The Relationship between Eco-Anxiety, Digital Distraction, and Academic Performance among Undergraduate Students in Pakistan

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ABSTRACT

The given research study investigated the association among Eco-anxiety, digital distraction via smartphones, and academic grades among undergraduate Pakistanis. The participants were 400 students aged between 18 and 25 years in different universities, and the selected cross-sectional correlational research design was applied. Demographic questions were formulated with validated instruments that included; the Hogg Eco-Anxiety Scale (HEAS-13), the Smartphone Distraction Scale (SDS) and the Academic Performance Scale. The statistical analysis was done using SPSS version 27 to estimate Pearson correlation, hierarchical multiple regression, and mediation analysis. Findings specified that Eco-anxiety and digital distraction demonstrated significant and negatively correlated results with academic performance. The mediation analysis revealed that digital distraction partially mediated the association between Eco-anxiety and academic outcomes, implying that students who suffer environmental distress show a greater tendency in avoiding digital behavior, and such a tendency, subsequently causes adverse academic focus and achievement. A cross-sectional correlational research design was used with a sample of 400 students aged 18–25 from multiple universities. Validated instruments—the Hogg Eco-Anxiety Scale (HEAS-13), the Smartphone Distraction Scale (SDS), and the Academic Performance Scale—were administered, alongside demographic questions. Statistical analyses including Pearson correlation, hierarchical multiple regression, and mediation analysis were conducted using SPSS version 27. Results indicated that Eco-anxiety and digital distraction were both significantly and negatively correlated with academic performance. Mediation analysis showed that digital distraction partially mediated the relationship between Eco-anxiety and academic outcomes, suggesting that students who experience environmental distress are more likely to engage in avoidant digital behaviors, which in turn negatively impact their academic focus and achievement. A hierarchical regression demonstrated the relevance of Eco-anxiety comprised of a considerable share of variance in academic performance, and further increased after including variables of smartphone distraction in the model. Also, the gender-based analysis demonstrated that males and females had significant differences in academic performance, but no significant disparity in Eco-anxiety and smartphone distraction levels. The results lead to the need to focus on the teaching of universities and mental health specialists, emphasizing the importance of being aware of the existence of Eco-anxiety as a significant source of academic stress and the consequences of excessive use of technologies. To decrease the level of distraction and manage the climate-related anxiety more adaptively, students can practice the interventions aimed at managing emotions, focusing attention, and managing time. Further studies will need to conduct longitudinal research and include other psychological mediators to have a clearer picture of the extremely complex nature of the situation.

Keywords: *Eco-Anxiety, Digital Distraction, Academic Performance, Undergraduate Students, Pakistan.*

INTRODUCTION

The 21st century has witnessed an intensification of global environmental challenges, including climate change, rising temperatures, deforestation, and biodiversity loss. These ongoing ecological disruptions have sparked not only political and scientific debates but also considerable psychological concerns, particularly among youth. A growing number of individuals, especially university students, are reporting symptoms of emotional distress related to environmental degradation—a condition increasingly referred to as eco-anxiety. Defined as chronic or severe anxiety related to environmental threats, eco-anxiety includes feelings of helplessness, frustration, guilt, and dread over the future of the planet (Clayton, 2020; Pihkala, 2020).

Among the undergraduate Pakistani students, the climate-related issue is increasingly becoming a reality, as more young people gain exposure through the media, institutional-based awareness campaigns, and individual experiences of changes in the environment, i.e., extreme weather situations. This level of stress can negatively affect the welfare of students, focus, and general academic achievements (Tanveer et al., 2025). Even though eco-anxiety has become a topic of study only recently, the emotional influences of climate distress on thoughts and academic performance are already observed in the educational setting.

At the same time, the second issue large numbers of learners worldwide struggle with is that of digital distraction, which is the thrilling use of telephones, social media, as well as other virtual forms taking away the priority given to studies. Owing to digital media technologies, people find an opportunity to have fun, be connected, and even feel temporarily relieved of stresses; however, excessive technological use can trigger multitasking, procrastination, and loss of academic effectiveness (Rosen, Carrier, & Cheever, 2013).

