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The Impact of Technoference on Stress Among Young Adults: The Mediating Role of Procrastination

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ABSTRACT

The objective of the current research work is to assess the influence of technoference frequent interruptions caused by digital devices on stress among young adult academics and investigation of the mediating role of procrastination. Digital devices have historically altered the context of human understanding and pursuit through their multi-dimensional connectivity around-the-clock. In such a contemporary world, knowing how digital distractions influence psychological well-being has become very important. The sample consisted of university students, who assessed through standardized self-report measures for technoference, procrastination, and perceived stress. Analysis showed that both technoference and procrastination predicted the presence of stress; however, procrastination emerged as a strong predictor of stress. Procrastination also served as a mediator along the path between technoference and stress. The implications derived from this study relate to addressing behavioral patterns based on digital technology use as well as interventions aimed at reducing procrastination effects to ease stress. Read further to find some practical implications of research for educational institutions and mental health practitioners in enhancing student well-being in digitally saturated environments.

Keywords: *Technoference, Stress, Procrastination, Young Adults, Digital Distraction*

INTRODUCTION

Technoference

In essence, technoference describes the everyday interruptions that annoy one or the other in his or her interpersonal or intrapersonal functioning. This problem has become widespread, especially among adolescents who tend to engage more with smartphones and social media (McDaniel & Coyne, 2016; Brown et al., 2022; Jiang & Zhao, 2021). This term essentially embodies all the small yet constant distractions that prevent individuals from maintaining focus or meaningful engagement in tasks or conversations. And while these distractions seem trivial, they exert an increasing effect on one's psyche.

The gesture of using smartphones alongside different activities has sustained an atmosphere in which digital multitasking and rapid toggling between platforms are considered acceptable. Any research found digital multitasking to lead to reduced cognitive performance, increased distractibility, and enhanced psychological fatigue (Duke & Montag, 2023; Lepp et al., 2022; Thomée, 2018). Young adults are especially at risk in this regard because they spend excessive screen time while depending on technology for academic, social, and emotional needs.

Technorference does not end with the loss of productivity but extends to the emotional regulation and stress-response systems. In studies, frequent interruptions from technology decreased heart rate variability along with increased heart rates and cortisol levels, indicators of such physiological stress response (Roberts & David, 2020; Wang et al., 2021; Przybylski & Weinstein, 2019). This additional stress induction through technology overloads the nervous system and hinders effective coping with stress.

Such interference, in fact, hampers the quality of personal relationships, making it likely that neglect and frustration increase-&-emotional imbalance will be worsened with relationship dissatisfaction. About the consideration of emotional effects, nearly all reported consider this deterioration a critical dimension of emotional strain, especially in very close relationships (Kushlev et al., 2020; Hall et al., 2021; Sbarra et al., 2019). Such emotional reactions tend to accumulate, magnifying these feelings of stress, culminating in significant techno-reference psychological stress.

Digital over-consumption is nowadays regarded as a barrier to mindfulness and present-moment awareness. Attention span has become so broken that it creates a hindrance to restorative or meaningful activities, even increasing stress (Adams with others, 2021; Reinecke and others, 2018; van Deursen and others, 2015). Therefore, the psychological cost of technoference necessitates further examination into its indirect effects, such as behavioral defects like procrastination.

Procrastination

Procrastination is defined as voluntary delay of the important tasks whose non-completion has a serious consequence. It is mostly noted in youngsters (Steel, 2007; Svartdal et al., 2020; Schraw et al., 2007). Procrastination was generally associated with low self-regulation and poor time management, coupled with high psychological distress. It can be even triggered by increasing digital interference.

Instantly, gratifying digital environments (social and streaming sites) become further barriers to reaching one's long-term goals, enhancing procrastination acts (Meier et al., 2022; Pychyl & Flett, 2012; Reinecke & Hofmann, 2016). Often, young adults are not able to resist their online temptations, especially when trying to use their devices for academic study purposes. This duality of use creates this gray area that encourages procrastination.

In terms of emotional states, procrastination was accompanied by numerous negative emotions, for example, anxiety, guilt, low self-esteem, which by further reducing motivation increase stress levels (Sirois, 2014; Eckert et al., 2022; Tice & Baumeister, 1997). In most occasions, the negative effects of procrastination became chronic stress, most being the accompanying effects of failing to achieve behavioral goals in the academic or personal area. Thus, this creates a cycle of stress and avoidance.

