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Research Paper

Social Media Addiction among Generation Z Smartphone Users: A Moderating Role for Subjective Well-being

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ABSTRACT

Purpose: This study aims to identify the factors that influence the social media behavior of Generation Z in the post-COVID era. A conceptual framework has now been constructed.

Methodology: The purpose of the standardized questionnaire was to collect primary data from Generation Z university students employing a non-probability, purposive sampling method. 841 people completed the questionnaire. The SmartPLS-SEM4.0.9.9 program was used to analyze the study model.

Results: It seems from the data that social stress, self-regulation, addictive smartphone use, and conduct related to social media use were important predictors of social media usage behavior. Furthermore, it was shown that the subjective well-being construct's moderation component lacked statistical significance.

Research limitations: The study lacks more generalizability, as it only includes data from a limited sample of Generation Z individuals from Bangladesh, specifically those residing in the Dhaka region.

Practical implications: By adding social stress and self-regulation, this study has advanced the body of current literature in addition to offering fresh perspectives and interpretations on how members of Generation Z use social media. In addition, this study aims to advance current understanding by categorizing key components that may promote the emergence of addictive behaviors associated with social media and smartphone use. Besides, by designing targeted lesson plans and interventions, the study's findings may help students become more self-reliant. Institutions that support social stress management and responsible technology use can assist students in striking a balance between their personal and academic life.

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Originality: This method will help to better understand how Gen Z uses social media and how addictive smartphone use and social media usage habits affect subjective well-being.

Keywords: *Generation Z; Social stress; Self-regulation; Addictive smartphone use; Social media usage behavior; Subjective well-being*

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1. Introduction

Smartphones are widely regarded as indispensable components of human existence on a global scale. Extensive research consistently shows that students exhibit a significant propensity for excessive smartphone usage, with smartphones ranking among their preferred devices (Fu et al., 2021; Mahapatra, 2019). While smartphones provide many conveniences, it is important to acknowledge the negative consequences of smartphone usage, such as smartphone addiction. Smartphone addiction refers to the compulsive and impulsive use of smartphones (Cha & Seo, 2018). An individual's level of severity in developing a smartphone addiction is proportional to the rate and length of time that they spend using their device (van Deursen et al., 2015). Similar to other addictions, smartphone addiction is characterized by its salience, mood modification, and the resulting problems it causes in daily life (Samaha & Hawi, 2016). Prior research has indicated that persons who experience anxiety (Hong et al., 2012) and loneliness (Dayapoglu et al., 2016) are more likely to acquire smartphone addiction due to their tendency to feel bashful during social interactions. In the previous decade, contemporary mobile technologies have become increasingly widespread. The presence of diverse applications, such as social networking sites (SNSs), on smartphones, facilitates the connection between users (Fu et al., 2021). People's everyday usage of smartphones has coincided with a widespread discussion in the research community about the association, favorable or negative, between screen time and behavioral and health consequences (Manwell et al., 2022).

Since the year 2000, previous research has established the significance of mobile communication and subjective well-being (Bae, 2019; Chan, 2018; Hu et al., 2017;

Munzel et al., 2018). Subjective wellbeing is examined through the utilization of both the hedonic and eudemonic traditions in behavioral science research (Dodge et al., 2012). The occurrence of COVID-19 as an unforeseen and highly impactful event has resulted in significant transformations in several parts of individuals' everyday routines (Khanra et al., 2021; Talwar et al., 2020; Wind et al., 2020). More precisely, the analysis of subjective well-being during the lockdowns considers various aspects of human experience, including cognitive (life satisfaction), psychological (psychological discomfort), and mental health (positive mental health) characteristics. While social media usage offers numerous advantages to users, particularly during the pandemic lockdown (Sheth, 2020), it is important to acknowledge the negative aspects of social media. Specifically, the harmful impacts of social media use in the post-pandemic period have yet to be thoroughly examined (Dhir et al., 2019; Islam et al., 2020). Generation Z (Gen Z), who have been raised in a time of peace and have had access to superior technologies, are currently encountering unprecedented difficulties (Osgerby, 2020). The impact of social media usage on the psychological well-being of individuals, particularly those belonging to Gen Z (people born between the mid-1990s and early 2010s), was noted during the pandemic lockdown (Priporas et al., 2017).

While social media usage offers numerous advantages to users, particularly during the pandemic lockdown (Sheth, 2020), it is important to acknowledge the negative aspects of social media. Diverse social media platforms have been prominently utilized during the COVID-19 pandemic, which has caused widespread anxiety globally. This is primarily due to social distancing measures and the closure of educational institutions and workplaces, which have impacted the livelihoods and lifestyles of numerous individuals (Sarangi et al., 2022). In the post-pandemic era, current research indicates a significant probability of an increase in mental health challenges, suggesting the existence of an emotional epidemic curve (Ransing et al., 2020). The post-pandemic context has significantly impacted mental health due to the implications on physical health, social dynamics, and economic conditions (Prakash et al., 2024). Besides, Sohu and Chaudhary (2024) disclosed that post-pandemic smartphone usage among users has surged, resulting in a notable rise in physical and psychological symptoms, as well as an increase in BMI.

Nevertheless, there remains a dearth of studies elucidating the mechanisms underlying the correlation between smartphone-mediated online communication and subjective well-being. Kuss and Griffiths (2017) observed the intersection of social media and

smartphone addiction. Gezgin (2018) urged researchers to look into the relationship between SNS usage and smartphone addiction in the context of a developing nation, using the current Bangladesh study as an example. The study investigates the post-COVID scenario of Gen Z users' social media usage behavior in broader aspects. Individuals experiencing psychosocial issues, such as social stress and difficulties in self-regulation, tend to favor alternative modes of communication, specifically through smartphones, rather than engaging in direct face-to-face interactions.

The study seeks to ascertain the impact of social stress and self-regulation on addictive smartphone usage among Gen Z university students in Dhaka, Bangladesh. In particular, this study will concentrate on how the addictive smartphone use of Gen Z drives them to drastically increase their use of social media. Furthermore, the study aims to examine how the degree to which subjective well-being acts as a moderating factor in the correlation between addicted smartphone use and social media use among Gen Z users. Consequently, this investigation will furnish the answers to the research problems it has presented.

RQ1: What is the impact of social stress and self-regulation on the addictive smartphone use of Gen Z users?

RQ2: What is the impact of Gen Z users' smartphone addiction on their social media usage?

RQ3: What is the impact of subjective well-being on the addicted smartphone use and social media usage behavior of Gen Z users?

This article has more than one section. The first section serves as an introduction. The second component covers the literature review, theoretical foundation, and the formulation of hypotheses. The third portion discusses the research methodology. The fourth section contains the study's results. The fifth section presents the discussion and consideration of both theoretical and practical aspects. The conclusion, study limitations, and future research scope have become clearer.

2. Literature Review

2.1. Theoretical background

The study of self-regulatory behavior has traditionally been approached from two main theoretical perspectives. Several scholars have proposed that self-regulatory behavior represents a relatively stable personality variable (Karoly, 1993) because people act and react in certain ways based on their inherent temperamental characteristics (Kopp, 1982; Rothbart & Bates, 1998) and because they draw from their prior experiences in goal pursuit. According to the psychodynamic theory, smartphone addiction is seen as a way to evade frustrations and seek pleasure and forgetting. Smartphone addiction is attributed to faulty beliefs and schemata according to the social cognitive theory (SCT) (Bandura, 1982). This idea facilitates comprehension of the societal aspects of utilizing information technology and its subsequent outcomes (Zhou et al., 2014). Social Cognitive Theory (SCT) is founded upon the interplay of the individual, their behavior, and the environment, encompassing both personal and occupational/educational aspects (Bandura, 1986). According to SCT, individuals' behavior can be modified, such as reducing smartphone addiction, by altering their perception of personal environmental elements, such as improving the environment to enhance their self-esteem. Ultimately, smartphone addiction is believed to arise from a confluence of individual, societal, communal, environmental, and affective elements (Davis, 2001).

