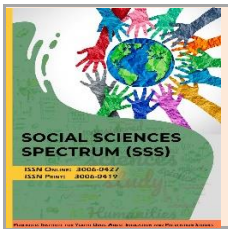

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Confidence in the Era of Distraction: The Influence of Media Multitasking on Self-Perception and Self-Efficacy among University Students

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Abstract

The current research analyzed the inter-relations among digital multitasking, self-perception, self-efficacy, and gender influence over these variables, among university students. Digital multitasking is the concurrent use of more than one digital media platform. Self-perception encompasses a person's understanding and judgment of his/her own characteristics, skills, and behavior, whereas, Self-efficacy is the perception of capability in executing and dealing with tasks or challenges successfully. A total of 106 undergraduate students filled out the Media Multitasking Frequency-Revised (MMT-R) scale, Rosenberg Self-Esteem Scale (adapted as a self-perception measure), and the General Self-Efficacy Scale (GSE). Moderate media multitasking and self-efficacy, and low self-perception were found. Digital multitasking predicted self-perception with a significant effect explaining 5% of the variance. Males showed higher self-perception compared to females, no gender differences in multitasking or self-efficacy were found. Implications for teaching strategies and psychological well-being are explored, as well as limitations in terms of sample, measurement, and study design.

Keywords: Inter-relations, Digital Multitasking, Self-perception, Media Platform, Strategies and Psychological.

Introduction

With the advent of the computer era, the world witnessed a revolution different from any other in the history of mankind. Media has become an inherent part of human beings, becoming a part of the daily run of life, and turning the entire world into a digital village. With the growth in technology, human behavior also changed, with people depending more and more on digital platforms to get information, communicate, and connect with the world. The prevalence of mobile phones, computers, and wireless internet has produced a hyper connected reality in which diverse sources of media are consumed simultaneously. Individuals nowadays process enormous flows of news from news organizations, blogs, sites, and social networks, enlarging their vision and understanding of social realities as well as taxing their capacity to deal with attention, cognitive burden, and emotional management.

The word multitasking, based on the Latin prefix multi meaning "many" and the English term task, was first used in 1965 to characterize the IBM System/360 computer's ability to execute several actions at the same time. The term has since come to be used to characterize the human activity of performing two or more tasks simultaneously. Media multitasking, in particular, is the synchronous consumption of various forms of media, both conventional (e.g., TV, radio) and digital media (e.g., smartphone, social media, online video). According to Bardhi, Rom, and Sultan (2010), media multitasking encompasses any behavior entailing simultaneous use of more than one source of media, frequently mixed with entertainment, communication, and productivity.

For socio-humanist scholars, media multitasking has become an interesting area of study for two main reasons. First, it is a characteristic behavior of modern society, particularly among young adults and students who are socialized in a world filled with digital technology. Second, its cognitive, psychological, and social consequences are complex and not well understood yet. Ophir, Nass, and Wagner (2009) discovered that frequent multitaskers are likely to have poor cognitive control, indicating that ongoing media use might decrease attention capacity, memory, and the capacity to screen out irrelevant information. Sherry Turkle (2011) mounts trenchant critiques of the possibly corrosive effect of digital technology on human interactions and identity construction. It is her argument that as digital tools become part of the self, they redefine the way people feel intimacy, solitude, and emotional validation. With this digital age, individuals find themselves going beyond mere communication and data gathering in cyber spaces to seeking affirmation and community affiliation. But this reliance on mediated interaction raises questions regarding authenticity, emotional disconnection, and the breakdown of face-to-face communication.

The university setting offers a specific useful context for studying digital multitasking. University students, described as "digital natives," use technology not only in an academic context, but also socially and for recreation. This pervasive connectivity, while it expands access to information, can result in fractured attention, heightened stress, and academic underachievement (Junco, 2012). In addition, it also intersects with fundamental psychological constructs including self-efficacy and self-perception, influencing the way students perceive themselves and their abilities in both academic and non-academic areas. Self-perception involves people's judgments of their capability, behavior, and overall self. It is an essential component of how they deal with social and academic contexts. Self-efficacy, on the other hand, is the belief in one's ability to perform actions necessary to achieve specific goals (Bandura, 1997). While students may view their ability to multitask as a sign of efficiency or technological adeptness, studies suggest this may create distorted self-perceptions. For example, heavy media multitaskers have been known to overestimate both their proficiency and productivity even when they have no resultant performance outcomes that correlate with such beliefs (Sanbonmatsu et al., 2013).

