



Wholly owned by UTAR Education Foundation
(Co. No. 578227-M)
DU012(A)

THE RELATIONSHIP BETWEEN FEAR OF MISSING OUT, SOCIAL MEDIA FLOW
EXPERIENCE AND SOCIAL MEDIA ADDICTION AMONG UNIVERSITY STUDENTS IN
MALAYSIA

NG JING WEN

SEE ROU YEE

VOOI HAO ZHENG

This research project was submitted in partial fulfilment of the requirement for the Bachelor of Social Science (Hons) Psychology, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman. Submitted in April 2023.

THE RELATIONSHIP BETWEEN FEAR OF MISSING OUT, SOCIAL MEDIA FLOW
EXPERIENCE AND SOCIAL MEDIA ADDICTION AMONG UNIVERSITY STUDENTS IN
MALAYSIA

See Rou Yee, Ng Jing Wen, Vooi Hao Zheng

Universiti Tunku Abdul Rahman

This research project is submitted in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Psychology, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman. Submitted in April

2024

Acknowledgements

We cannot imagine this Final Year Project (FYP) could be done without the assistance from our beloved supervisor, Dr Ooh Seow Ling. Although Dr Ooh often very busy, she still willing to provide advices and consultation for us, we feel we own a lot to Dr Ooh, thank you Dr Ooh! I, Hao Zheng, wish Dr Ooh can have a healthy and rich life as we know being a lecturer and researcher in university is a very stressful and challenging occupation, keep safe and healthy Dr Ooh.

SEE ROU YEE

NG JING WEN

VOOI HAO ZHENG

APPROVAL FORM

This research paper attached here, entitled “The Relationship Between Fear of Missing Out, Social Media Flow Experience and Social Media Addiction Among University Students in Malaysia.” prepared and submitted by “See Rou Yee, Ng Jing Wen and Vooi Hao Zheng” in partial fulfillment of the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

Supervisor

Dr Ooh Seow Ling

Date: _____

Abstract

Social media have brought a lot of benefits to our life, however if abuse, it might lead to social media addiction. Due to this concern, the current study analyses the connection between Malaysian undergraduate students' Social Media Addiction (SMA), Social Media flow (SM flow), and Fear of Missing Out (FoMO). Three instruments which are ten-item Fear of Missing Out Scale, Brailovskaia's Social Media flow scale and six-item Bergen Social Media Addiction Scale were used in the current study. In term of result design, quantitative cross-sectional research design was applied in the present study. Purposive sampling method was applied, participant must be a Malaysian undergraduate student, aged 18 or above, currently residing in Malaysia. A total number of 227 participants (M: 20.83, SD: 1.61), wherein most of them are UTAR students (95.5%). All the data was obtaining online self-report survey. All the hypothesis in the present study were supported, result indicated a significant positive relationship existed between FoMO and SMA, between SM flow and SMA, and between FoMO and SM flow, while SM flow play a mediating role between FoMO and SMA. These results were consistent was consistent with previous study conducted by Brailovskaia and Margraf (2023). In sum, current research on Fear of Missing Out (FoMO), flow experience of social media, and addictive behavior to social media in Malaysian university students offers insights for interventions promoting digital well-being. FoMO drives social media flow, contributing to addiction. Flow Theory helps understand this relationship, crucial especially amidst COVID-19 stress, highlighting the importance of targeted interventions.


Keywords: Social Media Addiction, Social media flow experience, Fear of Missing Out, Malaysian university students.

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.

Name: Ng Jing Wen

Student ID: 21AAB02478

Signature: 

Date: 08th April 2024

Name: See Rou Yee

Student ID: 21AAB01843

Signature: 

Date: 08th April 2024

Name: Vooi Hao Zheng

Student ID: 21AAB00061

Signature: VOOI HAO ZHENG

Date: 08th April 2024

Table of Content

Chapters		
I	Introduction	1
	Background of Study	1
	Problem Statement	3
	Research Objective	7
	Research Question	7
	Hypotheses	8
	Significant of Study	8
	Conceptual Definition	9
	Operational Definition	11
II	Literature Review	13
	Fear of Missing Out and Social Media Addiction	13
	Social Media Flow Experience and Social Media Addiction	14
	Fear of Missing Out and Social Media Flow Experience	16
	Indirect Relationship of Social Media Flow in the	18
	Relationship Between fear of missing out (FOMO) and	
	Social Media Addiction.	
	Conceptual Framework	20
	Theoretical Framework	21
III	Methodology	25

	Research design	25
	Sampling method	25
	Sample Size	26
	Location	27
	Participants	27
	Data Collection Procedures	27
	Pilot Study	28
	Actual Study	29
	Instruments	29
IV	Results	32
	Demographic characteristics	32
	Topic-Specific Characteristics	33
	Frequency and Percentages of Missing Data	35
	Methods employed for addressing missing data	35
	Criteria for Post Data-Collection Exclusion of Participants	35
	Univariate Outliers	36
	Multivariate Outliers	36
	Data transformation	36
	Histogram	36

	Q-Q plot	37
	Skewness and Kurtosis	37
	Kolmogorov-Smirnov test	38
	Pearson's correlation coefficient	39
	Multicollinearity	39
	Independence of error	40
	Test of Normality of Error, Linearity of Error, and Homoscedasticity	41
	Statistical Analyses	41
	Effect sizes	43
V	Discussion and Conclusion	45
	H1	45
	H2	46
	H3	48
	H4	49
	Practical Implication	50
	Theoretical Implication	52
	Limitations of the study	53
	Recommendations for Future Research	55
	References	

Appendices

Appendix A	Questionnaire	86
Appendix B	Effect Calculation	94
Appendix C	G*Power	96
Appendix D	Ethical Approval for Research Project	97
Appendix E	Univariate outlier	99
Appendix F	Multivariate outlier	100
Appendix G	Histogram	101
Appendix H	Q-Q plot	104
Appendix I	Skewness and kurtosis	107
Appendix J	Kolmogorov-Smirnov (K-S) test	108
Appendix K	Correlations	109
Appendix L	Multicollinearity	110
Appendix M	Independent of error	111
Appendix N	Scatterplot	112
Appendix O	Mediating test result	113

List of Figures

Figure		Page
1	Conceptual Framework	20
2	Scatterplot	41

List of Abbreviations

Tables	Name	Page
Table 3.1	Inter-item's reliability	29
Table 4.1	Demographic Information of Research sample	32
Table 4.2	Frequency Distribution of Topic-Specific Characteristics	34
Table 4.3	Skewness and Kurtosis	38
Table 4.4	Kolmogorov-Smirnov test	38
Table 4.5	Correlation Among variables	39
Table 4.6	Multicollinearity	40
Table 4.7	Independent Error test	40
Table 4.8	Mediating test result	43
Table 4.9	Mediating test result	43
Table 4.10	Mediating test result	44

List of Abbreviations

Abbreviations	
FOMOs	Ten-item Fear of Missing Out Scale
FFQ	Modified version of 'Facebook Flow' Questionnaire
BSMAS	Six-item Bergen Social Media Addiction Scale
K-S test	Kolmogorov-Smirnov (K-S) test

Chapter 1

Introduction

Background of the study

Social media is the online platform that allows people to present themselves and interact with each other either in asynchronously or synchronously and social media users can obtain benefit from the content created by fellow users and the interactions they have with others. (Carr & Hayes, 2015). Some common online networking platforms included Facebook, YouTube, WhatsApp and Instagram etc (Kemp, 2023). Social media has brought many benefits to our life, for instance, sharing of information and communication, collaborative teamwork, the ability to work remotely, the sharing of data and the list goes on (Drahošová & Balco, 2017). Abuse, nevertheless, could result in addiction.

Social media addiction has been given a meaning as investing needless amounts of time and energy on social media as individuals are concerned about social media too much and strongly motivated to use it to the degree that other life aspects of individuals are not functioning well (Andreassen, 2015). The time individuals spend on social media daily is increasing drastically around the world. The global digital overview report 2023 showed that the time people from worldwide spent using social media in 2013 was 1 hour and 37 minutes daily on average while year 2022 was 2 hour and 31 minutes which had increased 55.6% (Kemp, 2023). During their time in Malaysia, as per DIGITAL 2023: Malaysia, Malaysians spend an average of 2 hours and 47 minutes on social media usage daily, surpassing the global average of 2 hours and 31 minutes, as reported by Kemp (2023b). This suggests an increased susceptibility among Malaysians to develop social media addiction.

In Malaysia, university students allocate a significant portion of their time to engage with social media. Study conducted in Universiti Malaysia Sarawak showed that within a total number of 270 participants, 35.6% of the undergraduate participants used social media for more than 5 hours daily and 37.5% participants had social media addiction symptoms (Lee et al., 2023). Another study conducted in Malaysia shows that undergraduate students spend an average 4.5 hours daily on social media (Tung et al., 2022). We need to stress that spend time on social media within limiting time (≤ 60 minutes) can bring benefits to our well-being (Hunt et al., 2023), however, increased usage time on social media can lead to depression, problematic behavior and recurrence of drinking alcohol (Brunborg & Andreas, 2019). These findings have highlighted Malaysia undergraduate students as a high-risk population of social media addiction. There are many negative outcomes of social media addiction, for instances, sleep disturbance (Masthi et al., 2018; Sümen & EvgiN, 2021), stress, anxiety, depression (Ramani & Diwanji, 2022), lower self-esteem (Andreassen et al., 2017; Hawi & Samaha, 2016) and lower academic performance (Hou et al., 2019) etc. Therefore, it is essential to conduct studies among undergraduate students to determine what factors contribute to social media addiction.

Past academic works have suggested that Fear of Missing Out (FoMO) is one of the predictors of social media addiction, that is, increase in FoMO predicts increase in Social Media Addiction (Sultan, 2021). While social media flow is a mediator between FoMO and social media addiction, the increase in FoMO predicts increase in Social Media Flow which predicts increase in Social Media addiction (Brailovskaia & Margraf, 2023).

Problem Statement

With the swift progress of technology, social media has become an essential component of individuals' lives, especially evident during the pandemic of COVID-19 when restrictions forced individuals to rely more heavily on digital technology (Tung et al., 2022). In 2023, the Department of Statistics Malaysia reported that approximately 78.5 % of Malaysians were active social media users. Although this represents a 13.2 % decline from 2022, it is worth noting that Malaysians continue to spend an average of two hours and forty-seven minutes per day on social media, outpacing the global average by sixteen minutes (Malaysia: Social Media Usage 2023 | Statista, 2023). Simultaneously, research reveals that a substantial 67% of young people in Malaysia engage actively on social media platforms (Commission Factory, n.d.). In a 2022 research conducted by Sheng et al., 92.7% of respondents, aged between 17 and 19 at Universiti Kebangsaan Malaysia, reported daily use of social media, with 52% using it more than seven times a day (Sheng et al., 2022). Whereby, prior research has demonstrated that engaging in frequent online activity might hasten the emergence of addictive behaviors. (Brailovskaia & Teichert, 2020). A strong emotional attachment to social media can result in a problematic compulsion to stay online continuously (Andreassen et al., 2017). People exhibiting heightened addictive inclinations are more likely to engage in risky behavior in order to avoid unpleasant experiences and obtain positive ones (Brailovskaia & Teichert, 2020). Therefore, it is essential for us to study the issue of social media addiction in Malaysia.

University students, in particular, are regarded as a vulnerable group when it comes to social media addiction (Akakandelwa & Walubita, 2018; Alaika et al., 2020; Mahamid & Berte, 2018; Szczygieł & Podwalski, 2020). By interacting with other educational systems and learning

groups, they can enhance their learning and obtain the most recent information in social media (Greenhow & Robelia, 2009). However, it also have a negative consequence that contributes to a range of physical, mental, and psychological health issues, including academic decline (Pekpazar et al., 2021), reduced focus and productivity (Nyaribo & Munene, 2018), sleep disturbances (Vernon et al., 2015), social isolation (Meshi et al., 2020), stress (Brailovskaya & Margraf, 2017), depression (Shensa et al., 2017) and financial concerns (Kuss & Griffiths, 2017) due to overspending on online purchases or falling victim to scams on social media. In sum, it is evidence that university students tend to be affected by the negative impacts (Kolhar et al., 2021) if addicted to social media, hence it has drawn our attention to focus on university students.

For years researchers have been attempting to examine the risk factors that contribute to social media addiction, and one of the potential risk factors found was fear of missing out (FoMO) (Wolniewicz et al., 2019). Fear of missing out (FoMO) is a well-known phenomenon (Li et al., 2022; Wang et al., 2023). On May 15, 2023, a Google search for the term FoMO yielded over 500 million websites in under 1 second (Brailovskaia & Margraf, 2023). Numerous websites discuss how using social media (SM) sites like TikTok, Instagram, Facebook, and Twitter and FOMO are strongly correlated (Brailovskaia & Margraf, 2023). This may give the impression that the emergence of social media coincided with the FoMO phenomenon (Przybylski et al., 2013). FoMO, as first termed by a marketing strategist, Dr. Dan Herman, in 1996, describes the anxiety caused by the belief that others' lives are more enjoyable and fulfilling lives (Scott, 2022). Few studies have considered FOMO as a predictor of negative social media consequences (Tandon et al., 2020; Tandon et al., 2021). In short, given that FOMO may be a considerable factor for people to engage in social media (Tandon et al., 2021).

However, the interrelationship between FoMO and social media addiction is understudied in Asian countries, especially in Malaysia. In Malaysia, people tend to have a higher degree of fear of missing out compared to Western countries. This is due to the collectivist society that exists in Malaysia, where individuals are members of "groups" (Saat, 2021). In a collectivist culture, individuals prioritize social connections and as a result. Therefore, when people find that they are unable to participate in a specific event, they are more likely to experience the fear of missing out (FOMO) which causes them to spend increased time on social media sites and potentially develop addictive behavior (Gupta & Sharma, 2021). This emotional state can give rise to intense envy and lower self-esteem, particularly among university students (Gupta & Sharma, 2021). Their struggles with FOMO stem from factors such as disrupted sleep patterns, loss of focus, dependence on social media for gratification, and heightened anxiety (Rod et al., 2018; Tanhan et al., 2022; Alutaybi et al., 2020). However, research on the relationship between FoMO and social media addiction in Malaysia is limited (Kamaruddin et al., 2022; Cargill, 2019), despite prior investigations conducted in China (Li et al., 2022), Turkey (Koç et al., 2023; Orta, 2020), and Indonesia (Anastasya et al., 2022). Notably, existing research in Malaysia primarily pertains to young adults rather than university students (Koç et al., 2023). Previous studies have shown that, across diverse age brackets, university students rank among the most frequent users of social media (Azizi et al., 2019). They spend the majority of their online time completing research projects, communicating with professors, organizing with peers, and broadening their global social networks (Azizi et al., 2019; Lenhart & Madden, 2007; Wilson et al., 2010). Therefore, establishing a direct correlation between FOMO and social media addiction among university students in Malaysia remains unexplored.

According to previous research, a potential risk factor could be social media flow. Flow is characterized as an intrinsically rewarding experience linked to elevated levels of pleasure and enjoyment when an individual is deeply engaged in a particular activity. (Brailovskaia & Teichert, 2020). The question of staying informed and connected in the dynamic online world can lead to a state of "social media flow," characterized by deep immersion and absorption in the digital environment (Kühn, 2019). The repetitive and rewarding nature of social media interactions, coupled with the fear of missing out, creates a feedback loop that reinforces frequent and prolonged social media use (Khang et al., 2013). Over time, this can evolve into social media addiction, as individuals become increasingly reliant on these platforms as a means to alleviate the anxieties associated with missing out on social events and updates in their social circles (Brailovskaia & Margraf, 2023). Despite its connection to positive emotions, there has been limited research in Malaysia concerning the indirect interrelationship of social media flow in the relationship between fear of missing out (FoMO) and social media addiction. Most studies exploring the correlation between social media flow experience and social media addiction have been conducted in other countries, such as Korea (Jang, 2012), China (Zhao & Zhou, 2021), and Germany (Brailovskaia & Teichert, 2020). Thus, there have been insufficient studies that investigated the moderator role of social media flow experience in the relationship between fear of missing out (FoMO) and social media addiction, particularly among Malaysian university students.

To achieve a thorough comprehension of the reasons behind university students developing social media addictions, quantitative research will be employed to explore the

mediating role of social media flow in the connection between the fear of missing out (FoMO) and social media addiction. Addressing this problem holds practical benefits for researchers and contributes to a more profound comprehension of this widespread phenomenon. For example, support should be given when identifying people who may develop addictive tendencies, creating programs to stop social media addiction, and treating patients in therapy settings who already exhibit signs of addictive online behavior (Brailovskaia & Teichert, 2020). This project seeks to illuminate how the social media flow experience affects the connection between the fear of missing out and social media addiction among university students in Malaysia.

Research Objectives:

1. To examine the relationship between fear of missing out (FoMO) and social media addiction.
2. To examine the relationship between social media flow experience and social media addiction.
3. To examine the relationship between fear of missing out (FoMO) and social media flow experience.
4. To examine the mediation role of social media flow experience in the relationship between fear of missing out (FoMO) and social media addiction.

Research Questions

1. There is a significant relationship between fear of missing out (FoMO) and social media addiction.
2. There is a significant relationship between social media flow and social media addiction.

3. There is a significant relationship between fear of missing out (FoMO) and social media flow experience.
4. There is a significant indirect relationship of social media flow experience in the relationship between fear of missing out (FoMO) and social media addiction.

Research Hypotheses

H₁: There is a significant relationship between fear of missing out (FoMO) and social media addiction.

H₂: There is a significant relationship between social media flow and social media addiction.

H₃: There is a significant relationship between fear of missing out (FoMO) and social media flow.

H₄: There is a significant indirect relationship of social media flow in the relationship between fear of missing out (FoMO) and social media addiction.

Significant of study

Social media is a communication tool that allows people to share and discuss their information online without restrictions on time and place. According to Kuss & Griffiths (2011), The extensive utilization of social media can be considered as a manifestation of pathological internet use, indicating that one feels compelled to engage with social media platforms. Social media use has recently grown. People nowadays like to use YouTube, Snapchat or Instagram to communicate and watch videos of the adult population (Anderson, 2018). Overuse of social media may cause low work performance, sleep problems, low life satisfaction, and so on.

Given that the variables in this research, such as flow experience, haven't been employed as factors within the realm of internet community addiction, it presents a noteworthy opportunity to investigate the connection of the variable. This includes the other variable explored in current study, namely Fear of Missing Out, in relation to the inclination toward becoming an online addiction. Through this study, people can understand more about certain people addicted to social media. Furthermore, current research can help people understand social media addiction and enlighten the fundamental psychological mechanisms that drive excessive social media use, which can concern individuals' mental health and well-being.

Researchers in Malaysia discuss much research on social media addiction, and they always focus on young people, especially university students. Nevertheless, the variables selected for this study were seldom linked with the variables of addiction to social media in Malaysia. Because of the absence of research regarding social media addiction with these variables (e.g., flow experience and fear of missing out), people might not understand how people were addicted to social media. Young people, especially university students, consistently display a strong dependence on social media. Hence, a key scheme of current present study aspires to address the current research gap by exploring the factors contributing to social media addiction, specifically focusing on university students in Malaysia. The determinants under consideration include Fear of Missing Out and Flow Experience. This study can raise people's awareness of social media addiction, which seems to be rising recently, that is, the intention towards becoming addicted to social media.

Conceptual Definition

Social Media Flow. Flow experience, a concept formulated by psychologist Mihaly Csikszentmihalyi (1990), denotes optimal mental states characterized by deep immersion and heightened engagement in a specific activity. These states occur when individuals find a perfect alignment between their skills and the challenge. Time appears to blur during flow, self-awareness diminishes, and intrinsic motivation takes the forefront. Flow represents a harmonious synergy between individual capabilities and external demands, leading to intense focus and a profound sense of fulfillment. It offers a transformative mental state where individuals become absorbed in the task, transcending concerns and achieving a state of joy, mastery, and accomplishment. Flow experience can be explained from the norm in which Moneta and Csikszentmihalyi (1996) have noted that "Flow is defined as a psychological state in which the person feels simultaneously cognitively efficient, motivated, and happy" (p. 277).

