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Fear of Missing Out and Procrastination among University Students: Investigating the Mediating Role of Screen Time

Irum Aslam[1] & Dr. Jamil A. Malik[2]

[1] MPhiL Scholar, National Institute of Psychology, Quaid-i-Azam University, Islamabad
[2] Tenured Professor, National Institute of Psychology, Quaid-i-Azam University, Islamabad

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ABSTRACT

The present study aimed to test the mediating effect of screen time on the relationship between Fear of Missing Out (FoMO) and procrastination. A cross-sectional research approach and purposive sampling technique were employed to recruit university students (N = 400) from public and private sector universities in Rawalpindi and Islamabad. The study variables were assessed using the FoMO Scale (Wegmann et al., 2017), the General Procrastination Scale (Lay, 1986), and the usage dimensions of the Media and Technology Usage and Attitude Scale (Rosen et al., 2013). Participants also reported their mobile phone usage time using the screen time tracking feature available in their smartphones. Results of correlational analysis indicated that FoMO and screen time are positively associated with procrastination. Mediational analysis revealed that screen time mediates the relationship between FoMO and procrastination. It is concluded that FoMO increases screen time which consequently exacerbates procrastination. Findings suggest that interventions aimed at fostering mindful screen time management could offer effective strategies for minimizing procrastination tendencies.

INTRODUCTION

The modern world is studded with temptations including an abundance of television channels, video games, and the internet owing to significant technological innovations. Our concentration is diverted from the most important activities at hand by social media, mobile devices, notifications, and text messages. The abundance of knowledge leads to a wealth of time-consuming minor tasks and activities that serve no useful purpose. It is therefore more vital than ever to address issues like why individuals prefer to watch cat videos online or why students prefer to use their cellphones instead of completing their essential tasks.

University students have been recognized as the most frequent users of screen devices, engrossing themselves in a digital environment that offers both academic resources and diverse avenues of social connectivity (Butt et al., 2023). However, the paradigm shift toward remote schooling necessitated by the global disruption caused by the COVID-19 pandemic posed an entirely novel set of challenges. Since online synchronous education necessitates internet access, students keep the synchronous session open while participating in extracurricular activities such as watching movies for enjoyment or checking social media to stay updated (Aldhafeeri & Alotaibi, 2022; Zakaria et al., 2021). This diversion is especially fueled among students who worry about missing out on events and resort to various media and technologies to satisfy their need to stay connected. As a result, the need to stay updated and the

*Corresponding author:

Irum Aslam, MPhiL Scholar, National Institute of Psychology, Quaid-i-Azam University, Islamabad
e-mail: erumaslam12311@gmail.com

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consequent increase in social media and smartphone use time might cause the most important tasks to be put off. The present study therefore proposed a conceptual model to examine whether screen time mediates the relationship between procrastination and FoMO among university students.

Procrastination

Procrastination, which poses serious challenges for both individuals and societies, is very common. It has been defined as the purposeful delay of a planned, necessary, and/or personally important task regardless of the likelihood that unfavorable outcomes may outweigh any potential benefits (Pham & Duff, 2022). Literature suggests that choosing to delay despite intention shows a serious breakdown in self-control/regulation (Clinton et al., 2022). This breakdown happens more frequently when people encounter an undesirable task (i.e., one that is unpleasant, dull, without sense or structure, etc.), which causes negative feelings or a low mood (Sonnentag et al., 2019).

Procrastination is not a new phenomenon, and people have been struggling with this dilatory behavior for a long time (Mao et al., 2022). However, recent technological advancements that enable virtually unlimited internet access may have made procrastination more prevalent, especially among university students who own personal gadgets (Lim & Tan, 2022). Receiving notifications while working may divert attention, which might result in checking and subsequent procrastination, especially in persons with weak self-control (Sirois, 2023). Therefore, a distracting notification could be regarded as an external factor that fosters and promotes procrastination. Additionally, social networking sites encourage procrastination in various circumstances, such as when users reply to messages soon away out of a sense of FoMO (Anto et al., 2023).

Fear of Missing Out (FoMO)

FoMO refers to a persistent worry that others might be having enjoyable experiences while one is not around (Przybylski et al., 2013), and this fear is typically manifested as an intense desire to stay updated with what others are doing. It has frequently been thought of as a type of anxiety-related psychopathology (Elhai et al., 2020) that stems from deficiencies in psychosocial needs including the need to belong (Berezan et al., 2020; Roberts & David, 2020).

