11029
	65	65	8.78558	.25946	.13516
	66	66	6.22295	.08557	.09574
Total	N		66	66	66

Figure F1: All cases did not breach the threshold value; thus, no outliers were identified.

Appendix F

Histogram for Each Distribution

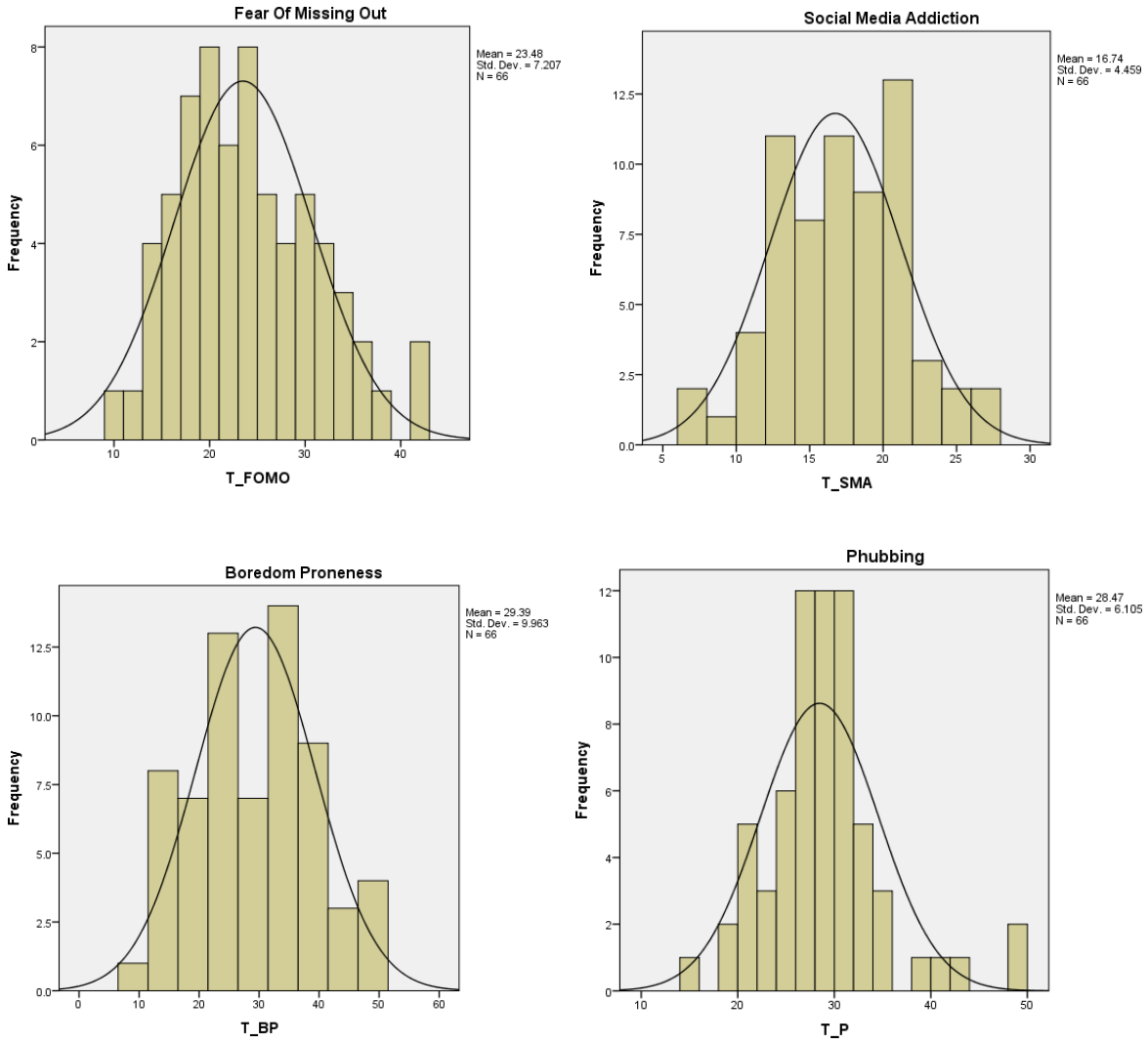

Figure G1: Histogram for each variable.