Fear of missing out. The "Fear of Missing Out" (FOMO) is a pervasive emotional state characterized by anxiety or apprehension that one misses out on experiences, events, or opportunities, often driven by the social media and a longing for connection and inclusion, this can impact the utilization of social media. It stems from the apprehension of exclusion, falling behind, or not keeping up with peers, resulting in an incessant urge to stay updated and participate in various activities. FOMO can lead to stress, distraction, and a compulsive need to engage with online platforms. Research on FOMO has grown alongside the rise of digital communication and social media (Przybylski et al., 2013).

Social media addiction. Social media addiction, alternatively termed Social Media Use Disorder, is a compulsive and excessive engagement with social networking platforms that

negatively affects an individual's daily life, mental health, and well-being. It involves a loss of control over time dedicated to social media, preoccupation with online interactions, withdrawal symptoms when not using, and neglect of real-life responsibilities. Extensive research has explored the prevalence and impact of this behavioural addiction, highlighting its connection to psychological distress (Andreassen et al., 2016) and the neurobiological mechanisms alike with excessive social media use (Turel et al., 2018).

Operational Definition

Social Media Flow. Flow experience that connects with social media usage is determined by the scores obtained from the modified edition of “Facebook Flow” proposed by Brailovskaia and his associates in 2018 (Brailovskaia et al., 2018). The scale encompasses eleven items in total, and its scores range from 11 to 55. It is a Likert scale with five points and can be rated between 1 (strongly disagree) to 5 (strongly agree). The upper levels of perceived result will indicate a greater experience of social media flow.

Fear of missing out. The current study assesses the Fear of Missing Out using the ten-item Fear of Missing Out Scale (FoMOs). The FoMOs was proposed by Przybylski and his colleagues in 2013 (Przybylski et al., 2013a). Fear of Missing Out Scale is a summative scale with 5 points, and consists of ten items in the scale, and can be rated between 1 (Not at all true of me) to 5 (Extremely true of me). The scores on the scale span from 10 to 50, in which a high-rise score indicates a greater level of Fear of missing out (Przybylski et al., 2013). The scale also evaluated participants' apprehension about missing out based on their daily experiences.

Social media addiction. The six-item Bergen Social Media Addiction Scale, created by Andreassen and other researchers, is used in this current study to gauge social media addiction (Andreassen et al., 2016b). The BSMAS is a scale with five response options and can be rated from 1 (Very rarely) to 5 (Very often). The scale's scores vary from 6 to 30 (Zarate et al., 2023). The greater the integrated score, the more pronounced the degree of social media addiction (Brailovskaia & Margraf, 2022b).

Chapter 2

Literature Review

Introduction

In this section, we examine prior studies and theories. The chapter initiates by exploring the relationship between the control variable (Fear of Missing Out) and the outcome variable (Social Media Addiction). Furthermore, one potential moderator (Social Media Flow Experience) is considered. Throughout these discussions, we also pinpoint pertinent research gaps.

Relationship between Fear of Missing out and Social Media Addiction

FoMO is determined as a high level of anxiety when individuals' friends are having meaningful, enjoyable activities without them (Tandon et al., 2021). Several studies have found that the Fear of Missing Out (FoMO) serves as a predictive factor for social networking website addiction. (Blackwell et al., 2017; Sultan, 2021; Tunc-Aksan & Akbay, 2019; Varchetta et al., 2020) and some sum up that there is a strong positive association among them (Sommantico et al., 2023; Zhu & Xiong, 2022). A systematic review that consists of 32 researches with a total of 21473 participants show that there is a significant association ($r=0.49$) between fear of missing out and social media addiction (Fioravanti et al., 2021), worth noting that variables such as age, sex and geographic area do not have a moderating effect on the association between FoMO and social media addiction.

Some studies focus on specific social media platforms when examining the rapport between FoMO and social media addiction. One study that has observed participants' activities

in Instagram found that participants with high FoMO show more positive attitude towards Instagram, followed more Instagram accounts, and have higher social media addiction (Moore & Crăciun, 2020). Another study shows that one's with elevated levels of FoMO lead to higher Facebook addiction (Uram & Skalski, 2020).

According to our knowledge, there have yet to be any studies that explore the association between FoMO and Social Media Addiction in Malaysia. Therefore, more studies need to be conducted in Malaysia to confirm the relationship between FoMO and Social Media Addiction.

Relationship Between Social Media Flow Experience and Social Media Addiction

Flow experience can be defined as a condition of optimal concentration and pleasure, wherein an individual becomes wholly absorbed in an activity, losing awareness of time and self, and concurrently enjoying a profound sense of satisfaction and fulfillment under such a circumstance of their engagement with social media. (Brailovskaia et al., 2020). Generally, Kwak et al. (2014) suggested six main modules to describe the experience of flow on social media: concentration (e.g. high focus on social media), enjoyment (e.g. the pleasant experience that users have when using social media), curiosity (e.g. extreme desire to understand what is happening on online platforms), telepresence (e.g. believes that the world formed by social media is genuine), time deformation (e.g. disregarding time while engaging with social media) and self-disclosure (e.g. leaking individual information during the use of social media).

There are few studies summarizing that experience of flow has a pragmatic predictive consequence on social media addiction and there is a study that present flow experience was

significantly positively correlated with social media addiction (Zhao & Zhou, 2021). A serial mediation analysis with a total of 512 participants shows that flow experience positively correlated to social media addiction (Zhao & Zhou, 2021). Past study shows that emotions of social media users also significantly correspond with flow experience and social media addiction (Brailovskaia et al., 2020).

The researchers explored the relationship among perceived stress and addiction to social media found that the lower flow experience predicted social media addiction and stress will increase (ÇeliK & Peker, 2023). But many studies have shown that there is a strong interrelationship between social media addiction and flow experience. ÇeliK and Peker (2023) have done their data collection through online with a total of 542 university students by a convenient sampling technique to discover whether the relationship of flow experience and social media addiction.

Researchers mostly focus on a few online network platforms such as Instagram and Facebook since they are mostly used globally (Brailovskaia & Teichert, 2020). In the research, the authors also discovered how the Flow Experience plays a mediator role in the relationship between implicit associations and social media addiction, and it is notable (Brailovskaia & Teichert, 2020). Additionally, the association between flow experience and social media addiction was found to be significant.

Nowadays, people like to do more commenting on others through social media rather than doing more commenting in reality to escape the problems and release their stress in daily

life (Brailovskaia & Teichert, 2020). Of the greatest concern is whether the flow experience of university students in Malaysia when using social media might lead them to become addicted to it. All in all, more research should have been done to prove that mostly young people, especially university students, will tend to be addicted to web based platforms because of the higher flow experience.

Relationship between Fear of Missing Out and Social Media Flow Experience

The Fear of Missing Out (FoMO) is a fact that explains the excessive use of technology, particularly when individuals attempt to connect with their social circle through social media (Wiesner, 2017). Those experiencing apprehension of being left out feel a sense of being left out, which can result in both physical and psychological challenges. Studies indicate that an individual's need for social belonging significantly contributes to the evolution of the Fear of Missing Out (Alabri, 2022). The higher one's personal need for belonging, the more vulnerable they are to this phenomenon. Meanwhile, the term "Social Media Flow Experience" denotes a condition of profound enjoyment and focus experienced by individuals while engaging with social media (Hyun et al., 2022). This state is characterized by a loss of awareness of time and the attainment of equilibrium between one's skills and the confrontation presented by social media activity.

A study has investigated what is the role of 'Social Media Flow Experience' among the variables which are Social Media Addiction and Fear of Missing Out (FoMO) (Brailovskaia & Margraf, 2023). Even before social media became the most crucial thing in the old generation, people were still often scared that they would miss out on what was important and they couldn't

be a part of the events. Fauzi and his colleagues (2021) have proposed a study stating that one's concentration on high usage on gaming and smartphone utilization, outlined a favorable correlation with Fear of Missing Out (FoMO) and the experience of flow (Li et al., 2021). Studies stated that the experience of social media flow will cause positive emotions in a short-term period (Kwak et al., 2014) but the long-term period of social media flow experience has a high possibility of being addicted to social media (Brailovskaia & Teichert, 2020). Particularly, individuals who wish to escape from their negative emotion tend to engage in extensive online activities (Brailovskaia et al., 2020). This will cause them to face an increased likelihood of evolving addictive inclinations when they undergo a flow state in social media.

Elevated levels of Fear of Missing Out (FoMO) contribute to the occurrence of negative emotions associated with somatic and inner discomfort (Elhai et al., 2021). To alleviate this adverse condition, a person may participate in extensive internet-based activities (Rozgonjuk et al., 2021). Such exhaustive online engagement serves as a predictor for experiencing Social Media Flow Experience which, in turn, acts as a significant precursor to addictive tendencies (Brailovskaia & Margraf, 2022b). This association is particularly noteworthy when the individual employs social media as an escape from denial feelings and becomes greatly immersed in the online realm during usage tendencies (Brailovskaia, Schillack, & Margraf, 2020).

Previous studies have rarely explored the bond connecting fear of missing out and social media fluid experience, and there are gaps in research conducted in the Malaysian context, which has attracted the attention of the current research authors. In addition, limited research has

mainly focused on university students, and few studies have focused on other age groups. They are prone to participating in the same activities repeatedly, resulting in an elevation in the intensity of cardio-fluid experiences.

Indirect Relationship of Social Media Flow in the Relationship Between fear of missing out (FOMO) and Social Media Addiction

Fear of Missing Out (FoMO) was found to be positively correlated with social media flow experience, individuals that have high levels of fear of missing out might result in intensive social media addiction, contributing to the occurrence of the flow experience. Research supports that the relation of fear of missing out (FoMO) and social media flow experience describe a positive association between FoMO and social media flow (Fauzi et al., 2021; Li et al., 2021). Each time an individual disconnects from the online realm, they experience apprehension about potentially missing out on crucial news (Barry & Wong, 2020). The absence of this news can cause feelings of anxiety, stress, and annoyance (Rozgonjuk et al., 2021). High levels of FoMO can cause individuals to adopt unhealthy coping mechanisms that are harmful to their mental and physical health (Dempsey et al., 2019; Riordan et al., 2015; Varchetta et al., 2020). Needless engagement in social media use (SMU) is one such strategy (Baker et al., 2016; Wang et al., 2023). Experiencing social media flow can contribute to vigorous emotions in the short term (Kwak et al., 2014), but it may serve as a precursor to addictive conduct in the long run (Brailovskaia & Teichert, 2020; Zhao & Zhou, 2021). Particularly individuals who engage in online activities intensively as a means of escaping negative emotional states are more likely to develop addictive tendencies when they encounter social media flow experience (Brailovskaia et al., 2020). Therefore, social media flow could mediate the interrelationship between FoMO and

social media addiction by fostering the development of addictive usage patterns (Brailovskaia & Margraf, 2023).

In the study carried out by Fauzi et al (2021), the interrelationship between social media flow experience and the level of fear of missing out in university youth was examined, and the aforementioned research was conducted on 210 students. The study showed the association between social media flow experience and fear of missing out (FoMO) (Fauzi et al., 2021). Peak levels of fear of missing out have been linked to the emergence of social media flow experience (Fauzi et al., 2021). According to research, those who have high in fear of missing out more inclined to engage with the platform to address this fear, they might transition into a flow state if the content and interactions align with their interests and more time spent on social media, can leads to addictive behavior (Brailovskaia & Margraf, 2023). In another study conducted on Chinese university students, the relationship of fear of missing out and games flow was examined, and it was found that students who experience fear of missing out (FoMO) may be more motivated to engage in gaming to compensate for the fear of missing out on rewarding experiences (Li et al., 2021). This motivation allows individuals to repetitive online game behavior as well as lead to addictive tendencies (Li et al., 2021). In this context, it has been reported that fear of missing out is high in students with high in experiencing social media flow (Li et al., 2021).

In conclusion, most of the previous studies indicated that social media flow experience could mediate positivity associated between fear of missing out (FoMO) and social media addiction which means higher the level of fear of missing out (FoMO), the greater the level of

social media flow, the greater the level of social media flow, the greater the level of social media addiction (Brailovskaia & Margraf, 2023). As far as we are concerned, there is a lack of extensive research examining the indirect interrelationship between social media flow and the association between fear of missing out (FoMO) and social media addiction in Malaysian contexts, indicating an unaddressed research gap.

Conceptual Framework

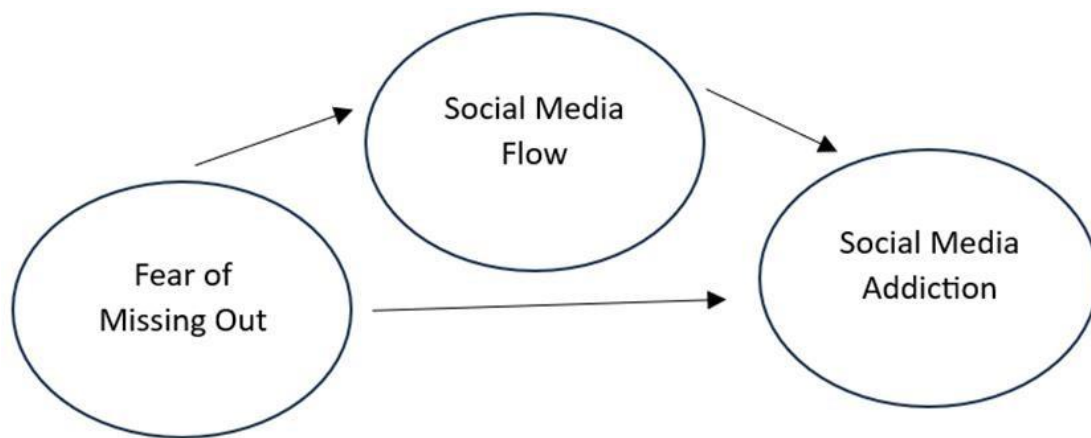


Figure 2.1 Conceptual framework of the association between Fear of Missing Out (FoMO), Social Media Flow (SM Flow) and Social Media Addiction (SMA). The Fear of Missing out serves as a predictor of Social Media Addiction while the Social Media flow is a mediator between Fear of Missing Out and Social Media Addiction.

The study aims to examine the relationship between Fear of Missing out (FoMO), Social Media Flow (SM Flow) and Social Media Addiction (SMA) among university students in Malaysia. In this study, FoMO will serve as an independent variable and SMA will serve as a dependent variable in H_1 to examine the relationship between FoMO and SMA. SM Flow will serve as an independent variable and SMA will serve as a dependent variable in H_2 to examine the relationship between SM flow and SMA. FoMO will serve as an independent variable and

SM flow will serve as a dependent variable in H_3 to examine the relationship between FoMO and SM flow. FoMO will serve as independent variable and SMA will serve as dependent variable while SM flow will serve as mediator between FoMO and SMA in H_4 to examine the relationship between FoMO, SM flow and SMA. Figure 2.1 which is our conceptual framework visualizes the relationship between the variables of this study.

Theoretical Framework

Self-compensation motivation

The relationship between fear of missing out (FoMO) and social media flow experiences can be explained by self-compensation motivation. The theory proposed that when people proactively respond to alleviate threats and discomfort caused by socio-psychological stress, they are acting in self-defense (Xiao-Tong et al., 2017). Theoretically, social media use behavior can be seen as a form of claimant for situations in which a student's mental development is impeded (such as a self-identity crisis, or unhelpful interpersonal relationships). Problematic compensation, such as excessive social media use, can lead to social media addiction (Gao & Wenbin, 2006). The hypothesis known as psychological decompensation suggests that: (i) normal development is the state in which an individual develops smoothly; (ii) blocking development may result from the interaction of internal and external causes; (iii) positive compensation during the developmental stage characterized by obstruction can reinstate normal development, initiating the psychological self-repair process.; and (iv) decompensation implies that a lack of psychological self-repair can lead to deviation from or disruption of development due to difficult compensation (Gao & Wenbin, 2006).

This is prevalent when people who have a high level of fear of missing out will be more likely to experience flow in social media use. This is because individuals may actively seek out experiences that induce flow, characterized by intense concentration and enjoyment in an activity. This pursuit of social media flow can be viewed as a compensatory mechanism—a deliberate attempt to counteract the negative emotions associated with fear of missing out (FoMO). By engaging in activities that promote flow, individuals may find a distraction from the anxiety linked to missing out, as flow experiences demand full immersion in the present moment. Moreover, the sense of mastery and control that comes with flow can address the feelings of inadequacy tied to fear of missing out (FoMO), offering individuals a way to regain a sense of competence and agency. In essence, the self-compensation motivation suggests that individuals may intentionally seek and engage in flow-inducing activities to compensate for the social deficits perceived through the lens of FoMO (Li et al., 2021).

In fact, high levels of trait-fear of missing out (FoMO) may actually be caused by social media flow (the most intense intrinsic motivation) and self-compensation motivation, which may lead to increased social media use and addictive behavior (Li et al., 2021). A detrimental cycle can manifest wherein social media triggers heightened negative emotions such as FOMO and depression (Elhai et al., 2020; Wang et al., 2018), reinforces use of social media, and increases time spent on social media.

Flow Theory

The connection between Social Media (SM) Flow Experience and Social Media Addiction (SMA) can be clarified by Flow Theory. The theory posited that one experiences

activities while completely absorbed in an ideal situation (Hyun et al., 2022). Regarding social media, the occurrences of flow experiences can be associated with Flow Theory as individuals interact with platforms, resulting in a sustained state of pursuing information and experiences (Pelet et al., 2017).

Flow theory is a psychological notion that delineates a condition of absolute immersion and engagement in an activity, during which a person experiences a sense of control and overlook awareness of time and space (Hong & Khan, 2022). The concepts of perceived enjoyment and concentration are components within the broader framework of the flow idea, as suggested by Csikszentmihalyi in 1970 (Chen et al., 2017). There are two crucial elements that researchers mentioned about flow which included enjoyment and concentration (Zaman et al., 2010).

As the researchers mentioned, flow experience consists of two elements, which include perceived enjoyment and concentration. Study has explained how these two elements will lead to experience in flow, and finally guide to social media addiction (Fauzi et al., 2021). Studies showed that flow frequently arises during individuals' involvement in social media activities that involve social interaction aspects, like interacting with others and obtaining instant responses (Zhao & Zhou, 2021). The experience of flow arises from lacking variety behaviors driven by a desire to sustain positive desire. This inclination could amplify the ratio and powerfulness of media consumption, consequently leading to addictive behaviors.

The Flow Theory has been surveyed in various studies related to human dependency, such as online test match addiction (Wan & Chiou, 2006), compulsive buying addiction (Niu & Chang, 2014), and excessive internet use (Yang et al., 2014). Studies suggest that Flow Theory is useful in describing user dependency on internet-based or supportive systems (Fauzi et al., 2021). COVID-19, it has been identified as a factor that can positively correlate with both Social Media Flow Experiences and Social Media Addiction. Flow will seek as a coping mechanism for stress, and this may lead to Social Media Addiction (Zhao & Zhou, 2021). Therefore, employing Flow Theory to explain social media addiction serves as the primary justification for adopting this theory in the study.

All in all, Flow Theory is a psychological idea that characterizes the condition of full immersion and engagement in an activity. Flow Theory has been implemented across diverse domains, demonstrating positive impacts on motivation, performance, and well-being. Nonetheless, challenges persist in establishing universally accepted definitions and measurements for the concept of flow. Therefore, we decided to do this research, which studies how Fear of Missing Out (FoMO) and Flow Experience estimate social media addiction among university students in Malaysia.

Chapter 3

Methodology

Research design

Present study aims to explore the connection between Fear of Missing out (FoMO), SM Flow and Social Media Addiction among university students in Malaysia by utilizing quantitative, cross-sectional research design. Quantitative research is by using structured techniques (in our study, online survey questionnaire) to collect numerical or standardized data to test the relationship between multiple variables (Ahmad et al., 2019). Quantitative research allowed researchers to obtain larger sample sizes compared to qualitative study which is one of the desirable conditions for generalization (Rahman, 2016). In addition, by implementing quantitative research design, it is faster in terms of analyzing the data as it can be done by using statistical software such as SPSS (Rahman, 2016).