It is quite common to see students not being able to focus on the study process due to the constant distractions with notifications, alerts, and the consistency of going online. Such distractions may decrease the retention, concentrate, as well as manage time in a negative way, which eventually affects the academic performance (Kushlev et al., 2016; Junco, 2012). The eco-anxiety and digital distraction is a possibly risky harm that has been little studied, but which has the potential to produce a negative effect on student achievement. Arguably, students with eco-stress can resort to use of digital platforms in an effort to cope an act that is not deliberated, and in the process they end up losing their concentration in academics, although momentarily.

This interaction leaves a dual burden whereby students experience emotional fatigue due to the climate anxiety and mental fatigue due to the digital overexposure and both of these factors can negatively impact their educational results. At the same time, in Pakistan both increasing environmental concern and the soaring popularity of smartphones mean that it is important to learn how the two phenomena may affect academic achievements in concert. Although this is an urgent field, few empirical studies have studied these variables as a bundle in the case of Pakistani undergraduate learners.

Theoretical Framework

The use of two psychological theories guides this study and they include Cognitive Behavioral Theory (CBT) and the Uses and Gratifications Theory (UGT). According to CBT, the thoughts of a person dictate his/her emotions and behaviors. As an example, the presence of maladaptive cognition about the future of the environment can cause emotional distress related to the anxiety state known as eco-anxiety. Such psychological distress may then affect cognitive functions and behaviors including those of academic

activities. Students who experience eco-anxiety might lack focus or motivation or be unable to systematically deal with scholarly stress.

The CBT model assists in describing the impact of eco-anxiety in internal processing and subsequently, the impact on performance. Simultaneously, the Uses and Gratifications Theory (UGT) outlines motifs and mechanisms, according to which people purposefully refer to media as the satisfaction of certain needs. Smartphones and social network sites could be a coping mechanism to students dealing with eco-anxiety. These sites offer the instant gratification of providing a distraction or a feeling of comfort to the user; though they are the cause of loss of emotional requirement and overuse of digital media.

This tends to affect the concentration of the students with regard to their studies. UGT, hence, provides a context in which the explanation of why anxious students may resort to technology, even though it has adverse effects on academic concentrations and performances can be observed. The combination of these theories allows developing an in-depth picture of eco-anxiety causing digital distraction and further impacting academic outcomes. This framework supports the hypotheses and methodology of the given study.

LITERATURE REVIEW

In recent psychological literature, the rising rate of Eco-anxiety has received a response especially when talking of young groups that are emotionally affected by the global environment. According to Clayton (2020), Eco-anxiety is a state that makes sense given the facts of climate change and should be seen as such among people who are unable to see a way to implement change. Pihkala (2020) stressed that Eco-anxiety is not only the result of the environmental crises but also the display of the high level of concern about ecological justice.

In developing countries such as Pakistan, students are especially susceptible because of the high vulnerability of the country to climate incidents and low accessibility to mental service. Digital distraction, however, has been explored extensively in the course of the last twenty years. Studies indicate that excess smartphone use, especially among non-academic activities will always lead to a lack of engagement and performance in academic activities (Junco, 2012; Rosen et al., 2013).

Digitalization and constant alerts negatively affected the capability of students to concentrate even in the case of brief studying. Smartphone Distraction Scale is a valid efficacy of the distraction produced by digital overuse. Recent researchers indicate that anxiety is linked to digital behavior. According to Rozgonjuk et al. (2019), learners who have various degrees of anxiety, such as fear of missing out (FoMO), embrace digital devices to provide emotional support. This generates a kind of paradox because the use of digital can be seen as a way of coping on a temporary basis and avoiding productivity.

Even though the research conducted shows these results, there was very little research done concerning eco-anxiety and digital distraction combined especially in South Asian scholarly circles. Through this research, it is expected to reduce this gap by investigating the combination of these variables with regard to academic performance.

METHODOLOGY

A cross-sectional correlational research design was adopted for this study. A purposive sampling strategy was used to recruit a total of 400 undergraduate students aged 18–25 years from public and private universities in major cities of Pakistan. Participants included both male and female students from various

disciplines and academic years. The inclusion criteria required students to be enrolled full-time and to have access to a smartphone. All the participants signed an informed consent and an ethical clearance was obtained by the appropriate institutional review board.