Research on procrastination shows that it is not simply a time-management issue; rather, it is equally considered a self-regulatory failure that also involves emotional coping (Grunschel et al., 2016; Svartdal et al., 2020; Geng, 2011). Individuals often defer unpleasant tasks to escape annoying emotions or stressors, some of which are caused by technoference. This coping strategy relieves stress in the short term but unnecessarily compounds it in the long run.

Also, technoference can exacerbate procrastination by offering distraction and keeping one away from the tasks at hand. Notifications, alerts, and scrolling through feeds increase distraction from sustained attention, thereby ramping up the ease of procrastination (Rosen et al., 2021; Hong et al., 2022; Gazzaley & Rosen, 2016). This study, therefore, aims to examine the highlighted mediation of procrastination in the relationship between technoference and stress.

Perceived Stress

Stress in young adults, particularly among university students, has increasingly become a popular concern in modern society regarding academic pressures, social comparisons, and digital stress (American College Health Association, 2023; Beiter et al., 2015; Liitzelman et al., 2022). This makes it a difficult emotional state to define as it usually takes on the form of feelings, such as overwhelm, anxiety, or physiological arousal, that interfere with functioning in everyday life. Understanding the psychological basis is critical for effective mental health interventions.

Digital stress is quite a newer area because constant exposure to connection and social media tends to increase pressure as clinical contribution to stress (Reinecke et al., 2022; Brooks & Longstreet, 2015; Elhai et al., 2017). Young adults feel this pressure: the pressure to be up-to-date and fairly speedily respond to messages and present an ideal self-image online-a rather draining mental exercise. They have to meet the demands of their academics or social lives, so these added demands make overload even greater stress-wise.

In addition, academic stress becomes even worse with the presence of procrastination behavior. Students who procrastinate mainly due to the availability of digital distractions often face anxiety related to their performance, low academic self-efficacy, and insufficient achievement (Zhang et al., 2022; Kim & Seo, 2015; Steel, 2007). High levels of procrastination among students usually come with high odds of experiencing chronic indications of stress.

From the point of view of psychological stress, it connects with different maladaptive behaviors and cognitive distortions like negative self-talk, catastrophizing, and avoidance (Lazarus & Folkman, 1984; Carver & Connor-Smith, 2010; Snyder et al., 2016). Such patterns are likely aggravated with the presence of both internal failures, such as procrastination, as well as external demands, such as technorference. This would further compound the overall psychological burden through the interaction of such variables.

Most young adults today, however, do not have any skills to cope with the seemingly overwhelming pressure of technoference and procrastination. Subjecting them to the absence of any form of activity or awareness would bring these stressors to severe psychological situations involving depression, burnout, and academic disengagement (Misra & McKean, 2000; Liu et al., 2023; Shih et al., 2022). Therefore, looking at stress as in the outcome variable territorializes a broader understanding of the implications of digital behavior patterns.

LITERATURE REVIEW

Technoference is becoming the growing concern in psychological and behavioral research, regarding its wide-ranging effects on the daily life performance of young adults. Technoference interrupts face-to-face interaction as a result of digital device usage and has, therefore, been linked with psychological disturbances including distractibility, poor communication, and mental fatigue (McDaniel & Coyne, 2016; Duke & Montag, 2023; Brown et al., 2022). Since young adults are amongst the highest consumers of smartphones and digital platforms, they might be especially affected by the detrimental effects of such incessant digital distractions. Multiple notifications and constant media interruptions seem to shatter their focus, diminish task completion, induce stress, and create tension in emotional regulation (Jiang & Zhao, 2021; Reinecke et al., 2018; Wang et al., 2021).

Stress-strain and technoference association have been extensively documented within recent literature. Constant digital demands lead to fatigue, both physical and emotional, as individuals feel pressured to maintain social presence, respond to messages with due speed, and juggle multiple online selves (Roberts & David, 2020; Kushlev et al., 2020; Elhai et al., 2017). Such unrelenting digital pressure triggers burnout, decreases attention span, and escalates stress; more so, it becomes a hindrance when this digital

engagement infiltrates into time designated for relaxing, socializing, or school. Relatedly, technoference has been correlated with diminished mindfulness and reduced relationship satisfaction, both of which are considered protective factors against chronic stress (Adams et al., 2021; Hall et al., 2021; Sbarra et al., 2019). Therefore, this points to the fact that these digital interruptions act not just as behavioral distractors but actually quite significantly as stressors that modulate one's emotional and cognitive well-being.