Cross-sectional study design, particularly, analytical cross-sectional studies was implemented in our study. One of the advantages of using cross-sectional study design is that it is quick and less financially consuming to be conducted as it only collects the data from the specific population one time only (Wang & Cheng, 2020).

Sampling method

The sampling approach that was applied in the current study was the non-probability sampling method, that is, there are no equal chance of each individual in the population be selected as research subject in the study, as the selection process of individual as research subject solely based on researcher's subjective decision (Sharma, 2017). This study chose non-probability sampling because there was no sampling frame for Malaysian undergraduates (Acharya et al., 2013) which is

precedent prerequisites for random sampling, in addition, it is impractical generate the sampling frame for the present study due to limited resources.

Purposive sampling was applied in the present study as the research subjects were selected based on present study's inclusion criteria of research subject (Setia, 2016). The following are the inclusion criteria for the present study, research subjects must be (a) a Malaysian university student (b) age range from 18 to above (c) physically in Malaysia when answering questionnaire of present study and (d) understand the risk and responsibility of the present study and agree with the condition of informed consent. In fact, researchers of few previous studies that are related to social media addiction also used purposive sampling (Yeap et al., 2015; Siah et al., 2021; Mazhar et al., 2020; Bhandarkar et al., 2021). For instances, Fauzi et al (2021) and Siah et al. (2020) used purposive sampling to select their participants when they are conducting their research regard the social media addiction among Malaysian undergraduates. In summary, since past researchers has implemented purposive sampling successfully when they doing research regard the social media addiction among Malaysian undergraduates, it is valid for present's study to follow the steps of previous researchers.

Sample size

The sample size of our investigation was obtained through the calculation in the G*Power 3.1.9.7 which is a power analysis program that is vastly used in social science research study (Faul et al., 2007). The power analysis method we applied to calculate the sample size was a priori. To run a priori, effect size, p-value and power level was determined (Kang, 2021). Effect size was obtained by applying the algorithm, $f^2=r^2/(1-r^2)$ (Faul et al., 2007), the effect size for our study was 0.395 (refer to Appendix A), while p-value was 0.05 as fisher suggested (Dahiru, 2011), power level was set as 0.95, this result a total sample size of 56 participants (refer to Appendix C). However, an extra

20% of sample size will add in the present study's target sample size to avoid the problems caused by missing data. In sum, the target number of sample size in present study would be 67 participants.

Location

The present study will be conducted in Malaysia online. The researchers will distribute the online survey links via social media platforms including Microsoft Teams, WhatsApp, Instagram, WeChat, and Facebook. Researchers will also show the QR code of the survey whenever they encounter a suitable potential participant.

Participants

The target population for the present study is Malaysia university students regardless of foundation students, undergraduates, masters, or PhD students from any field. Besides, the participants of present study must be 18 or above, physically in Malaysia when answering questionnaire of present study, and understand the risk and responsibility of the present study and agree with the condition of informed consent.

Data Collection Procedures

Before the process of data collection was conducted, due to ethical concern, research proposal of the present study needs to be reviewed by UTAR scientific and ethical review committee (SERC), to avoid any ethical violation. After the present study's research proposal was reviewed by UTAR SERC, an ethical approval for the present study was obtained, the reference number of approval letter is (Re: U/SERC/326/2023).

The instruments chosen for this study are ten-item Fear of Missing Out Scale (FoMOs), modified edition of “Facebook Flow” and six-item Bergen Social Media Addiction Scale. When designing the present study’s questionnaire, Qualtrics which is a web-based survey tool would be used. In term of participants’ demographics such as age, gender, race, current university, and nationality will also be collected to ensure they fulfilled the inclusion criteria. Most importantly, the data can be used only before the participants agree with the consent form. As mentioned above, the link of the survey will be distributed through social media or physically share the QR code when encounter a suitable potential participant. This is to obtain the participants’ response immediately.

Pilot study

A preliminary study was carried out before the actual study to assess the feasibility of the current study, identify potential problems with the research protocol, and familiarize the researchers with the research procedures (Hassan et al., 2006). The minimum requirement of sample size for a pilot study was 30 (Kieser & Wassmer, 1996). The questions included in the survey are informed consent, demographic details, ten-item Fear of Missing Out Scale (FoMOs), modified edition of “Facebook Flow” and six-item Bergen Social Media Addiction Scale. The survey link was distributed through WhatsApp, Instagram, WeChat, Facebook and physical QR code. In the ongoing pilot study, a total count of 34 cases was obtained, not missing data in these cases. Pearson correlation coefficient test was implemented to examine the inter-item reliability of each scale. For Fear of Missing out, the Cronbach’s Alpha is 0.883, according to George and Mallery (2019), the reliability level is good. For Social Media flow, the Cronbach’s Alpha is 0.648, according to George and Mallery (2019), the reliability is questionable, but this might be due to the limited sample size, in fact, we obtain a larger Cronbach’s Alpha (0.741, which is acceptable) in the present actual study. For

Social Media Addiction, the Cronbach's Alpha is 0.762, according to George and Mallery (2019), the reliability is acceptable. In summary, the inter-item reliability of each scale is acceptable, the actual study was therefore proceeded (refer to Table 3.1).

Table 3.1

Inter-items reliability

Scale	<i>Cronbach's Alpha</i>
Fear of missing out	.883
Social Media Flow	.648
Social Media Addiction	.762

Actual study

After pilot study was conducted and discovered no major issue, the actual study proceeds. The procedures of actual virtually same with pilot study. After collecting a sufficient number of participants, the recorded data were cleaned and analyzed using IBM SPSS Statistics 23 computer software. After data cleansing and remove the outliers, the total number of the present study is 217 cases.

Instruments

Fear of missing out. The current study assesses the Fear of Missing Out using the ten- item Fear of Missing Out Scale (FoMOs). The FoMOs was proposed by Przybylski and colleagues in 2013 (Przybylski et al., 2013a). Fear of Missing Out Scale is a summative scale with 5 points, and consists of ten items in the scale, and can be rated between 1 (Not at all true of me) to 5 (Extremely true of me). The scores on the scale span from 10 to 50, in which a high-rise score indicates a greater

level of Fear of missing out (Przybylski et al., 2013). The scale showed a superior internal consistency, whereby Cronbach's alpha was 0.82. Lai and other researchers (2016) have reported that the items from the scale have produced a favorable index fit, $\chi^2(275) = 1778.1$, p-value indicates smaller than .01, .073 root mean square error of approximation (RMSEA), and .056 standardized root mean square residual (SRMR).

Social Media Flow. Flow experience that connects with social media usage is determined by the scores obtained from the modified edition of "Facebook Flow" proposed by Brailovskaia and his associates in 2018 (Brailovskaia et al., 2018). The scale encompasses eleven items in total, such as "While using social media, I am deeply engrossed." "I enjoy using social media." and "Using social media excites my curiosity.". The scale showed an excellent consistency whereby Cronbach's alpha is .82. The researchers have determined that the modified version of Facebook Flow Questionnaire exhibits strong factorial validity, as evidenced by values of .996 in CFI, .992 in TLI, .014 in SMSR, and .025 in RMSEA (Brailovskaia et al., 2021). It is a Likert scale with five points and can be rated between 1 (strongly disagree) to 5 (strongly agree). Its scores range from 11 to 55. The upper levels of perceived results will indicate a more significant experience of social media flow.

Social media addiction. The six-item Bergen Social Media Addiction Scale, created by Andreassen and other researchers, is utilized in this current study to gauge social media addiction (Andreassen et al., 2016b). The BSMAS is a scale with five response options and can be rated from 1 (Very rarely) to 5 (Very often). The scale's scores vary from 6 to 30 (Zarate et al., 2023), and the cumulative scores of individual items are summed to derive the total score of the BSMAS. The greater the integrated score, the more pronounced the degree of social media addiction (Brailovskaia & Margraf, 2022b). The scale showed an excellent consistency whereby Cronbach's alpha is .88 in

the earlier study by Andreassen and his colleagues (Andreassen et al., 2016b). Besides that, the present study by Stănculescu has shown that Cronbach's alpha is .84 (Stănculescu, 2022). Luo and colleagues (2021) recently suggested a clinical cut-off point of 24, established through the gold standard of clinical diagnosis. The researchers have determined that the BSMAS exhibits strong factorial validity, as evidenced by values of .996 in CFI, .994 in TLI, .045 in SMSR, and .039 in RMSEA (Tung et al., 2022).

Chapter IV

Results

Descriptive statistic

Demographic characteristics

224 university students participated in this study which included 92 male participants (41.1%) and 132 female participants (58.9), average age are 20.83, and most of the participants are Chinese Malaysian (93.8%). In terms of university, most of the participants are from Universiti Tunku Abdul Rahman (UTAR) (95.5%). Most of the participants spend 5 to 6 hours using social media in their daily life (17%), while around 7.6% participants spend 12 hours above daily on social media (refer to Table 4.1).

Table 4.1

Demographic Information of Research Sample (n = 224)

	n	M	SD
Gender			
Male	92	41.1	
Female	132	58.9	
Age		20.83	1.61
Race			
Chinese	210	93.8	
Indian	14	6.3	
University			
UTAR	214	95.5	
Others	10	4.5	

**Hours spend on
social media daily**

1 to 2 hours	7	3.1
2 to 3 hours	19	8.5
3 to 4 hours	34	15.2
4 to 5 hours	31	13.8
5 to 6 hours	38	17
6 to 7 hours	33	14.7
7 to 8 hours	15	6.7
8 to 9 hours	8	3.6
9 to 10 hours	1	0.4
10 to 11 hours	20	8.9
11 to 12 hours	1	0.4
12 hours above	17	7.6

Note. n = number of cases; % = percentage; M = mean; SD = standard

deviation;

Topic-Specific Characteristics

Since the authors of Fear of Missing out scale and Social Media flow scale did not mention the categorisation of score, percentile 33th, percentile 66th and percentile 100th were used as the cut-off points to divide the scores into low, moderate, and high score group in the present study. The correspond score of percentiles 33th, percentile 66th and percentile 100th for Fear of Missing out score in the present study are 20, 28 and 42 while the correspond score of percentiles 33th, percentile 66th and percentile 100th for Social Media flow score are 34, 39 and 52. The result show that majority of the participant reported moderate level of Fear of Missing Out (36.6%) while 34.4% of

the participants reported low level of Fear of Missing Out, 29% of the participants reported high level of Fear of Missing Out. For Social Media flow, besides, majority of the participants reported moderate level of Social Media flow (34.8%) while 33.5% of the participants reported low level of Social Media flow, 31.7% of the participants reported high level of Social Media flow. In present study, to classify the score of social media addiction, clinical cut-off points 24 suggested by Luo and colleagues (2021) was adapted. Participants who obtain the score of 24 and above are possibly living with social media disorder. The result show that majority (92.6%) living with living with low level of social media addiction while minority (7.4%) might live with social media disorder.

Table 4.2

Frequency Distribution of Topic-Specific Characteristics (i.e., *Fear of Missing out, Social Media flow and Social Media Addiction*) (n = 217)

	n	M	SD	Min	Max
Fear of Missing Out		24.16	7.31	10	42
Low (≤ 20)	77	34.4			
Moderate ($20 < \text{score} \leq 28$)	82	36.6			
High ($28 < \text{score} \leq 42$)	65	29			
Social Media flow		37.25	5.43	21	52
Low (≤ 34)	75	33.5			
Moderate ($34 < \text{score} \leq 39$)	78	34.8			
High ($\leq 39 \text{score} < 52$)	71	31.7			
Social Media Addiction		17.79	3.91	6	28
Normal (< 24)	206	92			

SMD (≥ 24)	18	8
-------------------	----	---

Note. n = number of cases; % = percentage; M = mean; SD = standard deviation; Min

=minimum value; Max = maximum value

Data Diagnostic and Missing Data

Frequency and Percentages of Missing Data

A cumulative total of 46 cases with omitted data (16.14%) in the data set.

Methods employed for addressing missing data

A total number of 46 cases with missing data were remove from the data set.

Criteria for Post Data-Collection Exclusion of Participants

Sample members who are below age 18 will be removed from the data set, therefore case 53 (age 17) was removed from the data set. Participants who answer non-Malaysia university or irrelevant answer to the question “which university are you currently studying in?” were removed (i.e. case 37, case 38, case 96). Participants who answer irrelevant answer to the question “How many hours a day do you spend on SOCIAL MEDIA?” were removed (i.e. case 2, case 18, case 147, case 148, case 149, case 199, case 222, case 224). In sum, a total number 11 cases were removed in this stage.

Defining and processing of statistical outliers.

Univariate Outliers

By converting the total score of Fear of Missing Out, Social Media Flow and Social Media Addiction into z-score, those cases whose value are not within -3.29 to 3.29 were identified as univariate outliers. Case 4, case 237, case 133 was identified as univariate outliers and removed from the data set.

Multivariate Outliers

In present study, Mahalanobis distance was used to identify the multivariate outliers. Cases whose p-value of Mahalanobis distance smaller than .001 were identified as multivariate outliers. No cases were identified as multivariate outliers in the present study.

Data transformation

None.

Test of normality

In the present study, histogram, Quantile-Quantile plot (Q-Q plot), skewness and kurtosis and Kolmogorov-Smirnov test (K-S test) were applied to examine the normality of the data we obtained. In summary, Fear of missing out fulfil the requirement of each indicator and test, While Social Media flow and Social Media Addiction only violate K-S test. Hence, all the scale shows acceptable normality.

Histogram

By plotting the distribution of the observed cumulative distribution of a specific variable, a curve can be drawn. A symmetric bell-shaped curve with the only one peak right upper the mean value indicates an ideal normal distribution (Das, 2016). All the scale fulfils the requirements (refer to Appendix 1, 3 and 5)

Q-Q plot

Q-Q plot compares the expected cumulative distribution and observed cumulative distribution of a specific variable. If the both expected and observed cumulative distribution is identical, a diagonal line can be drawn and it indicate ideal normal distribution (Das, 2016). All the scale fulfils the requirements (refer to Appendix 2, 4 and 6)

Skewness and Kurtosis

Skewness is a numerical indicator of the asymmetry of the observed cumulative distribution (Kwak & Park, 2019). Positive value indicates majority clusters at the low score area while negative value indicates majority clusters at the high score area. The ideal values of skewness for normal distribution should be zero or close to zero. However, some researchers suggested -2 to 2 also an acceptable range (Hahs-Vaughn & Lomax, 2013). Kurtosis is a numerical indicator of the “tailedness” of the observed cumulative distribution (Kwak & Park, 2019). Positive value of kurtosis indicates fatter tails while negative value indicates less fatter tails. When the value of kurtosis is zero, the kurtosis is called mesokurtic which it indicates normality. However, same as skewness, -2 to 2 is an acceptable range (Hahs-Vaughn & Lomax, 2013). All the scale fulfils the requirements (refer to table 4.2).

Table 4.3*Skewness and Kurtosis*

Scale	Skewness	Kurtosis
Fear of missing out	.156	-.595
Social Media Flow	.028	.249
Social Media Addiction	-.192	.692

Kolmogorov-Smirnov test

K-S test compare the observed score to normally distributed score with same mean and standard deviation. If the test is non-significant in which the null hypothesis is fail to rejected (that is no difference between observed score and normally score), it indicates normality (Ghasemi & Zahediasl, 2012). Social Media flow scale and Social Media addiction scale violate this test (refer to Table 4.3).

Table 4.4

Kolmogorov-Smirnov test

Scale	<i>p-value</i>
Fear of missing out	.051
Social Media Flow*	.030
Social Media Addiction*	.001

* Violate K-S test

Pearson's correlation coefficient

Pearson correlation was applied to analysis the intercorrelations among the variables. The result indicated their significant relationship among the variables at $p < .001$. Overall, according to Cohen (2013), the intensity of the relationship between Fear of Missing Out and Social Media flow, and the degree of association among Fear of Missing Out and Social Media Addiction are medium. While the strength of the relationship between Social Media Flow and Social Media Addiction is strong.

Table 4.5

Correlation Among Variables

Variable	1	2	3
1. Fear of Missing Our	—		
2. Social Media Flow	.432*	—	
3. Social Media Addiction	.419*	.596*	—

*p-value < .001

Simple mediation tests assumptions

Multicollinearity

Multicollinearity, as defined by Daoud (2017), pertains to the extent of correlation between two predictor variables. A substantial correlation between two variables implies redundancy, suggesting that one of the variables can be accurately predicted from another. The assessment of multicollinearity involves examining tolerance and VIF values. If the Variance Inflation Factor (VIF) ≥ 10 or the tolerance falls $\leq .1$, it indicates the presence of notable multicollinearity, requiring corrective measures (Hair, 2010). The corresponds value of tolerance and VIF for Fear of Missing

out is 0.813 and 1.229 while the corresponds value of tolerance and VIF for Social Media Flow is 0.813 and 1.229 (refer to Table 4.5).

Table 4.6

Multicollinearity

Scale	Tolerance	VIF
Fear of missing out	.813	1.229
Social Media Flow	.813	1.229

Independence of error

Durbin-Waston was used when assessing independence of error (Chen, 2016).

Autocorrelation refers to the data correlating with itself over successive time intervals, which will lead to underestimation of standard error causing misconception while deciding significant predictors.

The Durbin-Watson test statistics values range from zero to four where the value of two is characterized as no autocorrelation, which aims to avoid residuals that are not independent of each other. Hence, the closer to two the better it is. The assumption will be met when there is no autocorrelation if the test statistics value falls between the upper critical level and four minus the upper critical values (Sarstedt & Mooi, 2014). The Durbin-Watson value for the present study's model is 2.197 which is acceptable as this near to 2 (refer to Table 4.6).

Table 4.7

Independent Error Test

Model	Tolerance
1	2.197

Test of Normality of Error, Linearity of Error, and Homoscedasticity

According to the data presented in Figure 4.1, the scatterplot indicates that the residuals are predominantly concentrated near the zero line, with random dispersion of residuals around it (refer to figure 4.1). Hence, the 3 assumptions above has been met.

Figure 4.1

Statistical Analyses

In the ongoing study, there are four hypothetical statements to be tested. Mediation test was conducted through PROCESS v4.2 by Andrew F. Hayes in software SPSS.

H1: There is a significant relationship between Fear of Missing Out (FoMO) and social media Addiction (supported)

The assumptions of mediation test such as normality, multicollinearity, independent of error, normality of error, Homoscedasticity and linearity of error were met before conducting the test. Simple mediation test was conducted to test if there is a statistically meaningful relationship between Fear of Missing Out (FoMO) and social media Addiction. The result shows the significant direct effect of Fear of Missing out toward Social Media Addiction is 0.1029 (95% CI: 27.37 to 31.86; $p < 0.05$) while the indirect effect is 0.1177 (BootLLCI= 0.0729 and BootULCI= 0.1702, in which the zero is not within the interval, thus statistically significant), and the total effect is 0.2206 (95% CI: 0.1560 to 0.2852; $p < 0.001$) (refer to Table 4.10).

H2: There is a significant relationship between social media flow and social media addiction (supported)

A simple mediation test was performed to test if there is a substantial correlation between social media flow and social media addiction. The result shows the significant direct effect of Social Media flow toward social media addiction is 0.3726(95% CI: 0.2900 to 0.4551; $p < 0.001$) (refer to table 4.8).

H3: There is a significant relationship between fear of missing out (FoMO) and social media Flow (supported)

A simple mediation test was conducted to test if there is a meaningful association between fear of missing out (FoMO) and social media Flow. The result shows the significant direct effect of Fear of Missing out toward social media flow is 0.3158 (95% CI: 0.2268 to 0.4048; $p < 0.001$) (refer to table 4.9).

H4: There is a significant indirect relationship of social media flow in the relationship between fear of missing out (FoMO) and social media addiction (supported)

A simple mediation test was conducted to test if social media flow mediated the relationship between Fear of Missing out and social media Addiction. The result show that the indirect effect of Fear of Missing Out toward Social Media Addiction through social media flow is 0.1177 (BootLLCI= 0.0729 and BootULCI= 0.1702, in which the zero is not within the interval, thus statistically significant) (refer to table 4.10).

Effect sizes

Fear of Missing Out and Social Media Flow accounted for 38.85% of the variance in Social Media addiction. By applying the formula, the effect size =0.17, according to Cohen (2013), this effect size is Medium as it excess (0.15).