2.2. Generation Z (Gen Z)

The oldest individuals belonging to Gen Z are now pursuing their undergraduate education (Szymkowiak et al., 2021). They were designated as "digital natives" due to their upbringing in the era of digital technology, leading to their early exposure and proficiency with social media and the internet (Haddad et al., 2021). Gen Z is widely recognized for their exceptional aptitude in technology and their inclination towards digital communication as opposed to face-to-face interactions with people (Poláková & Klímová, 2019). Their strong reliance on technology for information gathering in all spheres of their existence, including schooling, means that they can tolerate very little time without digital resources (Szymkowiak et al., 2021). Hence, it is evident that the cognitive processes of the younger generation have seen significant changes (Prensky, 2001; Szymkowiak et al., 2021).

2.3. ***Social Stress, addictive smartphone use and social media usage behavior***

Adolescent smartphone addiction is closely linked to stress perception. Engaging in frequent smartphone use for social interactions triggers emotional responses marked by dishonesty, regret, and heightened stress levels due to the expectation of swiftly responding to smartphone communications (Pera, 2020). Smartphones allow teenagers to consistently interact with social media sites, satisfying their need for self-expression, interpersonal connections, and social approval. A previous study conducted by Berger et al., (2018) showed that individuals with impaired self-regulation are inclined to quickly respond to smartphone notifications, indicating that people often struggle to control their behavior when it comes to technology habits. Consequently, this leads to elevated levels of stress and dependence on these technological devices (Hawk et al., 2019). Individuals exhibiting insecure attachment aspects may exhibit problematic smartphone usage as a result of challenges in managing stress and as a means of coping with relationship issues (Parent et al., 2022).

The following hypotheses have been proposed:

H1a: There is a strong positive relationship between social stress and addicted smartphone use.

H1b: There is a strong positive correlation exists between social stress and the social media usage behavior of Gen Z users.

H1c: The excessive use of smartphones by Gen Z users acts as a mediator between social stress and their behavior of using social media.

2.4. Self-regulation, addictive smartphone use and social media usage behavior

Self-regulation encompasses the capacity to withstand both internal and external enticements to accomplish a certain goal (Tangney et al., 2018). Studies indicate that self-regulation can alleviate the negative consequences of addictive behaviors (Geng et al., 2021). A recent study suggests that individuals who possess outstanding self-regulation have both high levels of well-being and the ability to adapt their behavior (De Ridder & Gillebaart, 2017; Servidio, 2021). Self-regulation requires individuals to effectively prioritize and maintain focus on stated goals, even when faced with distractions, as individuals often have multiple intended outcomes or ends simultaneously (Parent et al.,

2022). Effective self-regulation promotes personal and collective growth, while insufficient self-regulation can result in challenges in adjusting, subpar academic performance, reduced well-being, and various other issues (Bassi et al., 2023; De Ridder & Gillebaart, 2017). The emergence of addictive behaviors and problems controlling cravings for addictive substances are further consequences of this lack of self-control (Zhang et al., 2022). The following hypotheses are proposed:

H2a: Self-regulation has a significant positive correlation with addictive smartphone use among Gen Z.

H2b: There is a significant positive association between self-regulation and Gen Z users' social media usage behavior.

H2c: Gen Z users' addictive smartphone use mediates the relationship between self-regulation and social media usage behavior.

2.5. Gen Z users' addictive smartphone use and social media usage behavior

As educated emerging adults, university students typically view their smartphones as important to their identity and way of life (Long et al., 2016). Smartphone usage has a substantial impact on various elements of the daily routines of young individuals, making them more likely than other age groups to own the most recent technology breakthroughs (Parasuraman et al., 2017). The widespread usage of mobile phones, driven by their adaptability and ability to fulfill utilitarian and recreational demands, increases the likelihood of mobile phone addiction (Zhang et al., 2022). Smartphone users primarily use their devices for online gaming, social networking sites, academic study, and entertainment (Abbasi et al., 2021). Research suggests a correlation between frequent use of social networking sites (SNS) and social media addiction (Barnes et al., 2019). Moreover, if an individual's desire for connection is lacking, they may have apprehension about not being able to participate in a gratifying social encounter. Subsequently, individuals may resort to using social media as a means to fulfill their desire for a sense of belonging, prompted by this concern (Roberts & David, 2020). The excessive use of social media has an impact on one's study habits and possesses the capacity to redirect focus away from academic pursuits (Van Den Beemt et al., 2020). The following hypothesis is proposed:

European Journal of Applied Business Management, 10(2), 2024, pp. 147-174 ISSN 2183-5594

H3: There is a direct correlation between the addicted use of smartphone by Gen Z users and their social media usage behavior.

2.6. The moderating role of subjective well-being

The correlation between increased mental health and better social and psychological outcomes, such as subjective well-being, has drawn the attention of several researchers to this issue (Dodge et al., 2012). Subjective well-being, often known as psychological well-being, is the subjective measure of total life satisfaction (Chan, 2015). Several research conducted on college students have confirmed that utilizing smartphones for communication is favorably correlated with overall subjective well-being (Chan, 2015). In line with these findings, a recent comprehensive study shown that using smartphones for communication initially has a beneficial impact on subjective well-being (SWB). Nevertheless, this phenomenon does not seem to endure in the long run (Bae, 2019). A recent study discovered that smartphone usage has a beneficial impact on the subjective well-being (SWB) of older persons aged 35-54 years and 55-70+ years. However, this effect was not observed in the youngest age group (Chan, 2018). One potential interpretation of the results is that as people age, they desire more close and personal connections, and they utilize their smartphones to communicate and sustain these relationships, so enhancing their subjective well-being.

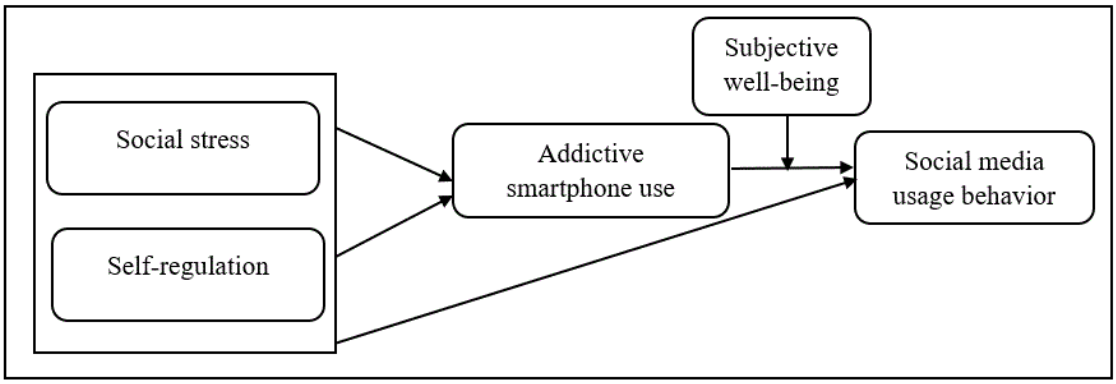
In line with these findings, a recent study also demonstrated that the association between wellbeing in addition, social media's intimacy is negative for younger users (Munzel et al., 2018), who typically use social media to establish new connections. Despite ongoing controversies (Hu et al., 2017; Munzel et al., 2018) and a few studies reporting positive associations (Valenzuela et al., 2009; Valkenburg & Peter, 2007). The majority of studies have focused on investigating the negative association between social media use and subjective well-being, particularly among young users (Meier et al., 2016; Satici & Uysal, 2015; Van Rooij et al., 2017). The sample of the current study consisted of young individuals, Gen Z, who utilize social media for the purpose of social reinforcement. Parallel findings are documented in a recent investigation conducted on Malaysian university students Sundarasen et al. (2020). Recent studies on the effects of the COVID-19 pandemic have highlighted the susceptibility of younger age groups in various

contexts, including India Roy et al. (2020), Thailand Nochaiwong et al. (2021), and other locations Deng et al. (2021).The following hypotheses proposed as,

H4a: Gen Zs' subjective well-being has a negative association with social media usage behavior.

H4b: Gen Zs' subjective well-being do not moderate the relationship between Gen Z users' addictive smartphone use and social media usage behavior.