In addition, studies suggest that multitasking behaviors may impact students' overall general self-efficacy in subtle ways. At first glance, juggling several digital tasks may enhance mastery and control feelings. However, in practice, multitasking usually results in mental overload, decreased task satisfaction, and an illusion of productivity (Misra & Stokols, 2012). This mismatch between perceived and actual ability can erode students' faith in their overall ability to cope with challenges which leads to undermining resilience, initiative, and academic motivation. Compounding this complexity is the existence of gender variations in digital behavior. Previous research has posited that men and women can be different in terms of how they go about multitasking, as well as the effects it has on self-reporting and academic performance. An understanding of these gender-based variations presents a fuller picture of the psychological impact of digital media habits.

In doing so, the present study attempts to examine the effects of digital multitasking on students' self-perception and self-efficacy at the university level, as well as gender differences in these associations. Through an examination of both behavioral and psychological aspects of media multitasking, this study aims to identify patterns that can help tailor interventions aimed at increasing students' digital literacy, mental health, and academic achievement.

Literature Review

Wang and Tchernev (2015) discovered that psychological needs such as social connectedness and information seeking drive digital multitasking. Digital multitasking, however, can result in cognitive overload and reduced efficiency. Boahene et al. (2019) investigated the impact of multitasking behaviors on self-perception and performance in students. They discovered that high self-efficacy results in more effective use of media and improved performance. Luo et al. (2020) discovered that media multitasking adversely impacts academic achievement but indirectly affects self-esteem. These studies emphasize the need to comprehend the effect of digital multitasking on cognitive performance and personal perception. Alghamdi et al. (2020) discussed the psychological mismatch among perceived and actual multitasking capacity. They found that those who believed they were competent multitaskers overestimated their level of competence. The overestimation of their ability level resulted in poorer academic performance since such students underappreciated the adverse cognitive effects of task-switching. The study found a metacognitive gap that perpetuates ineffective multitasking habits.

Kolo et al. (2017) examined the general theme of self-efficacy in the context of digital behavior. Their research identified that more self-efficacious students used media positively and had greater psychological resilience. Nevertheless, individuals with excessive or poorly managed digital use tended to report lower follow-through with tasks and efficacy, implying that digital habits can be a help or a hindrance to one's self-efficacy depending on management. Lin et al. (2017) conducted a study of multitasking self-efficacy and how it correlated with academic achievement. The research identified that students who held exaggerated impressions of their ability to multitask tended to experience attention control problems as well as task completion difficulties. This incongruity between perception and action resulted in decreased academic achievement scores and heightened stress levels, showing that multitasking self-efficacy may prove to be maladaptive if not based on a realistic level of capability.

Brooks (2015) examined the connection between computer multitasking self-efficacy and academic success by having participants complete an educational video by simultaneously using multiple social media sites. The findings indicated that, even with high self-reported efficacy at multitasking, students who multitasked performed significantly lower on a quiz about the content of the post-video. This finding illustrated that high self-efficacy was not shielded from cognitive negative effects of divided attention. Mohammed et al. (2021) set out to investigate the correlation

between social media use, multitasking, and academic self-efficacy among Malaysian university students. In contrast, the research established that both social media use and multitasking were positively related to students' self-efficacy, which in turn significantly affected their academic performance. The research also established self-efficacy as a mediator of social media multitasking and academic achievement, implying that the promotion of self-efficacy would counteract possible adverse effects of multitasking. Perez-Juarez et al. (2024) research examined digital distractions among university students in an engineering institution where technology is central to learning practices. Students rated themselves as being able to improve in performance, and the importance of having strategies to make awareness of digital distractions and build self-control abilities to make technology use sustainable in education was noted.

Previous literature indicates that multitasking has a significant impact on people's self-perception and overall self-efficacy, particularly for university students. Although there are studies to indicate that there are instances where multitasking may increase engagement if properly maintained or applicable to the situation, there is overwhelming evidence to indicate that habitual or uncontrollable multitasking tends to distort people's self-perceptions either in overestimation or loss of esteem and eroding one's confidence in his or her effectiveness in handling multiple tasks. This intricate relationship highlights how digital multitasking can influence not just cognitive results but also psychological measures integral to academic and personal achievement. Delving into these dynamics is crucial for crafting approaches that enable students to retain realistic self-evaluations and enhance their overall general self-efficacy in more digital classrooms. In the light of existing literature, following hypotheses were formulated for the current study.