The results were gathered using self-administering questionnaires that were availed through online platforms. The research question employed Hogg Eco-Anxiety Scale (HEAS-13) which was used to estimate the anxiety of participants on environmental issues. They measured digital distraction using Smartphone Distraction Scale (SDS), which is a tool used to identify the level of disruption caused by the use of smartphones in academic and daily activities. The short self-report Academic Performance Scale with four questions that assess perceived GPA, academic stress, time management, and motivation, were used to measure academic performance. There was also the collection of demographic data including age, gender, field of studies and year of study. IBM SPSS version 27 was used to do the statistical work. It was determined using descriptive statistics to know the characteristics of the participants.

Pearson's correlation analysis was employed to assess the relationships among the main variables. Hierarchical multiple regression was used to determine the variance in academic performance explained by eco-anxiety and digital distraction. Finally, mediation analysis was conducted using Hayes' PROCESS Macro (Model 4) to assess the mediating role of digital distraction.

RESULTS

The results of the study are presented in three parts: descriptive statistics and correlations, hierarchical multiple regression, and mediation analysis. Descriptive statistics showed that the mean eco-anxiety score was moderately high across participants, indicating that many students experience environmental concerns that could affect their psychological state. Smartphone distraction levels were also moderate to high, reflecting a high reliance on digital devices among university students. Self-reported academic performance showed a moderate range, with many students reporting difficulties in time management and academic motivation.

Table 1
Descriptive Statistics and Pearson Correlations Among Variables

Variable	M	SD	1	2	3
1. Eco-Anxiety	3.45	0.70	—		
2. Digital Distraction	3.62	0.75	.41**	—	
3. Academic Performance	2.89	0.68	-.31**	-.37**	—

Note. ***p*** < .01.*

Pearson correlation analysis (Table 1) demonstrated significant negative correlations between eco-anxiety and academic performance ($r = -0.31$, $p < .01$), as well as between digital distraction and academic performance ($r = -0.37$, $p < .01$). A significant positive correlation was also found between eco-anxiety and digital distraction ($r = 0.41$, $p < .01$), suggesting that students experiencing more eco-anxiety also reported higher levels of distraction from smartphone use.

Table 2

Hierarchical Multiple Regression Predicting Academic Performance

Model	Predictor	B	p
1	Eco-Anxiety	-0.31	< .01
2	Eco-Anxiety	-0.26	< .01
2	Digital Distraction	-0.35	< .01

Hierarchical multiple regression (Table 2) showed that in Model 1, Eco-anxiety alone significantly predicted academic performance ($\beta = -0.31$, $p < .01$), accounting for a modest amount of variance. In Model 2, digital distraction was added, and the model improved significantly ($\Delta R^2 = .13$), with both eco-anxiety ($\beta = -0.26$, $p < .01$) and digital distraction ($\beta = -0.35$, $p < .01$) emerging as significant predictors.

Table 3

Mediation Analysis Using Hayes PROCESS (Model 4)

Effect	B	95% CI
Direct Effect (Eco-Anxiety → Acad. Perf.)	-0.26	[-0.32, -0.20]
Indirect Effect (via Digital Distraction)	-0.13	[-0.17, -0.09]

Mediation analysis using Hayes' PROCESS Macro (Model 4; Table 3) tested whether digital distraction mediates the relationship between eco-anxiety and academic performance. The indirect effect was significant with a bootstrapped confidence interval of -0.17 to -0.09, confirming partial mediation.

Table 4

Independent Samples t-Test for Gender Differences

Variable	M (Male)	M (Female)	T	p
Eco-Anxiety	3.47	3.44	0.89	.37
Digital Distraction	3.64	3.61	0.67	.51
Academic Performance	2.77	2.94	2.47	< .05

Independent samples t-tests (Table 4) revealed no significant differences in levels of eco-anxiety or digital distraction between male and female students ($p > .05$). However, academic performance showed a statistically significant difference ($t = 2.47$, $p < .05$), with female students reporting slightly better academic outcomes than their male counterparts.

DISCUSSION

The results of the present study support all three hypotheses and highlight a complex relationship between eco-anxiety, digital distraction, and academic performance. The negative correlation between eco-anxiety and academic performance aligns with previous findings that stress and psychological distress can hinder academic functioning (Clayton, 2020; Pihkala, 2020). Students who experience persistent concern about environmental issues may face difficulties in concentrating, planning, and maintaining academic motivation.