Figure 1: A proposed theoretical model



Source: A proposed theoretical model (Proposed by author)

3. Methodology

3.1. Sampling, questionnaire development, and data collection

The survey encompassed individuals belonging to the Gen Z demographic, age group 18-25 years. The researcher concentrated on university students due to their widespread smartphone ownership and active engagement with social networking sites (SNSs) (Koç & Turan, 2021). Throughout the COVID-19 pandemic, Gen Z's engagement with social media escalated, while concurrently, individuals exhibited signs of psychological distress and mental health challenges (Asmundson & Taylor, 2020). The researcher utilized the non-probability, purposive sampling technique to collect the primary data (Easterby-Smith et al., 2021). The main data was gathered through a self-administered structured questionnaire methodology. The primary data collection period extended from September 2023 to November 2023. In addition, online methods were utilized to collect primary

data. These methods included Google Classroom posts, email survey links, Facebook groups, messenger chats, WhatsApp, and Instagram posts (Sobolewski et al., 2024). Electronically assisted survey methodologies have numerous benefits compared to conventional survey methods. The survey disseminated by email showed superior performance in terms of time expenditures, and the number of respondents acquired. However, they may also create coverage biases and measurement errors (Dodge & Chapman, 2018).

A random sample of 1500 students was selected to conduct this survey. Out of the 841 completed surveys, 139 survey replies were eliminated from the dataset because the respondents' made errors when filling out the questionnaire. The survey research attained a response rate of 56.06%, which is deemed satisfactory. The sample size for this study follows the widely established "10 times rule of thumb," which suggests that the minimum sample size should be 10 times the intricacy of the interactions in the research model. Moreover, the sample size is adequate to generate accurate SmartPLS (PLS-SEM) outcomes (Chin, 1998). The comprehensive demographic characteristics of the participants are displayed in Table I. The proportion of male respondents was 52.44% of the total, while the proportion of female respondents was 47.56%. Out of the participants, 22.71% held an MBA/MSC degree, 22.59% were in their fourth year of education, and 20.21% were in their third year of study. The majority of participants indicated that they spend more than 7 hours each day on social media platforms, with 26.16% of participants falling within this range. 24.97% of the participants allocated 5-7 hours of their time.

3.2. Measures and scaling

The questionnaire was divided into two sections. The initial segment covered the demographic characteristics of the participants, such as their gender, level of education, and duration of daily social media activity. The second half covered user social stress, self-regulation, addictive smartphone usage, social media usage, and academic performance. The researchers evaluated the factors of this study by utilizing standardized scales and adapting them to suit the particular study setting. The evaluations for each item linked to the dimensions were evaluated using a five-point Likert scale, where "1" represented strongly disagree and "5" represented strongly agree. The ten-item measurement of social stress was developed based on the work of Carleton et al., (2006).

European Journal of Applied Business Management, 10(2), 2024, pp. 147-174 ISSN 2183-5594

The nine-item measurement was derived from Diehl et al., (2006)'s work. In addition, the ten-item assessment of addictive smartphone usage was derived from Bianchi and Phillips (2005)'s research. The measurement of social media use consists of six items, which have been adapted from Andreassen et al., (2012)'s study. The study additionally employed subjective well-being as a mediator construct, utilizing a five-item test derived from Diener et al. (1985).

3.3. Data analysis

The study's hypotheses were evaluated using SmartPLS4.0.9.9 and Partial Least Square Structural Equation Modeling (PLS-SEM). As per the research conducted by Hair Jr et al., (2021) PLS-SEM exhibited enhanced statistical power in understanding the connections between construct routes. The researcher utilized a two-step procedure which involved evaluating the measurement model to determine the reliability and validity of the constructs and analyzing the structural model to assess its predictive potential and test the hypotheses in the research model. Hair Jr et al., (2010) validate the multivariate assumptions, which encompass the absence of data outliers and multi-collinearity concerns, as well as the presence of linearity and normal distribution, and an acceptable sample size. The study analyzed Harman's unifactorial model, comprising nine components (SOS, SER, ASU, SMU, and SWB), with a total of 40 scale items. However, none of the individual components were found to be the main factor responsible for 16.16% of the variation, which is below the 50% criterion recommended by Podsakoff et al., (2003). In addition, the researchers thoroughly examined the common method bias (CMB) to verify the model's validity and dependability. This study utilized the Variance-Inflation Factor (VIF) to evaluate the existence of multi-collinearity across latent variables and assessed tolerance. According to Table II, VIF values below 3.3 are regarded the threshold level, which is consistent with the findings of the earlier study conducted by Kock (2015). The VIF analysis conducted in this study confirms earlier research findings by proving the lack of common method bias (CMB) or collinearity.

4. Results

4.1. Analysis of the measurement model

European Journal of Applied Business Management, 10(2), 2024, pp. 147-174 ISSN 2183-5594

In their study, Hair Jr et al., (2021) assessed the external measurement model. The construct's reliability was evaluated using Cronbach's alpha (α), rho_A, and composite reliability (CR). The measure's convergent validity was evaluated by the utilization of AVE (Average Variance Extracted) and cross-loading approaches, as shown in Table III. The Fornell-Larcker criterion model and Hetrotrait-Monotrait (HTMT) ratio were used to evaluate the discriminant validity of the analysis, as shown in Tables III and IV.

4.1.1. Construct reliability and convergent validity

Hair Jr et al., (2021) assessed the reliability, convergent validity, and discriminant validity of the measurement model in relation to the research constructs. Table III presents the item factor loadings, Cronbach's alpha (α), composite reliability (CR), and average variance extracted (AVE). In order to satisfy the requirements, any factor loadings below 0.5 were excluded. SOS2, SO4, SER1, SER2, SER9, ASU1, ASU9, and SMU6 were excluded throughout the data processing phase. The Cronbach's alpha values ranged from 0.724 to 0.748, surpassing the cut-off levels established by Hair Jr et al., (2021). The composite reliability ranged from 0.727 to 0.816, surpassing the recommended threshold proposed by Hair Jr et al., (2021). The AVE values in this study varied from 0.505 to 0.573, surpassing the 0.50 threshold established by Fornell and Larcker (1981).

4.1.2. Discriminant validity

The calculated value within the threshold level based on the Heterotrait-Monotrait (HTMT) ratio and the measurement of Fornell and Larcker (1981) is shown in Table IV. Therefore, the discriminant validity and reliability of the measurement model have been confirmed. The Heterotrait-Monotrait ratio (HTMT) of correlations, as assessed by Henseler et al., (2015), was employed to ascertain the discriminant validity of the measurement model. The HTMT ratio's discriminant validity is called into question if it is higher than 0.90, as suggested by Gold et al., (2001), or 0.85, as suggested by Kline (2015). The HTMT output values are unbiased and considered acceptable in Table V.

Table I: Demographic profile of the respondents

Particulars	Category	Frequency	Percentage (%)
Gender	Male	441	52.44%

	Female	400	47.56%
Level of education	1st year	140	16.65%
	2nd year	150	17.84%
	3rd year	170	20.21%
	4th year	190	22.59%
	MBA/MSC	191	22.71%
Time spend on social media platforms [daily]	1-3 hours	220	26.16%
	3-5 hours	191	22.71%
	5-7 hours	210	24.97%
	More than 7 hours	220	26.16%

Source: Researcher's computation

Table II: Full collinearity statistics (VIF)

Item	VIF	Item	VIF	Item	VIF
ASU10	1.162	SOS1	1.229	SER8	1.103
ASU2	1.193	SOS10	1.203	SMU1	1.119
ASU3	1.299	SOS3	1.308	SMU2	1.074
ASU4	1.259	SOS5	1.200	SMU4	1.170
ASU5	1.337	SOS6	1.299	SMU5	1.152
ASU6	1.565	SOS7	1.217	SWB4	1.359
ASU7	1.538	SOS8	1.264	SWB5	1.381
ASU8	1.455	SOS9	1.291	SWB x ASU	1.000
SER3	1.225	SWB1	1.248	SMU3	1.117
SER4	1.248	SWB2	1.436		
SER5	1.126	SWB3	1.308		