- There will be a relationship between digital Multitasking, self-perception, and Self-efficacy.
- Digital Multitasking and self-perception will be positively correlated.
- Digital multitasking and self-efficacy will be negatively correlated.
- Gender differences will exist in digital multitasking behaviors, self-perception, and self-efficacy.

Methodology

Participants

The sample consisted of 106 participants drawn from seven faculties of Govt. College University Faisalabad. These faculties included Arts and Social Sciences, Engineering, Medical Sciences, Pharmacy, Life Sciences, Physical Sciences, and Business. Fifteen participants were taken from each department including both males and females to ensure gender diversity. Seventy (70) females and thirty-six (36) males are covered in the sample. A mixture of quota sampling and convenience sampling methods was applied. Quota sampling was utilized to cover each faculty proportionally, whereas convenience sampling enabled easy access to participants through university networks and face-to-face.

Inclusion Criteria/ Exclusion Criteria

The inclusion criteria existed of participants who are enrolled as full-time university students in any of the previously mentioned faculties. The age limit was 18-24 years. Only students who reported regular use of digital media devices were eligible, as this was central to the study of digital multitasking behaviors. However, the participants who reported any diagnosed cognitive or psychological disorder or who were on academic leave were excluded to maintain the validity of the results.

Measures

Three validated psychological scales were used in the survey:

Media Multitasking-Revised (MMT-R) Scale: Ralph et al. (2015) developed the MMT-R scale that measures how often and how extensively people use digital media simultaneously in everyday life. The 18 items of the scale are usually rated on a Likert scale of 1 (Never) to 5 (Always). The first scale item is reverse scored. Higher scores reflect higher frequency of media multitasking.

General Self-Efficacy Scale (GSE): Schwarzer and Jerusalem (1995) gave this scale to measure a person's general confidence in coping with difficult situations and goal accomplishment. The scale contains 10 items rated on a 4-point Likert scale from 1 (Not at all true) to 4 (Exactly true). The total score is 10 to 40, and higher scores represent higher self-efficacy.

Rosenberg Self-Esteem Scale (RSES): Morris Rosenberg (1965) devised the Rosenberg self-esteem scale, which evaluates overall self-perception through the measurement of positive and negative self-judgments. The 10-item scale has responses scored on a 4-point Likert scale ranging from 1 (Strongly disagree) to 4 (Strongly agree). Scores range from 10 to 40, with higher scores reflecting greater self-esteem or self-concept.

Procedure

The questionnaire was administered online via faculty announcement groups and gathered university-wide in person. Informed consent was given before undertaking the survey, and confidentiality was guaranteed to facilitate frank responses. Data collection took place over a four-week period to provide sufficient participation across faculties. This research was carried out in accordance with ethical guidelines for human-subject research. Before taking part, all participants were given clear information regarding the purpose of the study, methods, and their rights as a participant. Informed consent was gathered electronically via an embedded consent form at the start of the survey. Participants were made aware that taking part was voluntary, they could withdraw at any time without a penalty, and that their answers would be kept confidential and anonymous. No individually identifiable information was gathered to ensure privacy.

Data Analysis

Responses were collated and analyzed through statistical software SPSS. Descriptive statistics provided participant demographics and scale scores summary. Correlational analyses investigated the interplay among digital multitasking behavior, self-efficacy, and self-perception and helped to identify how multitasking affects self-perception among university students. Regression analysis was used to determine the impact of digital multi-tasking on self-perception and self-efficacy.

Results

Table 1: *Demographic Characteristics of Participants (N = 106)*

Variable	Category	N	%	M	SD	Min	Max
Age	—	106	—	21.09	1.80	18	24
Gender	Male	36	33.96	—	—	—	—
	Female	70	66.03	—	—	—	—
Faculty	Arts and Social Sciences	15	14.2	—	—	—	—
	Basic Sciences	15	14.2	—	—	—	—
	Engineering and Technology	15	14.2	—	—	—	—
	Life Sciences	15	14.2	—	—	—	—
	Management Sciences	15	14.2	—	—	—	—
	Medical Sciences	15	14.2	—	—	—	—
	Pharmacy	15	14.2	—	—	—	—