In this regard, a general fear of missing out on something could be viewed as a dispositional characteristic (i.e., trait FoMO). However, social media's constant accessibility through mobile devices has greatly expanded the opportunities for engaging, sharing, and taking advantage of positive interactions with acquaintances. Therefore, a specific component of FoMO, known as state-FoMO, which is less stable and develops in the context of Internet communication, may potentially be induced or exacerbated worse by frequent usage of Internet communication applications. In particular, state-FoMO specifically refers to the fear of missing out on other users' online activities (Gupta & Shrivastava, 2022). Studies show that FoMO predicts smartphone addiction (Xiao et al., 2023), and increased social media engagement (Pang et al., 2023).

Screen Time as a Mediator

Screen time is defined as the usage or viewing of any screen-based technology, such as television, computers, and mobile devices including smartphones and tablets (Bani-Issa et al., 2023). A substantial body of prior research has demonstrated a link between problematic smartphone use and screen time (Brodersen et al., 2022; Pardhan et al., 2022).

The inclination towards screen devices has significantly increased, particularly after the emergence of the COVID-19 pandemic (Orlowski et al., 2022). Even though studies have focused on the positive and negative consequences associated with regulated and unregulated usage of screen devices (Bozzola et al., 2022; Chaput et al., 2023; Li et al., 2022), literature is relatively silent about the psychological mechanisms driving the excessive usage of screen devices, and consequently, augmented screen time. At the same time, the possible impact of screen time on the tendency to delay important tasks has rarely been a subject of research.

Given that the construct of FoMO thrives in the digital sphere, particularly concerning the usage of Social Networking Sites (SNSs), which are regarded as preferred avenues for maintaining social connections (Huang & Lin, 2019), it is reasonable to assume that FoMO will lead to an increase in screen time. Literature also suggests that social media usage and smartphone usage trigger procrastination (Albursan et al., 2022; Ma et al., 2022; Mao et al., 2022). Based on the aforementioned explanation, the present study assumes that screen time mediates the relationship between FoMO and procrastination.

Theoretical Background of the Study

We conceptualized study variables in the light of Self-determination Theory (SDT; Dei & Ryan, 1985). The core idea behind SDT is the contribution of fundamental psychological needs to wellbeing and self-determined motivation. It further contends that people may become dominated, fragmented, and alienated resulting in the emergence of destructive behaviors if basic psychological demands for autonomy, competence, and relatedness are undermined by an unfavorable social environment.

As per SDT, FoMO is an indication of need unfulfillment in relatedness, which is one of the three fundamental psychological needs (e.g., Aljasri, 2021; Zhang et al., 2020). Higher levels of FoMO, experienced by individuals with higher unmet need for relatedness, encourage people to seek out more social connections. Due to the maladaptive self-regulatory behaviors employed to satisfy this need (such as using social media), FoMO, as a manifestation of unmet need for relatedness, contributes to poor health outcomes (Costanzo et al., 2021). The social media usage (signifying increase screen time) driven by FoMO could impact the satisfaction of psychological needs. As a compensatory motive for unfulfilled needs, individuals engage in procrastination behavior as a survival/self-protection strategy. Therefore, screen time is proposed to mediate the association between FoMO and procrastination in the conceptual framework of the current investigation, as

shown in Figure 1.

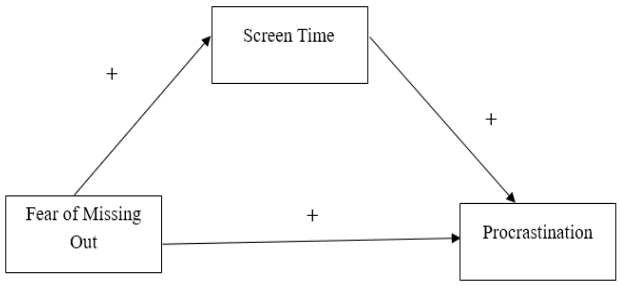

Fig. 1. Conceptual Framework of the Study

Rationale of the Study

Procrastination, which significantly troubles individuals and societies, is exceedingly regular and many individuals exercise it regularly (Suh et al., 2022). A comprehensive review of the literature reveals that procrastination is thoroughly investigated in in relation to personality (Foroozandeh & Kadkhodaei, 2022; Zulhajmi & Rafiq, 2022), academia-related constructs (Ghufron & Suminto, 2022; Niazov et al., 2022), and task characteristics (Hope et al., 2018; Vangness & Young, 2020). Nevertheless, it is also crucial to investigate the impact of contemporary behaviors, such as increased screen time and social media involvement, on procrastination, as new avenues for procrastination have emerged with the emergence of modern forms of technology.