Source: Researcher's computation

Table III: Construct reliability and validity and the results of the outer model

Construct	Measurement Items	Loadings	α	rho_a	CR	AVE	R^2
Social stress	SOS1	0.530	0.724	0.753	0.816	0.573	0.216
	SOS3	0.648					
	SOS5	0.553					
	SOS6	0.620					
	SOS7	0.627					
	SOS8	0.570					
	SOS9	0.570					
	SOS10	0.541					
Self-regulation	SER3	0.503	0.734	0.742	0.727	0.505	
	SER4	0.595					
	SER5	0.700					
	SER8	0.722					
Addictive smartphone use	ASU2	0.554	0.744	0.744	0.817	0.562	0.355
	ASU3	0.578					
	ASU4	0.548					
	ASU5	0.534					
	ASU6	0.696					
	ASU7	0.701					

	ASU8 ASU10	0.660 0.508					
Social media use	SMU1 SMU2 SMU3 SMU4 SMU5	0.657 0.502 0.650 0.626 0.506	0.748	0.746	0.727	0.551	0.398
Subjective well-being	SWB1 SWB2 SWB3 SWB4 SWB5	0.549 0.731 0.640 0.760 0.738	0.727	0.753	0.816	0.573	

Source: Researcher's computation

Table IV: Discriminant validity-Fornell and Larcker criterion model

Construct	ASU	SER	SMU	SOS	SWB
ASU	0.602				
SER	0.307	0.636			
SMU	0.484	0.485	0.592		
SOS	0.484	0.342	0.377	0.582	
SWB	0.199	0.354	0.380	0.136	0.688

Source: Researcher's computation

Table V: Heterotrait-Monotrait ratio (HTMT)

Construct	ASU	SER	SMU	SOS	SWB	SWB x ASU
ASU						
SER	0.454					
SMU	0.736	0.794				
SOS	0.644	0.494	0.545			
SWB	0.288	0.595	0.546	0.192		
SWB x ASU	0.033	0.013	0.146	0.079	0.063	

Source: Researcher's computation

4.2. Assessment of structural model

Henseler et al., (2015) determine the explanatory power of a structural model by multiplying the squared multiple correlations (R^2) by the significance level of the path coefficients. The research demonstrates a significant positive correlation between the addicted use of smartphones by Gen Z and their behavior in using social media. The

statistical significance of this link is confirmed by a p-value below 0.05. The combined variables SOS and SER account for approximately 35.5% of the variability observed in social media consumption behavior. The standardized path coefficient between the dependent variable of addictive smartphone use and the behavior of using social media, while engaging in them, was 0.355. The model achieved an R^2 value of 39.8%, surpassing the acceptable significance level of 0.20 (Yang & Peterson, 2004).

The study model's path coefficient was determined using bootstrapping, a technique that involved producing 5000 t-values and p-values (Hair et al., 2020). Table VI indicates that hypotheses H1a and H1b were confirmed, and the influence of social stress (SOS) on ASU (β = 0.429, t = 9.274, and p = 0.000) and SMU (β=0.105, t=2.698, p=0.007) was shown to be statistically significant. In addition to H2a and H2b, the results indicated that SER had a substantial impact on ASU (β=0.160, t=3.590, p=0.000) and SMU (β=0.282, t=6.775, p=0.000), providing support for the presented hypothesis. In addition, ASU had a significant impact on SMU. Moreover, H3 was determined to be statistically significant and favorable, providing support for the hypothesized hypothesis (β=0.305, t=7.030, p=0.000). Furthermore, the SWB had a favorable impact on SMU. Additionally, H4 was determined to be statistically significant and provided support for the hypothesized hypothesis (β=0.205, t=5.180, p=0.001). The moderating construct, SWB, was determined to be not statistically significant, leading to the rejection of the hypothesized hypothesis H4b (β=-0.004, t=0.103, p=0.918). Furthermore, the researchers analyzed the magnitude of the effect (f^2). The f^2 values for the significant independent variables were 0.02, 0.15, and 0.35, which corresponded to mild, moderate, and significant effects, respectively (Cohen, 1992). The magnitude of effect sizes f^2 is significant as they govern the representative impact of several variables in the study model (Henseler et al., 2015). Table VI displays the range of the model's effect size, which varied from 0.000 to 0.219.

Table VI: Hypotheses testing

H.	Structural paths	Path coefficients (β)	t-values	p-values	f-square	Effect size	LLCI	ULCI	Decision
H1a	SOS -> ASU	0.429	9.274	0.000	0.219	Moderate	0.331	0.515	Accepted
H1b	SOS -> SMU	0.105	2.698	0.007	0.013	Minor	0.027	0.178	Accepted
H2a	SER -> ASU	0.160	3.590	0.000	0.031	Minor	0.070	0.243	Accepted

H2b	SER -> SMU	0.282	6.775	0.000	0.103	Minor	0.200	0.363	Accepted
H3	ASU -> SMU	0.305	7.030	0.000	0.115	Minor	0.220	0.389	Accepted
H4	SWB-> SMU	0.205	5.180	0.001	0.061	Minor	0.124	0.279	Accepted
H4b	SWB x ASU -> SMU	-0.004	0.103	0.918	0.000	Minor	-0.074	0.066	Rejected

Source: Researcher's computation

4.3. Testing of mediation effects

The study's mediation results are displayed in Table VII, demonstrating the level of communication on Gen Z consumers' smartphone addiction. The bootstrapping analysis has identified the indirect effects of social stress, H1c, (β=0.131, t=5.395, p=0.000) and self-regulation, H2c, (β=0.049, t=2.989, p=0.003). The bias-corrected 95% confidence intervals (CI) for the indirect effects of SOS (LLCI=0.087, ULCI=0.182) and SER (LLCI=0.020, ULCI=0.083) are not between 0 and 1. According to Preacher and Hayes (2008), this indicates the presence of mediation. The correlation between social stress and self-regulation in Gen Z individuals is influenced by their smartphone addiction, as indicated by the indirect effects observed in mediation studies. These findings provide further evidence supporting the postulated connections between H1c and H2c.

Table VII: Testing of mediating effects

H.	**Structural paths**	**Path coefficients (β)**	**T-values**	**P-values**	**Confidence interval (CI)**		**Decision**
					LLCI	ULCI	
H1c	SOS -> ASU -> SMU	0.131	5.395	0.000	0.087	0.182	Accepted
H2c	SER -> ASU -> SMU	0.049	2.989	0.003	0.020	0.083	Accepted

Source: Researcher's computation

4.4. Testing of moderation effects

The study's moderating results are displayed in Table VIII, showcasing the level at which Gen Z consumers' smartphone addiction has been conveyed. The bootstrapping analysis

has identified the moderation connection, H4b, (β=-0.004, t=0.103, p= 0.918). The effect size, also known as f-square, was determined to be 0.010, indicating a small magnitude. The bias-corrected 95% confidence-intervals (CI) for the moderation effects of LLCI= -0.074, and ULCI=0.066. The study findings indicated that the postulated hypothesis H4b did not provide evidence for the presence of a moderation effect.

Table VIII: Testing of moderation effects

H.	Structural paths	Path coefficients (β)	t-values	p-values	f-square	Effect size	LLCI	ULCI	Decision
H4b	SWB x ASU -> SMU	-0.004	0.103	0.918	0.000	Minor	-0.074	0.066	Not moderated

Source: Researcher's computation

5. Discussion

This study investigates the influence of social stress, self-regulation, addictive smartphone usage, social media behavior, and the moderating effects of subjective well-being on university students who are part of Gen Z. To achieve this objective, the authors proposed a theoretical framework to analyze these ideas. The results of our study suggest that there are robust positive connections, both direct and indirect, among social stress, self-regulation, addictive smartphone use, and social media usage behavior. In contrast, a detrimental association was shown between excessive smartphone usage, social media behavior, and subjective well-being. This indicates that the proposed theory lacks a moderating impact. These findings strengthen our comprehension of the components that lead to social stress and self-regulation, hence expanding our knowledge on preventing smartphone addiction and excessive usage of social media.