Table 4.8

Outcome variable: Social Media Addiction							
	R	R-sq	MSE	F	df1	df2	p
	.6233	.3885	9.4708	70.1889	2.000	221.000	<.001
Model							
	Coeff	se	t	p	LLCI	ULCI	
Fear of Missing Out	.1029	.0311	3.3065	.0011	.0416	.1643	
Social Media Flow	.3726	.0419	8.8941	<.001	.2900	.4551	

Table 4.9

Outcome variable: Social Media Flow							
	R	R-sq	MSE	F	df1	df2	p
	.4249	.1806	24.3100	48.9175	1.00	222.00	<.001
Model							
	Coeff	se	t	p	LLCI	ULCI	
Fear of Missing Out	.3158	.0452	6.9941	<.001	.2268	.4048	

Table 4.10

Total effect of X on Y						
	Effect	se	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
	.2206	.0328	6.7324	<0.001	0.1560	0.2852
Direct effect of X on Y						
	Effect	se	<i>t</i>	<i>p</i>	LLCI	ULCI
	.1029	.0311	3.3065	.0011	.0416	.1643
Indirect effect(s) of X on Y:						
	Effect	BootSE	BootLLCI	BootULCL		
Social Media Flow	.1177	.0246	.0729	.1702		

Chapter V

Discussion and Conclusion

This study examined the relationship between fear of missing out, social media flow experiences and social media addiction among university students in Malaysia. Based on the statistical analyses, H_1 , H_2 , H_3 and H_4 were supported.

H₁: There is a significant relationship between fear of missing out (FoMO) and social media addiction.

The results of our study support the hypothesis that there is a substantial correlation between fear of missing out (FoMO) and social media addiction among university students in Malaysia. This outcome aligns with previous research suggesting that individuals experiencing higher levels of FoMO have a higher probability to exhibit symptoms of social media addiction (Elhai et al., 2016; Wegmann et al., 2017; Zhu & Xiong, 2022). A previous article done by Fioravanti, and colleagues (2021) provided further support for our findings, highlighting a significant relationship between fear of missing out and social media addiction. This broader perspective reinforces the importance of considering FoMO as a potential risk factor for problematic usage of social media, particularly among young adults.

Our analysis showed a strong positive correlation between social media addiction and fear of missing out, indicating that as levels of FoMO increase, so do levels of social media addiction. One potential explanation for this relationship can be illuminated through the lens of the self-compensation motivation theory, which posits that individuals may engage in certain behaviors, such as excessive social media use, as a means of compensating for unmet psychological needs or

deficiencies in their offline lives (Li et al., 2021). According to this theory, individuals experiencing high levels of FoMO may perceive themselves as lacking social connections or missing out on important social experiences, leading to feelings of loneliness, inadequacy, or anxiety (Li et al., 2021; Tanrikulu & Mouratidis, 2022). To alleviate these negative emotions, they may turn to social media as a means of seeking validation, social support, or distraction from their perceived social deficits (Kardefelt-Winther, 2014). However, this reliance on social media for emotional fulfillment can inadvertently reinforce addictive patterns of behavior, as individuals become increasingly dependent on digital interactions to regulate their mood or self-esteem (Li et al., 2021). This pattern aligns with previous research findings suggesting that FoMO is positively associated with maladaptive coping strategies, such as excessive social media use, which in turn contributes to higher levels of social media addiction (Przybylski et al., 2013; Dogan, 2019).

H₂: There is a significant relationship between social media flow and social media addiction.

The result supported the second hypothesis of the current study, indicating that social media flow predicted social media addiction positively and significantly among emerging university students in Malaysia. This suggests that individuals who exhibit a higher level of social media flow experience may have a greater likelihood of being addicted to social media compared to those with a lower level of Social Media Flow experience. Thus, the results of the current study align with previous research findings (Blackwell et al., 2017; Tunc-Aksan & Akbay, 2019; Varchetta et al., 2020; Sommantico et al., 2023; Zhu & Xiong, 2022).

Mainly, Zhao and Zhou (2021) found that Social Media Flow Experience positively mediates the relationship between social media usage and Social Media Addiction. The results of Zhao and

Zhou's research indicate that individuals who encounter higher levels of stress related to COVID-19 are more prone to developing addictive social media usage, a tendency that active engagement and experiences of flow could exacerbate. Moreover, flow was identified as a more influential factor in explaining addictive social media usage compared to active engagement in their research study. A result consistent with prior research indicates that individuals who experience Social Media Flow Experience, characterized by immersive pleasure, are especially susceptible to behavioural addiction such as addiction to social media.

Researchers have discovered that Social Media Flow Experiences were positively associated with the categories 'Search for Positive Emotions' and 'Escape from Negative Emotions', which led to a positive predictive Social Media Addiction inclination (Brailovskaia et al., 2020). Individuals with negative emotions and wish to escape from daily stressful events tend to have higher Social Media Flow Experiences. Besides, Brailovskaia et al. (2020) discovered that the experience of social media flow during Facebook usage positively correlates with the extent of Facebook addiction. The researchers also stated that individuals with elevated levels of Social Media Flow Experience demonstrated an increased susceptibility to developing Social Media Addiction (Brailovskaia et al. 2020).

Furthermore, Miranda et al. (2023) made a hypothesis that the Social Media Flow Experience during social networking site (SNS) use is one of the mediators in the relationship between user motivations and the onset of SNS addiction. Social Media Flow Experience renders the activity inherently rewarding, without external incentives, as the process brings satisfaction and pleasure (Csíkszentmihályi, 2014). Although Social Media Flow Experience has been stated as an influence that will positively affect attitudes, learning, behaviours and intentions in past studies (Pelet et al.,

2017), Brailovskaia et al. (2020) have proposed that Social Media Flow Experience may lead to Social Media Addiction. Miranda et al. (2023) finally found that the Social Media Flow Experience predicted addiction to social media.

H₃: There is a significant relationship between fear of missing out (FoMO) and social media flow.

The current study's findings have confirmed the third hypothesis, indicating a statistically significant positive association between the Fear of Missing Out (FoMO) and the experience of social media flow. This implies that individuals who consistently worry about missing out on information from their peers or others they care about are likely to experience a higher level of Social Media Flow Experience compared to those who have a lower level of Fear of Missing Out. As such, the outcomes observed in the present study are consistent with the conclusions drawn from prior research endeavours. Therefore, the outcomes of the present study are consistent with previous research findings (Fauzi, et al., 2021; Li et al., 2021).

According to Brailovskaia and Margraf (2024), Social Media Flow Experience is essential to the correlation between Fear of Missing Out and Social Media Addiction. They concluded that when individuals have a higher level of Fear of Missing Out, it will lead to a higher Social Media Flow Experience, and the level of Social Media Addiction will also increase accordingly. A noticeable fact is that there was literature stating that fear of missing out positively correlated with Social Media Flow Experience (Fauzi et al.,2021; Li et al., 2021). Fear of Missing Out cause individuals' emotions to become negative (Rozgonjuk et al.,2021), and they would like to spend more time on social media while the intention of playing social media is a great predictor of Social Media Flow Experience. Meanwhile, Social Media Flow Experience plays a significant role in Social Media Addiction when individuals are escaping their negative emotions (Brailovskaia & Margraf, 2022).

Fauzi et al. (2021) proposed that the Social Media Flow Experience could be explained by the subset of Flow Theory: concentration and perceived enjoyment. Additionally, both of these subsets showed that they are positively correlated with addictive behaviour, which is smartphone addiction. In addition, Oberst et al. (2016) proposed that individuals who fear missing out on any crucial shared information from social media will spend more time on social media, and this is also connected to the Social Media Flow Experience, which makes the individuals are fully immersed in their engagement with social media (Lin, J. et al., 2020).

H4: There is a significant indirect relationship of social media flow in the relationship between fear of missing out (FoMO) and social media addiction.

Our findings regarding Hypothesis 4 show that there is a significant indirect relationship between fear of missing out (FoMO) and social media addiction, mediated by the experience of social media flow among university students in Malaysia. This outcome aligns with prior research suggesting that FoMO contributes to excessive social media engagement (Przybylski et al., 2013), which in turn can lead to addictive behaviors (Andreassen et al., 2012). The mediation analysis indicated that social media flow plays a crucial role in exacerbating the relationship between FoMO and social media addiction. This result implies that when individuals experience a heightened fear of missing out, they may seek refuge in social media platforms to alleviate their anxieties and maintain a sense of connectedness with their social networks. Consequently, this immersion in social media content may trigger a state of flow, characterized by deep engagement and absorption in the online environment (Csikszentmihalyi, 1990). Additionally, a review article by Brailovskaia and Margraf (2022) suggested that there is a significant indirect relationship of social media flow in the

relationship between fear of missing out (FoMO) and social media addiction. This supports our findings and provides further validation of the complex interplay between these variables.

Furthermore, the concept of flow suggests that individuals are more likely to become engrossed in activities that provide clear goals, immediate feedback, and a balance between perceived challenges and skills (Csikszentmihalyi, 1990). Social media platforms often offer a plethora of stimuli, such as notifications, likes, and comments, which can create a sense of continuous feedback and gratification, thus facilitating a flow state (Dam et al., 2023). Consequently, individuals experiencing FoMO may find themselves particularly susceptible to the allure of social media flow, as it offers a temporary escape from their fear-driven concerns (Brailovskaia, Schillack, & Margraf, 2020). As a result, individuals who had higher level of fear of missing out (FoMO) will be more likely to engage in social media flow experience and then frequent use of social media may contribute to addiction behavior in social media platform.

Implications

Practical Implication

Exploring the relationship between fear of missing out (FoMO), social media flow experience, and social media addiction among university students in Malaysia can have significant implications for both individuals and society at large. Understanding these dynamics can provide valuable insights into the psychological effects of social media use and inform the development of interventions to promote digital well-being among university students (Ostic et al., 2021). For example, by identifying the factors that contribute to social media addiction, such as high levels of FoMO and immersive flow experiences, researchers can develop targeted intervention programs aimed at reducing problematic social media use behaviors. These interventions may include educational

workshops (Kumar et al., 2021), counseling services (Plackett et al., 2023), or technological solutions designed (Lubis et al., 2021) to help students manage their social media usage more effectively and develop healthier online habits (Elhai et al., 2016). Specifically, a workshop series on digital well-being could also provide students with practical tips for managing FoMO, such as setting boundaries for social media use, practicing mindfulness techniques, and cultivating offline activities to reduce reliance on social media platforms. By incorporating evidence-based strategies derived from psychological research, educational programs offer students actionable insights to enhance their digital literacy and promote healthier social media behaviors (Halsall et al., 2019).

Additionally, by raising awareness about the potential risks associated with excessive social media use, such as decreased academic performance, impaired mental health, and disrupted sleep patterns, researchers can empower university students to make more informed decisions about their digital consumption (Kolhar et al., 2021; Kuss & Griffiths, 2011). For example, universities can incorporate digital literacy education into university curricula to help students develop critical thinking skills and responsible social media use practices (Smith & Storrs, 2023). Digital literacy education promotes informed decision-making, ethical online behavior, and resilience against online threats, thereby enhancing students' overall digital well-being and empowering them to become responsible digital citizens (Sun et al., 2022). For example, a digital literacy course could incorporate interactive modules on media literacy, where students learn to analyze the credibility of online sources, identify bias in media representations, and evaluate the impact of social media on personal well-being (Samani et al., 2020). By engaging students in hands-on activities and discussions, digital literacy education fosters critical awareness and empowers students to navigate the digital landscape with confidence and resilience (Samani et al., 2020). Ultimately, the findings of research in this area can contribute to the creation of a more digitally literate and psychologically resilient generation of

university students, capable of navigating the challenges of the online world with confidence and balance.

This has the potential to have far-reaching impacts on individuals' personal well-being, academic success, and future career prospects, as well as on the broader societal issues related to technology use and mental health (Pellegrino et al., 2022). However, while social media flow may initially serve as a coping mechanism for individuals experiencing FoMO, it can ultimately contribute to the development of social media addiction (Brailovskaia, Schillack, & Margraf, 2020). Previous research has highlighted the addictive nature of social media platforms, characterized by excessive usage, withdrawal symptoms, and impaired functioning (Kuss & Griffiths, 2011). Therefore, our findings showed that the importance of understanding the interplay between FoMO, social media flow, and addiction within the context of university students in Malaysia.

Theoretical Implication

Self-compensation motivation explains the relationship between the Fear of Missing Out (FoMO) and the experience of experiencing social media flow. As suggested by Cuevas et al. (2021), individuals who prioritize text-based information and consistently engage with others online to avoid missing essential messages tend to experience heightened levels of social media flow. There was a study that implicated that women were having a higher level of being addicted to social media with some variables, which included Fear of Missing Out (Varchetta et al., 2020). Their findings indicate that the Fear of Missing Out is the most significant predictor of Social Media Addiction. This phenomenon is evident in individuals with elevated levels of Fear of Missing Out, as they are more prone to experiencing flow during social media usage. As mentioned by Li, L. et al. (2021), few research studies indicated that individuals who need escapism and interpersonal relationships may

drive online behaviour addiction. Elevated Fear of Missing Out could elevate the degree of Social Media Flow Experience and Self-compensation motivation, potentially resulting in heightened social media usage and increased addictive behaviours (Li, L. et al., 2021). Individuals who fear that they will miss out on essential social interactions will spend more time on social media and simultaneously increase their Social Media Flow Experience. While the period becomes longer, it might lead to addictive behaviour on social media.

The current study incorporates Flow Theory, as proposed by Mihaly Csikszentmihalyi (1975), as a framework to explore the association between Social Media Flow Experience and Social Media Addiction. Flow Theory, as highlighted by Hong & Khan (2022), elucidates how individuals become thoroughly engrossed and absorbed in an activity akin to being addicted to social media. Additionally, Flow Theory has been utilized to investigate how Social Media Flow Experience influences social media usage and impacts an individual's shopping intentions (Hyun et al., 2022). The present study's findings affirm the applicability of Flow Theory in understanding Social Media Addiction. Moreover, this study contributes to the growing body of evidence supporting the effectiveness of Flow Theory in elucidating the relationships between the Social Media Flow Experience and Social Media Addiction.

Limitations of the Study

Same as other studies, the present research has its own set of limitations that need to be addressed. Firstly, the limitation that we found in our research project is the limitation refers to the fact that the findings of the study may not be applicable or generalizable to all university students in Malaysia. As majority of our respondents are students form UTAR Kampar campus, the study overlooks potential differences in social media usage patterns, the level of fear of missing out

(FoMO), and social media addiction among students from other universities with varying demographics, cultural backgrounds, and academic environments. Therefore, it limits the extent to which the results can be extrapolated to other university student populations in Malaysia (Wang et al., 2017).

Second, the ethnic representation concerns the demographic composition of the sample, particularly the disproportionate representation of different ethnic groups (Palmer & Burchard, 2021). In Malaysia, the population is ethnically diverse, consisting primarily of Malay, Chinese, and Indian communities, among others. However, in studies where one ethnic group is overrepresented while others are underrepresented, there are significant implications for the generalizability and validity of the findings. In this case, given the majority of participants being Chinese and the underrepresentation of Indian and Malay students, the study's results might not fully encompass the diversity of viewpoints, behaviors, and experiences concerning social media usage, Fear of Missing Out (FoMO), and social media addiction across all ethnic groups in Malaysia. This limitation undermines the study's ability to provide comprehensive insights into the phenomenon under investigation and may lead to biased conclusions (Palmer & Burchard, 2021).

Thirdly, cross-sectional design is also one of the limitations. This limitation refers to the restriction of collecting data only once from the participants, which prevent us from observing how variables such as FoMO, social media flow, and social media addiction may fluctuate or evolve over time among university students (Setia, 2016). This limitation poses challenges in interpreting the temporal sequence of events and discerning the direction of relationships between variables. For example, while our study may identify associations between high FoMO and increased social media addiction, it cannot determine whether FoMO leads to social media addiction or vice versa.

Additionally, cross-sectional designs may overlook important contextual factors or developmental trajectories that influence the phenomena under investigation (Setia, 2016). For instance, the impact of cultural norms, academic pressures, or changes in social media platforms over time may not be adequately captured in a single snapshot.

Recommendations for Future Research

Several recommendations have been proposed for future research to tackle the constraints identified in the current study. First of all, the majority of respondents of the current study are UTAR Kampar students. There is a need for more than the UTAR Kampar campus respondents to represent the whole target group for the present study. Hence, to enhance the generalization in the future, the researchers are recommended to involve other university students in the research study. Researchers may conduct the research questionnaire by using the snowball sampling method. The snowball sampling method is utilized in some specific situations, such as when the researchers wish to obtain samples possessing the target group characteristics, which proves challenging (Naderifar et al., 2017).

Furthermore, due to Malaysia's multicultural and multi-ethnic composition, the findings may only partially reflect the entirety of the Malaysian population since current research shows that most respondents were Chinese (93%). According to the Department of Statistics Malaysia (2022), the most significant portion of Kampar's population consists of individuals of Chinese descent, comprising 46.9%, followed by Malays at 37.9%, Indians at 9.9%, and other ethnicities at 0.4%. The distinct traits associated with various ethnic groups might result in divergent outcomes, given that while social media usage experiences may share similarities across cultures, they also differ due to the diversity in religious and cultural backgrounds. Researchers are recommended to conduct a stratified sampling method to overcome the constraint. A stratified sampling method is recommended

to allow each individual to participate in the research study, irrespective of their ethnic background (Etikan & Rufai, 2021).

Lastly, the third limitation pertains to employing a cross-sectional design in the present study. In this scenario, patterns like shifts in attitudes or behaviours across different periods could not be observed due to the limitations of proposing a cross-sectional study, which gathers data from a single sample at a specific moment. Hence, a longitudinal study is suggested in future research because it can utilize continuous or repeated measurements to track specific individuals over extended durations (Caruana et al., 2015). Researchers would have the opportunity to investigate the issue of social media addiction among university students in Malaysia longitudinally. Also, a multiple cross-sectional study can be considered a valuable tool for determining the research study. Researchers are recommended to conduct the examination by getting at least two sets of data samples from the study's target population by using multiple cross-sectional studies (Setia, 2016). Thus, researchers can examine the research questions by minimising the possibility of losing their target population and solving the time issue.

References

- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), 330-333.
https://www.researchgate.net/publication/256446902_Sampling_Why_and_How_of_it_A_nita_S_Acharya_Anupam_Prakash_Pikee_Saxena_Aruna_Nigam
- Ahmad, S., Wasim, S., Irfan, S., Gogoi, S., Srivastava, A., & Farheen, Z. (2019). Qualitative v/s. quantitative Research- A summarized Review. *Journal of Evidence Based Medicine and Healthcare*, 6(43), 2828–2832. <https://doi.org/10.18410/jebmh/2019/587>
- Akakandelwa, A., & Walubita, G. (2018). Students' social media use and its perceived impact on their social life: A case study of the university of Zambia. *The International Journal of Multi-Disciplinary Research*, 2, 1-14. <http://dspace.unza.zm/handle/123456789/5247>
- Alabri, A. (2022). Fear of missing out (FOMO): The effects of the need to belong, perceived centrality, and fear of social exclusion. *Human Behavior and Emerging Technologies*, 1–12. <https://doi.org/10.1155/2022/4824256>
- Alaika, O., Doghmi, N., & Cherti, M. (2020). Social media addiction among Moroccan university students: a cross sectional survey. *PAMJ One Health*, 1.
<https://doi.org/10.11604/pamj-oh.2020.1.4.21930>
- Alutaybi, A., Al-Thani, D., McAlaney, J., & Ali, R. (2020). Combating fear of missing out (FOMO) on social media: the FOMO-R method. *International Journal of Environmental*

Research and Public Health, 17(17), 6128. <https://doi.org/10.3390/ijerph17176128>

Anastasya, Y. A., Hadiah, C. M., Amalia, I., & Suzanna, E. (2022). Correlation between fear of missing out and internet addiction in students. *International Journal of Islamic Educational Psychology*, 3(1). <https://doi.org/10.18196/ijiep.v3i1.14038>

Anderson, A. S. a. M. (2018). Social media use in 2018. *Pew Research Center Internet & Technology*. <http://apo.org.au/node/135341>

Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current Addiction Reports*, 2(2), 175–184. <https://doi.org/10.1007/s40429-015-0056-9>

Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study.

Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2017). The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. *Addictive Behaviors*, 64, 287–293. <https://doi.org/10.1016/j.addbeh.2016.03.006>

Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a

- Facebook addiction scale. *Psychological Reports*, *110*(2), 501-517.
<http://dx.doi.org/10.2466/02.09.18.PR0.110.2.501-517>
- associations with distress among Malaysian university students. *Healthcare*, *10*(8), 1448.
<https://doi.org/10.3390/healthcare10081448>
- Azizi, S. M., Soroush, A., & Khatony, A. (2019). The relationship between social networking addiction and academic performance in Iranian students of medical sciences: A cross-sectional study. *BMC Psychology*, *7*(1). <https://doi.org/10.1186/s40359-019-0305-0>
- Baker, Z. G., Krieger, H., & LeRoy, A. S. (2016). Fear of missing out: Relationships with depression, mindfulness, and physical symptoms. *Translational Issues in Psychological Science*, *2*(3), 275–282. <https://doi.org/10.1037/tps0000075>
- Barry, C. T., & Wong, M. (2020). Fear of missing out (FoMO): A generational phenomenon or an individual difference? *Journal of Social and Personal Relationships*, *37*(12), 2952–2966. <https://doi.org/10.1177/0265407520945394>
- Bhandarkar, A. M., Pandey, A. K., Nayak, R., Pujary, K., & Kumar, A. (2021). Impact of social media on the academic performance of undergraduate medical students. *Medical Journal Armed Forces India*, *77*, S37–S41. <https://doi.org/10.1016/j.mjafi.2020.10.021>
- Blackwell, D., Leaman, C., Tramposch, R., Osborne, C., & Liss, M. (2017). Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction. *Personality and Individual Differences*, *116*, 69–72.
<https://doi.org/10.1016/j.paid.2017.04.039>

Brailovskaia, J., & Margraf, J. (2017). Facebook addiction disorder (FAD) among German students—A longitudinal approach. *PLOS ONE*, *12*(12), e0189719.

<https://doi.org/10.1371/journal.pone.0189719>

Brailovskaia, J., & Margraf, J. (2022). Addictive social media use during Covid-19 outbreak: validation of the bergen social media addiction scale (BSMAS) and investigation of protective factors in nine countries. *Current Psychology*. <https://doi.org/10.1007/s12144-022-03182-z>

Brailovskaia, J., & Margraf, J. (2022b). The relationship between active and passive Facebook use, Facebook flow, depression symptoms and Facebook addiction: A three-month investigation. *Journal of Affective Disorders Reports*, *10*, 100374.

<https://doi.org/10.1016/j.jadr.2022.100374>

Brailovskaia, J., & Margraf, J. (2023). From fear of missing out (FoMO) to addictive social media use: The role of social media flow and mindfulness. *Computers in Human Behavior*, *150*, 107984. <https://doi.org/10.1016/j.chb.2023.107984>

<https://doi.org/10.1016/j.chb.2023.107984>

Brailovskaia, J., & Margraf, J. (2023). From fear of missing out (FoMO) to addictive social media use: The role of social media flow and mindfulness. *Computers in Human Behavior*, *150*, 107984. <https://doi.org/10.1016/j.chb.2023.107984>

<https://doi.org/10.1016/j.chb.2023.107984>

Brailovskaia, J., & Teichert, T. (2020). “I like it” and “I need it”: Relationship between implicit associations, flow, and addictive social media use. *Computers in Human Behavior*, *113*,

106509. <https://doi.org/10.1016/j.chb.2020.106509>

Brailovskaia, J., Rohmann, E., Bierhoff, H., & Margraf, J. (2018). The brave blue world: Facebook flow and Facebook Addiction Disorder (FAD). *PLOS ONE*, *13*(7), e0201484. <https://doi.org/10.1371/journal.pone.0201484>

Brailovskaia, J., Schillack, H., & Margraf, J. (2020). Tell me why are you using social media (SM)! Relationship between reasons for use of SM, SM flow, daily stress, depression, anxiety, and addictive SM use – An exploratory investigation of young adults in Germany. *Computers in Human Behavior*, *113*, 106511. <https://doi.org/10.1016/j.chb.2020.106511>

Brailovskaia, J., Truskauskaitė-Kunevičienė, I., Kazlauskas, E., & Margraf, J. (2021). The patterns of problematic social media use (SMU) and their relationship with online flow, life satisfaction, depression, anxiety and stress symptoms in Lithuania and in Germany. *Current Psychology*, *42*(5), 3713–3724. <https://doi.org/10.1007/s12144-021-01711-w>

Brunborg, G. S., & Andreas, J. B. (2019). Increase in time spent on social media is associated with modest increase in depression, conduct problems, and episodic heavy drinking. *Journal of Adolescence*, *74*(1), 201–209. <https://doi.org/10.1016/j.adolescence.2019.06.013>

Cargill, M. (2019). The relationship between social media addiction, anxiety, the fear of missing out, and interpersonal problems. *The University of Akron ProQuest Dissertations*, *166*. http://rave.ohiolink.edu/etdc/view?acc_num=akron1553205114159635

- Carr, C. T., & Hayes, R. A. (2015). Social media: defining, developing, and divining. *Atlantic Journal of Communication*, 23(1), 46–65. <https://doi.org/10.1080/15456870.2015.972282>
- Caruana, E., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *PubMed*, 7(11), E537-40. <https://doi.org/10.3978/j.issn.2072-1439.2015.10.63>
- ÇeliK, A. K., & Peker, A. (2023). Algılanan stres ve sosyal medya bağımliliği: Akiş yaşantılarının aracı rolü. *Journal of Education Faculty*, 25(3), 514–523. <https://doi.org/10.17556/erziefd.1314856>
- Chen, C., Zhang, K. Z., Gong, X., Zhao, S. J., Lee, M., & Liang, L. (2017). Understanding compulsive smartphone use: An empirical test of a flow-based model. *International Journal of Information Management*, 37(5), 438–454. <https://doi.org/10.1016/j.ijinfomgt.2017.04.009>
- Chen, Y. (2016). Spatial autocorrelation approaches to testing residuals from least squares regression. *PloS One*, 11(1), e0146865. <https://doi.org/10.1371/journal.pone.0146865>
- Cohen, J. (2013). Statistical power analysis for the behavioral sciences. In *Routledge eBooks*. <https://doi.org/10.4324/9780203771587>
- Csikszentmihalyi, M. (1990). Flow: the psychology of optimal experience. *Choice Reviews Online*, 28(01), 28–0597. <https://doi.org/10.5860/choice.28-0597>

- Csíkszentmihályi, M. (2014). Flow and the foundations of positive psychology. In *Springer eBooks*. <https://doi.org/10.1007/978-94-017-9088-8>
- Cuevas, L., Lyu, J., & Lim, H. (2021). Flow matters: Antecedents and outcomes of flow experience in social search on Instagram. *Journal of Research in Interactive Marketing*, 15(1), 49–67. <https://doi.org/10.1108/jrim-03-2019-0041>
- Cyberpsychology, Behavior, and Social Networking*, 18(7), 386–392. <https://doi.org/10.1089/cyber.2015.0107>
- Dahiru, T. (2011). P-value, a true test of statistical significance? A cautionary note. *Annals of Ibadan Postgraduate Medicine*, 6(1). <https://doi.org/10.4314/aipm.v6i1.64038>
- Dam, V. A. T., Dao, N. G., Nguyen, D. C., Vu, T. M. T., Boyer, L., Auquier, P., Fond, G., Ho, R. C. M., Ho, C. S. H., & Zhang, M. W. B. (2023). Quality of life and mental health of adolescents: Relationships with social media addiction, fear of missing out, and stress associated with neglect and negative reactions by online peers. *PloS ONE*, 18(6): e0286766. <https://doi.org/10.1371/journal.pone.0286766>
- Daoud, J. I. (2017). Multicollinearity and regression analysis. *Journal of Physics: Conference Series*, 949, 012009. <https://doi.org/10.1088/1742-6596/949/1/012009>
- Das, K. R. (2016). A brief review of tests for normality. *American Journal of Theoretical and Applied Statistics*, 5(1), 5. <https://doi.org/10.11648/j.ajtas.20160501.12>

Dempsey, A. E., O'Brien, K. D., Tiamiyu, M. F., & Elhai, J. D. (2019). Fear of missing out (FoMO) and rumination mediate relations between social anxiety and problematic Facebook use. *Addictive Behaviors Reports, 9*, 100150.

<https://doi.org/10.1016/j.abrep.2018.100150>

Department of Statistics Malaysia (2022). My local stats kampar Perak 2021. *Department of Statistics Malaysia*.

https://www.perak.gov.my/images/menu_utama/ms/kerajaan_negeri/data_UPEN/MyLocalStatsPerak/Daerah/Kampar/MLSKampar2021.pdf

Dogan, V. (2019). Why do people experience the fear of missing out (FoMO)? Exposing the link between the self and the FoMO through self-construal. *Journal of Cross-Cultural Psychology, 50*(4), 002202211983914.

<https://doi.org/10.1177/0022022119839145>

Drahošová, M., & Balco, P. (2017). The analysis of advantages and disadvantages of use of social media in European union. *Procedia Computer Science, 109*, 1005–1009.

<https://doi.org/10.1016/j.procs.2017.05.446>

Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior, 63*, 509–516. <https://doi.org/10.1016/j.chb.2016.05.079>

Elhai, J. D., McKay, D., Yang, H., Minaya, C., Montag, C., & Asmundson, G. J. (2020). Health anxiety related to problematic smartphone use and gaming disorder severity during

- COVID -19: Fear of missing out as a mediator. *Human Behavior and Emerging Technologies*, 3(1), 137–146. <https://doi.org/10.1002/hbe2.227>
- Elhai, J. D., Yang, H., & Montag, C. (2021). Fear of missing out (FOMO): Overview, theoretical underpinnings, and literature review on relations with severity of negative affectivity and problematic technology use. *Revista Brasileira De Psiquiatria*, 43(2), 203–209. <https://doi.org/10.1590/1516-4446-2020-0870>
- Etikan, İ., & Rufai, İ. (2021). Comparison of quota sampling and stratified random sampling. *Biometrics & Biostatistics International Journal*, 10(1), 24–27. <https://doi.org/10.15406/bbij.2021.10.00326>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/bf03193146>
- Fauzi, M. A., Harun, S. A., Martin, T., Paiman, N., & Hussin, M. S. F. (2021). Smartphone addiction among young adolescents: Integration of flow theory and fear of missing out. *International Journal of Information and Management Sciences*, 32(1), 39-58. <http://dx.doi.org/10.6186/IJIMS.202103>
- Fauzi, R., Saaiddin, N. I., Ibrahim, N. S., & Abdullah, S. S. (2021). Effect of social media addiction on academic performance among nursing students. *The Malaysian Journal of Nursing*, 13(1). <https://doi.org/10.31674/mjn.2021.v13i01.001>

- Fioravanti, G., Casale, S., Benucci, S. B., Probst, A., Falone, A., Ricca, V., & Rotella, F. (2021). Fear of missing out and social networking sites use and abuse: A meta-analysis. *Computers in Human Behavior, 122*, 106839. <https://doi.org/10.1016/j.chb.2021.106839>
- Gao, P., & Wenbin, W. (2006). A study on psychopathology and psychotherapy of Internet addiction. *Advances in Psychological Science, 14*(04), 596. <http://journal.psych.ac.cn/xlkxjz/EN/abstract/abstract2624.shtml>
- George, D., & Mallery, P. (2006). *SPSS for windows step-by-step: A simple guide and reference, 14.0 update*. <http://ci.nii.ac.jp/ncid/BA81875618>
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism, 10*(2), 486–489. <https://doi.org/10.5812/ijem.3505>
- Greenhow, C., & Robelia, B. (2009). Informal learning and identity formation in online social networks. *Learning, Media and Technology, 34*(2), 119–140. <https://doi.org/10.1080/17439880902923580>
- Gupta, M., & Sharma, A. (2021). Fear of missing out: A brief overview of origin, theoretical underpinnings and relationship with mental health. *World Journal of Clinical Cases, 9*(19), 4881–4889. <https://doi.org/10.12998/wjcc.v9.i19.4881>
- Hair, J. F. (2010). *Multivariate data analysis: A global perspective*. <https://ci.nii.ac.jp/ncid/BB03463866>

- Halsall, T., Garinger, C., Dixon, K., & Forneris, T. (2019). Evaluation of a social media strategy to promote mental health literacy and help-seeking in youth. *Journal of Consumer Health on the Internet*, 23(1), 13–38. <https://doi.org/10.1080/15398285.2019.1571301>
- Hassan, Z. A., Schattner, P., & Mazza, D. (2006). Doing a pilot study: Why is it essential? *DOAJ (DOAJ: Directory of Open Access Journals)*, 1(2–3), 70–73. <https://doaj.org/article/38b83fb6ae404889b9b3207a521eb3f2>
- Hawi, N. S., & Samaha, M. (2016). The relations among social media addiction, self-esteem, and life satisfaction in university students. *Social Science Computer Review*, 35(5), 576–586. <https://doi.org/10.1177/0894439316660340>
- Hong, Z., & Khan, A. (2022). The students' flow experience with the continuous intention of using online English platforms. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.807084>
- Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology*, 13(1). <https://doi.org/10.5817/cp2019-1-4>
- Howe, S. (2023, August 21). Social Media statistics for Malaysia [Updated 2023]. *Meltwater*. <https://www.meltwater.com/en/blog/social-media-statistics-malaysia>
- Hunt, M. G., Xu, E., Fogelson, A., & Rubens, J. (2023). Follow friends one hour a day: Limiting time on social media and muting strangers improves well-being. *Journal of Social and*

Clinical Psychology, 42(3), 187–213. <https://doi.org/10.1521/jscp.2023.42.3.18>

Hyun, H., Thavisay, T., & Lee, S. H. (2022). Enhancing the role of flow experience in social media usage and its impact on shopping. *Journal of Retailing and Consumer Services*, 65, 102492. <https://doi.org/10.1016/j.jretconser.2021.102492>

Kamaruddin, N. A., Haris, H., & Nurlina. (2022). Relationship fear of missing out with social media addiction high school-aged teens. *Comprehensive Health Care*, 6(1). <https://doi.org/10.37362/jch.v6i1.693>

Kang, H. (2021). Sample size determination and power analysis using the G*Power software. *Journal of Educational Evaluation for Health Professions*, 18, 17. <https://doi.org/10.3352/jeehp.2021.18.17>

Kardefelt-Winther, D. (2014). A conceptual and methodological critique of Internet addiction research: Towards a model of compensatory Internet use. *Computers in Human Behavior*, 31(1), 351–354. <https://doi.org/10.1016/j.chb.2013.10.059>

Kemp, S. (2023, February 4). *Digital 2023: Global overview report — Data reportal – Global digital insights*. DataReportal – Global Digital Insights. <https://datareportal.com/reports/digital-2023-global-overview-report>

Kemp, S. (2023b, February 13). *Digital 2023: Malaysia — DataReportal – Global Digital Insights*. DataReportal – Global Digital Insights. <https://datareportal.com/reports/digital->

2023-malaysia

- Khang, H., Kim, J. K., & Kim, Y. (2013). Self-traits and motivations as antecedents of digital media flow and addiction: The internet, mobile phones, and video games. *Computers in Human Behavior, 29*(6), 2416–2424. <https://doi.org/10.1016/j.chb.2013.05.027>
- Kieser, M., & Wassmer, G. (1996). On the use of the upper confidence limit for the variance from a pilot sample for sample size determination. *Biometrical Journal, 38*(8), 941–949. <https://doi.org/10.1002/bimj.4710380806>
- Koç, H., Şimşir, Z., & Seki, T. (2023). The relationships between self-control and distress among emerging adults: A serial mediating roles of fear of missing out and social media addiction. *Emerging Adulthood, 11*(3), 626–638. <https://doi.org/10.1177/21676968231151776>
- Kolhar, M., Kazi, R. N., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi Journal of Biological Sciences, 28*(4), 2216–2222. <https://doi.org/10.1016/j.sjbs.2021.01.010>
- Kühn, L., Hermann, C., & Boer, L. (2019). Design research themes for mindful interaction. In C. Granja & T. Solvoll (Eds.), *Proceedings of the 17th scandinavian conference on health informatics*. (pp. 24-29). Linköping University Electronic Press. <https://ep.liu.se/ecp/161/ecp19161.pdf>
- Kumar, P., Patel, V., Chaudhary, P., Vasavada, D., & Tiwari, D. (2021). A study of correlates of

- social networking site addiction among the undergraduate health professionals. *Asian Journal of Social Health and Behavior*, 4(1), 30. https://doi.org/10.4103/shb.shb_1_21
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—A review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8(9), 3528–3552. <https://doi.org/10.3390/ijerph8093528>
- Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, 14(3), 311. <https://doi.org/10.3390/ijerph1403031>
- Kwak, K. T., Choi, S. K., & Lee, B. G. (2014). SNS flow, SNS self-disclosure and post hoc interpersonal relations change: Focused on Korean Facebook user. *Computers in Human Behavior*, 31, 294–304. <https://doi.org/10.1016/j.chb.2013.10.046>
- Kwak, S. G., & Park, S. (2019). Normality test in clinical research. *Journal of Rheumatic Diseases*, 26(1), 5. <https://doi.org/10.4078/jrd.2019.26.1.5>
- Lai, C., Altavilla, D., Ronconi, A., & Aceto, P. (2016). Fear of missing out (FOMO) is associated with activation of the right middle temporal gyrus during inclusion social cue. *Computers in Human Behavior*, 61, 516–521. <https://doi.org/10.1016/j.chb.2016.03.072>
- Lee, M. H. L., Kaur, M., Shaker, V., Yee, A., Sham, R., & Siau, C. S. (2023). Cyberbullying, social media addiction and associations with depression, anxiety, and stress among medical students in Malaysia. *International Journal of Environmental Research and*

Public Health, 20(4), 3136. <https://doi.org/10.3390/ijerph20043136>

Lenhart, A., & Madden, M. (2007, April 18). *Teens, privacy and online social networks*. Pew Research Center. <https://www.pewresearch.org/internet/2007/04/18/teens-privacy-and-online-social-networks/>

Li, L., Niu, Z., Griffiths, M. D., & Mei, S. (2021). Relationship between gaming disorder, self-compensation motivation, game flow, time spent gaming, and fear of missing out among a sample of Chinese university students: A network analysis. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.761519>

Li, L., Niu, Z., Mei, S., & Griffiths, M. D. (2022). A network analysis approach to the relationship between fear of missing out (FoMO), smartphone addiction, and social networking site use among a sample of Chinese university students. *Computers in Human Behavior*, 128, 107086. <https://doi.org/10.1016/j.chb.2021.107086>

Lin, J., Lin, S., Turel, O., & Xu, F. (2020). The buffering effect of flow experience on the relationship between overload and social media users' discontinuance intentions. *Telematics and Informatics*, 49, 101374. <https://doi.org/10.1016/j.tele.2020.101374>

Lomax, R. G. (2013). Statistical concepts. In *Routledge eBooks*.
<https://doi.org/10.4324/9780203137802>

Lubis, M., Handayani, D., Novrian, N., & Fauzi, R. (2021). *Development of Internet healthy platform for student community through design approach against Internet addiction*.

<http://dx.doi.org/10.1145/3479162.3479166>

Luo, T., Qin, L., Cheng, L., Wang, S., Zi-Jun, Z., Xu, J., Chen, H., Liu, Q., Hu, M., Tong, J., Hao, W., Wei, B., & Liao, Y. (2021). Determination the cut-off point for the Bergen social media addiction (BSMAS): Diagnostic contribution of the six criteria of the components model of addiction for social media disorder. *Journal of Behavioral Addictions, 10*(2), 281–290. <https://doi.org/10.1556/2006.2021.00025>

Mahamid, F., & Berte, D. Z. (2018). Social media addiction in geopolitically at-risk youth. *International Journal of Mental Health and Addiction, 17*(1), 102–111. <https://doi.org/10.1007/s11469-017-9870-8>

Malaysia: social media usage 2023 | Statista. (2023, November 1). Statista.

