



RESEARCH ARTICLE

Impact of Social Media on Undergraduate Students' Academic Performance in Malaysia

Ting Tin Tin¹, They Chuan Kiat², Hoi Jee Kit³, Lew Yong Shun⁴, Sum Ka Wah⁵, Wan Nor Al-Ashekin Wan Husin⁶, Ali Aitizaz⁷, Lee Kuok Tiung^{8*}, Ayodeji Olalekan Salau^{9a,9b}, Umar Farooq Khattak¹⁰, Yasin Ahmed Siddiqui¹¹

^{1,6,9}Faculty of Data Science and Information Technology, INTI International University, Nilai 71800, Malaysia

^{2,3,4,5}Faculty of Computing and Information Technology, Tunku Abdul Rahman University of Management and Technology, Kuala Lumpur, Malaysia

⁷School of technology, Asia Pacific University, Malaysia

⁸Faculty of Social Science and Humanities, 88400 Kota Kinabalu, Universiti Malaysia Sabah, Malaysia

^{9a}Department of Electrical/Electronics and Computer Engineering, Afe Babalola University, Ado-Ekiti, Nigeria

^{9b}Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, Tamil Nadu, India

¹⁰School of IT, Unitar International University, Malaysia

¹¹School of Business, Asia Pacific University, Malaysia

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***Corresponding Author:**

tintin.ting@newinti.edu.my

lee@ums.edu.my

ABSTRACT

Undergraduate students in Malaysia extensively use social media platforms, necessitating an exploration of its impact on academic performance. This study delves into the multifaceted influence of social media on students' academic pursuits, lifestyles, and mental well-being, considering concerns about addictive behaviors, cyberbullying, and overall academic success. The research analyzes the duration and purposes of social media usage, including entertainment, self-pursuit, and educational activities, to understand their effects on academic performance. Mediating variables such as addiction and cyberbullying are investigated, along with their influence on mental well-being. Data from 154 undergraduate students were collected through questionnaires and analyzed using SPSS software and the Pearson's correlation method. The PROCESS macro investigates how addiction mediates the connection between social media use and mental well-being, while the path analysis method in AMOS software explores sequential relationships among variables. Positive correlations between social media use and addiction, cyberbullying, and mental well-being are confirmed. However, no significant mediation effects were found between addiction, mental well-being, and academic performance. Addiction and the concept of cyberbullying mediate the relationship between the use of social media for education and mental well-being. On the contrary, other mediation effects between social media use, addiction, cyberbullying, mental well-being, and academic performance are not significantly correlated. This study offers valuable information on the influence of social networks on academic performance, which could shape students' future academic and career paths.

INTRODUCTION

Social media's profound influence within today's student community underscores the imperative to grasp its ramifications on academic performance, presenting both opportunities and challenges. As technological innovations rapidly redefine communication norms through platforms such as WhatsApp, Facebook, and YouTube, the educational landscape undergoes transformative changes (Abbas et al., 2019). This evolution prompts growing concerns regarding its impact on student lifestyles and learning environments, in contrast to its undeniable potential for global knowledge dissemination (Umar & Idris, 2018). However, while social networks facilitate seamless access to information and foster virtual interconnectedness, they also introduce distractions and long-term academic dilemmas, necessitating a delicate balance between usage and scholastic performance (Sperling, 2021). Academic institutions are increasingly using social media platforms for educational purposes, reflecting their evolving role in pedagogy (Selwyn, 2011). Research underscores the significance of platforms like Facebook and YouTube as supplementary learning resources, contributing to students' skill development, including enhanced writing proficiency (Moghavvemi et al., 2017). Moreover, social media facilitates various online learning avenues, ranging from educational videos to virtual interactions, enriching students' academic journeys. In Malaysia's undergraduate context, the impact of social media on academic performance transcends direct effects, extending to crucial mediating factors such as mental well-being and exposure to cyberbullying. Excessive use of social media correlates with heightened risks of anxiety and depression among students, exacerbated by idealized portrayals and the comparison culture prevalent on digital platforms. Concurrently, cyberbullying poses pervasive threats to student welfare and academic engagement, highlighting the imperative for comprehensive assessments of social media's educational impact. Understanding these mediating dynamics is crucial in devising targeted interventions to boost student well-being and foster positive academic outcomes within Malaysia's undergraduate community (Sujarwoto et al., 2021; Baturay & Toker, 2019; Lei, 2021; Ting et al., 2021).

Research Problem Statement

The surge in social media usage among undergraduate students has become a topic of concern, prompting questions about its potential ramifications on academic performance. As students seamlessly integrate social media into their daily lives, the delineation between academic participation and social interactions becomes increasingly ambiguous. This shift requires a comprehensive exploration of the intricate dynamics of social media usage and its potential impact on the educational pursuits of undergraduate students. According to the findings of Chandani et al. (2019), students acquire skills in sharing, communicating, collaborating and networking information and knowledge through social media platforms. In Malaysia, social media has grown in popularity and is now widely utilized among students as a means of communication and group cohesion (Bhandarkar et al., 2021). It highlights the widespread adoption of social media among students in Malaysia, underscoring its role as a prominent communication tool and facilitator of group cohesion. As social media platforms become increasingly integral to students' daily lives, understanding their impact on academic environments becomes paramount. Social media networking is all about sharing and developing information, and all these aspects are extremely useful in higher education (Rasheed et al., 2020). Developing collaborative learning abilities is another advantage of using social media in the classroom, which may help students obtain and share information from both internal and external sources via social media platforms. (Brailovskaia et al., 2019).

Furthermore, the influence of social media extends beyond the educational realm, permeating the domains of entertainment and personal gratification. Students face the task of balancing their academic responsibilities amidst the allure of entertainment and leisure pursuits online. In this evolving digital landscape, where educational content contends with a variety of social and

entertainment distractions, there is a necessity for a deeper understanding of the specific impact of social media on education. The university students use social media frequently in daily events to share and explore themselves in self-presentation, maintain relationships with peers, express their emotions or opinions, and more (Busalim et al., 2019). However, social media has undeniably had adverse effects on university students. The prolonged use of the Internet among students of Universiti Teknologi Malaysia, as evidenced by a study cited in (Lei, 2021), poses a significant concern. With 71% of students spending extended periods online, there is a pressing need to understand the implications of this behavior. Furthermore, research referenced from (Aluh et al., 2019) suggests that university students encounter various negative consequences due to their engagement with social media platforms. This highlights a growing problem within the student population, which warrants further investigation into the impact of excessive use of the Internet and social media on academic performance and general well-being.

Furthermore, the rise of addictive behaviors associated with social media engagement among students demands a thorough examination. This addictive quality not only raises concerns about its impact on academic performance, but also integrates with broader issues such as cyberbullying, mental well-being, and overall academic success. Many students have been almost completely absorbed in social networking, paying less attention to their academic work because they have gained significant attention on platforms rather than learning or participating in one-on-one interactions (Bai et al., 2021). The primary concerns for students regarding the use of social media are addiction and distraction. On the other hand, the proliferation of technology use has caused problematic behaviors associated with internet use, such as social media addiction and cyberbullying (Ali et al., 2022; Martínez-Monteagudo et al., 2020). There is a connection between cyberbullying and the duration of Internet usage, with increased online time correlated with increased instances of cyberbullying activities (Maurya et al., 2022). Addiction to social media, similar to other challenging online habits, such as smartphone overuse and internet gaming disorder, has been recognized as a type of behavioral addiction. A study conducted in Malaysia revealed that social media serves as the primary tool for cyberbullying among young adults (Giumetti et al., 2022). Specifically, the research focused on understanding how social media platforms are used as primary means for perpetrating acts among this demographic.

The influence of social media on the academic achievements of undergraduate students in Malaysia extends beyond educational realms to include concerns about mental well-being. As students immerse themselves in social media platforms, their mental well-being can be influenced by factors such as addiction, cyberbullying, and blurring of boundaries between online and offline interactions (Kim et al., 2020). Excessive college students who use social media have been associated with experiencing symptoms of anxiety, depression, and low self-esteem as they grapple with issues of comparison, cyberbullying, and digital overload. Understanding the nuanced interplay between social media participation and mental well-being is crucial to designing effective interventions and support systems to promote student holistic well-being amidst the digital age (Wallin et al., 2019; Pascoe et al., 2019). Research findings may offer substantial evidence to support the idea that prioritizing higher educational achievement and participating in relevant training programs correlates positively with academic performance, potentially leading to improved grades and overall educational outcomes for undergraduate students.