This study examines the relationship between social stress and the moderating influence of smartphone addiction and social media usage behavior. University students frequently cultivate a reliance on mobile phones as a method of evading social and emotional stressors. This addiction functions as a means of alleviating the adverse feelings and encounters linked to academic life (Chiu, 2014). The hypotheses H1a and H1b put forward in this study have shown statistically significant positive connections, as

demonstrated by the previous studies (Berger et al., 2018; Chicca & Shellenbarger, 2018; Hawk et al., 2019; Pera, 2020). Furthermore, the study of indirect effects showed a significant and positive relationship between excessive smartphone use, social stress, and engagement in social media consumption. This finding provides support for hypothesis H1c. Individuals displaying insecure attachment dimensions may develop problematic smartphone usage due to difficulties in stress management and as a mechanism for dealing with relationship problems (Parent et al., 2022).

The study also examines the function of self-regulation and the mediating effect of smartphone addiction and social media usage behavior. The study results indicated that the hypothesized hypotheses H2a, H2b, and H2c were confirmed. The present study's results exhibited outcomes that were comparable to other investigations (Bassi et al., 2021; Cho et al., 2017; Geng et al., 2021; Parent et al., 2022; Zhang et al., 2022). Further investigations carried out in South Korea and Lebanon have shown a connection between diminished self-restraint, elevated stress levels, and amplified smartphone dependency (Jeong et al., 2016; Samaha & Hawi, 2016). Conversely, van Deursen et al., (2015) found that there is a negative relationship between self-regulation and addictive smartphone behavior in their study on this topic.

The study also examines the ramifications of addictive smartphone usage and social media usage behavior. The study's findings confirmed the validity of the stated hypothesis H3. The present study's results confirmed the findings of previous research (Abbasi et al., 2021; Jeong et al., 2016; Lee et al., 2018; Van Den Beemt et al., 2020; Vizcaya-Moreno & Pérez-Cañaveras, 2020). In addition, if someone lacks a desire for social connection, they may feel anxious about not being able to engage in a fulfilling social interaction. Consequently, people may turn to using social media platforms to satisfy their need for a feeling of belonging, driven by this worry (Roberts & David, 2020). Overuse of social media can have positive and negative effects on students' academic performance, relationships with others, and general well-being (Jha et al., 2016).

Based on hypothesis H4a, the study investigates the association between social media usage behavior and subjective well-being. The study findings confirmed that hypothesis H4a was supported and consistent with the existing research (Meier et al., 2016; Munzel et al., 2018; Satici & Uysal, 2015; Van Rooij et al., 2017; Zhang et al., 2023). In contrast, the authors have suggested the presence of a moderating link, namely subjective well-

being, between addictive smartphone use and the social media usage behavior of Gen Z users. The results indicated that the proposed hypothesis did not have a moderating effect on the hypothesized relationship H4b, which led to the rejection of the stated hypothesis. Bangladesh's socioeconomic environment and Gen Z's traits and psychological fallout (Shiraev & Levy, 2020) disprove the hypothesis. A potential argument for rejecting the hypothesis may be the contextual differences and methodological disparities between industrialized and developing countries, as well as the study's sample size, sampling methodology, statements adaptation strategy, personal attributes of the respondents, and data analysis techniques (Snyder, 2022). Additionally, a recent study by Su and He (2024) found that demographic factors like a student's country of origin, level of education, and family income impact their subjective well-being. This study examines university students' subjective well-being and investigates the relationship between smartphone addiction (Su & He, 2024) and social media usage behavior. Moreover, the complex association between addictive smartphone use and addictive social media usage behavior may be mediated or moderated by an additive construct, which would account for the inconsistent findings in the literature (Gerson et al., 2016).

5.1. Theoretical implications

The findings of this inquiry contribute to this field in multiple ways. To begin with, based on the inconclusive findings of previous research, which are considered to be prospective areas for further investigation, a conceptual framework is proposed. Furthermore, the predominant focus of social media research has been on the active utilization of social media by Gen Z and the possible adverse impacts that social media may have on this demographic (Liu et al., 2021; Marciano et al., 2022). This study examines the impact of social media on users' subjective well-being within the framework of psychosocial theory. It has been both conceived and empirically demonstrated to provide a substantial contribution to the theoretical understanding of the issue. The extent to which subjective well-being might predict problematic smartphone usage patterns among university students has not been extensively studied, despite a growing body of research that has identified specific patterns of problematic smartphone use among Gen Z students.

Secondly, factors like social stress and self-regulation are included in this study. Deficiencies in self-regulation have been widely acknowledged as a substantial risk factor

for the development of problematic smartphone usage (Parent et al., 2022; van Deursen et al., 2015). Furthermore, there is a theoretical proposition that suggests perceived stress plays a crucial role as a catalyst for the emergence of mobile phone addiction, as it is indicative of detrimental behavior (Parent et al., 2022). In the context of Bangladesh, there has been limited study that has combined these concepts and examined them from the perspective of university students belonging to Gen Z. This study, which had a sample size of 841 respondents, offered robust evidence for the constructs under the examination of these features, was conducted through an online survey and a structural equation modeling (SEM) approach.

5.2. Practical implications

This study seeks to elucidate the intricacies of smartphone addiction in this demographic by analyzing these interactions and to offer valuable guidance for the diverse stakeholders involved in addressing and resolving this problem. Educational institutions might use the findings of this study to develop unique lesson plans and interventions that enhance students' capacity for self-regulation. Institutions can facilitate the equilibrium between students' academic and personal lives by advocating for proper technology usage practices and implementing strategies for managing social stress. Mental health professionals might incorporate the research results into their counseling and treatment sessions. Therapists can develop programs that target self-control and social stress to handle smartphone addiction more effectively and assist Gen Z individuals in acquiring better-coping mechanisms. Hence, the research holds significant implications for several stakeholders involved in the welfare of Gen Z. The collaboration between these parties can effectively mitigate the detrimental consequences of smartphone addiction by addressing the concerns described in this study.

6. Conclusion

The results of our study enhance the existing knowledge on social stress, self-regulation, addictive smartphone use, social media usage behavior, and the subjective well-being of Gen Z individuals. The study’s offer a comprehensive analysis and comparison of these notions. Prior study examined the relationship in various ways, but it did not give

sufficient importance to the combined dimensions, especially when considering emerging nations. Furthermore, smartphones significantly improve the level of convenience in our daily lives. Nevertheless, this study has found two distinct constructs that signify patterns of addicted smartphone usage behavior. These structures have been empirically demonstrated to exhibit a substantial positive connection with smartphone usage behavior. Utilizing social media is justified in view of the psychosocial concerns emphasized in the study findings. The study data show that the suggested moderating hypothesis was not supported, despite the fact that the negative use of smartphones and social media has a substantial influence on subjective well-being. Although smartphone usage may not initially diminish an individual's subjective well-being (Satici, 2019), the onset of addiction can correlate with a decrease in subjective well-being, thereby impacting feelings of loneliness. These findings have significant implications for improving university students' subjective well-being (Su & He, 2024). The authors sought to examine the specific research objectives that they underlined in this study. The authors emphasized the problem of contemporary distractions in daily life and proposed that conducting further research in the field of literature would help comprehend the influence of smartphone devices and associated tools on the emergence of social anxiety in young individuals.

6.1. Limitations and scope of the future research study

Given the recent emergence of smartphones, there is a lack of prior research investigating the correlation between smartphone addiction and psychosocial stress. Nevertheless, because of the established link in the research findings, there is now a feasible opportunity to conduct further examinations on samples from both homogeneous and heterogeneous cultures. Furthermore, it investigates the extent to which the subjective well-being of Gen Z individuals influences this connection. There are certain limitations to our investigation.