The coronavirus pandemic has primarily affected all spheres of life, and the isolation brought about by the proliferation of COVID-19 posed severe crises, including numerous detrimental impacts on physical and mental health (Peixoto et al., 2022; Shah et al., 2022). During the lockdown period, one of the novel problematic behaviors that stemmed from the limited outdoor movement, particularly for university students, is increased screen time. Since the pandemic, the utilization of social networking applications such as Facebook and Twitter to stay updated with latest news, and connected with friends and families has become increasingly common. Social media exposes people to a multitude of information about what other people are up to as well as possibly enjoyable events (both online and offline) that they could be missing. Despite the growing recognition of the surge in screen time, the underlying reasons for the increase in screen time among young people remain unclear. FoMO may be one of the factors triggering screen time. People who experience FoMO use social media to continually stay in touch and satisfy their need to belong. Prior research has documented the positive association of FoMO with social media (Alutaybi et al., 2020; Hunt et al., 2018), and smartphone usage (Akbari et al., 2021; Al-Furaih & Al- Awidi, 2021), but predictive role of FoMO in screen time has rarely been a subject of research. The present research, in an attempt to explain the reason behind excessive screen time among university students, conceptualizes FoMO as its positive predictor.

Pakistan embodies in-group dynamics, a sense of belonging, the pursuit of validation, and social comparison due to its ties with an Asian collectivistic culture. Individuals typically have large social networks that they feel compelled to maintain contact with. However, such a level of connectedness can trigger the anxiety of missing reward experience. FoMO can have a detrimental impact on an individual's productivity as the anxiety of missing rewarding experiences can distract individuals from their targeted goals, but empirical research is relatively silent about this relationship. The present study attempts to examine the mediating effect of screen time on the association between FoMO and procrastination.

METHODOLOGY

Drawing upon the conceptual and empirical evidences, the present study examined the mediating effect of screen time on the association between FoMO and procrastination among university students. Following hypotheses were proposed based upon literature; H1) FoMO is positively associated with screen time and procrastination. H2) Screen time is positively associated with procrastination. H3) Screen time mediates the relationship between FoMO and procrastination.

Study Design

A cross-sectional research design and quantitative approach was used. Using purposive sampling technique, self-reported questionnaires were administered on the participants to assess FoMO, screen time, and procrastination.

Procedure

We recruited 400 university students enrolled in public and private sector universities in Rawalpindi and Islamabad selected through purposive sampling technique. Students who used screen devices for more than three hours per day and had a screen time tracking feature in their phone were included in the study after they showed consent to participate.

Participants

Our sample included more female students (n = 260, 65%) than males (n = 140, 35%). The mean age was 22.07 years (SD = 2.52) whereas the average monthly family income (measured in thousands) was 148.25 (SD = 241.07). The percentage of students enrolled in Bachelors and Master program was 75.5% and 25.5% respectively while the highest percentage of students were from social sciences discipline (59.1%) followed by biological (27.3%) and natural sciences (13.1%). Most of the participants were day scholars (67.7%) and lived in nuclear family systems (74.1%). Majority of the participants used multiple devices for work/education/entertainment purposes (84.7%). More than half participants used screen devices for the purpose of social networking (n = 276) while WhatsApp (n = 283) and Instagram (n = 249) were the most frequently used social networks.

Measures

Demographics Characteristics

Information regarding age, gender, program and discipline of study, residence, family system, number of devices used for work/education/entertainment purpose, motto behind the usage of screen devices, and the most frequently used social networking site was obtained.

The FoMO Scale

The 12-item FoMO scale was used to measure FoMO (Wegmann et al., 2017). The responses are graded on a 5-point scale ranging from 1 = Totally disagree to 5 = Totally agree. The overall score on the scale varies from 12 to 60, with the higher values indicating a greater degree of alarm about missing out. In our sample, scale was also found to be reliable (α = .84).

Screen Time

Screen time was assessed in a subjective and objective manner. The details about each assessment are given below.

The Media and Technology Usage and Attitudes Scale

For the subjective assessment of screen time, 10 usage dimensions of the Media and Technology Usage and Attitudes Scale (Rosen et al., 2013) covering 42 items were used. The dimensions include smartphone usage, general social media usage, internet searching, emailing, media sharing, text messaging, video gaming, Facebook friendships, phone calling, and television viewing. The items 1-40 are arranged on a 10-point frequency scale ranging from 1(= Never) to 10 (= All the time). High score on each subscale indicates more usage of that media or technology. Item 41-42 are arranged on a 9-point scale that is 0 (1), 1–50 (2), 51–100 (3), 101-175 (4), 176–250 (5), 251–375 (6), 376–500 (7), 501–750 (8), 751 or more (9), with a high score indicating more Facebook friendships. In present study, the composite score was used with high score indicating high usage of media and technology. In our sample, the internal consistency of the overall scale was .92.