LITERATURE REVIEW

Duration of Social Media with Addiction

The study highlights a notable correlation between the frequency of use of social media and addiction among college students. Studies consistently show that higher frequency and duration correlate with increased likelihood of addiction. Addicted users tend to spend more time on social media platforms compared to non-addicted counterparts, with excessive online time serving as a key indicator of

potential addiction (Lei, 2021; Wan et al., 2021; Chandrasena & Ilankoon, 2021). The research can also be supported by (Galán et al., 2020), individuals who are addicted to technology frequently exhibit loss of self-control, an overwhelming need to connect to social media, withdrawal symptoms like anxiety, agitation, and depression, irritation when they are unable to access the network, and tolerance (the need to gradually increase the length of time spent on the Internet in order to feel satisfied and achieve the same results). Addictive behavior in social networks is marked by various characteristics, including neglecting real-life problems, mood swings, and concealing addictive behaviors.

Signs of addiction include interruptions in daily activities, spending excessive time on social networks, and feeling anxious without access to them (Seyyed et al., 2019; Bhandarkar et al., 2021). However, according to the research of (Kan et al., 2022), contrasts the use and gratifications theory with the uses and satisfaction argument regarding social media usage among students. While the former acknowledges that students use social media to fulfill various needs, it fails to consider the possible negative consequences, such as poor time management and addiction, resulting from excessive use for entertainment purposes. This gap highlights the theory's inability to measure the impact of prolonged social media use on students' well-being and academic performance.

Recent studies have highlighted the prevalence of social media addiction among university students, emphasizing its detrimental impact on mental health. With the COVID-19 pandemic leading to an increased reliance on online platforms for learning and social interaction, students are spending more time on social media, potentially exacerbating addiction problems. The combination of limited physical activities and increased internet usage during lockdown poses significant risks to mental well-being. Evidence from Wuhan suggests that excessive social media use during the pandemic is negatively affects user mental health (Sujarwoto et al., 2021; Chatterjee, 2020; Sinha et al., 2020).

Social Media Usage (Education) with Addiction

The literature surrounding the integration of social media into educational contexts underscores their dual nature, presenting both opportunities and challenges, particularly with respect to the potential for addiction. Supporters of incorporating social media into education contend that these platforms provide novel opportunities for student collaboration, communication, and knowledge exchange. Educators, fostering a more dynamic and interactive learning environment. Social media platforms can facilitate real-time discussions, collaborative projects, and peer-to-peer learning, thus enhancing student engagement and knowledge acquisition. However, concerns have been raised about the addictive nature of social media, particularly within educational settings. The constant availability of social media platforms on smartphones and other devices makes it easy for students to become compulsively engaged, leading to excessive and potentially harmful usage patterns. Research suggests that social media addiction among students can manifest itself in various forms, including a preoccupation with checking notifications, spending excessive amounts of time online, and experiencing anxiety or distress when unable to access social media. Furthermore, addictive behaviors such as neglecting academic responsibilities, reduced focus in class, and decreased study time have been observed among students who excessively engage with social media. Thus, while social media are promising as a tool to improve educational experiences, educators and policy makers must be vigilant about the potential risks of addiction and implement strategies to promote responsible and balanced use among students. Efforts such as education in digital literacy, setting boundaries for device usage, and fostering offline activities and interactions can help mitigate the negative impacts of social media addiction on educational outcomes and student well-being (Aslan & YAŞAR, 2020; Casale et al., 2018 ; Yucens et al., 2018 ; Brailovskaia et al., 2019; Liu & Ma, 2018).

Social Media Usage (Education) with Cyberbullying Concept

Recent literature, as exemplified by, underscores the intricate interplay between social media use in educational settings and the prevalent issue of cyberbullying (Narayan et al., 2019). elucidate student engagement as the dynamic fusion of physical and psychological energies directed towards academic pursuits, while creativity emerges as the conduit for generating novel and impactful ideas (Koranteng et al., 2019). However, despite the potential benefits of social media integration, concerns persist about its association with cyberbullying, an aggressive phenomenon that manifests itself through electronic means (Sarwar et al., 2019). illuminate the deleterious effects of cyberbullying on students' learning outcomes and academic performance. In particular, we propose knowledge sharing as the linchpin connecting social media utilization to increased engagement and creativity. Furthermore, our model explores the moderating influence of cyberbullying, highlighting its ability to mitigate the beneficial impacts of social media participation in academic pursuits. Through this comprehensive examination, our research aims to enrich the understanding of the multifaceted dynamics shaping the intersection of social media, education, and cyberbullying, thereby paving the way for informed strategies to harness the potential of digital platforms while mitigating associated risks.

Social Media Usage (Entertainment & Self-Pleasure) with Addiction

Social media has undergone significant transformations and continues to shape social dynamics. Individuals, including students, dedicate numerous hours daily to engaging with various social media platforms through smartphones, computers, and other devices, involving activities such as commenting, tweeting, liking, and browsing images (Chukwuere, 2021; Busalim et al., 2019; Lei, 2021; Abbas et al., 2019). This substantial time investment is primarily directed towards social endeavors, fostering social interaction. By offering extensive networking opportunities, social media platforms have enhanced students' ability to connect not only with peers locally, but also nationally and internationally. A study conducted at the University of Education, Winneba, in 2013 highlighted that students use social media to reconnect with old friends and engage with family members and relatives, thus facilitating communication. Sharing information and experiences with friends is identified as a fundamental aspect of social media use, contributing significantly to the process of socialization and underpinning its appeal (Chukwuere, 2021; Busalim et al., 2019; Lei, 2021; Abbas et al., 2019).

Social media, particularly Facebook, has become an integral part of young adults' daily lives, often surpassing the time spent on studies. Although it can enrich students' social connections, studies caution against its potential negative impacts, including decreased engagement in real-life communities, academic performance issues, and relationship problems. Excessive Facebook use has been linked to addictive behaviors, especially among students, contributing to mental health concerns like depression and anxiety. Research on the effects of social media on academic performance yields mixed results, with some studies suggesting benefits while others highlight detrimental effects. However, the majority of the reviewed studies indicate negative impacts, calling for further research, especially in regions with high Facebook use, such as Malaysia. Overall, more empirical research is needed to fully understand the complexities of social media addiction and its consequences on student academic performance and well-being (Lambić, 2016; Aluh et al., 2019; Brailovskaia et al., 2018).

Various research indicates that increased use of social media among college students correlates with a higher likelihood of developing addiction. For example, research indicates that the intensity of social media use correlates with the likelihood of addiction among college students. Users with addictive tendencies on social media tend to dedicate more time to online platforms compared to their non-addicted counterparts. This extended period of online engagement is often viewed as a significant factor contributing to problematic social media use and the potential for addiction.

Whether it is for socializing or entertainment, users often spend significant amounts of time on social media, which can contribute to addiction (Lambić, 2016; Aluh et al., 2019; Dahdal, 2020; Brailovskaia et al., 2018).

Social Media Usage (Entertainment & Self-Pleasure) with Cyberbullying Concept

The evolution of the Internet into Web 2.0 has transformed it into a social platform facilitating communication and information sharing, particularly among today's youth who spend a significant portion of their online time on entertainment activities. However, this shift has also facilitated the proliferation of cyberbullying, exemplified by platforms such as Ask.fm, where anonymous questioning can lead to ethical dilemmas and instances of cyberbullying, resulting in tragic outcomes (Martinez-Monteaquedo et al., 2020; Vincek, 2016; Bartlett, 2016; Hosseinmardi et al., 2014; Fischer et al., 2020). Cyberbullying, with its unique characteristics, presents challenges distinct from traditional bullying, necessitating a deeper understanding of online behavior and its impact, as evidenced by studies correlating frequent internet and social media use with increased cyberbullying behaviors among adolescents (Giumetti et al., 2022; Cañas et al., 2020). Furthermore, cyberbullying via social media has been associated with adverse effects on well-being, including psychological distress, decreased life satisfaction, and suicidal ideation, highlighting the urgent need for prevention and intervention strategies, such as cyberbullying detection software and increased awareness of responsible online behavior (Ali et al., 2022; Martinez-Monteaquedo et al., 2020; Rasheed et al., 2020). These findings collectively underscore the complex interplay between social media use, entertainment, and cyberbullying, emphasizing the importance of holistic approaches to promote responsible online behavior and mitigate the negative consequences of cyberbullying in today's digital age (Park et al., 2014; Giumetti et al., 2022; Rodríguez-Álvarez et al., 2021).