This study's strength is that it is the inaugural research in the Bangladeshi context addressing the psychosocial difficulties of Gen Z. The total sample of 841 university students from Dhaka city, Bangladesh is scarcely representative of the entire Gen Z population in Bangladesh. However, the author's sample is typical of the Gen Z demographic. Future studies may include a larger sample size to yield significant conclusions. Second, using cross-sectional data is a constraint, indicating that future

research should incorporate longitudinal studies that integrate both longitudinal and cross-sectional data. Longitudinal study designs can be implemented across several countries with diverse demographic and sociocultural factors, including socioeconomic class, age group, marital status, family dynamics, religious norms, and community support. Third, our study findings originate from a single country; the author should consider that socioeconomic and cultural differences that may influence the variations in social stress, self-regulation, smartphone addiction, addictive social media use, and subjective well-being about life satisfaction. In addition, additional construct dynamics, or moderated-mediated constructs, can be added to comprehend the new findings, which are not specific to Gen Z but can be applied to cohorts across other generations. The fourth restriction of this study stems from the utilization of a structured self-reported questionnaire, purposeful sampling, and survey data. Psychometric informatics research methods can assess participants' actions, offering empirical social media usage statistics rather than relying on subjective views (Hussain et al., 2019). Subsequent investigations may utilize objective measurement instruments to augment the scientific rigor of the research. Furthermore, the study just analyzed two domains to measure the correlation between addictive smartphone use and addictive social media use. In addition, the concepts of sadness, anxiety, loneliness, aggression, life satisfaction, and other psychosocial constructs will be employed to evaluate the connection.

List of Abbrevations

GEN Z- Generation Z; SOS-Social stress; SER-Self-regulation; ASU- Addictive smartphone use; SMU-Social media usage behavior; SWB-Subjective well-being; LLCI-Lower-level confidence level; ULCI-Upper level confidence interval; SCT-Social cognitive theory

References

Abbasi, G. A., Jagaveeran, M., Goh, Y.-N., & Tariq, B. (2021). The impact of type of content use on smartphone addiction and academic performance: Physical activity as moderator. *Technology in Society, 64*, 101521. doi: https://doi.org/10.1016/j.techsoc.2020.101521

Andreassen, C. S., Griffiths, M. D., Hetland, J., & Pallesen, S. (2012). Development of a work addiction scale. *Scandinavian journal of psychology, 53*(3), 265-272.

Asmundson, G. J. G., & Taylor, S. (2020). Coronaphobia: Fear and the 2019-nCoV outbreak. *J Anxiety Disord, 70*, 102196. doi: 10.1016/j.janxdis.2020.102196

Bae, S.-M. (2019). The relationship between smartphone use for communication, social capital, and subjective well-being in Korean adolescents: Verification using multiple latent growth modeling. *Children and Youth Services Review, 96*, 93-99. doi: https://doi.org/10.1016/j.childyouth.2018.11.032

Bandura, A. (1982). The assessment and predictive generality of self-percepts of efficacy. *Journal of Behavior Therapy and Experimental Psychiatry, 13*(3), 195-199. doi: https://doi.org/10.1016/0005-7916(82)90004-0

Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.

Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. *Computers in Human Behavior, 90*, 246-258. doi: https://doi.org/10.1016/j.chb.2018.09.013

Bassi, G., Lis, A., Marci, T., & Salcuni, S. (2021). The Italian Version of Smartphone Addiction Inventory (SPAI-I) for Adolescents: Confirmatory Factor Analysis and Relation with Self-Control and Internalized-Externalized Symptoms. *International Journal of Mental Health and Addiction*. doi: 10.1007/s11469-021-00705-w

Bassi, G., Lis, A., Marci, T., & Salcuni, S. (2023). The Italian Version of Smartphone Addiction Inventory (SPAI-I) for Adolescents: Confirmatory Factor Analysis and Relation with Self-Control and Internalized-Externalized Symptoms. *International Journal of Mental Health and Addiction, 21*(3), 1992-2005. doi: 10.1007/s11469-021-00705-w

Berger, S., Wyss, A. M., & Knoch, D. (2018). Low self-control capacity is associated with immediate responses to smartphone signals. *Computers in Human Behavior, 86*, 45-51. doi: https://doi.org/10.1016/j.chb.2018.04.031

Bianchi, A., & Phillips, J. G. (2005). Psychological Predictors of Problem Mobile Phone Use. *CyberPsychology & Behavior, 8*(1), 39-51. doi: 10.1089/cpb.2005.8.39

Carleton, R. N., McCreary, D. R., Norton, P. J., & Asmundson, G. J. G. (2006). Brief Fear of Negative Evaluation scale—revised. *Depression and Anxiety, 23*(5), 297-303. doi: https://doi.org/10.1002/da.20142

Cha, S.-S., & Seo, B.-K. (2018). Smartphone use and smartphone addiction in middle school students in Korea: Prevalence, social networking service, and game use. *Health Psychology Open, 5*(1), 2055102918755046. doi: 10.1177/2055102918755046

Chan, M. (2015). Mobile phones and the good life: Examining the relationships among mobile use, social capital and subjective well-being. *New Media & Society, 17*(1), 96-113. doi: 10.1177/1461444813516836

Chan, M. (2018). Mobile-mediated multimodal communications, relationship quality and subjective well-being: An analysis of smartphone use from a life course perspective. *Computers in Human Behavior, 87*, 254-262. doi: https://doi.org/10.1016/j.chb.2018.05.027

Chicca, J., & Shellenbarger, T. (2018). Connecting with Generation Z: Approaches in Nursing Education. *Teaching and Learning in Nursing, 13*(3), 180-184. doi: https://doi.org/10.1016/j.teln.2018.03.008

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.

Cho, H.-Y., Kim, D. J., & Park, J. W. (2017). Stress and adult smartphone addiction: Mediation by self-control, neuroticism, and extraversion. *Stress and Health, 33*(5), 624-630. doi: https://doi.org/10.1002/smi.2749

Cohen, J. (1992). A Power Premier Psychological bulletin: Hilldale NJ: Routledge.

Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior, 17*(2), 187-195. doi: https://doi.org/10.1016/S0747-5632(00)00041-8

Dayapoglu, N., Kavurmaci, M., & Karaman, S. (2016). The relationship between the problematic mobile phone use and life satisfaction, loneliness, and academic performance in nursing students. *International Journal of Caring Sciences, 9*(2), 647-652.

De Ridder, D., & Gillebaart, M. (2017). Lessons learned from trait self-control in well-being: making the case for routines and initiation as important components of trait self-control. *Health Psychology Review, 11*(1), 89-99. doi: 10.1080/17437199.2016.1266275

Deng, J., Zhou, F., Hou, W., Silver, Z., Wong, C. Y., Chang, O., . . . Huang, E. (2021). The prevalence of depressive symptoms, anxiety symptoms and sleep disturbance in higher education students during the COVID-19 pandemic: A systematic review and meta-analysis. *Psychiatry Research, 301*, 113863. doi: https://doi.org/10.1016/j.psychres.2021.113863

Dhir, A., Kaur, P., Chen, S., & Pallesen, S. (2019). Antecedents and consequences of social media fatigue. *International Journal of Information Management, 48*, 193-202. doi: https://doi.org/10.1016/j.ijinfomgt.2019.05.021

Diehl, M., Semegon, A. B., & Schwarzer, R. (2006). Assessing Attention Control in Goal Pursuit: A Component of Dispositional Self-Regulation. *Journal of Personality Assessment, 86*(3), 306-317. doi: 10.1207/s15327752jpa8603_06

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*(1), 71-75. doi: 10.1207/s15327752jpa4901_13

Dodge, N., & Chapman, R. (2018). Investigating recruitment and completion mode biases in online and door to door electronic surveys. *International Journal of Social Research Methodology, 21*(2), 149-163. doi: 10.1080/13645579.2017.1336596

Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The Challenge of Defining Wellbeing. *International Journal of Wellbeing, 2*, 222-235. doi: 10.5502/ijw.v2i3.4

Easterby-Smith, M., Jaspersen, L. J., Thorpe, R., & Valizade, D. (2021). *Management and Business Research*: Sage.

Fornell, C., & Larcker, D. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. SAGE Publications Sage CA: Los Angeles CA.