<https://www.statista.com/statistics/883712/malaysia-social-media-penetration/>

Masthi, N. R. R., Pruthvi, S., & Phaneendra, M. S. (2018). A comparative study on social media usage and health status among students studying in pre-university colleges of Urban Bengaluru. *PubMed, 43*(3), 180–184. https://doi.org/10.4103/ijcm.ijcm_285_17

Mazhar, N., Khan, T. B., Zafar, K., Warris, S., Nikhet, S., & Tahir, A. (2020). A study of components of behavioral addiction to social media use in current generation of Pakistani youth. *The Professional Medical Journal, 27*(08), 1680–1685. <https://doi.org/10.29309/tpmj/2020.27.08.4494>

Meshi, D., Cotten, S. R., & Bender, A. R. (2019). Problematic social media use and perceived social isolation in older adults: A cross-sectional study. *Gerontology, 66*(2), 160–168.

<https://doi.org/10.1159/000502577>

Miranda, S., Trigo, I., Rodrigues, R., & Duarte, M. (2023). Addiction to social networking sites: Motivations, flow, and sense of belonging at the root of addiction. *Technological Forecasting and Social Change*, 188, 122280. <https://doi.org/10.1016/j.techfore.2022.122280>

Moneta, G. B., & Csikszentmihalyi, M. (1996). The effect of perceived challenges and skills on the quality of subjective experience. *Journal of Personality*, 64, 274–310. [doi:10.1111/j.1467-6494.1996.tb00512.x](https://doi.org/10.1111/j.1467-6494.1996.tb00512.x).

Moore, K., & Crăciun, G. (2020). Fear of missing out and personality as predictors of social networking sites usage: The Instagram case. *Psychological Reports*, 124(4), 1761–1787. <https://doi.org/10.1177/0033294120936184>

Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball sampling: A purposeful method of sampling in qualitative research. *Strides in Development of Medical Education*, 14(3). <https://doi.org/10.5812/sdme.67670>

Niu, H., & Chang, C. (2014). Addiction in cyberspace: Flow experience on e-shopping. *International Journal of Web Based Communities*, 10(1), 52. <https://doi.org/10.1504/ijwbc.2014.058386>

Nyaribo, Y. M., & Munene, A. G. (2018). Effect of social media pertication in the workplace on employee productivity. *IJAME*.

<https://www.managementjournal.info/index.php/IJAME/article/view/266>

- Oberst, Ú., Wegmann, E., Stodt, B., Brand, M., & Lusak, A. C. (2016). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence*, *55*(1), 51–60. <https://doi.org/10.1016/j.adolescence.2016.12.008>
- Orta, İ. M. (2020). Fear of missing out, internet addiction and their relationship to psychological symptoms. *Addicta: The Turkish Journal on Addictions*, *7*(1), 67–73. <https://doi.org/10.15805/addicta.2020.7.1.0070>
- Ostic, D., Qalati, S. A., Barbosa, B., Shah, S. M. M., Galvan Vela, E., Herzallah, A. M., & Liu, F. (2021). Effects of social media use on psychological well-being: A mediated model. *Frontiers in Psychology*, *12*(12). <https://doi.org/10.3389/fpsyg.2021.678766>
- Palmer, N., & Burchard, E. (2021). *Diversity in research participation: Why it's important*. Recruitment Services. <https://recruit.ucsf.edu/diversity-research-participation-why-its-important>
- Pekpazar, A., Aydin, G. K., Aydin, U., Beyhan, H., & Ari, E. (2021). Role of Instagram addiction on academic performance among Turkish university students: Mediating effect of procrastination. *Computers and Education Open*, *2*, 100049. <https://doi.org/10.1016/j.caeo.2021.100049>
- Pelet, J., Ettis, S. A., & Cowart, K. (2017). Optimal experience of flow enhanced by telepresence: Evidence from social media use. *Information & Management*, *54*(1), 115–

128. <https://doi.org/10.1016/j.im.2016.05.001>

Pellegrino, A., Stasi, A., & Bhatiasevi, V. (2022). Research trends in social media addiction and problematic social media use: A bibliometric analysis. *Frontiers in Psychiatry, 13*(1017506). <https://doi.org/10.3389/fpsy.2022.1017506>

Plackett, R., Blyth, A., & Schartau, P. (2023). The impact of social media use interventions on mental well-being: Systematic review. *Journal of Medical Internet Research, 25*, e44922. <https://doi.org/10.2196/2F44922>

Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior, 29*(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
Psychology of Addictive Behaviors, 30(2), 252–262. <https://doi.org/10.1037/adb0000160>

Pugh, C. M., & Salud, L. H. (2007). Fear of missing a lesion: Use of simulated breast models to decrease student anxiety when learning clinical breast examinations. *The American Journal of Surgery, 193*(6), 766–770. <https://doi.org/10.1016/j.amjsurg.2006.12.033>

Rahman, S. (2016). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “Testing and Assessment” research: A literature review. *Journal of Education and Learning, 6*(1), 102. <https://doi.org/10.5539/jel.v6n1p102>

Ramani, Z., & Diwanji, H. (2022). A review of impact on social media addiction.

Multidisciplinary International Research Journal of Gujarat Technological University,
4(2). <https://researchjournal.gtu.ac.in/News/3.%20ENG2022205.pdf>

Riordan, B. C., Flett, J. a. M., Hunter, J., Scarf, D., & Conner, T. S. (2015). Fear of missing out (FoMO): The relationship between FoMO, alcohol use, and alcohol-related consequences in college students. *Journal of Psychiatry and Brain Functions*, 2(1), 9.
<https://doi.org/10.7243/2055-3447-2-9>

Rod, N. H., Dissing, A. S., Clark, A., Gerds, T. A., & Lund, R. (2018). Overnight smartphone use: A new public health challenge? A novel study design based on high-resolution smartphone data. *PLOS ONE*, 13(10), e0204811.
<https://doi.org/10.1371/journal.pone.0204811>

Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2021). Individual differences in fear of missing out (FoMO): Age, gender, and the big five personality trait domains, facets, and items. *Personality and Individual Differences*, 171, 110546.
<https://doi.org/10.1016/j.paid.2020.110546>

Saat, G. A. M. (2021, January 7). Collectivist, individualistic cultures deal with anxiety differently. *New Straits Times*.
<https://www.nst.com.my/opinion/letters/2021/01/655419/collectivist-individualistic-cultures-deal-anxiety-differently>

Samani, E., Bagheripour, R., & Noordin, N. (2020). Effect of a course on educational tools

on students' attitude and digital literacy skills. *International Journal of Educational Technology and Learning*, 8(1), 38–46. <https://doi.org/10.20448/2003.81.38.46>

Sarstedt, M., & Mooi, E. (2014). Hypothesis testing & ANOVA. In *Springer texts in business and economics* (pp. 141–192). https://doi.org/10.1007/978-3-642-53965-7_6

Scott, E., PhD. (2022, November 16). *How to deal with FOMO in your life*. Verywell Mind. <https://www.verywellmind.com/how-to-cope-with-fomo-4174664>

Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61(3), 261–264. NCBI. <https://doi.org/10.4103/0019-5154.182410>

Setia, M. S. (2016). Methodology series module 5: Sampling strategies. *Indian Journal of Dermatology*, 61(5), 505. <https://doi.org/10.4103/0019-5154.190118>

Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), 749-752. https://scholar.google.com.my/scholar?q=pros+and+cons+of+different+sampling+techniques&hl=en&as_sdt=0&as_vis=1&oi=scholart

Sheng, C. Y., Noresafendy, N. H., Yee, W. L., Hazhar, M., & Samat, F. (2022). Social media influence to the life of Malaysian pre-university students. *Malaysian Journal of Social Sciences and Humanities*, 7(8), e001654. <https://doi.org/10.47405/mjssh.v7i8.1654>

- Shensa, A., Escobar-Viera, C. G., Sidani, J. E., Bowman, N. D., Marshal, M. P., & Primack, B. A. (2017). Problematic social media use and depressive symptoms among U.S. young adults: A nationally-representative study. *Social Science & Medicine*, *182*, 150–157. <https://doi.org/10.1016/j.socscimed.2017.03.061>
- Siah, P. C., Hue, J. Y., Wong, B. Z. R., & Goh, S. J. (2021). Dark triad and social media addiction among undergraduates: Coping strategy as a mediator. *Contemporary Educational Technology*, *13*(4), ep320. <https://doi.org/10.30935/cedtech/11104>
- Siah, P. C., YiRong, B. S., & Yang, S. Z. (2020). Social media addiction and academic adjustment: The mediating or moderating effect of grit personality. *International Journal of Psychology and Educational Studies*, *7*(3), 143–151. <https://doi.org/10.17220/ijpes.2020.03.013>
- Smith, E. E., & Storrs, H. (2023). Digital literacies, social media, and undergraduate learning: What do students think they need to know? *International Journal of Educational Technology in Higher Education*, *20*(1). <https://doi.org/10.1186/s41239-023-00398-2>
- Sommantico, M., Ramaglia, F., & Lacatena, M. (2023). Relationships between depression, fear of missing out and social media addiction: The mediating role of self-esteem. *Healthcare*, *11*(12), 1667. <https://doi.org/10.3390/healthcare11121667>

- Stănculescu, E. (2022). The bergen social media addiction scale validity in a Romanian sample using item response theory and network analysis. *International Journal of Mental Health and Addiction*, 21(4), 2475–2492. <https://doi.org/10.1007/s11469-021-00732-7>
- Sultan, A. J. (2021). Fear of missing out and self-disclosure on social media: The paradox of tie strength and social media addiction among young users. *Young Consumers*, 22(4), 555–577. <https://doi.org/10.1108/yc-10-2020-1233>
- Sümen, A., & EvgiN, D. (2021). Social media addiction in high school students: A cross-sectional study examining its relationship with sleep quality and psychological problems. *Child Indicators Research*, 14(6), 2265–2283. <https://doi.org/10.1007/s12187-021-09838-9>
- Sun, H., Yuan, C., Qian, Q., He, S., & Luo, Q. (2022). Digital resilience among individuals in school education settings: A concept analysis based on a scoping review. *Frontiers in Psychiatry*, 13. <https://doi.org/10.3389/fpsyt.2022.858515>
- Swan, A. J., & Kendall, P. C. (2016). Fear and missing out: Youth anxiety and functional outcomes. *Clinical Psychology-science and Practice*, 23(4), 417–435. <https://doi.org/10.1111/cpsp.12169>
- Szczygieł, K., & Podwalski, P. (2020). Comorbidity of social media addiction and other mental disorders – An overview. *Archives of Psychiatry and Psychotherapy*, 22(4), 7–11. <https://doi.org/10.12740/app/122487>

Tandon, A., Dhir, A., Almugren, I., AlNemer, G. N., & Mäntymäki, M. (2021). Fear of missing out (FoMO) among social media users: A systematic literature review, synthesis and framework for future research. *Internet Research*, *31*(3), 782–821.
<https://doi.org/10.1108/intr-11-2019-0455>

Tandon, A., Dhir, A., Talwar, S., Kaur, P., & Mäntymäki, M. (2021). Dark consequences of social media-induced fear of missing out (FoMO): Social media stalking, comparisons, and fatigue. *Technological Forecasting and Social Change*, *171*, 120931.
<https://doi.org/10.1016/j.techfore.2021.120931>

Tandon, A., Kaur, P., Dhir, A., & Mäntymäki, M. (2020). Sleepless due to social media? Investigating problematic sleep due to social media and social media sleep hygiene. *Computers in Human Behavior*, *113*, 106487.
<https://doi.org/10.1016/j.chb.2020.106487>

Tanhan, F., Özok, H. İ., & TayiZ, V. (2022). Gelişmeleri kaçırma korkusu (FOMO): Güncel bir derleme. *Psikiyatride Guncel Yaklasimlar - Current Approaches in Psychiatry*, *14*(1), 74–85. <https://doi.org/10.18863/pgy.942431>

Tanrikulu, G., & Mouratidis, A. (2022). Life aspirations, school engagement, social anxiety, social media use and fear of missing out among adolescents. *Current Psychology*.
<https://doi.org/10.1007/s12144-022-03917-y>

Tunc-Aksan, A., & Akbay, S. E. (2019). Smartphone addiction, fear of missing out, and perceived competence as predictors of social media addiction of adolescents. *European Journal of Educational Research, 8*(2), 559–569. <https://doi.org/10.12973/eu-jer.8.2.559>

Tung, S. E. H., Gan, W. Y., Chen, J., Kamolthip, R., Pramukti, I., Nadhiroh, S. R., Chang, Y., Lin, C., Pakpour, A. H., Lin, C., & Griffiths, M. D. (2022). Internet-related instruments (bergen social media addiction scale, smartphone application-based addiction scale, Internet gaming disorder scale-short form, and nomophobia questionnaire) and their

Turel, O., He, Q., Xue, G., Lin, X., & Bechara, A. (2014). Examination of neural systems subserving Facebook “addiction.” *Psychological Reports, 115*(3), 675–695. <https://doi.org/10.2466/18.pr0.115c31z8>

Uram, P., & Skalski, S. (2020). Still logged in? The link between Facebook addiction, FoMO, self-esteem, life satisfaction and loneliness in social media users. *Psychological Reports, 125*(1), 218–231. <https://doi.org/10.1177/0033294120980970>

Varchetta, M., Frascchetti, A., Mari, E., & Giannini, A. M. (2020). Adicción a redes sociales, miedo a perderse experiencias (FOMO) y vulnerabilidad en línea en estudiantes universitarios. *Revista Digital De Investigación En Docencia Universitaria, 14*(1), e1187. <https://doi.org/10.19083/ridu.2020.1187>

Vernon, L., Barber, B. L., & Modecki, K. L. (2015). Adolescent problematic social networking and school experiences: The mediating effects of sleep disruptions and sleep quality.

- Wan, C., & Chiou, W. (2006). Psychological motives and online games addiction: A Test of flow theory and humanistic needs theory for Taiwanese adolescents. *Cyberpsychology & Behavior, 9*(3), 317–324. <https://doi.org/10.1089/cpb.2006.9.317>
- Wang, H. R., Cho, H., & Kim, D. (2018). Prevalence and correlates of comorbid depression in a nonclinical online sample with DSM-5 internet gaming disorder. *Journal of Affective Disorders, 226*, 1–5. <https://doi.org/10.1016/j.jad.2017.08.005>
- Wang, L., Zhou, X., Song, X., Gan, X., Zhang, R., Liu, X., Xu, T., Jiao, G., Ferraro, S., Bore, M. C., Yu, F., Zhao, W., Montag, C., & Becker, B. (2023). Fear of missing out (FOMO) associates with reduced cortical thickness in core regions of the posterior default mode network and higher levels of problematic smartphone and social media use. *Addictive Behaviors, 143*, 107709. <https://doi.org/10.1016/j.addbeh.2023.107709>
- Wang, W., Ma, Y., Huang, Y., & Chen, H. (2017). Generalizability analysis for clinical trials: A simulation study. *Statistics in Medicine*. <https://doi.org/10.1002/sim.7238>
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies. *Chest, 158*(1), S65–S71. <https://doi.org/10.1016/j.chest.2020.03.012>
- Wegmann, E., Oberst, U., Stodt, B., & Brand, M. (2017). Online-specific fear of missing out and Internet-use expectancies contribute to symptoms of Internet-communication disorder. *Addictive Behaviors Reports, 5*, 33–42. <https://doi.org/10.1016/j.abrep.2017.04.001>

Wiesner, L. (2017). *Fighting FoMO : A study on implications for solving the phenomenon of the fear of missing out*. <https://essay.utwente.nl/73690/>

Wilson, K. E., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior, and Social Networking*, 13(2), 173–177. <https://doi.org/10.1089/cyber.2009.0094>

Wolniewicz, C. A., Rozgonjuk, D., & Elhai, J. D. (2019). Boredom proneness and fear of missing out mediate relations between depression and anxiety with problematic smartphone use. *Human Behavior and Emerging Technologies*, 2(1), 61–70. <https://doi.org/10.1002/hbe2.159>

Xiao-Tong, J., Zhao, T., Cui, H., Wei, X., & Li, G. (2017). The influence of the perceived status change on status consumption. *Acta Psychologica Sinica*, 49(2), 273. <https://doi.org/10.3724/sp.j.1041.2017.00273>

Yang, S., Lu, Y., Wang, B., & Zhao, L. (2014). The benefits and dangers of flow experience in high school students' internet usage: The role of parental support. *Computers in Human Behavior*, 41, 504–513. <https://doi.org/10.1016/j.chb.2014.09.039>

Yeap, J. A., Ramayah, T., Kurnia, S., Halim, H. A., & Ahmad, N. H. (2015). The assessment of Internet addiction among university students: Some findings from a focus group. *Tehnicki Vjesnik-technical Gazette*, 22(1), 105–111. <https://doi.org/10.17559/tv-20131009152752>

- Zaman, M., Anandarajan, M., & Dai, Q. (2010). Experiencing flow with instant messaging and its facilitating role on creative behaviors. *Computers in Human Behavior*, *26*(5), 1009–1018. <https://doi.org/10.1016/j.chb.2010.03.001>
- Zarate, D., Hobson, B. A., March, E., Griffiths, M. D., & Stavropoulos, V. (2023). Psychometric properties of the bergen social media addiction scale: An analysis using item response theory. *Addictive Behaviors Reports*, *17*, 100473. <https://doi.org/10.1016/j.abrep.2022.100473>
- Zhao, N., & Zhou, G. (2021). COVID-19 stress and addictive social media use (SMU): mediating role of active use and social media flow. *Frontiers in Psychiatry*, *12*. <https://doi.org/10.3389/fpsy.2021.635546>
- Zhu, X., & Xiong, Z. (2022). Exploring association between social media addiction, fear of missing out, and self-presentation online among university students: A cross-sectional study. *Frontiers in Psychiatry*, *13*. <https://doi.org/10.3389/fpsy.2022.8>

Appendixes

Appendix A

Questionnaire



Wholly owned by UTAR Education Foundation
(Co. No. 52029-M)
DU0121A

UNIVERSITI TUNKU ABDUL RAHMAN
Department of Psychology and Counselling
Faculty of Arts and Social Science

Introduction

We would like to conduct a research study to study 'The Relationship between Fear of Missing Out (FoMO), Social Media Flow Experience and Social Media Addiction among university students in Malaysia.'

Procedures and Confidentiality

The following questionnaire will require approximately 10 minutes to complete. All information provided will remain as private and confidential. The information given will only be reported as group data with no identifying information and only use for academic purpose. Participation All the information gathered will remain anonymous and confidential. Your information will not be disclosed to any unauthorized person and would be accessible only by group members. Participants in this study is voluntary, you are free to withdraw with consent and discontinue participation in anytime without prejudice. Your responses will be coded numerically in research assignment for the research interpretation. Your cooperation would be greatly appreciated. If you choose to participate in this project, please answer all the questions as honestly as possible and return the completed questionnaire promptly.

Personal Data Protection Statement

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA")

which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (“UTAR”) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:

- a) For assessment of any application to UTAR
- b) For processing any benefits and services
- c) For communication purposes
- d) For advertorial and news
- e) For general administration and record purposes
- f) For enhancing the value of education
- g) For educational and related purposes consequential to UTAR
- h) For replying any responds to complaints and enquiries
- i) For the purpose of our corporate governance
- j) For the purposes of conducting research/ collaboration

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.
2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.
3. You may access and update your personal data by writing to us at UTAR email.

Member List:

Ng Jing Wen (jingwenng1709@utar.my)

See Rou Yee (seerouyee925@utar.my)

Vooi Hao Zheng (vooihaozheng991126@utar.my)

Inclusion criteria:

1. Participants must be a Malaysian.
2. Participants must be a university student aged 18 and above.
3. Participants must be residing in Malaysia at the time of filling out the form.
4. Participants who consented for their data to be used in the study.

Acknowledgment of Notice

I have been notified and that I hereby understood, consented and agreed per UTAR above notice.

I disagree, my personal data will not be processed.

Instruction: Please select your answer and they will be kept confidential.