Addiction with Mental Well Being

According to (Coyne et al., 2020), college students grappling with social media addiction often find themselves engulfed in prolonged periods of platform use, inadvertently neglecting their immediate surroundings and interpersonal relationships. This preoccupation with virtual participation takes a toll on your mental and physical well-being, contributing to elevated levels of stress and diminished subjective satisfaction with life. Echoing this sentiment, a meta-analysis conducted by (Lei et al., 2019; Alaika et al., 2020; Weijing, 2019) highlights a concerning correlation between internet addiction, including social media dependency, and the prevalence of negative emotions among college students. This suggests that excessive reliance on online platforms can exacerbate feelings of anxiety, depression, and general emotional distress. Furthermore, recent empirical research by (Koç & Turan, 2021) underscores the adverse impact of social media addiction on college students' subjective well-being, revealing a notable inverse relationship between the two variables. As social media addiction escalates, students' perceived quality of life tends to diminish, underscoring the profound repercussions of excessive digital engagement on their holistic well-being. These findings underscore the urgency of addressing social media addiction as a pressing concern among college communities, emphasizing the need for targeted interventions aimed at promoting healthier online habits and improving student general well-being.

The relationship between mental health and social media addiction is reciprocal. Young people who prioritize social media are more prone to depressive symptoms, possibly because those with depression seek acceptance through social media, thus becoming more dependent on it (Xuan & Amat, 2020; Jeri-Yabar et al., 2019; Hou et al., 2019). There is also research that shows that young people who experience stress, worry, and frustration in real life rely more on social media because they do not know how to handle these emotions in a healthy way. The severity of emotions such as anxiety, despair, and low self-esteem is positively associated with the probability of developing a social media addiction (Simsek et al., 2019). Recent studies highlight the correlation between social media addiction and adverse mental health consequences, especially among vulnerable groups like

adolescents. Overuse can disturb sleep patterns, interfere with offline interactions, exacerbate pre-existing conditions, or even cause the onset of new ones. This might leave one feeling lonely (Soni, 2024).

Cyberbullying Concept with Mental Well-being

Cyberbullying has become a significant concern, with various studies have examined its impact on mental health among university students. A study involving university students found that cybervictimization increased the likelihood of suicidal thoughts and higher levels of anxiety, depression, and stress, underscoring the prevalence of cyberbullying in university settings and its association with emotional problems and suicidal ideation. Subsequent inquiries have delved into the connection between cyberbullying victimization and adolescents' perspectives, revealing a positive link between experiencing cyberbullying and contemplating suicide, mediated by beliefs in justice. In particular, there is a notable correlation between cyberbullying victimization and feelings of depression and thoughts of suicide among adolescents, underscoring the urgency of implementing effective interventions to combat cyberbullying and its detrimental mental health effects. In addition, a study among medical students in Malaysia discovered the prevalence of victimization and perpetration. Cybervictimization was found to significantly increase the likelihood of depression, anxiety, and stress, highlighting the importance of policies and guidelines to combat cyberbullying in educational institutions. These findings collectively underscore the urgent need for comprehensive interventions to address cyberbullying and its detrimental effects on mental health among students worldwide (Ali et al., 2022; Martinez-Monteagudo et al., 2020; Bai et al., 2021; Maurya et al., 2022; Lee et al., 2023). Additionally, cyberbullying has been linked to difficulties in social and emotional development, hindering the ability to form friendships and engage in social interactions (Martinez-Monteagudo et al., 2020; Maurya et al., 2022; Rodríguez-Álvarez et al., 2021).

Mental Well Being with Academic Performance

It is commonly thought that mental health gets better as we grow older, and depression tends to decrease between the ages of 18 and 25. However, during this period, there is a high rate of depression, especially among university students. Studies show that a significant percentage of high school graduates face depression or are at risk of it when they start college. Moving into higher education brings new challenges, such as tough coursework, demanding assignments, and adjustment issues for students from different cities. University experiences can also play a role in causing or exacerbating depression. It is important to note that depression symptoms can vary over the academic years, and both personal experiences and university stress contribute to students' depressive feelings (Deng et al., 2020; Awadalla et al., 2020; Kim et al., 2020; Mitchell et al., 2018).

Research indicates that the correlation between emotional stability and academic achievement among university students, in addition to financial status, directly contributes to lower performance on exams. As the study further concluded, depression was verified to be an independent factor (Deng et al., 2020; Aluh et al., 2019; Dahdal, 2020). Similarly, students experiencing depression tend to achieve lower grades, although this association disappears upon successful treatment. In addition to affecting confidence, depression significantly hampers academic success, leading afflicted students to skip more classes, assessments, and assignments. They drop courses if they find them challenging than their nondepressed peers and are more likely to drop out of university completely (Deng et al., 2020; Aluh et al., 2019; Dahdal, 2020). Students suffering from depression can become vicious, ultimately affecting their educational performance and making them moody (Deng et al., 2020; Aluh et al., 2019).

Research consistently shows that people who face tough times are more likely to feel depressed. These emotional struggles, including depression, could affect how well someone does in school, especially depending on their gender. Studies have shown that good mental health often goes hand

in hand with better academic performance. However, there is still more to understand about how depression specifically impacts the school results of students dealing with adversity and bullying. Some studies suggest that feeling depressed might actually lower the chances of dropping out of school, while others indicate that it could increase this risk. More research is needed to fully understand the connection between mental health and academic success in challenging situations (Dahdal et al., 2020; Brailovskaia et al., 2018; Marino et al., 2018; Busalim et al., 2019).

Duration of social media with addiction affects mental well-being

The landscape of addiction has evolved beyond traditional substances, with technology addiction, particularly social media addiction, gaining prominence since the mid-1990s. Among college students, social media addiction is marked by excessive use, often leading to detrimental effects on mental well-being. Although social media offer avenues for social connections and entertainment, addictive behaviors are promoted by frequent engagement, including gaming activities (Griffiths et al., 2014; Busalim et al., 2019). However, such addiction can undermine subjective well-being, as evidenced by decreased life satisfaction and increased negative emotions. In contrast, social use of social media platforms tends to improve subjective well-being by facilitating social connections and perceived support, while entertainment-oriented use, such as gaming, may lead to adverse outcomes (Chandani et al., 2019).

Social Media Usage (Entertainment & Self-Pleasure) with Addiction affects mental well-being

The literature on cyberbullying has seen a surge in research interest since 2004, primarily focusing on understanding its predictors and consequences, notably its impacts on victimization and perpetration. Although factors like self-esteem, depression, and social support have received significant attention in research, there remains a notable research gap on the impact of cyberbullying on mental well-being within the context of social media platforms. This review aims to address this gap by presenting a comprehensive synthesis of existing research, identifying research limitations, and offering directions for future research. The initial section provides an overview of the prevalence of cyberbullying victimization and perpetration on social media, along with an examination of the characteristics of social networks and individual difference variables that may increase the risk of cyberbullying. Subsequently, recent studies exploring the relationship between cyberbullying through social media and well-being are reviewed. With the proliferation of various online platforms over the past decade, social media has emerged as the primary medium for cyberbullying, defined as aggressive electronic behavior targeting individuals unable to defend themselves. Examples include sending mean messages or sharing inappropriate content, and cyberbullying occurring across diverse media, including text messages, emails, chat rooms, and social media platforms such as Facebook, Instagram, and Twitter. This review article focuses on studies that explicitly measure cyberbullying in the context of social media use. Social media is defined as online communication networks that allow users to create content and engage in social interactions synchronously or asynchronously. Finally, well-being is defined as the absence of physical or mental health problems along with positive affect and satisfaction (Kowalski et al., 2020 ; Smith et al., 2008 ; Bayer et al, 2020).