Fu, S., Chen, X., & Zheng, H. (2021). Exploring an adverse impact of smartphone overuse on academic performance via health issues: a stimulus-organism-response perspective. *Behaviour & Information Technology, 40*(7), 663-675. doi: 10.1080/0144929X.2020.1716848

Geng, Y., Gu, J., Wang, J., & Zhang, R. (2021). Smartphone addiction and depression, anxiety: The role of bedtime procrastination and self-control. *Journal of Affective Disorders, 293*, 415-421. doi: https://doi.org/10.1016/j.jad.2021.06.062

Gerson, J., Plagnol, A. C., & Corr, P. J. (2016). Subjective well-being and social media use: Do personality traits moderate the impact of social comparison on Facebook? *Computers in Human Behavior, 63*, 813-822. doi: https://doi.org/10.1016/j.chb.2016.06.023

Gezgin, D. M. (2018). Understanding patterns for smartphone addiction: Age, sleep duration, social network use and fear of missing out. *Kıbrıslı Eğitim Bilimleri Dergisi, 13*(2), 166-177.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems, 18*(1), 185-214. doi: 10.1080/07421222.2001.11045669

Haddad, J. M., Macenski, C., Mosier-Mills, A., Hibara, A., Kester, K., Schneider, M., . . . Liu, C. H. (2021). The Impact of Social Media on College Mental Health During the COVID-19 Pandemic: a Multinational Review of the Existing Literature. *Current Psychiatry Reports, 23*(11), 70. doi: 10.1007/s11920-021-01288-y

Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). Multivariate data analysis: A global perspective (Vol. 7): Upper Saddle River, NJ: Pearson.

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109*, 101-110. doi: https://doi.org/10.1016/j.jbusres.2019.11.069

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage publications.

Hawk, S. T., van den Eijnden, R. J. J. M., van Lissa, C. J., & ter Bogt, T. F. M. (2019). Narcissistic adolescents' attention-seeking following social rejection: Links with social media disclosure, problematic social media use, and smartphone stress. *Computers in Human Behavior, 92*, 65-75. doi: https://doi.org/10.1016/j.chb.2018.10.032

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135.

Hong, F.-Y., Chiu, S.-I., & Huang, D.-H. (2012). A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior, 28*(6), 2152-2159. doi: https://doi.org/10.1016/j.chb.2012.06.020

Hu, X., Kim, A., Siwek, N., & Wilder, D. (2017). The Facebook Paradox: Effects of Facebooking on Individuals' Social Relationships and Psychological Well-Being. *Frontiers in Psychology, 8*. doi: 10.3389/fpsyg.2017.00087

Hussain, Z., Simonovic, B., Stupple, E. J. N., & Austin, M. (2019). Using Eye Tracking to Explore Facebook Use and Associations with Facebook Addiction, Mental Well-being, and Personality. *Behavioral Sciences, 9*(2). doi:10.3390/bs9020019

Islam, A. K. M. N., Laato, S., Talukder, S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective. *Technological Forecasting and Social Change, 159*, 120201. doi: https://doi.org/10.1016/j.techfore.2020.120201

Jeong, S.-H., Kim, H., Yum, J.-Y., & Hwang, Y. (2016). What type of content are smartphone users addicted to?: SNS vs. games. *Computers in Human Behavior, 54*, 10-17. doi: https://doi.org/10.1016/j.chb.2015.07.035

Jha, R. K., Shah, D. K., Basnet, S., Paudel, K. R., Sah, P., Sah, A. K., & Adhikari, K. (2016). Facebook use and its effects on the life of health science students in a private medical college of Nepal. *BMC Research Notes, 9*(1), 378. doi: 10.1186/s13104-016-2186-0

Karoly, P. (1993). Mechanisms of Self-Regulation: A Systems View. *Annual Review of Psychology, 44*(1), 23-52. doi: 10.1146/annurev.ps.44.020193.000323

Khanra, S., Dhir, A., Kaur, P., & Joseph, R. P. (2021). Factors influencing the adoption postponement of mobile payment services in the hospitality sector during a pandemic. *Journal of Hospitality and Tourism Management, 46*, 26-39. doi: https://doi.org/10.1016/j.jhtm.2020.11.004

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. New York: Guilford publications.

Koç, T., & Turan, A. H. (2021). The Relationships Among Social Media Intensity, Smartphone Addiction, and Subjective Wellbeing of Turkish College Students. *Applied Research in Quality of Life, 16*(5), 1999-2021. doi: 10.1007/s11482-020-09857-8

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (ijec), 11*(4), 1-10. doi: 10.4018/ijec.2015100101

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18*(2), 199-214. doi: 10.1037/0012-1649.18.2.199

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.

Lee, H., Min, H., Oh, S.-m., & Shim, K. (2018). Mobile Technology in Undergraduate Nursing Education: A Systematic Review. *hir, 24*(2), 97-108. doi: 10.4258/hir.2018.24.2.97

Liu, H., Liu, W., Yoganathan, V., & Osburg, V.-S. (2021). COVID-19 information overload and generation Z's social media discontinuance intention during the pandemic lockdown. *Technological Forecasting and Social Change, 166*, 120600. doi: https://doi.org/10.1016/j.techfore.2021.120600

Long, J., Liu, T.-Q., Liao, Y.-H., Qi, C., He, H.-Y., Chen, S.-B., & Billieux, J. (2016). Prevalence and correlates of problematic smartphone use in a large random sample of Chinese undergraduates. *BMC Psychiatry, 16*(1), 408. doi: 10.1186/s12888-016-1083-3

Mahapatra, S. (2019). Smartphone addiction and associated consequences: role of loneliness and self-regulation. *Behaviour & Information Technology, 38*(8), 833-844. doi: 10.1080/0144929X.2018.1560499

Manwell, L. A., Tadros, M., Ciccarelli, T. M., & Eikelboom, R. (2022). Digital dementia in the internet generation: excessive screen time during brain development will increase the risk of Alzheimer's disease and related dementias in adulthood. *JIN, 21*(1). doi: 10.31083/j.jin2101028

Marciano, L., Ostroumova, M., Schulz, P. J., & Camerini, A.-L. (2022). Digital Media Use and Adolescents' Mental Health During the Covid-19 Pandemic: A Systematic Review and Meta-Analysis. *Frontiers in Public Health, 9*. doi: 10.3389/fpubh.2021.793868

Meier, A., Reinecke, L., & Meltzer, C. E. (2016). "Facebocrastination"? Predictors of using Facebook for procrastination and its effects on students' well-being. *Computers in Human Behavior, 64*, 65-76. doi: https://doi.org/10.1016/j.chb.2016.06.011

Munzel, A., Meyer-Waarden, L., & Galan, J.-P. (2018). The social side of sustainability: Well-being as a driver and an outcome of social relationships and interactions on social networking sites. *Technological Forecasting and Social Change, 130*, 14-27. doi: https://doi.org/10.1016/j.techfore.2017.06.031

Nochaiwong, S., Ruengorn, C., Thavorn, K., Hutton, B., Awiphan, R., Phosuya, C., . . . Wongpakaran, T. (2021). Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. *Scientific Reports, 11*(1), 10173. doi: 10.1038/s41598-021-89700-8

Osgerby, B. (2020). *Youth culture and the media: Global perspectives* (2nd ed.): Routledge.

Parasuraman, S., Sam, A. T., Yee, S. W. K., Chuon, B. L. C., & Ren, L. Y. (2017). Smartphone usage and increased risk of mobile phone addiction: A concurrent study. *Int J Pharm Investig, 7*(3), 125-131. doi: 10.4103/jphi.JPHI_56_17

Parent, N., Bond, T., Wu, A., & Shapka, J. (2022). Predicting Patterns of Problematic Smartphone Use among University Students: A Latent Class Analysis. *Human Behavior and Emerging Technologies, 2022*, 4287600. doi: 10.1155/2022/4287600

Pera, A. (2020). The Psychology of Addictive Smartphone Behavior in Young Adults: Problematic Use, Social Anxiety, and Depressive Stress. *Frontiers in Psychiatry, 11*. doi: 10.3389/fpsyt.2020.573473

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903. doi: 10.1037/0021-9010.88.5.879

Poláková, P., & Klímová, B. (2019). Mobile Technology and Generation Z in the English Language Classroom—A Preliminary Study. *Education Sciences, 9*(3). doi:10.3390/educsci9030203

Prakash, J., Ghosh, P., Chaudhury, S., & Srivastava, K. (2024). Nurturing mental health in the postpandemic era. *Industrial Psychiatry Journal, 33*(Suppl 1).