Mobile Phone Usage Time

To measurer screen time in an objective manner and validate the subjectively assessed screen time, mobile phone usage time was used. Participants were given explicit instruction to use the screen time tracking feature in their phones to report the daily average, weekly summary, and social networking screen time.

The General Procrastination Scale (GPS)

Procrastination was measured using Lay's General Procrastination Scale (GPS; Lay, 1986), a 20-item measure that evaluates general, trait-like tendencies towards procrastination across a range of tasks. All items are required to be rated on a 5-point Likert scale ranging from 1 = Extremely uncharacteristic to 5 = Extremely characteristic. The possible score range of the scale is 20-100. After reverse scoring 10 items (i.e., 3, 4, 6, 8, 11 13, 14, 15, 18, and 20), a composite score is obtained with high scores indicating higher procrastination. In the current study, the internal consistency of the scale was .70.

RESULTS

Statistical Analysis

Data were analyzed through SPSS-26 using descriptive and inferential statistics. To find out the internal consistency of measures used in the present study, the alpha reliability coefficients were computed. The relationships among study variables were established through Pearson Product bivariate analysis. Lastly, the proposed mediation paths were tested using Process Macro (Model 4) (Hayes, 2013).

Descriptive Statistics and Correlation Analysis

Table 1 presents descriptive statistics including the mean, standard deviation, and correlation between the study variables. Overall, the findings support theoretical predictions that indicate a positive correlation between procrastination and both objective and subjective screen time measures, as well as FoMO. Furthermore, there is a positive correlation between procrastination and both objective and subjective measures of screen time.

Table 1

Descriptive Statistics and Correlation Among Study Variables (N = 400)

	Variable	k	α	1	2	3	4	5	6
1	FoMO	12	.84	-	.52**	.18**	.42**	.22**	.41**
2	MTU	42	.92		-	.17**	.37**	.22**	.39**
3	ST-Daily Average	-	-			-	.33**	.19**	.13*
4	ST-Weekly Summary	-	-				-	.60**	.37**
5	ST-Social Networking	-	-					-	.37**
6	Procrastination	20	.70						-
	M				219.90	5.03	11.83	5.09	50.7
	SD				51.91	2.56	8.81	5.57	7.49

Note. k = No. of items; α = Cronbach's Alpha; MTU = Media and Technology Usage; ST = Screen time, *p < 0.05, ** p < 0.01.

Mediation Analysis

The indirect effect of screen time on the association between procrastination and FOMO was examined using the SPSS Macro PROCESS (Model 4) (Hayes, 2013). FoMO was taken as independent variable. The mediating effect of both subjective and objective measures of screen time including media and technology usage scale, daily average, weekly summary of screen time, and social networking screen time were tested in a parallel meditational model.

Figure 2 shows that the direct and total effect of fear of missing out on procrastination is significantly positive. Moreover, the indirect effect of FoMO on procrastination through media and technology usage and social networking screen time is significant, while the indirect effect through

daily average and weekly summary of screen time is nonsignifcant suggesting that only media and technology usage and social networking screen time mediate the relationship between FoMO and procrastination.

Table 2

Mediating Effect of Screen Time for the Relationship Between FoMO and Procrastination (N = 400)

	Procrastination			
Variable	**Without Mediators**	**With Mediators**	**95% CI**	
	B	B	LL	UL
Constant	34.29	32.80**	27.49	38.12
Fear of Missing Out	.56**	.39**	.22	.56
Media and Technology Usage		.05**	.03	.08
Screen Time- Daily Average		-.06	-.51	.39
Screen Time- Weekly Summary		-.02	-.17	.13
Screen Time- Social Networking		.39**	.13	.65
R^2	.23	.55		
F	54.13	15.98		