Social Media Usage (Entertainment & Self-Pleasure) with Cyberbullying Concept affects Mental Well Being

The widespread use of social media has led to a notable increase in cyberbullying, which acts as a significant link between social media use, especially for entertainment and personal enjoyment, and individuals' mental well-being. Cyberbullying refers to the intentional and repetitive electronic harassment of individuals who may not have effective ways to defend themselves. It has become more common among different age groups with access to technology. This type of harassment includes various behaviors, such as sending hurtful messages and sharing inappropriate images, and occurs through different digital channels such as text messages, emails, and various social media

platforms such as Facebook, Instagram, and Twitter. This review of the existing literature highlights the close connection between cyberbullying and social media, focusing on platforms that allow users to create content and engage in delayed or real-time social interactions. Mental well-being, which involves the absence of mental health issues and the presence of positive emotions and satisfaction, is closely linked to the dynamics of cyberbullying mediated using social media. This underscores the intricate relationship between digital engagement and psychological health. Understanding this relationship is crucial to developing effective strategies to reduce the negative effects of cyberbullying and encourage healthier online interactions and mental well-being among individuals (Bayer et al., 2020; Baccarella et al., 2018; O'Reilly et al., 2018; Smith et al., 2008).

Addiction affects mental well-being and hence affects academic performance

The literature review illustrates the complex interconnection between social media addiction, mental well-being, and academic performance. Social media addiction, marked by excessive use stemming from an uncontrollable compulsion, correlates with various negative mental health consequences, including stress, anxiety, and depression. Studies indicate that prolonged social media use, particularly on platforms such as Facebook, correlates positively with depressive symptoms and negatively impacts long-term well-being. Moreover, certain categories of social media use are linked with reduced academic performance, with non-academic usage and multitasking during social media engagement being particularly detrimental. Self-esteem emerges as a key factor underlying these relationships, with low self-esteem associated with both social media addiction and negative mental health outcomes. Furthermore, self-esteem plays a crucial role in academic performance, serving as a protective factor against adversities and contributing to academic and emotional resilience. Thus, the mediating role of self-esteem in the associations between social media addiction, mental well-being, and academic performance underscores the complex interplay between these variables, necessitating further exploration for effective interventions (Banyai et al., 2017; Hawi et al., 2017; Shensa et al., 2017 ; van Rooji et al., 2017).

Duration of Social Media with Addiction affect Mental Well Being and hence affect Academic Performance

The literature encompasses various theoretical frameworks to elucidate the phenomenon of addiction to social media, providing insights into its multifaceted nature. These theories, which span dynamic psychology, social control, behavioral, biomedical, and cognitive explanations, converge on the idea that social media addiction may stem from a confluence of psychological, social, and cognitive factors. In particular, social media addiction is correlated with adverse effects on mental well-being, with manifestations such as depression, anxiety, and stress being particularly pronounced among individuals with underlying vulnerabilities such as low self-esteem. Observable signs of addiction include neglect of real-life obligations and increased distress upon disconnection from social networks. Contributing to this complex issue are factors ranging from specific online activities like gaming and entertainment to individual traits such as personality and self-esteem levels. Among various demographics, students emerge as a susceptible group, as evidenced by research indicating a link between excessive social media use and diminished academic performance. This connection is underscored by findings revealing lower grade point averages (GPA) and reduced classroom engagement among students grappling with social media addiction (Mérelle et al., 2017 ; Sun et al, 2011 ; Chaudhari et al. , 2015; Eshetu et al., 2024)

Social Media Usage (Entertainment & Self-Pleasure) with Addiction affect Mental Well-being hence affect Academic Performance

Recent literature highlights the increasing concern regarding Facebook addiction among students and its ramifications on academic performance. Although some studies suggest a positive association between Facebook usage and academic outcomes, recommending its integration for educational

purposes, others argue the contrary, citing detrimental effects such as distraction and reduced study time leading to lower academic achievement. Furthermore, the frequency of Facebook use appears to correlate positively with addiction, exacerbating the decline in academic performance. Self-esteem emerges as a pivotal factor that influences both Facebook addiction and academic performance, with lower levels of self-esteem linked to increased addiction and poorer academic outcomes. However, high self-esteem has been consistently associated with better academic performance, providing a protective mechanism against negative experiences such as failure. These findings underscore the complex interaction between social media use, addiction, self-esteem, and academic performance, warranting further investigation of effective interventions to mitigate adverse effects on student well-being and scholastic achievement (Li et al., 2018; Brailovskaia et al., 2018, Huang, 2018; Jam et al., 2018). Based on the literature review carried out, this research study constructed a conceptual framework as shown in Figure 1.

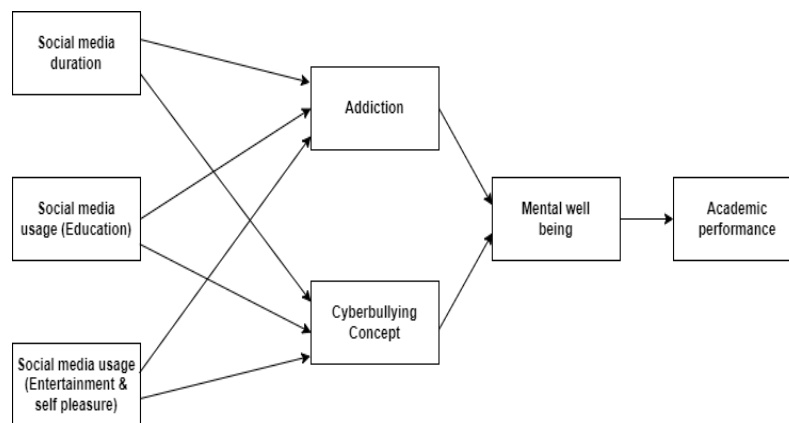


Figure 1. Conceptual framework of this research study.

RESEARCH METHODOLOGY

The study aims to discover the impacts of social media use on the academic performance of undergraduate students in Malaysia. The target group comprises approximately 150 undergraduates enrolled in various universities in Malaysia, representing various stages of their academic journey. With students coming from different backgrounds and at different points in their degree programs, the study seeks to understand how their use of social media platforms like Facebook, Instagram, and Twitter affects their study habits, mental well-being, and overall academic performance.

In the methodology of this study, a combined approach of simple random sampling and convenient sampling is used to form the sample. Simple random sampling ensures the selection of participants from the target population in a purely random manner, without bias or preference, thus enhancing the representativeness of the sample. This method allows everyone in the population an equal chance of being chosen, minimizing the risk of skewed results. Complementing this, convenient sampling is utilized to facilitate ease of access to participants, particularly in cases where logistical constraints or limited resources may impede a purely random selection process. By incorporating both approaches, this study aims to strike a balance between rigor and practicality, ultimately improving the generalizability and reliability of the findings (Ting et al., 2024; Helaudho et al., 2024).

Table 1 shows the total section of this questionnaire which is distributed to the undergraduate students in Malaysia is seven sections including all the components in the conceptual framework. All of the questions are taken from previous research done by others to make sure the accuracy of the research can be promised. The first section of the questionnaire is demographic information which gathers some basic background information of the participants related to our topics. This section is performed by using multiple choice forms to increase efficiency and save their time from typing a lot

of answers. The second section of questionnaires is regarding the duration of the social media usage in scale form from 1 - 5 which scale 1 represents strongly disagree and scale 5 represents strongly agree. The third section is about the use of social media in education in scaling form from 1 - 5 which scale 1 represents strongly disagree and scale 5 represents strongly agree. The third section is regarding the social media usage in entertainment and self-pleasure in scaling form from 1 - 5 which scale 1 represents strongly disagree and scale 5 represents strongly agree. The fourth section is about social media addiction in scaling form from 1 - 5 which scale 1 represents strongly disagree and scale 5 represents strongly agree. The fifth section is cyberbullying concept in scale form from 1 - 5 which represents strongly disagree and scale 5 represents strongly agree. The sixth and seventh sections are mental well-being in scale form from 1 - 5 which scale 1 represents strongly disagree and scale 5 represents strongly agree.

Table 1 shows the questionnaire items and its resources.