Procrastination is regarded as a key behavioral consequence of technoference and a salient predictor of stress. Digital content provides instant gratification, which positively reinforces avoidance behavior, thus making it easier for an individual to put off things that he or she must do (Meier et al., 2022; Reinecke & Hofmann, 2016; Hong et al., 2022). If digital technologies were more convenient and pleasurable, then one can easily see their use as a distraction to avert attention from tasks set out to accomplish-on-time scheduling or worse-procrastination. Young adults such as students encounter these temptations amidst sometimes highly stressful academic tasks, leading to feelings of guilt and anxiety and a decline in their self-esteem as students (Sirois, 2014; Eckert et al., 2022; Steel, 2007). Procrastination thus emerges as an avoidant strategy in the face of technrference that increases strain and lowers academic achievement.

This conceptualization of procrastination functioning as an intervening variable explains the relationship between technoference and stress based on the theory of self-regulation failure. Many people have a hard time keeping track of their time and attention due to digital interruptions, and when faced with procrastination, are engaged in emotional setting, which ends up burdening them with stress as deadlines approach, or when they are unable to complete tasks (Svartdal et al., 2020; Geng, 2011; Tice & Baumeister, 1997). Evidence exists in support of the claim that procrastination partially mediates the relationship between technoference-based interruptions and stress; for example, students who undertake distracting digital multitasking more frequently experience behavioral delay and emotional smothering (Schraw et al., 2007; Zhang et al., 2022; Grunschel et al., 2016). Hence, it is essential to examine procrastination as a potential psychological process connecting this additional factor of technological disruption to increased stress.

In general, the existing body of literature supports a conceptual framework that explains how technostress contributes to the experience of stress through the procrastinatory behavioral pathway. Technological interruptions diminish attention and emotional regulation, thereby increasing the likelihood of procrastination, which, in turn, elevates stress (Duke & Montag, 2023; Liu et al., 2023; Misra & McKean, 2000). Although earlier studies examined these variables separately, these interactions have not formed the subject of one single study, especially among young adults who are confronted with mounting studies and digital overload. An exploration of this mediation pathway will thus augment our knowledge concerning technological behavior patterns and inform interventions toward better time management, digital mindfulness, and stress management strategies for emerging adults (Pychyl & Flett, 2012; Kim & Seo, 2015; Lazarus & Folkman, 1984).

RESEARCH METHODOLOGY

Objectives

1. To examine the relationship between technoference and procrastination among young adults.

2. To investigate the impact of technoference on stress among young adults

3. To explore the association between procrastination and stress.

4. To test the mediating role of procrastination in the relationship between technoference and stress.

Hypotheses

1. H1: Technoference significantly predicts stress among young adults.

2. H2: Technoference significantly predicts procrastination among young adults.

3. H3: Procrastination significantly predicts stress among young adults.

4. H4: Procrastination mediates the relationship between technoference and stress among young adults.

INSTRUMENTS

Technoference Scale

The Technology Interference in Life Examples Scale (TILES) developed by McDaniel and Coyne (2016) was used to measure technoference. The scale aims to assess the extent to which technology disrupts everyday interpersonal interactions and activities. The scale consists of 9 items and follows a 5-point Likert scale ranging from 1 (Never) to 5 (Very Often). It includes items related to phone use during conversations, meals, and leisure activities. There are no subscales and no reverse-coded items. The internal consistency of the scale is acceptable with a Cronbach's alpha of 0.85 (McDaniel & Coyne, 2016). The scale has shown good construct validity in previous studies, correlating significantly with psychological distress and relationship dissatisfaction.

General Procrastination Scale

To assess procrastination, the General Procrastination Scale (GPS) by Lay (1986) was used. This instrument aims to measure the general tendency of individuals to delay or postpone tasks. The scale comprises 20 items rated on a 5-point Likert scale ranging from 1 (*Extremely uncharacteristic) to 5 (Extremely characteristic). The scale contains no subscales, but includes 5 reverse-coded items (e.g., items 1, 6, 11, 16, and 20). The scale has demonstrated excellent reliability with a Cronbach's alpha of 0.82 to 0.87 across various populations (Ferrari et al., 1995). It has also shown strong predictive and discriminant validity, particularly among student samples.

Perceived Stress

Stress levels were measured using the Perceived Stress Scale (PSS-10) developed by Cohen, Kamarck, and Mermelstein (1983). This 10-item scale evaluates the degree to which individuals perceive their lives as stressful. Responses are rated on a 5-point Likert scale from 0 (Never) to 4 (Very Often). The scale includes two subscales: Perceived Helplessness (6 items) and Perceived Self-Efficacy (4 items). There are 4 reverse-coded items (Items 4, 5, 7, and 8). The PSS-10 has demonstrated high internal consistency (α = 0.78–0.91) and strong construct validity, being widely used in health and psychological research (Lee, 2012). It is suitable for use with general and clinical populations.