Note. *M = Mean; SD = Standard Deviation.*

Age is presented as a continuous variable; gender and faculty are presented as categorical variables with frequencies and percentages. The sample comprised 106 participants and measured three significant psychological constructs: media multitasking, self-perception, and self-efficacy. Descriptive statistics revealed that the Media Multitasking Scale (MMF) scores ranged from 43 to 79 (M = 56.22, SD = 7.67), Rosenberg Self-Esteem Scale (RSE) scores, which reflect self-perception, varied from 9 to 32 (M = 14.68, SD = 3.54), and General Self-Efficacy Scale scores varied between 13 and 40 (M = 28.27, SD = 5.68). Reliability testing revealed acceptable to high internal consistency for the MMF (α = .78) and GSE (α = .83), whereas the RSE indicated lower reliability (α = .63). These findings give an indication of the core variables and justify the usage of the MMF and GSE scales when measuring their respective dimensions in this population.

Table 2: *Descriptive Statistics, Reliability Coefficients, and Interco relations among Study Variables (N = 106)*

Variable	No. of Items	Min	Max	M(SD)	*α*	1	2	3
1. Media Multitasking (MMF_Total)	18	43	79	56.2 (7.6)	.78	—		
2. Self-Perception (RSE_Total)	10	9	32	14.6 (3.5)	.63	.224*	—	
3. Self-Efficacy (GSE_Total)	10	13	40	28.2 (5.6)	.83	-.122	-.439**	—

Note. *$p < .05$, **p** $< .01$. M = Mean; SD = Standard Deviation; α = Cronbach's alpha (internal consistency).*

Pearson product–moment correlation coefficients were calculated to examine the relationships among media multitasking, self-perception, and self-efficacy. Results are displayed in Table *2*. There was a strong positive correlation between media multitasking and self-perception (r = .224, p <.05), suggesting that students who perform more frequent media multitasking report higher self-perception. Conversely, self-perception and self-efficacy were strongly negatively correlated (r = –.439, p < .001). Nonetheless, no significant relationship existed between media multitasking and self-efficacy (r = –.122)

To test whether media multitasking was a predictor of self-perception, a simple linear regression analysis was carried out with MMF_Total as the predictor and RSE_Total as the dependent variable. The model was significant statistically, F (1, 103) = 5.45, p = .022, accounting for about 5% of the variance in self-perception scores (R^2 = .05). =

Table 3: *Simple Linear Regression Predicting Self-Perception and Self-Efficacy from Media Multitasking (N = 106)*

Outcome Variables	Predictor	B	SE	*β*	*t*	*p*
Self-Perception	(Constant)	17.42	2.31	—	7.54	< .001
	MMF_Total	0.095	0.041	.224	2.33	.022
Self-Efficacy	(Constant)	19.87	2.20	—	9.03	< .001
	MMF_Total	0.122	0.098	.122	1.25	.216

Note. *MMF_Total = Media Multitasking total score; B = unstandardized regression coefficient; SE = standard error; β = standardized coefficient.*

Two simple linear regression analyses were performed to evaluate the effect of media multitasking on self-perception and self-efficacy. For self-perception, regression model was significant, F (1, 103) = 5.45, p = .022, and coefficient of determination R^2 = .05, meaning that media multitasking predicted about 5% of the variance in self-perception. Media multitasking was a positive significant predictor of self-perception, with an unstandardized regression coefficient (B) = 0.095, standard error (SE) = 0.041, standardized regression coefficient (β) = .224, and t-value (t) (degree of freedom df = 103) = 2.33, p = .022. For self-efficacy, the regression model was not significant, F (1, 103) = 1.55, p = .216, R^2 = .015. Media multitasking was not a significant predictor of self-efficacy, B = 0.122, SE = 0.098, β = .122, t (103) = 1.25, p = .216. What these findings indicate is that increased levels of media multitasking were weakly linked with somewhat greater selfperception, but not significantly linked to levels of self-efficacy.