Question Items	Resources
Q1. Gender? Q2. What is your ethnicity? Q3. Age? Q4. What is your current study year? Q5. What is your current CGPA?	Lee, 2022
Q6. How often do you use social media?	Lee, 2022
Q7. Do you often use social media to publish your study content? Q8. Social media allows me to communicate with my professors about study-related matters. Q9. Social media facilitates the conduction of research and studies. Q10. Social media is a convenient and reliable source for obtaining general education. Q11. Social media allows me to collaborate with my colleagues regarding study-related matters. Q12. Social media allows me to get the latest information for free. Q13. Social media makes it easy for me to effortlessly publish scholarly articles. Q14. Social media is a convenient and reliable source of knowledge. Q15. Social media helps me to find information in it that I cannot find elsewhere. Q16. Social media helps me to get benefits from some scientific publications. Q17. I feel that using social media for collaborative learning in my group was effective. Q18. I was able to develop research skills through peer collaboration. Q19. Using social media improves my interaction with classmates and lecturers. Q20. Using social media to facilitate academic activities and coordinate with peers and lecturers.	Raed Al-Husain, 2022
Q21. I don't feel lonely when I am using social media. Q22. Social media enables me to do things according to my desire and freedom. Q23. Social media allows me to share my recent experiences by posting blogs, photos or videos to my friends. Q24. Social media allows me to learn new cultures when enjoying entertainment with foreign. Q25. Social media helps me to release my stress when playing games. Q26. Social media serves as a platform for leisure and recreational activities. Q27. I don't feel the passage of time when using social media.	Raed Al-Husain et al., 2022
Q28. I feel the need to use social media more and more often. Q29. I often do not pay attention to university classes because I am using social media. Q30. I often use social media to escape from negative feelings and/or academic problems.	Lee, 2022

<p>Q31. I regularly do not get enough sleep because I am using social media late at night.</p> <p>Q32. I regularly find that I cannot think of anything else including academics but the moment that I will be able to use social media again.</p> <p>Q33. I regularly feel dissatisfied because I want to spend more time on social media.</p> <p>Q34. I often feel angry and frustrated if I am not able to use social media.</p> <p>Q35. I often have conflicts with others (e.g., relatives, friends) because of my social media use.</p> <p>Q36. I jeopardize or lose important friendships or relationships because I am spending too much time on social media.</p> <p>Q37. I often lie to others (e.g., parents, friends) about the amount of time I spend on social media.</p> <p>Q38. I regularly hide my social media use from others.</p> <p>Q39. I often devote little or no attention to people around me because I am using social media.</p>	
<p>Q40. Cyber-bullying is an action of sending a text message with words that are full of anger and frontal.</p> <p>Q41. Cyber-bullying is an action taken such as sending interruption messages on email, short messages and text messages on social networks that are carried out continuously.</p> <p>Q42. Cyber-bullying always sparks someone's ugliness on the internet and social media with the intention of damaging the person's reputation and good name.</p> <p>Q43. Cyber-bullying perpetrators usually pretend to be other people and end bad messages or status, so that the victim's friend thinks that the status or message is the original result of the victim.</p> <p>Q44. Cyber-bullying is done by spreading the secrets of other people, or personal photos of others with the intention of spreading the ugliness or privacy of that person.</p> <p>Q45. Cyberbullying is an intention and cruel act of removing someone in an online group.</p> <p>Q46. Cyber-bullying activities, which involve disturbing and defaming someone's reputation intensely so as to terror the victim.</p> <p>Q47. Cyberbullying usually persuades someone with deception to get his secret or personal photo, which could one day be used as a weapon to blackmail or threaten.</p> <p>Q48. Cyber-bullying is caused by anger, hurt, revenge, or frustration.</p> <p>Q49. Cyberbullying is done when thirsting for power by highlighting the ego so that it hurts others.</p> <p>Q50. Cyberbullying is done when the offender feels bored and has the ability to hack.</p> <p>Q51. Cyberbullying activities are done by accident, for example in the form of impulsive and emotional reactions/comments.</p> <p>Q52. Cyberbullying activities on social media are caused by dissatisfaction with the surrounding environment.</p> <p>Q53. Cyberbullying activities on social media are caused by the free means of conveying feelings on social media.</p>	Akrim et al., 2020
<p>Q54. I feel bad about myself or that I am a failure or have let myself/my family down(disappointed).</p> <p>Q55. I have thoughts that I would be better off dead or hurting myself in some way.</p> <p>Q56. I feel trouble falling or staying asleep or sleeping too much.</p> <p>Q57. I feel down, depressed, or hopeless.</p> <p>Q58. I feel trouble concentrating on things, such as reading the newspaper, textbook, or watching tv.</p> <p>Q59. I have a poor appetite or overeating.</p> <p>Q60. I feel tired or have little energy all day.</p>	Ting et al, 2023

Q61. I feel I have a number of good qualities. Q62. I feel I am able to do things as well as most other people. Q63. I feel I have a positive attitude toward myself. Q64. I feel I have much to be proud of. Q65. On the whole, I am very satisfied with myself. Q66. I do not feel useless at all times. Q67. I am not a failure.	Ting et al, 2023
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In this study, data collection is facilitated through multiple digital platforms, including WhatsApp, Instagram, email, and XiaoHongShu. These platforms are chosen to ensure efficient and diverse means of communication with participants. WhatsApp, a widely used instant messaging application, offers real-time interaction and accessibility across various devices, allowing seamless communication and timely responses. Email serves as a formal and structured channel for data exchange, accommodating longer-form communication and document sharing. In addition, XiaoHongShu, a popular social media platform in China, is used to tap into a specific demographic and cultural context, fostering engagement and unique insights unique to its user base. By utilizing these platforms, a comprehensive data set can be obtained, offering a detailed understanding of the research phenomenon. Instagram, a widely used social media platform globally, provides a visually engaging environment conducive to sharing experiences and opinions. Its diverse user base and multimedia capabilities offer an avenue for participants to express themselves through images, videos, and captions, potentially providing rich qualitative data. Furthermore, Instagram's direct messaging feature allows for direct and personalized communication with participants, facilitating the exchange of information and insights.

In examining the relationships between variables A, B, C, and D, a multifaceted approach is employed to uncover the intricate interplay among these factors. Initially, using SPSS software and the Pearson correlation method, the association between variables A and B is explored, providing information on their linear relationship and the strength of their correlation. Subsequently, moving beyond the simple bivariate relationship, the mediation effect of variable B between A and C is examined using the PROCESS macro, allowing for the identification of both direct and indirect effects. This analysis sheds light on the mechanisms through which variable B influences the relationship between A and C, providing a nuanced understanding of the underlying processes. Finally, to further extend the analysis, the path analysis method in AMOS software is used to investigate the sequential relationships among variables A, B, C and D. This method enables the evaluation of both direct and indirect pathways, elucidating the complex causal pathways through which these variables interact and influence each other. Through this comprehensive approach, a deeper understanding of the relationships between variables A, B, C, and D is achieved, facilitating more informed decision making and theoretical advancement in the field.

RESULTS

A total of 154 undergraduate students participated in this study with their demographic data, as shown in Table 2. There are a total of 35.71% of Chinese male undergraduates and 64.29% of Chinese female undergraduates. The age of majority of undergraduate students ranged from 21 to 23 years, which has a total of 79.87%. Most of the undergraduate students who participated in this study are from degree year 2 and the current CGPA ranged from 3.41-3.60.

Table 2. Demographic details of the participants

	Frequency (n)	Percentage (%)
Ethnicity		
Chinese	154	100

Gender		
Female	99	64.29
Male	55	35.71
Age		
18	2	1.30
19	4	2.60
20	14	9.09
21	43	27.92
22	60	38.96
23	20	12.99
24	7	4.55
25	3	1.95
26	1	0.65
Current study year		
Degree Year 1	26	16.88
Degree Year 2	57	37.01
Degree Year 3	52	33.77
Degree Year 4	19	12.34
Current CGPA		
<3.00	11	7.14
3.00-3.20	15	9.74
3.21-3.40	19	12.34
3.41-3.60	49	31.81
3.61-3.80	27	17.53
3.81-4.00	33	21.4

Table 3 shows Cronbach's alpha testing, which was conducted to test the reliability of the questionnaires that were collected from 154 students. For the acceptance value, the reliability of the questionnaire is considered acceptable in the range of (0.70-0.79), good in the range of 0.80-0.89 and excellent in the range of >0.90. (Cortina, 1993)

Table 3. Cronbach Alpha based on standardized items result from questionnaire items.