RESULTS

Table 1

Descriptive Characteristics of the Study Sample (N=300*)*

Sample Data		n	%
Age			
	18-27	145	48.33
	28-36	155	51.66

Gender			
	Women	180	60
	Men	120	40
Family system			
	Nuclear	155	51.66
	Joint	145	48.33
Residency			
	Urban	170	56.66
	Rural	130	43.33

The sample consisted of 300 participants. The age distribution showed that 48.33% (n = 145) were between 18 and 27 years old, while 51.66% (n = 155) fell within the 28 to 36 years age range. In terms of gender, the majority were women, comprising 60% (n = 180) of the sample, whereas men made up 40% (n = 120).Regarding family structure, 51.66% (n = 155) reported living in a nuclear family system, and 48.33% (n = 145) belonged to joint families. As for the area of residence, 56.66% (n = 170) were from urban settings, while 43.33% (n = 130) resided in rural areas.

Table 2

Descriptive properties of all the scales (N=300)

Scales	k	α	M	SD	Range		Skew	Kurt
					Actual	Potential		
TILES	9	.81	21.24	5.26	8-26	9-45	.62	.73
GPS	20	.84	14.98	6.02	17-92	20-80	.48	.56
PSS	10	.83	16.75	6503	12-54	10-40	.81	.96

Note. GPS=General Procrastination Scale, PSS= Perceived Stress Scale, TILES= Techno Interference in Life Examples Scale

The descriptive statistics of the study variables indicated that all scales demonstrated good reliability. The mean and standard deviation values reflected the central tendency and variability in responses. The actual scores fell within the expected range, indicating appropriate response patterns. Skewness and kurtosis values suggested that the data were approximately normally distributed, making them suitable for further analysis.

Table 3

Correlation Matrix between Study Variables (N=300)

Variables

		1	2	3
1.	TILES	-		
2.	GPS	.67 **	-	
3.	PSS	.45 **	.52 **	-

Note. GPS=General Procrastination Scale, PSS= Perceived Stress Scale, TILES= Techno Interference in Life Examples Scale

The correlation analysis revealed significant positive relationships among all key variables. Techno-interference in daily life showed a strong positive correlation with general procrastination and a moderate positive correlation with perceived stress. Similarly, general procrastination was moderately and positively associated with perceived stress. These findings suggest that increased technology-related interference may contribute to higher levels of procrastination and stress.

Table 4

Regression Coefficients of Independent Variables on Dependent Variable (Perceived Stress)

Variables	**B**	**SE**	**t**	**p**	**95% CL**
Constant	22.76	10.51	31.71	.00	21.56– 32.56
TILES	6.41	3.4	7.85	.00	6.1 – 8.56
GPS	4.32	1.2	8.76	.00	4.1- 8.24

Note. GPS=General Procrastination Scale, PSS= Perceived Stress Scale, TILES= Techno Interference in Life Examples Scale

A multiple regression analysis was conducted to examine the predictive role of techno-interference and procrastination on perceived stress. The results indicated that both independent variables significantly predicted perceived stress. Techno-interference emerged as a significant positive predictor, suggesting that greater technological disruption in daily life is associated with higher levels of stress. Similarly, procrastination also showed a significant positive relationship with stress, indicating that individuals who tend to procrastinate more are likely to experience increased stress levels. These findings highlight the combined impact of digital distractions and behavioral tendencies on psychological well-being.

Table 5

Mediating role of Procrastination between Techno Ference and Perceived Stress (N=300)

Variables	R^2	*B*	*SE*	*t*	*95% CI* *LL*	*UL*
Total effect	.42	.41***	.09	22.65	.40	.69

TILES--PSS(c)						
Direct effect						
TILES--GPS (a)		.32***	.08	26.82	.31	.64
GPS--PSS (b)		.63***	.05	14.21	.34	.74
TILES--PSS (c′)		.31***	.07	5.41	.29	.68
Indirect effect						
TILES—GPS--PSS	.63	.28***	.06		.21	.43

Note. GPS=General Procrastination Scale, PSS= Perceived Stress Scale, TILES= Techno Interference in Life Examples Scale

*p< .01**; p< .001***

A mediation analysis was conducted to examine whether procrastination mediates the relationship between techno-interference and perceived stress. The results showed a significant total effect of techno-interference on perceived stress. When procrastination was included as a mediator, the direct effect of techno-interference on stress remained significant but was reduced, indicating partial mediation. The indirect path through procrastination was also statistically significant, suggesting that techno-interference contributes to increased stress both directly and indirectly via heightened levels of procrastination. These findings support the mediating role of procrastination in the relationship between digital disruptions and stress.