Figure 1: *Effect of Media Multitasking on Self-perception and Self-efficacy (N=106)*

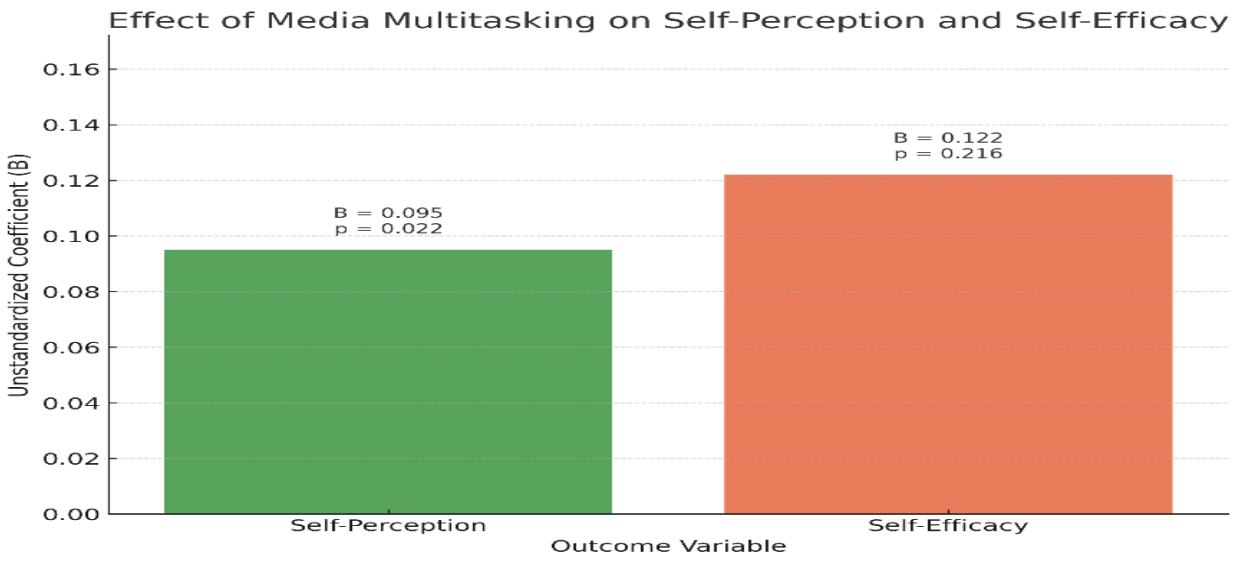

Table 4: *Gender Differences in Media Multitasking, Self-Perception, and Self-Efficacy (N = 106)*

Variable	Gender	M (SD)	*t*	*p*	95% CI of Mean Difference
Media Multitasking	Male	54.71 (8.2)	–1.43	.156	[–5.39, 0.88]
	Female	56.97 (7.2)			
Self-perception	Male	15.53 (3.5)	–2.54	.012*	[–2.97, –0.37]
	Female	13.86 (3.3)			
Self-efficacy	Male	27.37 (7.1)	–1.01	.319	[–4.02, 1.34]
	Female	28.71(4.8)			

Note. $p < .05$(*).

A significant difference was observed in self-perception scores between male and female participants, with males reporting significantly higher self-perception than females (t (103) = –2.54, p = .012). However, no significant gender differences were found for media multitasking or self-efficacy scores.

Discussion

The current research explored the correlation between digital multitasking, self-perception, and self-efficacy among university students, with a further emphasis on gender differences. The findings indicated a positive significant correlation between digital multitasking and self-perception but not between digital multitasking and self-efficacy. Furthermore, gender comparisons revealed large differences in self-perception with the males' higher scores but no significant differences in frequency of multitasking or in self-efficacy.

The descriptive statistics reveal that sampled students had high and moderate media multitasking (M = 56.22, SD = 7.67). Except for this widespread participation, the self-perception scores were discovered to be relatively low (M = 14.68, SD = 3.54), which suggests the majority of the students would think less positively about themselves. In contrast, self-efficacy ratings were average (M =

28.27, SD = 5.68), demonstrating a good amount of confidence that they could handle tasks. This trend shows students as active digital multitaskers who are self-assured in general but might be having trouble with the way they see themselves, which is an area of potential discrepancy between perceived competence and self-concept. The positive correlation between multitasking online and self-conception runs counter to earlier findings of negative consequences from multitasking. Wang and Tchernev (2015), for instance, discovered that online multitasking will fulfill inner psychological needs such as social belonging or searching for information but ultimately diminishes task accuracy due to cognitive overload. In the same vein, Alghamdi et al. (2020) noted that students who overestimated their ability at multitasking performed worse, implying metacognitive mismatch.