Questionnaires item sections	Cronbach's Alpha	Number of items
Social Media Usage (Education)	0.910	14
Social Media Usage (Entertainment & Self-pleasure)	0.835	7
Addiction	0.945	12
Cyberbullying concept	0.880	14
Mental Well Being	0.917	14
Total	0.951	62

Based on Table 3, H1, H2, H3, H4, H5, H6, H7, H8 are accepted ($R_{H1} = 0.159$, s ; $R_{H2} = 0.334$; $R_{H3} = 0.340$; $R_{H4} = 0.517$, s ; $R_{H5} = 0.271$; $R_{H6} = 0.557$; $R_{H7} = 0.504$, s ; $R_{H8} = 0.347$). This indicates that there is a positive significant correlation between the duration of social media and addiction, social media duration and the concept of cyberbullying, the usage of social media (education) and addiction, social media usage(education) and the concept of cyberbullying, the use of social media (Entertainment & Self-Pleasure) and addiction, social media (Entertainment & Self-Pleasure) and cyberbullying

concept, addiction and mental well-being, the concept of cyberbullying concept and mental well-being. H9 is rejected ($R_{H9} = -0.035$). Therefore, the correlation between mental well-being and academic performance is not significant.

Table 4 shows the Pearson correlation analysis Result

	Addiction	Cyberbullying Concept	Mental Well Being	Academic Performance	Standard Deviation
Social Media Duration	0.159*	0.334**			0.671
Social Media Usage (Education)	0.340**	0.517**			0.59355
Social Media Usage (Entertainment & Self-Pleasure)	0.271**	0.557**			0.58964
Addiction			0.504**		1.03694
Cyberbullying Concept			0.347**		0.49864
Mental Well Being				-0.035	0.94147

** The correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

The direct effect and the indirect effect with a bootstrap 95% confidence interval for the mediation analysis of addiction, cyberbullying concept, and mental well-being in the relationship between predictors that are social media duration, social media (education), the use of social media usage(Entertainment & Self-Pleasure), the concept of addiction and cyberbullying and dependent variable which are mental well-being and academic performance are reported in Table 4. Through mediation analysis, addiction was found to be a significant mediator between the relationship of social media use (education) and mental well-being, showing a positive indirect effect (IE = 0.2348) and a 95% confidence interval of [0.1214, 0.3964]. The concept is also shown to be a significant mediator and is shown to have a positive indirect effect between the relationship of social media use (education) and mental well-being, showing a positive indirect effect(IE = 0.1862) and a 95% confidence interval of [0.0349, 0.4216]. Therefore, H12 and H13 are accepted. On the contrary, addiction did not significantly affect the relationship between the duration of social media and mental well-being, showing a positive indirect effect(IE = 0.1085) and a 95% confidence interval of [0.0189, 0.2111]. Thus, H10 is rejected. The concept of cyberbullying did not significantly affect the relationship between social media duration and mental well-being, showing a positive indirect effect (IE = 0.1499) and a 95% confidence interval of [0.0576,0.2953]. Therefore, H11 is rejected. Then, addiction did not significantly affect the relationship between social media use (entertainment & self-pleasure) and mental well-being, showing a positive indirect effect (IE = 0.2017) and 95% confidence interval of [0.0904,0.3544]. Thus, H14 is rejected. The concept of cyberbullying did not significantly affect the relationship between the use of social media usage (entertainment & self-pleasure) and mental well-being, showing a positive indirect effect (IE = 0.2595) and a 95% confidence interval of [0.0815,0.5202]. Thus, H14 is rejected. Then mental well-being did not significantly affect the relationship between addiction and academic performance, showing a positive indirect effect (IE = 0.0015) and a 95% confidence interval of [-0.0342,0.0350]. Thus, H16 is rejected. Lastly, mental well-being did not significantly affect the relationship between the concept of cyberbullying and academic performance, showing a positive indirect effect (IE = -0.0032) and a 95% confidence interval of [-0.0497,0.0445]. Thus, H17 is rejected.

Table 5: Direct and indirect effects with Bootstrap 95% Confidence Interval For Mediation Analysis

Predictor	Mediator	Dependent Variable	Direct Effect	Indirect Effect (95% CI)
Dur	Add	Men	0.1577	0.1085(0.0189,0.2111)
Dur	Cyb	Men	0.1163	0.1499(0.0576,0.2953)

Edu	Add	Men	0.3201	0.2348(0.1214,0.3964)
Edu	Cyb	Men	0.3686	0.1862(0.0349,0.4216)
Ent	Add	Men	0.2171	0.2017(0.0904,0.3544)
Ent	Cyb	Men	0.1593	0.2595(0.0815,0.5202)
Add	Men	AP	-0.0293	0.0015(-0.0342,0.0350)
Cyb	Men	AP	-0.0443	-0.0032(-0.0497,0.0445)

Notes: Dur = duration of social media, Edu = use of social media (education), Ent = Social Media Usage(Entertainment & Self-Pleasure), Add = addiction, Cyb = Cyberbullying Concept, Men = mental well-being, AP = Academic Performance

Based on the regression analysis, the duration of social media, the use of social media (education), and the use of social media (entertainment and social media usage (entertainment & self-pleasure)) were the only patterns included in the path analysis. Addiction and mental well-being did not significantly affect the relationship between the duration of social networks and academic performance. Therefore, H18 is rejected. Moreover, the concept of cyberbullying and mental well-being did not significantly affect the relationship between the duration of social media and academic performance, so H19 is rejected. Furthermore, addiction and mental well-being did not significantly affect the relationship between social media use (education) and academic performance. So, H20 is rejected. Furthermore, cyberbullying concepts and mental well-being did not significantly affect social media use (education) and academic performance. So, H21 is rejected. Furthermore, addiction and mental well-being did not significantly affect the relationship between social media usage (entertainment & self-pleasure) and academic performance. So, H22 is rejected. Lastly, the concept of cyberbullying and mental well-being did not significantly affect social media use (entertainment & self-pleasure) and academic performance. So, H23 is rejected.

Table 6 shows the coefficients of the mediation model.

	Estimate	SE	p	BootLCCI	BootULCI
Partial Indirect Effect					
Dur → Add → Men → AP	0.000	0.004	0.827	-0.007	0.010
Dur → Cyb → Men → AP	-0.001	0.003	0.413	-0.017	0.002
Edu → Add → Men → AP	-0.005	0.014	0.581	-0.042	0.019
Edu → Cyb → Men → AP	-0.003	0.009	0.496	-0.032	0.010
Ent → Add → Men → AP	-0.002	0.006	0.395	-0.027	0.005
Ent → Cyb → Men → AP	-0.005	0.012	0.588	-0.034	0.017
Total Indirect Effect					
Dur → AP	-0.001	0.003	0.413	-0.017	0.002
Edu → AP	-0.003	0.009	0.496	-0.032	0.010
Ent → AP	-0.005	0.012	0.588	-0.034	0.017

Notes: Dur = duration of social media, Edu = use of social media (education), Ent = Social Media Usage(Entertainment & Self-Pleasure), Add = addiction, Cyb = Cyberbullying Concept, Men = mental well-being, AP = Academic Performance

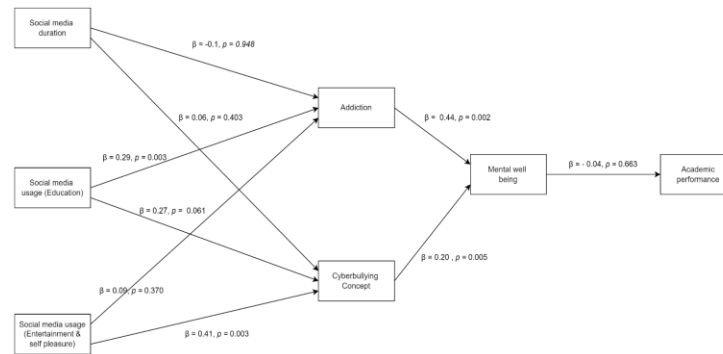


Figure 2. Path analysis depicting indirect effects of social media duration, social media usage (education), and social media usage(entertainment & self-pleasure) on cyberbullying and addiction.