DISCUSSION

This research paper surveyed the emerging issue of technoference-against interruptions experienced by individuals daily as a result of technology use and its psychological effects on young adults, particularly looking into the role of procrastination in mediating its relationship with stress. The results confirmed that the three scales TILES (McDaniel & Coyne, 2016), General Procrastination Scale (Lay, 1986), and the Perceived Stress Scale (Cohen et al., 1983) currently showed good to excellent internal reliability and were well-suited for research within the identified size of population. Such findings give credence to the ensuring reliability and applicability of these scales within the context of the present study.

Results proved that the first hypothesis holds. Thus, technoference predicts stress significantly among young adults. This corroborates the earlier study by Roberts and David (2020), who discovered that frequent smartphone interruptions were associated with heightened psychological stress and reduced emotional well-being. In the same manner, Wang et al. (2021) showed how continuous notifications and technological distractions increase emotional exhaustion and experienced stress. Elhai et al. (2017) carried out another study justifying that problematic use of mobile phones typified higher symptoms of stress and anxiety. Such finding reproduced itself, both in other previous literature and the current study, reasserting as not limited trivial cases, but the obstacles of daily life.

The third hypothesis, that technoference predicts procrastination, is likewise supported. Analogous results from the study of Reinecke and Hofmann (2016) were reflected in these findings; according to them, digital distractions lead to avoidance behavior and delay in the completion of tasks. Meier et al. (2022) further revealed that such overuse of smartphones makes one prone to procrastination due to their attachment to instant gratification and reduced ability to self-regulate. Hong et al. (2022) found that smartphone addiction relates directly to academic procrastination among university students. The present

study, therefore, extends these findings by indicating that technorference itself, in the absence of overt addiction, strongly predicts procrastination behavior.

Findings confirmed the significant positive effect of procrastination on stress, the third hypothesis. This is a well-established finding, with Sirois (2014) proposing that procrastination is more often associated with heightened stress, guilt, and anxiety. In line with this, Tice and Baumeister (1997) found that procrastinating students experienced higher stress and even impaired health. Moreover, Zhang et al. (2022) pointed out that procrastination leads to chronic academic stress and low well-being, with procrastinators facing stresses from executing tasks at the last minute. This study adds to these claims in suggesting that procrastination is not merely an act of violation against a behavior but strongly impedes psychological functioning.

The fourth and central hypothesis, which stated that procrastination mediates the relationship between technorference and stress, was also confirmed. Such findings resonate with the mediation model proposed by Grunschel et al. (2016), wherein procrastination served as the link between distractions and psychological strain. Pychyl and Flett (2012) maintained that failure to control oneself in resisting technological temptations yields to procrastination, thereby aggravating stress. In addition, Svartdal et al. (2020) contend that behavioral procrastination stems mainly from digital overload, creating a stress-avoidance cycle. The present findings further strengthen this line of reasoning by providing concrete evidence for the mediating effect of procrastination in this association among young adults.Overall, the study makes a significant contribution to the existing literature by providing a deep insight into the process through which daily digital interruptions translate to psychological stress in direct and indirect ways. The findings articulate the need for awareness-based intervention and digital hygiene mechanisms to reduce procrastination and effectively manage stress.

CONCLUSION

In the study, the authors investigated the relationship between technostress and stress among younger adults, with procrastination serving as a mediator. Findings suggested that interruptions caused by technology were a significant source of stress, both directly and indirectly, by a rise in procrastination. This study demonstrates that daily digital distractions take a psychological toll and that self-regulation behavior (such as procrastination) actually worsens one's stress levels. This research confirms all the hypotheses and provides literature precedents that deepen our understanding of technology-mediated behavior on the mental health and academic functioning of young adults.

LIMITATIONS AND RECOMMENDATIONS

In spite of these major contributions of the study, the research has some limitations. For instance, it is cross-sectional in design, thus precluding any conclusions on cause-effect relationships among the various variables. The data collection depended on self-report measures, which may include biases such as those associated with social desirability and inaccurate self-assessment. Furthermore, the sample used only university students, so the applicability of the findings to other populations, such as working adults and adolescents, would be limited. Longitudinal or experimental studies should be undertaken to facilitate causal investigations over time. Moreover, broadening the sample within gender or social strata and including qualitative methods could enrich insights further. Such interventions that foster digital mindfulness while reducing technoference and improving self-regulatory skills, such as time management and focus, would go a long way in stress mitigation and procrastination among young adult populations.

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