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891. doi: 10.3758/BRM.40.3.879

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 2: Do They Really Think Differently? *On the Horizon, 9*(6), 1-6. doi: 10.1108/10748120110424843

Priporas, C.-V., Stylos, N., & Fotiadis, A. K. (2017). Generation Z consumers' expectations of interactions in smart retailing: A future agenda. *Computers in Human Behavior, 77*, 374-381. doi: https://doi.org/10.1016/j.chb.2017.01.058

Ransing, R., Adiukwu, F., Pereira-Sanchez, V., Ramalho, R., Orsolini, L., Teixeira, A. L. S., . . . Kundadak, G. K. (2020). Mental Health Interventions during the COVID-19 Pandemic: A Conceptual Framework by Early Career Psychiatrists. *Asian Journal of Psychiatry, 51*, 102085. doi: https://doi.org/10.1016/j.ajp.2020.102085

Roberts, J. A., & David, M. E. (2020). The Social Media Party: Fear of Missing Out (FoMO), Social Media Intensity, Connection, and Well-Being. *International Journal of Human–Computer Interaction, 36*(4), 386-392. doi: 10.1080/10447318.2019.1646517

Rothbart, M. K., & Bates, J. E. (1998). Temperament *Handbook of child psychology: Social, emotional, and personality development, Vol. 3, 5th ed.* (pp. 105-176). Hoboken, NJ, US: John Wiley & Sons, Inc.

Roy, A., Singh, A. K., Mishra, S., Chinnadurai, A., Mitra, A., & Bakshi, O. (2020). Mental health implications of COVID-19 pandemic and its response in India. *International Journal of Social Psychiatry, 67*(5), 587-600. doi: 10.1177/0020764020950769

Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior, 57*, 321-325. doi: https://doi.org/10.1016/j.chb.2015.12.045

Sarangi, A., Amor, W., Co, E. L. F., Javed, S., Usmani, S., & Rashid, A. (2022). Social Media Reinvented: Can Social Media Help Tackle the Post-Pandemic Mental Health Onslaught? *Cureus, 14*(1), e21070. doi: 10.7759/cureus.21070

Satici, S. A. (2019). Facebook Addiction and Subjective Well-Being: a Study of the Mediating Role of Shyness and Loneliness. *International Journal of Mental Health and Addiction, 17*(1), 41-55. doi: 10.1007/s11469-017-9862-8

Satici, S. A., & Uysal, R. (2015). Well-being and problematic Facebook use. *Computers in Human Behavior, 49*, 185-190. doi: https://doi.org/10.1016/j.chb.2015.03.005

Servidio, R. (2021). Self-control and problematic smartphone use among Italian University students: The mediating role of the fear of missing out and of smartphone use patterns. *Current Psychology, 40*(8), 4101-4111. doi: 10.1007/s12144-019-00373-z

Sheth, J. (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *Journal of Business Research, 117*, 280-283. doi: https://doi.org/10.1016/j.jbusres.2020.05.059

Shiraev, E. B., & Levy, D. A. (2020). *Cross-cultural psychology: Critical thinking and contemporary applications* (7th ed.). New York: Routledge.

Snyder, M. (2022). Seek, and ye shall find: Testing hypotheses about other people *Social cognition* (pp. 277-304): Routledge.

Sobolewski, J., Rothschild, A., & Freeman, A. (2024). The Impact of Incentives on Data Collection for Online Surveys: Social Media Recruitment Study. *JMIR Form Res, 8*, e50240. doi: 10.2196/50240

Sohu, A., & Chaudhary, J. (2024). The Impact of Smartphone Usage Patterns on Health and Other Aspects of Life Post-Covid Pandemic. *Journal of Humanities and Social Sciences Studies, 6*(8), 01-08. doi: https://doi.org/10.32996/jhsss.2024.6.8.1

Su, P., & He, M. (2024). The mediating role of loneliness in the relationship between smartphone addiction and subjective well-being. *Scientific Reports, 14*(1), 4460. doi: 10.1038/s41598-024-54546-3

Sundarasen, S., Chinna, K., Kamaludin, K., Nurunnabi, M., Baloch, G. M., Khoshaim, H. B., . . . Sukayt, A. (2020). Psychological Impact of COVID-19 and Lockdown among University Students in Malaysia: Implications and Policy Recommendations. *International Journal of Environmental Research and Public Health, 17*(17), 6206.

Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. *Technology in Society, 65*, 101565. doi: https://doi.org/10.1016/j.techsoc.2021.101565

Talwar, S., Dhir, A., Singh, D., Virk, G. S., & Salo, J. (2020). Sharing of fake news on social media: Application of the honeycomb framework and the third-person effect hypothesis. *Journal of Retailing and Consumer Services, 57*, 102197. doi: https://doi.org/10.1016/j.jretconser.2020.102197

Tangney, J. P., Boone, A. L., & Baumeister, R. F. (2018). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success *Self-regulation and self-control* (pp. 173-212): Routledge.

Valenzuela, S., Park, N., & Kee, K. F. (2009). Is There Social Capital in a Social Network Site?: Facebook Use and College Students' Life Satisfaction, Trust, and Participation1. *Journal of Computer-Mediated Communication, 14*(4), 875-901. doi: 10.1111/j.1083-6101.2009.01474.x

Valkenburg, P. M., & Peter, J. (2007). Online Communication and Adolescent Well-Being: Testing the Stimulation versus the Displacement Hypothesis. *Journal of Computer-Mediated Communication, 12*(4), 1169-1182. doi: 10.1111/j.1083-6101.2007.00368.x

Van Den Beemt, A., Thurlings, M., & Willems, M. (2020). Towards an understanding of social media use in the classroom: a literature review. *Technology, Pedagogy and Education, 29*(1), 35-55. doi: 10.1080/1475939X.2019.1695657

van Deursen, A. J. A. M., Bolle, C. L., Hegner, S. M., & Kommers, P. A. M. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior, 45*, 411-420. doi: https://doi.org/10.1016/j.chb.2014.12.039

Van Rooij, A. J., Ferguson, C. J., Van de Mheen, D., & Schoenmakers, T. M. (2017). Time to abandon internet addiction? Predicting problematic internet, game, and social media use from psychosocial well-being and application use. *Clinical Neuropsychiatry, 14*(1), 113-121.

Vizcaya-Moreno, M. F., & Pérez-Cañaveras, R. M. (2020). Social Media Used and Teaching Methods Preferred by Generation Z Students in the Nursing Clinical Learning Environment: A Cross-Sectional Research Study. *International Journal of Environmental Research and Public Health, 17*(21). doi:10.3390/ijerph17218267

Wind, T. R., Rijkeboer, M., Andersson, G., & Riper, H. (2020). The COVID-19 pandemic: The 'black swan' for mental health care and a turning point for e-health. *Internet Interv, 20*, 100317. doi: 10.1016/j.invent.2020.100317

Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology & Marketing, 21*(10), 799-822. doi: https://doi.org/10.1002/mar.20030

Zhang, A., Xiong, S., Peng, Y., Zeng, Y., Zeng, C., Yang, Y., & Zhang, B. (2022). Perceived stress and mobile phone addiction among college students: The roles of self-control and security. *Frontiers in Psychiatry, 13*. doi: 10.3389/fpsyt.2022.1005062

Zhang, C. a., Tang, L., & Liu, Z. (2023). How social media usage affects psychological and subjective well-being: testing a moderated mediation model. *BMC Psychology, 11*(1), 286. doi: 10.1186/s40359-023-01311-2

Zhou, J., Zuo, M., Yu, Y., & Chai, W. (2014). How fundamental and supplemental interactions affect users' knowledge sharing in virtual communities? A social cognitive perspective. *Internet Research, 24*(5), 566-586. doi: 10.1108/IntR-07-2013-0143