DISCUSSION

H1: There is a positive relationship between social media duration and addiction.

According to Table 3, the duration of social media is significantly correlated with addiction with a positive correlation ($R_{H1}=0.159$) and therefore H1 is accepted indicating that increased time spent on social media is associated with higher levels of addiction. This result is consistent with multiple studies which were done by different previous researchers and concluded that the social media duration is significantly correlated with addiction (Lei et al., 2021; Wan et al., 2021; Chandrasena & Ilankoon, 2021; Galán et al., 2020).

H2: There is a positive relationship between social media duration and cyberbullying concept.

Based on Table 3, social media duration is significantly correlated with the concept of cyberbullying with a positive correlation ($R_{H2}=0.334$) and therefore H2 is accepted. This result is consistent with multiple studies conducted by different previous researchers and concluded that the duration of social media is significantly correlated with the concept of cyberbullying.

H3: There is a positive correlation between social media use (education) and addiction.

According to Table 3, the use of social media (education) is significantly correlated with addiction with a positive correlation ($R_{H3}=0.340$) and therefore H3 is accepted. This result is consistent with multiple studies conducted by different previous researchers and concluded that social media use (education) is significantly correlated with addiction (Aslan & YAŞAR, 2020).

H4: There is a positive correlation between social media use (education) and cyberbullying concept.

Based on Table 3, social media usage(education) is significantly correlated with addiction with a positive correlation ($R_{H4}=0.517$) and therefore H4 is accepted. This result is consistent with multiple studies that were done by different previous researchers and concluded that the use of social media (education) is significantly correlated with addiction (Narayan et al., 2019; Koranteng et al., 2019; Sarwar et al., 2019).

H5: There is a positive relationship between social media use (entertainment & self-pleasure) and addiction.

According to Table 3, the use of social media (entertainment & self-pleasure) is significantly correlated with addiction with a positive correlation ($R_{H5}=0.271$) and therefore H5 is accepted. This result is consistent with multiple studies conducted by different previous researchers and concluded that social media usage (entertainment & self-pleasure) is significantly correlated with addiction (Lambić, 2016; Aluh et al., 2019; Dahdal, 2020; Brailovskaia et al., 2018).

H6: There is a positive relationship between social media use (entertainment & self-pleasure) and the concept of cyberbullying.

Based on Table 3, social media usage (entertainment & self-pleasure) is significantly correlated with the concept of cyberbullying with a positive correlation ($R_{H6}=0.557$) and therefore H6 is accepted. This result is consistent with multiple studies conducted by different previous researchers and concluded that the use of social media usage (entertainment & self-pleasure) is significantly correlated with the concept of cyberbullying (Park et al., 2014; Giumetti et al., 2022; Rodríguez-Álvarez et al., 2021).

H7: There is a positive relationship between addiction and mental well-being.

According to Table 3, addiction is significantly correlated with mental well-being with a positive correlation ($R_{H7}=0.504$) and therefore H7 is accepted. This result is consistent with multiple studies conducted by different previous researchers and concluded that addiction is significantly correlated with mental well-being (Lei et al., 2019; Alaika et al., 2020; Weijing, 2019).

H8: There is a positive relationship between cyberbullying and mental well-being.

Based on Table 3, cyberbullying concept is significantly correlated with mental well-being with a positive correlation ($R_{H8}=0.347$) and therefore H8 is accepted. This result is consistent with multiple studies that were done by different previous researchers and concluded that the concept of cyberbullying is significantly correlated with mental well-being (Ali et al., 2022; Martínez-Monteagudo et al., 2020; Bai et al., 2021; Maurya et al., 2022; Lee et al., 2022).

H9: There is a negative relationship between mental well-being and academic performance.

According to Table 3, mental well-being is not significantly correlated with academic performance with a negative correlation ($R_{H9}=-0.035$) and therefore H9 is rejected. This result is inconsistent with the research done by the previous researchers who stated that mental well-being was significantly correlated with academic performance with positive correlation (Deng et al., 2020; Awadalla et al., 2020; Kim et al., 2020; Mitchell et al., 2018).

H10: The mediating effect of addiction was not significant in the relationship between the duration of social media and mental well-being.

According to Table 4, addiction did not significantly affect the relationship between the duration of social media and mental well-being with positive indirect effect ($IE = 0.1085$) and a 95% confidence interval of [0.0576, 0.2953] and this relationship is not significantly acceptable since p is not less than 0.05. Thus, H10 is rejected. The H10 result shows that addiction mediated in the correlation between social media duration and mental well-being is not correlated. This result is inconsistent with the research done by the previous researchers who stated that mental well-being was significantly correlated with academic performance with positive correlation (Griffiths et al., 2014; Busalim et al., 2019; Chandani et al., 2019).

H11: The mediating effect of the concept of cyberbullying is not significant between social media and mental well-being.

Based on Table 4, cyberbullying concept did not significantly affect the relationship between the duration of social media and mental well-being with positive indirect effect ($IE = 0.1499$) and a 95% confidence interval of [0.0576, 0.2953] and this relationship is not significantly acceptable since p is not less than 0.05. Thus, H11 is rejected. The H11 result shows that the concept of the cyberbullying mediated in the correlation between the duration of social media and mental well-being is not correlated.

H12: The mediating effect of addiction is significant in the relationship between social media use (education) and mental well-being.

According to Table 4, addiction significantly affects the relationship between social media use (education) and mental well-being with positive indirect effect (IE = 0.2348) and a 95% confidence interval of [0.1214, 0.3964] and this relationship is significantly acceptable since p is less than 0.05. Thus, H12 is accepted. The H12 result shows that addiction mediated in the relationship between social media use (education) and mental well-being is significantly correlated, as there is a significant indirect effect.

H13: The mediating effect of the cyberbullying concept is significant in the relationship between social media use (education) and mental well-being.

According to Table 4, the concept of cyberbullying significantly affects the relationship between social media use (education) and mental well-being, showing a positive indirect effect (IE = 0.1862) and a 95% confidence interval of [0.0349, 0.4216] and this relationship is significantly acceptable since p is less than 0.05. Thus, H13 is accepted. The H13 result shows that the concept of cyberbullying mediated in the relationship between social media usage(education) and mental well-being is significantly correlated, as there is a significant indirect effect.

H14: The mediating effect of addiction is not significant in the relationship between social media usage (entertainment & self-pleasure) and mental well-being.

According to Table 4, addiction did not significantly affect the relationship between social media use (entertainment & self-pleasure) and mental well-being, showing a positive indirect effect (IE = 0.2017) and a 95% confidence interval of [0.0904,0.3544] and this correlation is not significantly acceptable since p is not less than 0.05. Thus, H14 is rejected. The H14 result shows that addiction mediated in the relationship between social media duration and mental well-being is not correlated. This result is inconsistent with previous research that stated that mediating effect of addiction is significant in the relationship between social media usage (entertainment & self-pleasure) and mental well-being(Kowalski et al., 2020; Smith et al., 2008 ; Bayer et al., 2020).

H15: The mediating effect of the cyberbullying concept is not significant in the relationship between social media use (entertainment & self-pleasure) and mental well-being.

Based on Table 4, cyberbullying concept did not significantly affect the relationship between social media use (entertainment & self-pleasure) and mental well-being, showing a positive indirect effect (IE = 0.2595) and a 95% confidence interval of [0.0815,0.5202] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H15 is rejected. The H15 result shows that the concept of cyberbullying mediated in the correlation between the duration of social media and mental well-being is not correlated. This result is inconsistent with the research done by the previous researchers who stated that the mediating effect of cyberbullying concept is significant in the correlation between the use of social media (entertainment & self-pleasure) and mental well-being (Li et al., 2018; Brailovskaia et al., 2018; Huang, 2018; Kaba et al., 2022).

H16: The mediating effect of mental well-being is not significant in the relationship between addiction and academic performance.

According to Table 4, mental well-being did not significantly affect the relationship between addiction and academic performance, showing a positive indirect effect(IE = 0.0015) and a 95% confidence interval of [-0.0342,0.0350] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H16 is rejected. The H16 result shows that mental well-being mediated in the relationship between addiction and academic performance is not correlated. This result is inconsistent with previous research that stated that mediating effect of mental well-being is

significant in the relationship between addiction and academic performance in positive correlation (Banyai et al, 2017; Hawi et al., 2017; Shensa et al., 2017 ; van Rooji et al., 2017).