Age

Gender

Male

Female

Non-binary / third gender

Prefer not to say

Race

Malay

Chinese

Indian

Others

Are you currently study in a University in Malaysia?

Yes

No

Which university are you currently studying in?

Nationality

Malaysian

Non-Malaysian

Fear of Missing Out

Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences. Please answer according to what really reflects your experiences rather than what you think your experiences should be. Please treat each item separately from every other item.

	Not at all true of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me
1. I fear others have more rewarding experiences than me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I fear my friends have more rewarding experiences than me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I get worried when I find out my friends are having fun without me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I get anxious when I don't know what my friends are up to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It is important that I understand my friends "in jokes."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Sometimes, I wonder if I spend too much time keeping up with what is going on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. It bothers me when I miss an opportunity to meet up with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. When I have a good time it is important for me to share the details online (e.g. updating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. When I miss out on a planned get-together it bothers me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. When I go on vacation, I continue to keep tabs on what my friends are doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Flow Experience

This questionnaire is a series of statements about the flow experience when using social media. Read each statement and rate, using the scale below. There are no right or wrong answer. Please indicate your own personal feelings about each statement below by marking the selection that best describes you.

	Very rarely	Rarely	Sometimes	Often	Very often
1. While using social media, I am deeply engrossed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. While using social media, I am immersed in the task I am performing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Using social media provides me with a lot of fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I enjoy using social media.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Using social media arouses my imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Using social media excites my curiosity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Using social media often makes me forget where I am and what currently happens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Social media creates a new world for me, and this world suddenly disappears when I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. While using social media, the world generated by the sites I visit is more real for me than the real world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Time flies when I am using social media.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I often spend more time on social media than I had intended.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Social Media Addiction

This questionnaire is a series of statements about the flow experience when using social media. Read each statement and rate, using the scale below. There are no right or wrong answer. Please indicate your own personal feelings about each statement below by marking the selection that best describes you.

	Very rarely	Rarely	Sometimes	Often	Very often
1. Thinking about social media.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Feeling an urge to use social media more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The use of social media to forget about personal problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. No success in cutting down on social media use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Feeling restless if social media using is prohibited.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Too extensive use of social media has a negative impact on job or studies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B

Calculation of Effect Size

Fear of Missing Out

Tunc-Aksan, A., & Akbay, S. E. (2019). Smartphone addiction, fear of missing out, and perceived competence as predictors of social media addiction of adolescents. *European Journal of Educational Research*, 8(2), 559–569. <https://doi.org/10.12973/eu-jer.8.2.559>

Table 2. Correlation coefficients between social media addiction, fear of missing out, social competence perception, academic proficiency perception and smartphone addiction in high school students

	1	2	3	4	5
1. SMAS-KF	1				
2. FoMOS	.430(**)	1			
3. PCS-SCP	-.110(*)	.050	1		
4. PCS-ACP	-.243(**)	-.106	.531(**)	1	
5. SPAS	.492(**)	.422(**)	-.109	-.250(**)	1
Mean	2,29	22,79	55,56	56,97	89,20
SD	2,17	7,6	9,97	12	27,287
α	.74	.92	.81	.92	.83

** P<.001 *P<.005 SMAS-KF: Social Media Addiction Scale, FoMOS: Fear of Missing Out Scale, PCS-SCP: Perceived Competence Scale-Social Competence Perception, PCS-ACP: Perceived Competence Scale-Academic Competence Perception, SPAS: Smartphone Addiction Scale

$$f^2 = \frac{r^2}{1 - r^2}$$

$$f^2 = \frac{(0.430)^2}{1 - (0.430)^2} = 0.22$$

Flow experiences

Brailovskaia, J., & Margraf, J. (2024). From fear of missing out (FoMO) to addictive social media use: The role of social media flow and mindfulness. *Computers in Human Behavior*, 150, 107984. <https://doi.org/10.1016/j.chb.2023.107984>

Table 2
Zero-order bivariate correlations between FoMO, SM flow (overall and subscales), addictive SMU, and mindfulness.

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) FoMO	.379**	.236**	.193**	.344**	.228**	.307**	.443**	-.240**
(2) SM Flow		.656**	.613**	.744**	.757**	.726**	.604**	-.014
(3) SM Flow: 'Curiosity'			.560**	.334**	.278**	.223**	.267**	.066*
(4) SM Flow: 'Enjoyment'				.294**	.294**	.140**	.184**	.103*
(5) SM Flow: 'Time-Distortion'					.485**	.459**	.608**	-.039
(6) SM Flow: 'Focused Attention'						.572**	.422**	-.005
(7) SM Flow: 'Telepresence'							.569**	-.132**
(8) Addictive SMU								-.142**
(9) Mindfulness								

Notes. N = 905; FoMO = Fear of Missing Out; SM = Social Media; SMU = Social Media Use; correlations of the SM flow scales are included for the Discussion section; **p < .001, *p < .05.

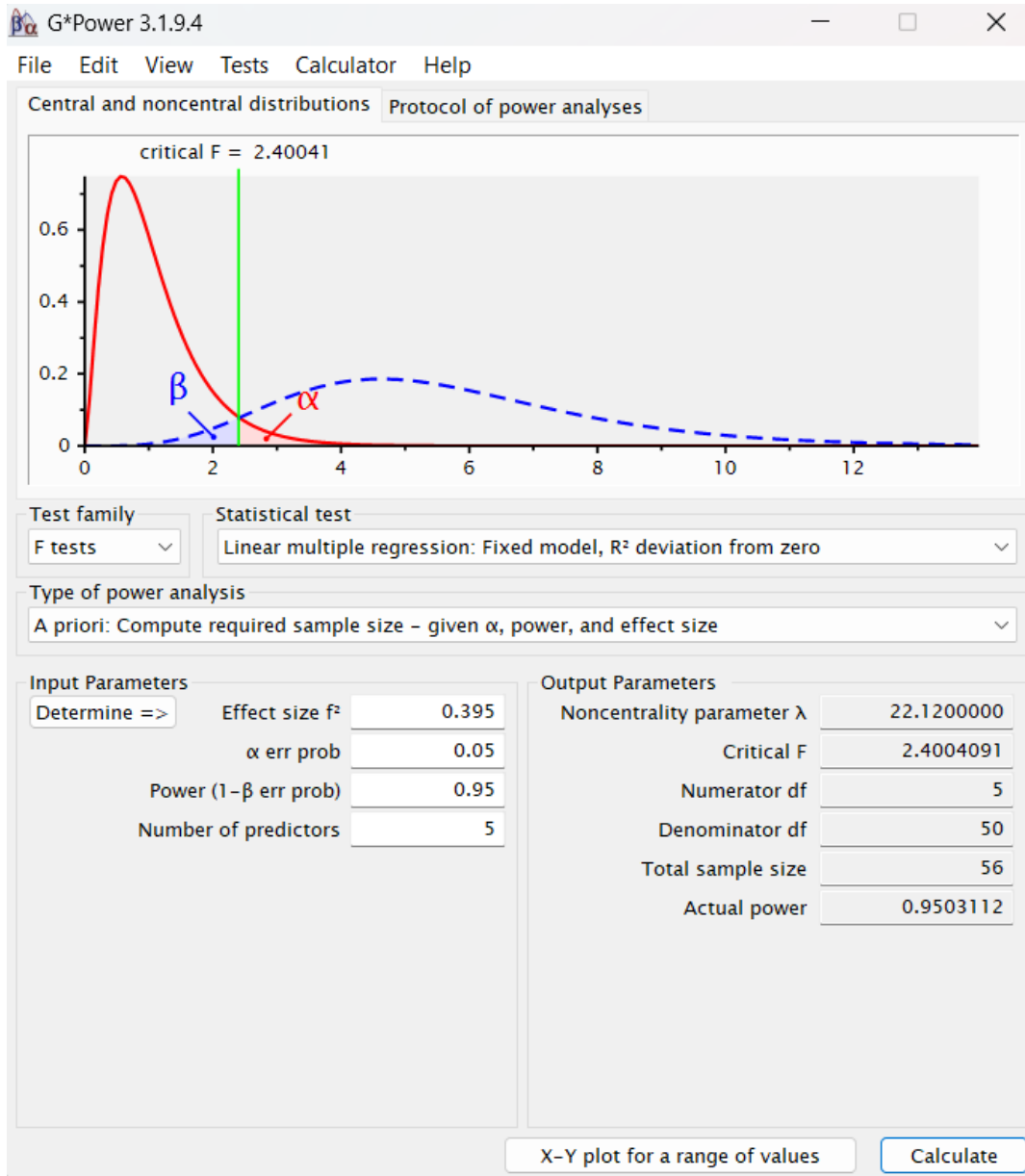
$$f^2 = \frac{r^2}{1 - r^2}$$

$$f^2 = \frac{(0.604)^2}{1 - (0.604)^2} = 0.57$$

Effect size for current study:

$$f^2 = \frac{0.22 + 0.57}{2} = 0.395$$

Appendix C



G*Power

Appendix D: Ethical Approval for Research Project



UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/326/2023

21 December 2023

Dr Pung Pit Wan
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 Dr Pung,

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.	Dark Triad Personality and Public Acceptance of Homosexuals Among Malaysian Adults: Interdependent Self-Construct as a Moderator	1. Muriel Wong Jie Chee 2. See Tong Shin	Dr Tan Soon Aun	21 December 2023 – 20 December 2024
2.	Mating Orientation and Dark Triad Personality on Sexting Behaviour: A Comparative Study Between Male and Female Emerging Adults in Malaysia	1. Lee Yih Wen 2. Tong Kher Sze		
3.	Relationship Between Public Mental Health Stigma, Mental Health Literacy, and Help-seeking Behaviour Among Adults in Malaysia	1. Chan Ming Chen 2. Chew Jia Xin 3. Lilian Soh Li-Ern	Dr Ooh Seow Ling	
4.	The Relationship Between Fear of Missing, Social Media Flow Experience and Social Media Addiction Among University Students in Malaysia	1. Ng Jing Wen 2. See Rou Yee 3. Vooi Hao Zheng		
5.	Relationship Between Intolerance of Uncertainty, Mindfulness, and Social Anxiety	1. Ch'ng Zer Swen 2. Wong Jin Yau 3. Yaw Suet Kuan		

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.

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
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 Faiz 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



Appendix E: Univariate outlier (cases has been removed)

Case	Q1_5_5	Q1_5_6	FoMo	SMFlow	SMA	ZFoMo	ZSMFlow	ZSMA	MAH_1	pMAH_1	SMTU	SMD	FomOgroup	SMFlowgroup	var	var	var	var
1	4	3	31.00	38.00	21.00	86442	11920	76344	95554	6202	3.00	1.00	3.00	2.00				
2	2	2	21.00	34.00	14.00	-43164	-56152	-93559	39662	8201	3.00	1.00	2.00	1.00				
3	4	2	11.00	34.00	21.00	-1.72770	-56152	76344	3.27521	1944	8.00	1.00	1.00	1.00				
4	3	4	21.00	36.00	19.00	-43164	-22116	27800	18994	9094	6.00	1.00	2.00	2.00				
5	2	2	33.00	48.00	14.00	1.12363	1.82099	-93559	4.07762	1302	10.00	1.00	3.00	3.00				
6	1	5	19.00	27.00	12.00	-69086	-1.75277	-1.42103	3.56843	1679	7.00	1.00	1.00	1.00				
7	4	3	13.00	42.00	21.00	-1.46849	-79992	76344	5.16125	0757	5.00	1.00	1.00	3.00				
8	2	4	18.00	33.00	16.00	-82046	-73169	-45015	82997	6281	4.00	1.00	1.00	1.00				
9	4	4	19.00	39.00	23.00	-69086	28938	1.24888	97128	6153	4.00	1.00	1.00	2.00				
10	3	1	35.00	49.00	18.00	1.38284	1.99117	03529	5.06145	0796	12.00	1.00	3.00	3.00				
11	3	4	23.00	34.00	20.00	-1.7243	-56152	52072	36861	8317	2.00	1.00	2.00	1.00				
12	2	2	24.00	36.00	15.00	-0.4282	-22116	-69287	05990	9705	10.00	1.00	2.00	2.00				
13	2	4	16.00	34.00	15.00	-1.07967	-56152	-69287	1.26539	5312	3.00	1.00	1.00	1.00				
14	3	4	21.00	34.00	18.00	-43164	-56152	03529	39662	8201	9.00	1.00	2.00	1.00				
15	3	2	11.00	39.00	17.00	-1.72770	28938	-20743	4.68318	0962	5.00	1.00	1.00	2.00				
16	3	2	19.00	31.00	17.00	-69086	-1.07206	-20743	1.38045	5015	3.00	1.00	1.00	1.00				
17	3	3	13.00	34.00	16.00	-1.46849	-56152	-45015	2.33436	3112	3.00	1.00	1.00	1.00				
18	5	5	35.00	42.00	24.00	1.38284	79992	1.49160	2.26823	3217	5.00	2.00	3.00	3.00				
19	1	5	37.00	45.00	20.00	1.64206	1.31045	52072	3.64530	1616	5.00	1.00	3.00	3.00				
20	3	2	20.00	39.00	15.00	-56125	28938	-69287	71268	7002	3.00	1.00	1.00	2.00				
21	5	5	24.00	43.00	27.00	-0.4282	97010	2.21975	1.39157	4987	4.00	2.00	2.00	3.00				
22	2	4	25.00	32.00	18.00	08678	-90187	03529	1.26918	5302	4.00	1.00	2.00	1.00				
23	2	3	26.00	43.00	17.00	21639	97010	-20743	1.16766	5578	6.00	1.00	2.00	3.00				
24	1	4	34.00	29.00	19.00	1.25324	-1.41241	27800	7.13718	0282	2.00	1.00	3.00	1.00				
25	4	3	26.00	33.00	19.00	21639	-73169	27800	1.02669	5985	5.00	1.00	2.00	1.00				
26	2	3	23.00	39.00	17.00	-1.7243	28938	-20743	21074	9000	2.00	1.00	2.00	2.00				
27	2	4	25.00	37.00	19.00	08678	-05098	27800	0.2393	9881	7.00	1.00	2.00	2.00				
28	3	3	31.00	35.00	21.00	86442	-39134	76344	1.67660	4324	4.00	1.00	3.00	2.00				

Appendix F: Multivariate outliers

IBM SPSS Statistics Data Editor

MAH_1 9 04425130015643 Visible: 50 of 50 Variables

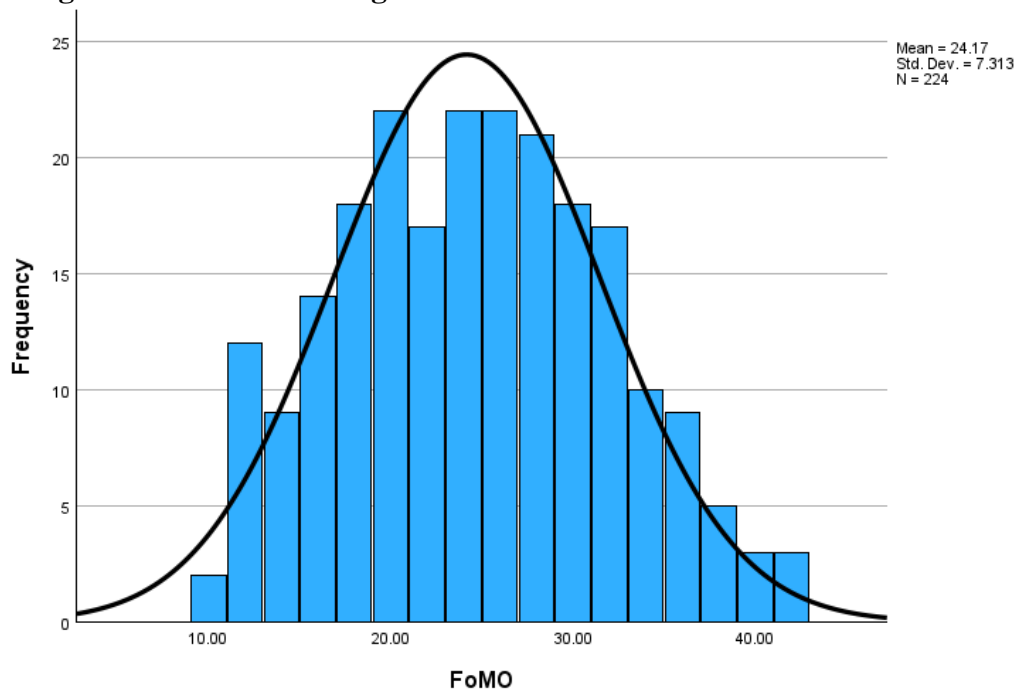
	Q1 5_5	Q1 5_8	FoMO	SMFlow	SMA	ZFoMO	ZSMFlow	ZSMA	MAH_1	pMAH_1	SMTU	SMD	FoMOgrou p	SMFlowgrou p	var	var	var	var
1	3	1	17.00	21.00	19.00	-95006	-2.77384	27800	9.04425	0.109	6.00	1.00	1.00	1.00				
2	3	3	10.00	44.00	17.00	-1.85730	1.14027	-20743	8.95704	0.114	8.00	1.00	1.00	1.00				
3	1	3	42.00	35.00	14.00	2.29009	-39134	-93559	8.51535	0.142	4.00	1.00	3.00	3.00				
4	3	5	41.00	51.00	27.00	2.16048	2.33153	2.21975	8.23996	0.163	3.00	2.00	3.00	3.00				
5	4	4	34.00	52.00	24.00	1.25324	2.50171	1.49160	7.41140	0.246	11.00	2.00	3.00	3.00				
6	5	4	11.00	43.00	18.00	-1.72770	97010	03529	7.29710	0.260	5.00	1.00	1.00	3.00				
7	1	4	34.00	29.00	19.00	1.25324	-1.41241	27800	7.13718	0.282	2.00	1.00	3.00	1.00				
8	1	1	13.00	23.00	8.00	-1.46849	-2.43348	-2.39190	7.08340	0.290	2.00	1.00	1.00	1.00				
9	3	3	39.00	34.00	16.00	1.90127	-56152	-45015	6.71694	0.348	5.00	1.00	3.00	1.00				
10	5	4	31.00	51.00	28.00	86442	2.33153	2.46247	6.42568	0.402	10.00	2.00	3.00	3.00				
11	1	1	12.00	24.00	8.00	-1.59809	-2.26331	-2.87734	6.42510	0.403	5.00	1.00	1.00	1.00				
12	1	1	13.00	24.00	8.00	-1.46849	-2.26331	-2.39190	6.23846	0.442	5.00	1.00	1.00	1.00				
13	3	4	42.00	44.00	20.00	2.29009	1.14027	52072	5.99988	0.498	5.00	1.00	3.00	3.00				
14	4	2	38.00	49.00	16.00	1.77166	1.99117	-45015	5.83048	0.542	3.00	1.00	3.00	3.00				
15	1	1	11.00	40.00	7.00	-1.72770	45956	-2.63462	5.21270	0.738	5.00	1.00	1.00	3.00				
16	4	3	13.00	42.00	21.00	-1.46849	79992	76344	5.16125	0.757	5.00	1.00	1.00	3.00				
17	2	3	16.00	25.00	13.00	-1.07967	-2.08313	-1.17831	5.11183	0.776	6.00	1.00	1.00	1.00				
18	3	1	35.00	49.00	18.00	1.38284	1.99117	03529	5.06145	0.796	12.00	1.00	3.00	3.00				
19	3	5	19.00	46.00	22.00	-69085	1.48063	1.00616	4.95193	0.841	6.00	1.00	1.00	3.00				
20	3	4	37.00	48.00	23.00	1.64206	1.82099	1.24888	4.93373	0.849	10.00	1.00	3.00	3.00				
21	4	5	24.00	48.00	26.00	-0.4282	1.82099	1.97704	4.82208	0.897	7.00	2.00	2.00	3.00				
22	4	4	40.00	44.00	24.00	2.03087	1.14027	1.49160	4.81544	0.900	6.00	2.00	3.00	3.00				
23	4	3	39.00	46.00	24.00	1.90127	1.48063	1.49160	4.79833	0.908	12.00	2.00	3.00	3.00				
24	5	3	32.00	49.00	23.00	99403	1.99117	1.24888	4.70320	0.952	5.00	1.00	3.00	3.00				
25	3	2	11.00	39.00	17.00	-1.72770	28938	-20743	4.68318	0.962	5.00	1.00	1.00	2.00				
26	3	5	18.00	45.00	20.00	-82046	1.31045	52072	4.59616	1.005	2.00	1.00	1.00	3.00				
27	2	5	18.00	45.00	21.00	-82046	1.31045	76344	4.59616	1.005	1.00	1.00	1.00	3.00				
28	2	3	20.00	26.00	17.00	-56125	-1.92295	-20743	4.40269	1.107	6.00	1.00	1.00	1.00				