On the other hand, findings here are more consistent with Mohammed et al. (2021), wherein there was a positive relationship between multitasking and academic self-efficacy and that it was mediated through higher confidence. Such results suggest that students might perceive their multitasking as a sign of competence or adaptability and consequently develop a positive self-concept despite lowered performance. Such a mismatch between perceived and actual multitasking ability might be a reflection of cultural or situational norms that excessively value productivity and multitasking.

In contrast to predictions and Hypothesis 3, computer multitasking was not significantly correlated with self-efficacy in the current study. Past research including Boahene et al. (2019) and Kolo et al. (2017) highlighted that students with greater self-efficacy are found to have better constructive media behaviors and perform more favorable academic results. Lin et al. (2017), nonetheless, identified that exaggerated multitasking ability perceptions might be associated with lower task completion and higher stress. These contradictory results indicate that although students might be confident in their capability for multitasking, this might not carry over to a general sense of efficacy if it is not accompanied by subsequent success within academic settings.

The absence of a significant correlation in our results can also suggest that general self-efficacy, as operationalized in this research, is not affected by multitasking routines per se. Alternatively, perhaps it mirrors students' compartmentalized perceptions of competence—confident in navigation of the digital world but not necessarily in general academic or life tasks.

Gender comparisons showed that male students reported significantly greater levels of self-perception than female students, although no significant differences between genders were identified in multitasking frequency or self-efficacy. This conforms with previous research (Boahene et al., 2019), where it is inferred that male students may indicate greater confidence within digital contexts due to differing socialization experiences or confidence norms.

The absence of gender differences in self-efficacy does not necessarily imply that male and female students both perceive themselves as competent in general regardless of multitasking behaviors. The greater self-perceived scores among males may imply that digital multitasking contributes more positively to their self-perception, or that males conceptualize multitasking success differently than women. This study follows research by Luo et al. (2020), who demonstrated that academic performance mediated the relationship between self-esteem and media multitasking. Though our study did not quantify academic performance, the relationship between multitasking and perceived competence lies in students equating multitasking ability with academic competency. Similarly, Perez-Juarez et al. (2024) emphasized the importance of self-regulatory strategies to cope with digital distractions. The current findings confirm the potential for students to overestimate their ability at multitasking, advocating for metacognitive awareness and instructional intervention.

Brooks (2015) also showed that high levels of multitasking self-efficacy failed to insulate students against the cognitive penalty of divided attention. The present results are consistent with this conclusion, in that high levels of multitasking frequency were not associated with greater self-efficacy, suggesting a potential disconnection between perceived and actual ability.

Conclusion

The present study explored the inter-relationship between digital multitasking, self-perception, and self-efficacy among university students. The results showed a significant positive correlation between digital multitasking and self-perception. However, no significant relation resulted between digital multitasking and self-efficacy, indicating that multitasking behavior may not manifest in increased belief in one's own ability. Moreover, gender-based comparisons revealed significant differences in self-perception scores, with males showing significantly higher scores than females. No such differences were found in digital multitasking and self-efficacy variables. Overall, the study adds to a rich picture of how digital habits create psychological traits in educational contexts**.**

Implications

These results have a number of practical and theoretical implications:

The significant correlation between digital multitasking and self-perception reveals that students overestimate their capabilities in dealing with general and academic tasks. This false confidence can affect how they approach learning material. Training in digital literacy and time management are crucial educational interventions

Since gender variation had been discovered in the self-perception aspect, university support services would be well advised to involve gendered strategies to address self-image and academic confidence, especially among female students who may underreport or experience lower rates of self-perception. Academic professionals and administrators can use these findings to foster environments that discourage deleterious multitasking i.e., excessive use of digital devices during lectures.

Limitations

Following are some of the limitations of this study:

This study employed a cross-sectional research design, which limits the ability to draw causal inferences. To determine whether multitasking leads to changes in self-perception and self-efficacy over time, longitudinal research is necessary. Additionally, all data were collected via self-report questionnaires, which are susceptible to biases such as social desirability and inaccurate self-assessment—particularly relevant in the context of multitasking behaviors. The sample was limited to university students from a specific geographic region, thereby restricting the generalizability of the findings to other populations or age groups. Moreover, cultural factors unique to the Pakistani university context may influence multitasking tendencies, self-perception, and self-efficacy. Future research should incorporate cross-cultural comparisons to enhance the generalizability and applicability of the results across diverse populations.

Conflict of Interest

The authors showed no conflict of interest.

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