H17: The mediating effect of mental well-being is not significant in the relationship between the concept of cyberbullying and academic performance.

According to Table 4, mental well-being did not significantly affect the relationship between the concept of cyberbullying and academic performance, showing a negative indirect effect (IE = -0.0032) and a 95% confidence interval of [-0.0497,0.0445] and this relationship is not significantly acceptable, as p is not less than 0.05. Thus, H17 is rejected. The H17 result shows that mental well-being mediated in the relationship between the concept of cyberbullying concept and academic performance is not correlated.

H18: The mediating effect of addiction and mental well-being is not significant in the relationship between the duration of social media and academic performance.

According to Table 5, mental well-being and addiction did not significantly affect the relationship between the duration of social media and academic performance, showing a 95% confidence interval of [-0.007,0.0010] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H18 is rejected. The H18 result shows that mental well-being and addiction mediated in the relationship between social media duration and academic performance are not correlated, as there is no indirect effect. This result is inconsistent with the research done by previous researchers who stated that the mediating effect of mental well-being and addiction is significant in the relationship between the duration of social media duration and academic performance in positive correlation (Mérelle et al., 2017; Sun et al, 2011; Chaudhari et al., 2015).

H19: The mediating effect of addiction and mental well-being is not significant in the relationship between social media use (education) and academic performance.

According to Table 5, mental well-being and addiction did not significantly affect the relationship between social media use (education) and academic performance, showing a 95% confidence interval of [-0.042,0.019] and this relationship is not significantly acceptable since p is not less than 0.05. Thus, H19 is rejected. The H19 result shows that mental well-being and addiction mediated in the relationship between social media use (education) and academic performance are not correlated.

H20: The mediating effect of addiction and mental well-being is not significant in the relationship between the use of social media (entertainment & self-pleasure) and academic performance.

According to Table 5, mental well-being and addiction did not significantly affect the relationship between social media use (entertainment & self-pleasure) and academic performance, showing a 95% confidence interval of [-0.027,0.005] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H20 is rejected. The H20 result shows that mental well-being and addiction mediated in the relationship between social media usage (entertainment & self-pleasure) and academic performance are not correlated. This result is inconsistent with previous research that stated that mediating effect of mental well-being and addiction is significant in the relationship between social media duration and academic performance in positive correlation (Li et al., 2018; Brailovskaia et al, 2018, Huang, 2018).

H21: The mediating effect of the concept of cyberbullying and mental well-being are not significant in the relationship between the duration of social media and academic performance.

Based on Table 5, cyberbullying concept and mental well-being did not significantly affect the relationship between the duration of social media and academic performance, showing a 95% confidence interval of [-0.017,0.002] and this relationship is not significantly acceptable, as p is not less than 0.05. Thus, H21 is rejected. The H21 result shows that mental well-being and addiction

mediated in the relationship between the duration of social media duration and academic performance are not correlated.

H22: The mediating effect of cyberbullying and mental well-being is not significant in the relationship between social media usage (education) and academic performance.

Based on Table 5, cyberbullying concept and mental well-being did not significantly affect the relationship between social media use (education) and academic performance, showing a 95% confidence interval of [-0.032,0.010] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H22 is rejected. The H22 result shows that the concept of cyberbullying and mental well-being mediated in the relationship between social media usage (education) and academic performance are not correlated.

H23: The mediating effect of the concept of cyberbullying and mental well-being are significant in the relationship between the use of social media (entertainment & self-pleasure) and academic performance.

Based on Table 5, cyberbullying concept and mental well-being did not significantly affect the relationship between social media usage (entertainment & self-pleasure) and academic performance, showing a 95% confidence interval of [-0.034,0.017] and this relationship is not significantly acceptable as p is not less than 0.05. Thus, H23 is rejected. The H23 result shows that the concept of cyberbullying and mental well-being mediated in the relationship between social media use (entertainment & self-pleasure) and academic performance are not correlated.

CONCLUSION

The results of the analysis provide information on complex relationships among social media use, psychological variables, and academic performance. Initially, the study confirmed the anticipated positive relationships between the duration of social media, addiction, and cyberbullying concept, aligning with previous research. This suggests that prolonged exposure to social media platforms may increase the likelihood of addictive behaviors and cyberbullying incidents. Furthermore, the positive correlations observed between addiction, cyberbullying, and mental well-being emphasize the detrimental impact of these factors on individuals' psychological health. Such associations underscore the need for comprehensive interventions to address not only addiction, but also the broader spectrum of negative consequences associated with excessive use of social media.

Unexpectedly, the research revealed no notable correlation between mental well-being and academic performance, contradicting previous studies suggesting a positive association between these factors. This unexpected result prompts further exploration of the nuanced interactions between mental health indicators and academic outcomes. It suggests that while psychological well-being is undoubtedly crucial for overall functioning, its direct influence on academic performance may be more complex than previously assumed. This finding underscores the importance of considering various factors, including socioeconomic background, educational resources, and personal motivation, in understanding academic success.

Analyzing the mediating effects across different relationships unveils the intricate dynamics among social media usage, psychological variables, and academic performance. Although addiction and cyberbullying concepts emerged as significant mediators in certain contexts, their effects were not observed uniformly in all relationships. Specifically, in the relationships between social media duration and academic performance (H18), use of social media for educational purposes and academic performance (H19), and social media usage for entertainment and self-pity and academic performance (H20), neither addiction nor mental well-being significantly mediated the associations. These findings suggest that other factors beyond addiction and mental well-being can influence academic outcomes in these scenarios, necessitating further exploration of the underlying

mechanisms. Furthermore, the absence of substantial mediation by the concept of cyberbullying and mental well-being concerning the connections between the duration of social media and academic performance (H21), the use of social media for educational objectives and academic performance (H22), and social media usage for entertainment, self-indulgence and academic performance (H23) emphasizes the complexity of these links. Moreover, it accentuates the need for a more exhaustive comprehension of the elements that influence academic achievement in the realm of social media utilization.

Essentially, these findings underscore the importance of taking a holistic approach to understanding the complex interaction between social media use, mental health, and academic performance. By acknowledging the multifaceted nature of these factors and their subtle interconnections, researchers and professionals can devise more impactful interventions to alleviate the adverse impacts of excessive social media consumption and foster favorable outcomes in both the psychological and academic spheres.

Although this study's discoveries provide valuable perspectives on the correlations among social media usage patterns, psychological aspects, and academic performance, it is essential to recognize several limitations. First, reliance on self-reported measures may introduce biases such as social desirability and recall inaccuracies. Additionally, the cross-sectional design of the study limits the ability to establish causal relationships, and longitudinal studies would be necessary to provide a clearer understanding of the temporal dynamics involved. Moreover, the study's focus on a specific demographic or sample may restrict the generalizability of the findings to broader populations. Subsequent studies could overcome these constraints by diversifying samples, adopting longitudinal methodologies to track developments over time, and integrating objective metrics to evaluate the use of social media, addiction, cyberbullying, and academic performance. Additionally, qualitative approaches could complement quantitative analyzes by providing deeper insights into individuals' experiences and perceptions related to social media use and its impacts on well-being and academic outcomes. By addressing these limitations, future studies can enhance the robustness and applicability of research findings in this area.

In the future, further research could explore diverse avenues to enhance our understanding of the complex interconnections between social media usage, mental health, and academic performance. First, longitudinal studies could investigate the lasting effects of social media use patterns on individuals' psychological well-being and academic achievements, allowing the exploration of developmental trajectories and potential moderating influences. Furthermore, qualitative research methodologies, such as interviews or focus groups, could offer deeper insights into subjective experiences, motivations, and coping mechanisms of individuals about the use of social media. Furthermore, conducting experimental studies could provide insight into causal connections and evaluate the efficacy of interventions designed to mitigate the adverse effects of excessive social media use on mental health and academic performance. Furthermore, investigating the impact of individual variances, such as personality traits or cultural background, on shaping the connections between social media use and results could yield a more nuanced understanding of these dynamics. By embracing a multidisciplinary approach and employing a variety of research methodologies, future studies have the potential to contribute significantly to a comprehensive understanding of the use of the implications of social media for individuals' well-being and academic success.

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