*p<.05, **p<.01

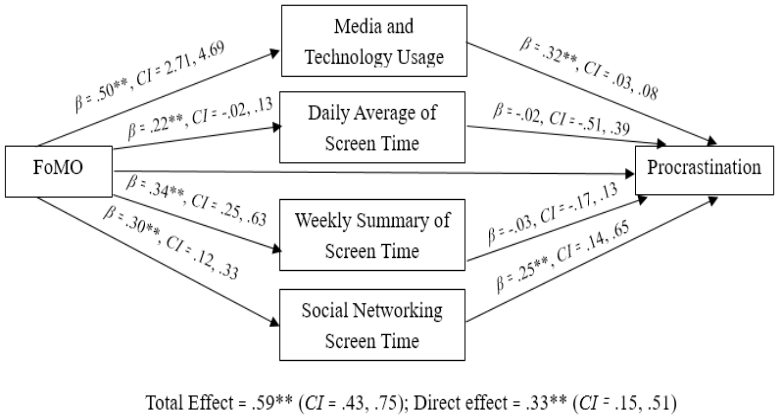

Fig. 2. Mediating Effect of Screen Time for the Relationship between Fear of Missing Out and Procrastination (N = 400)

Discussion

The current study examined the mediating effect of screen time on the relationship between FoMO and procrastination among university students. Findings show that procrastination is positively associated with screen time. Results presented in Table 1 provide substantial support for the hypothesis 1 showing that procrastination increases with the increase in FoMO. FoMO is conceptualized as an outward-focused attention and a pervasive apprehension (Wang et al., 2019). These characteristics make it difficult to focus on the intended work, which increases procrastination. Muller and colleagues (2020) reported that FoMO is positively associated with procrastination. As FoMO is particularly important in the context of missing out on something that occurs online, findings suggest that the tendency to procrastinate is especially high in cases where specific fears and intentions to find/to not miss a potentially better alternative for online social experiences are high.

Moreover, subjective and objective measures of screen time including media and technology usage, daily average of screen time, its weekly summary, and social networking screen time were found to be positively associated with procrastination thus confirming Hypothesis 1 (screen time is positively associated with procrastination). Technology's over-stimulation leads to the underutilization of cognitive abilities (Kosal, 2020). Empirical literature focusing on the association between academic procrastination and various forms of media and technology usage demonstrates that as the daily Internet access time increases, the tendency to exhibit academic procrastination also increases (Godinez & Lomibao, 2022; Narci, 2022).

Hypothesis 2 posited that FoMO is positively associated with screen time. Results are consistent with the hypothesis demonstrate that trait and state-FoMO are positively associated with objectively and subjectively measured screen time. Empirical studies show that FoMO is positively associated with time spent on social media (Hayran & Anik, 2021; Yin et al., 2020). Social media provides a convenient outlet for people who experience FOMO, allowing them to maintain constant contact with their peer group.

Importantly, the positive association between objective measures of screen time i.e., daily average, weekly summary and social networking screen time with self-reported media and technology usage suggesting that participants' self-reported screen time patterns and the actual amount of time they spend using their phones coincide. Moreover, the convergence of findings across both measures i.e., the media and technology scale and the objectively measured

cell phone usage time provides evidence in favor of the validity and reliability of participants' self-reported media and technology use as an approximation for screen time behaviors.

The mediation analysis showed that social networking screen time and media and technology usage mediate the effect of trait and state-FoMO on procrastination. The results are consistent with the proposed hypothesis. Moreover, empirical studies also lend indirect support for the results. In a study conducted by Elhai and colleagues (2017), it was found that FoMO is related to social smartphone usage and increased smartphone use frequency. The finding is in line with self-determination theory (Deci & Ryan, 1985) in proposing that the unmet social relatedness needs accompanying FoMO drive social engagement, and cause individuals to check their phone increasingly and habitually for social-related notifications. Similarly, some studies support the notion that problematic social media usage (Arness & Ollis, 2022; Serrano et al., 2022) and excessive smartphone usage (Cui et al., 2022; Malla, 2021) predict procrastination. The features of social media and smartphones are highly distracting and keep individuals away from accomplishing their tasks (Faber et al., 2022). Therefore, the aforementioned evidence and explanations provide support for the proposed hypothesis i.e., screen time mediates the relationship between FoMO and procrastination.

CONCLUSIONS

The present study provides evidence for the effect of contemporary behaviors such as FoMO on procrastination. Findings suggest that screen acts as a mediator variable in the association between FoMO and procrastination. Therefore, results emphasize the need for interventions targeting screen time management to reduce procrastination among university students.

Although findings of the study are based on the empirical derivations; however, there are few potential weaknesses. any causal findings are precluded by the cross-sectional research design used in the study. Future research examining the causal connections between screen usage, procrastination, and FOMO may include a longitudinal design. Secondly, besides mobile phone usage time, Self-reported measures were utilized to evaluate study variables, which are susceptible to biases and might not precisely mirror participants' real behaviors. Future studies should use more subjective assessments to improve the accuracy of responses.

Conflict of Interests

The authors has declared that no competing interests exist.

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