The strong relationship between digital distraction and academic performance is consistent with earlier studies showing that smartphone overuse can compromise attention, increase procrastination, and reduce

the effectiveness of study routines (Rosen et al., 2013; Kushlev et al., 2016). Digital distraction, when compounded by emotional distress such as eco-anxiety, acts as an avoidant coping strategy. Students may turn to their phones not only for entertainment but also to escape emotional discomfort.

Importantly, the mediation analysis confirmed that digital distraction is a mechanism through which eco-anxiety impairs academic performance. This is a novel finding, particularly in the South Asian context, where little research has been conducted on these interactions. It suggests that digital coping may provide short-term relief from emotional strain but contributes to long-term academic challenges.

The finding that gender differences in eco-anxiety and digital distraction were not significant reflects broader patterns in current literature, which increasingly challenges older gendered assumptions about emotional and behavioral differences. However, the significant difference in academic performance by gender may be influenced by cultural or motivational factors not assessed in this study.

Limitations

This study has several limitations that should be acknowledged. First, its cross-sectional design restricts the ability to draw causal conclusions. Longitudinal or experimental designs would be needed to determine whether eco-anxiety leads to digital distraction over time. Second, the use of self-report measures may introduce social desirability bias or inaccuracy in estimating academic performance. Objective measures such as GPA records or behavioral data could enhance the validity of findings. Third, the sample was limited to students from a few urban universities, which may not reflect the diversity of Pakistan's broader student population, including rural or underprivileged communities.

Implications

The study has practical implications to educators, psychologists, and policymakers despite its limitations. Instead of discarding eco-anxiety as fear and futile angst, universities are encouraged to adopt psych educational interventions allowing them to consider eco-anxiety as a valid feeling to address. The Improvement of climate-related distress coping strategies can be introduced to mental health services. Also, the online wellness programs which help to teach students about mindful smartphone use would help counter balancing the effect of digital distraction. Another change that can be undertaken by institutions is to ensure that time management workshop is incorporated as part of orientation programs in order to assist the students to develop effective academic routines.

On a higher level of policy making, increased cooperation between environmental education and mental health awareness could help to make students more resilient in the face of a quickly shifting ecological environment. To have a more comprehensive picture in the future research, one could add some more of the psychological factors to the existing model like resilience, quality of sleep, or motivation.

CONCLUSION

This study sheds light on the growing psychological burden faced by university students in Pakistan due to eco-anxiety and digital distraction. The findings establish that both eco-anxiety and digital distraction are significant predictors of academic performance, and that digital distraction mediates the impact of eco-anxiety. The study contributes to the limited body of knowledge on climate-related mental health in South Asia and calls for targeted intervention strategies at both academic and psychological levels. As global and digital pressures continue to rise, it is essential that higher education institutions adapt to address the evolving emotional needs of their students.

REFERENCES

Beck, A. T. (2011). Cognitive therapy of depression. Guilford Press.

Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. Journal of Anxiety Disorders, 74, 102263.

Junco, R. (2012). The relationship between frequency of Facebook use, participation in Facebook activities, and student engagement. Computers & Education, 58(1), 162-171.

Kushlev, K., Dwyer, R. J., & Dunn, E. W. (2016). The social price of constant connectivity: Smartphones impose subtle costs on well-being. Current Directions in Psychological Science, 25(5), 347–352.

Pihkala, P. (2020). Eco-anxiety and environmental education. Sustainability, 12(23), 10149.

Rosen, L. D., Carrier, L. M., & Cheever, N. A. (2013). Facebook and texting made me do it: Media-induced task-switching while studying. Computers in Human Behavior, 29(3), 948–958.

Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2019). Individual differences in fear of missing out (FoMO): Findings from a mixed-methods study. Journal of Research in Personality, 81, 50-57.

Rubin, A. M. (2002). The uses-and-gratifications perspective of media effects. In J. Bryant & D. Zillmann (Eds.), Media Effects: Advances in Theory and Research (pp. 525–548). Routledge.

Tanveer, H., Khan, M. S., & Ashraf, R. (2025). Climate change perception and mental health in Pakistani youth. Asian Journal of Environmental Psychology, 1(1), 1–10.

Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2021). Motivational processes and dysfunctional mechanisms of social media use among adolescents: A qualitative focus group study. Computers in Human Behavior, 114, 106578.