Appendix G

Q-Q Plot for Each Variable

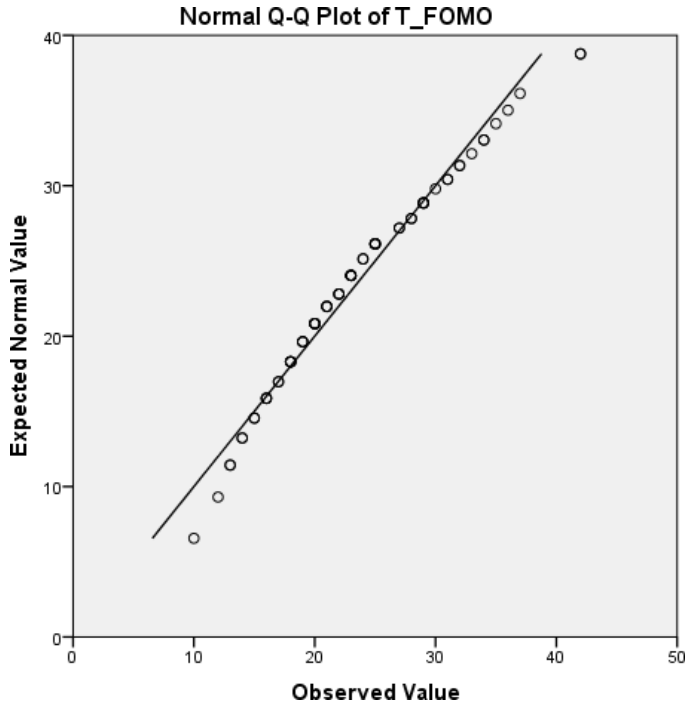

Figure H1: Q-Q plot for Fear of Missing Out (FoMO)

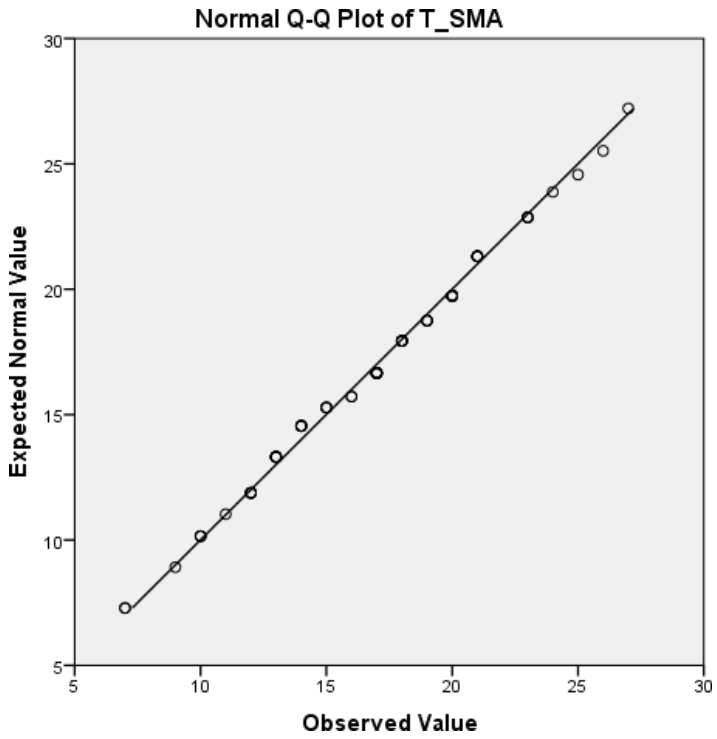

Figure H2: Q-Q plot for Social Media Addiction (SMA)