Overview Data View Variable View

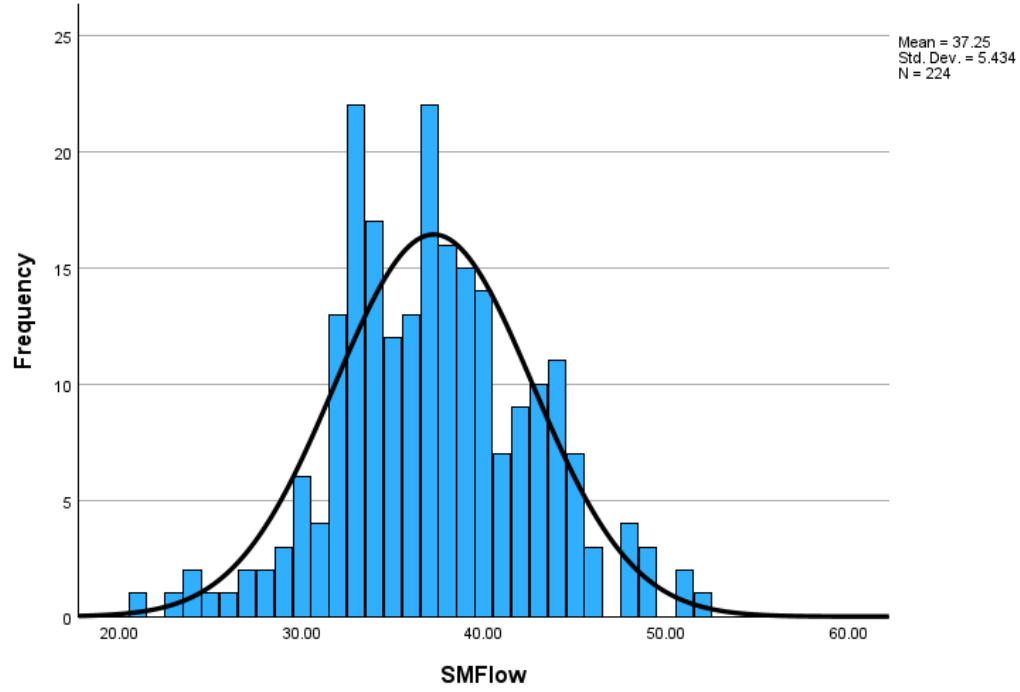
IBM SPSS Statistics Processor is ready Unicode ON Classic

Appendix G: Histogram

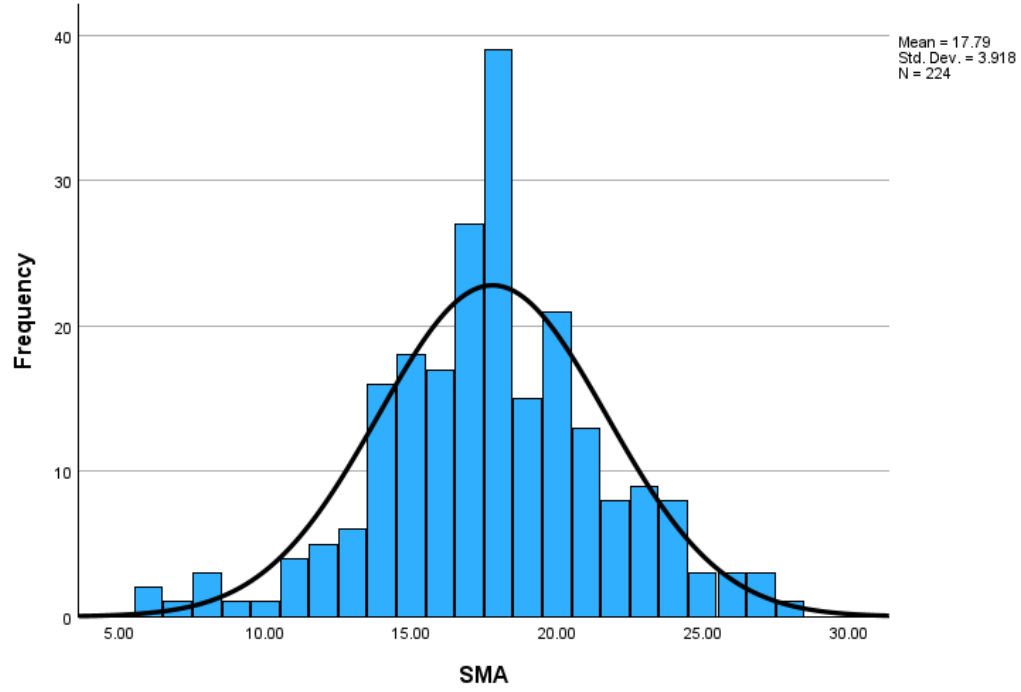
Histogram of Fear of Missing Out



Histogram of Social Media flow

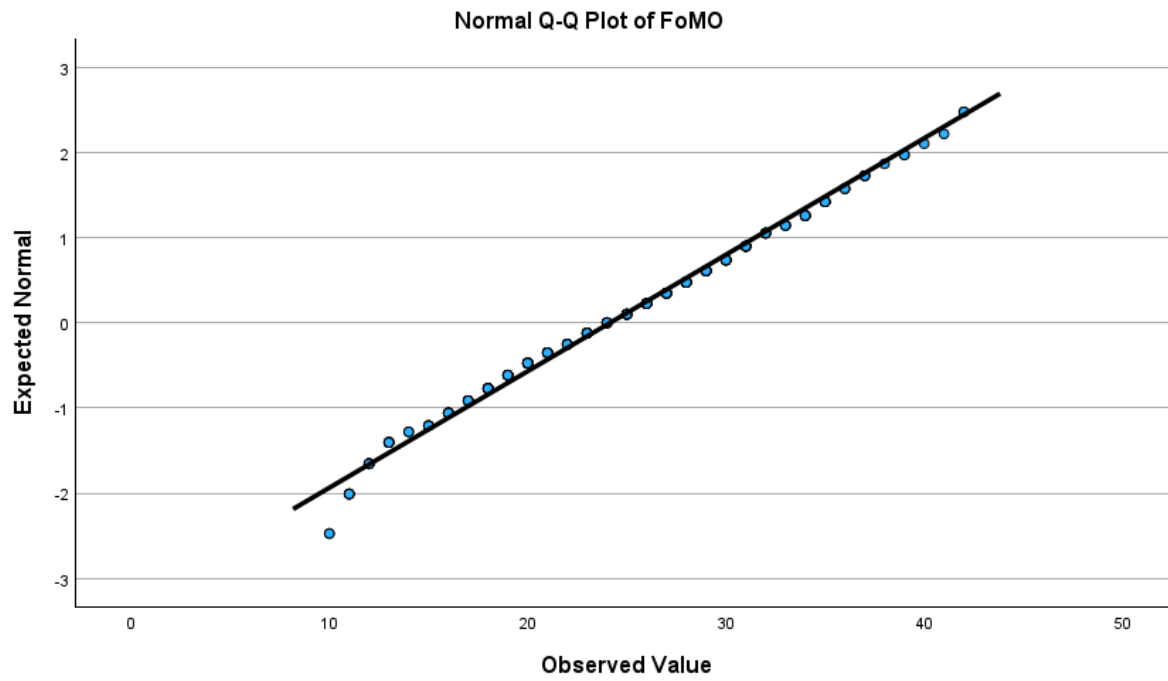


Histogram of Social Media Addiction

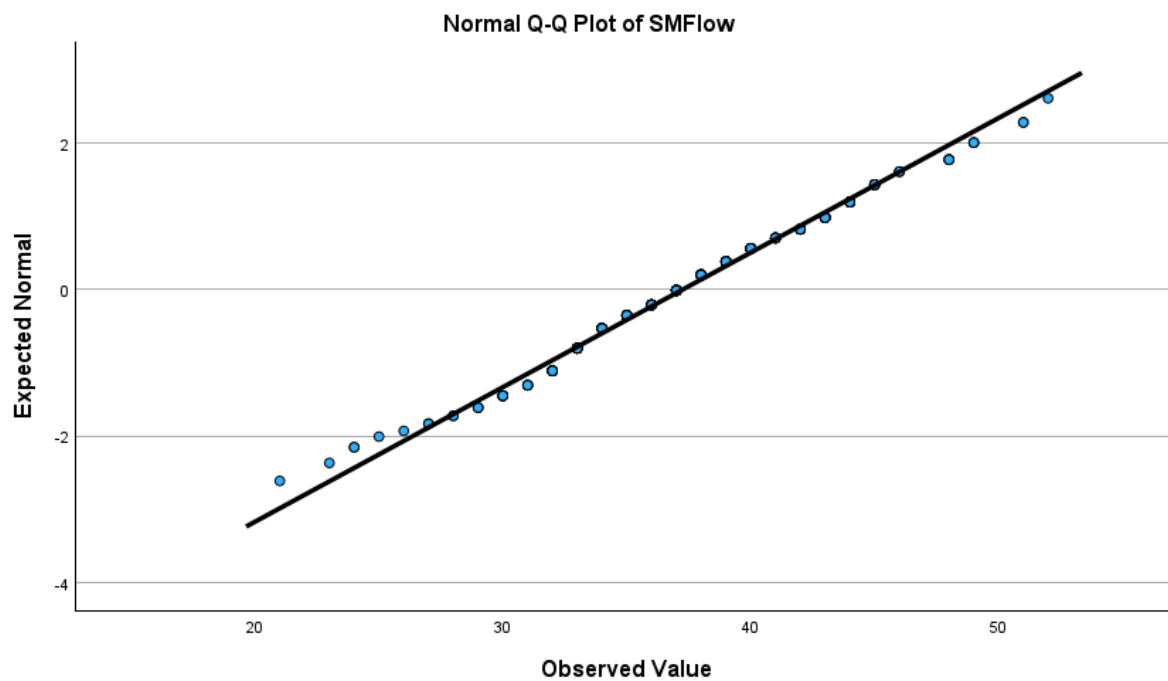


Appendix H: Q-Q plot

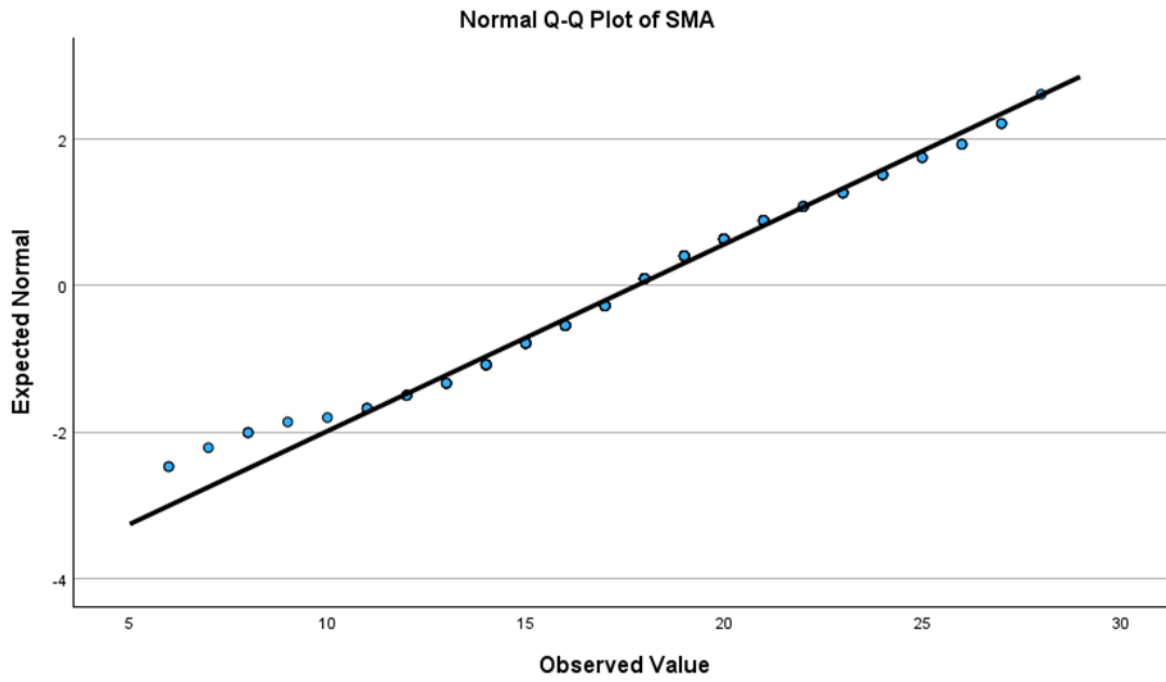
Q-Q plot of Fear of Missing Out



Q-Q plot of Social Media flow



Q-Q plot of Social Media Addiction



Appendix I: Skewness and kurtosis

Descriptives

			Statistic	Std. Error
SMA	Mean		17.7946	.26176
	95% Confidence Interval for Mean	Lower Bound	17.2788	
		Upper Bound	18.3105	
	5% Trimmed Mean		17.8472	
	Median		18.0000	
	Variance		15.348	
	Std. Deviation		3.91762	
	Minimum		6.00	
	Maximum		28.00	
	Range		22.00	
	Interquartile Range		5.00	
	Skewness		-.161	.163
	Kurtosis		.645	.324
	FoMO	Mean		24.1652
95% Confidence Interval for Mean		Lower Bound	23.2023	
		Upper Bound	25.1280	
5% Trimmed Mean			24.0645	
Median			24.0000	
Variance			53.475	
Std. Deviation			7.31265	
Minimum			10.00	
Maximum			42.00	
Range			32.00	
Interquartile Range			10.75	
Skewness			.128	.163
Kurtosis			-.616	.324
SMFlow		Mean		37.2500
	95% Confidence Interval for Mean	Lower Bound	36.5344	
		Upper Bound	37.9656	
	5% Trimmed Mean		37.2421	
	Median		37.0000	
	Variance		29.534	
	Std. Deviation		5.43449	
	Minimum		21.00	
	Maximum		52.00	
	Range		31.00	
	Interquartile Range		8.00	
	Skewness		.068	.163
	Kurtosis		.216	.324

Appendix J: Kolmogorov-Smirnov (K-S) Test**Tests of Normality**

	Kolmogorov-Smirnov ^a			Stati
	Statistic	df	Sig.	
SMA	.104	224	<.001	
FoMO	.059	224	.054	
SMFlow	.064	224	.025	

a. Lilliefors Significance Correction

Appendix K: Correlations**Correlations**

		FoMO	SMFlow	SMA
FoMO	Pearson Correlation	1	.425**	.412**
	Sig. (1-tailed)		<.001	<.001
	N	224	224	224
SMFlow	Pearson Correlation	.425**	1	.598**
	Sig. (1-tailed)	<.001		<.001
	N	224	224	224
SMA	Pearson Correlation	.412**	.598**	1
	Sig. (1-tailed)	<.001	<.001	
	N	224	224	224

** . Correlation is significant at the 0.01 level (1-tailed).

Appendix L: Multicollinearity**Coefficients^a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.428	1.430		.999	.319		
	FoMO	.103	.031	.192	3.306	.001	.819	1.220
	SMFlow	.373	.042	.517	8.894	<.001	.819	1.220

a. Dependent Variable: SMA

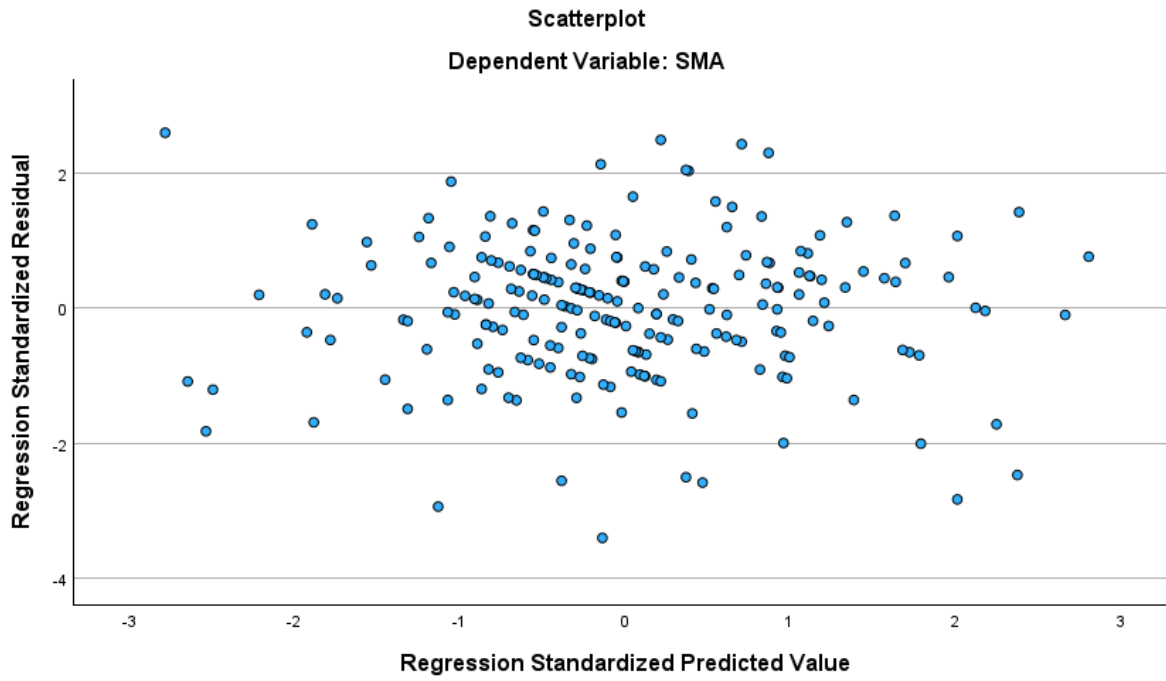
Appendix M: Independent of error
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.623 ^a	.388	.383	3.07747	2.140

a. Predictors: (Constant), SMFlow, FoMO

b. Dependent Variable: SMA

Appendix N: Scatterplot



Appendix O: Mediating test

```

Run MATRIX procedure:
***** PROCESS Procedure for SPSS Version 4.2 *****
    Written by Andrew F. Hayes, Ph.D. www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/phayes3
*****
Model : 4
Y : SMA
X : FoMO
M : SMFlow

Sample
Size: 224
*****
OUTCOME VARIABLE:
SMFlow

Model Summary
R      R-sq      MSE      F      df1      df2      p
.4249  .1806  24.3100  48.9175  1.0000  222.0000  .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant 29.6189  1.1397  25.9877  .0000  27.3728  31.8650
FoMO      .3158   .0452  6.9941  .0000  .2268   .4048
*****
OUTCOME VARIABLE:
SMA

Model Summary
R      R-sq      MSE      F      df1      df2      p
.6233  .3885  9.4708  70.1889  2.0000  221.0000  .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant 1.4282  1.4302   .9986  .3191  -1.3904  4.2469
FoMO      .1029   .0311  3.3065  .0011  .0416   .1643
SMFlow    .3726   .0419  8.8941  .0000  .2900   .4551
***** TOTAL EFFECT MODEL *****
OUTCOME VARIABLE:
SMA

Model Summary
R      R-sq      MSE      F      df1      df2      p
.4118  .1695  12.8029  45.3258  1.0000  222.0000  .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant 12.4639  .8271  15.0692  .0000  10.8339  14.0939
FoMO      .2206   .0328  6.7324  .0000  .1560   .2852
***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI
.2206   .0328  6.7324  .0000  .1560   .2852

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
.1029   .0311  3.3065  .0011  .0416   .1643

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
SMFlow    .1177   .0246   .0729   .1702
***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

----- END MATRIX -----
    
```