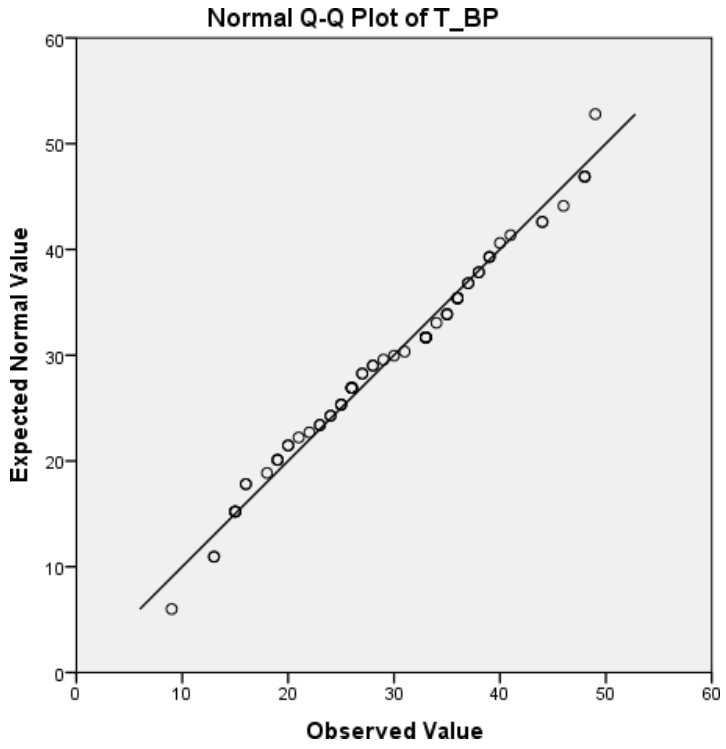

Figure H3: Q-Q plot for boredom proneness

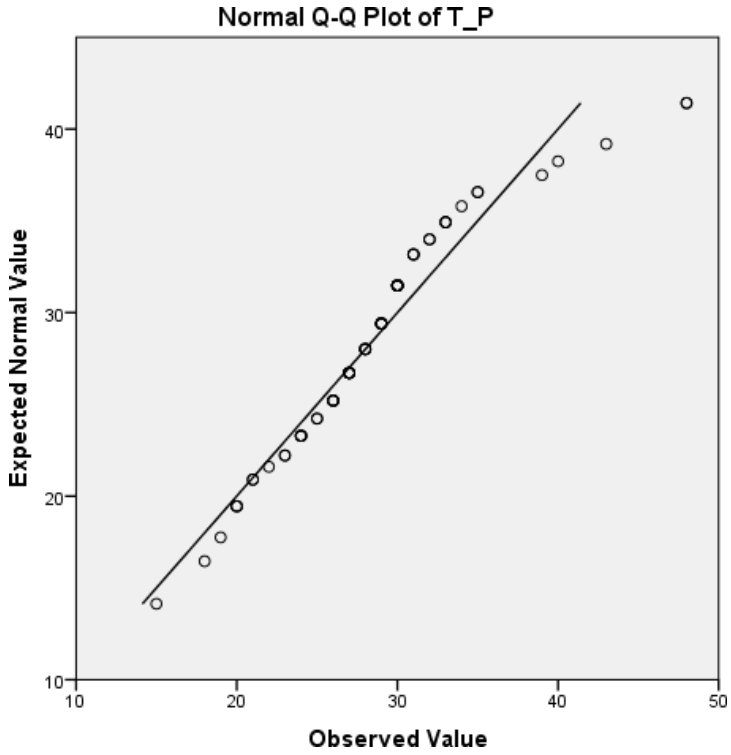

Figure H4: Q-Q plot for phubbing behaviour

Appendix H

Pearson Correlation Analysis

Correlations

		T_FOMO	T_SMA	T_BP	T_P
T_FOMO	Pearson Correlation	1	.520**	.326**	.425**
	Sig. (2-tailed)		.000	.008	.000
	N	66	66	66	66
T_SMA	Pearson Correlation	.520**	1	.504**	.619**
	Sig. (2-tailed)	.000		.000	.000
	N	66	66	66	66
T_BP	Pearson Correlation	.326**	.504**	1	.518**
	Sig. (2-tailed)	.008	.000		.000
	N	66	66	66	66
T_P	Pearson Correlation	.425**	.619**	.518**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	66	66	66	66

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

Figure I1: Correlation analysis for study variables

Appendix I

Multiple Linear Regression (MLR) Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	11.623	2.481		4.685	.000	6.663	16.582		
	T_FOMO	.100	.094	.118	1.069	.289	-.087	.288	.724	1.381
	T_SMA	.579	.166	.423	3.492	.001	.248	.910	.604	1.654
	T_BP	.163	.067	.266	2.434	.018	.029	.297	.740	1.351

a. Dependent Variable: T_P

Figure J1: Variance Inflation Factor (VIF) Values and Tolerance Values

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.671[a]	.450	.424	4.635	1.816

a. Predictors: (Constant), T_BP, T_FOMO, T_SMA

b. Dependent Variable: T_P

Figure J2: Durbin-Watson Test

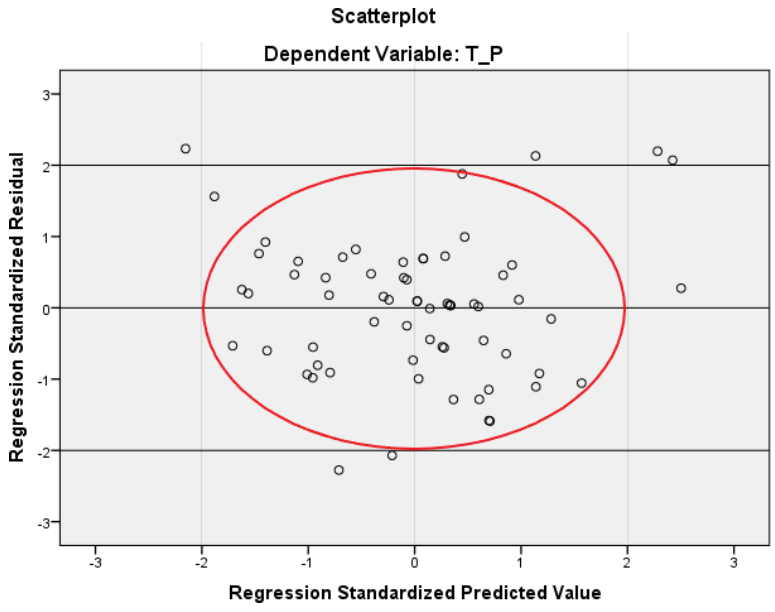

Figure J3: Scatterplot demonstrated the normality of residuals, linearity, and homoscedasticity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1090.385	3	363.462	16.917	.000[b]
	Residual	1332.054	62	21.485		
	Total	2422.439	65			

a. Dependent Variable: T_P

b. Predictors: (Constant), T_BP, T_FOMO, T_SMA

Figure J4: Regression Model