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Profiling Perceptions of Psychologically Restorative University Environments and Cognitive Resilience Among Public Sector University Students: A Baseline Descriptive Item-Level and Subscale Analysis

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Abstract

Students at the university are constantly exposed to high levels of cognitive workload, assessment pressure, and the cognitive load needed to be able to perform in an academic setting, which can cause direct attention fatigue and academic distress. The quantitative descriptive study used a quantitative approach, and it was based on the Attention Restoration Theory (ART), which explores university students' perceptions of psychologically restorative university environments and their cognitive resilience. To obtain a sample of 300 undergraduate and graduate students across six academic departments of the University of Sargodha, Punjab, Pakistan, multistage stratified sampling was used. Data were gathered using a 35-item semi-structured questionnaire made up of the Psychologically Restorative University Environment (PRE) scale (20 items, $\alpha=.860$) and Cognitive Resilience (CR) scale (15 items, $\alpha=.899$). Descriptive analysis showed that the overall rating for the campus environment was moderately restorative ($M=3.535$, $SD=1.043$); the functional study areas ($M=3.797$, $SD=0.934$) and spatial adequacy ($M=3.760$, $SD=0.972$) received the highest ratings, while quiet restorative refuges from daily campus crowds received lower ratings ($M=3.333$, $SD=1.045$). The students' cognitive resilience was in the moderate range ($M=3.578$), with behavioral persistence when studying difficult tasks being in the high range ($M=3.903$, $SD=0.933$) and generating alternative study strategies in the somewhat lower range ($M=3.307$, $SD=1.142$). The results highlight the need to consider both restorative environmental affordances (noise-buffered quiet spaces, biophilic green spaces) and coping support workshops to ensure students' learning processes continue.

Keywords: Psychologically Restorative University Environment, Cognitive Resilience, Attention Restoration Theory, Descriptive Survey, Pakistan.

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Introduction

Institutions of higher learning form an environment that poses mental challenges for learners to attain advanced knowledge and professional skills and good grades in academics. For instance, in striving towards such objectives, university learners have to go through rigorous academic assignments, numerous examinations, stringent deadlines, and social evaluations. Overexposure to such conditions without appropriate rest for the brain may cause acute stress, mental tiredness, and poor engagement in academic activities (Lipson et al., 2022; Wang et al., 2024). Academic success, depends much on the psychological strengths of the learners and physical surroundings (Hunsu et al., 2023; Richardson et al., 2012; Robbins et al., 2004).

The physical environment of the campus makes a significant impact on the psychological state, attention levels, and stress recovery of the students. According to Attention Restoration Theory (ART) developed by Kaplan (1995; Kaplan & Kaplan, 1989), intentional and directed concentration is based on the use of directed attention processes, which have a limited capacity and become depleted under prolonged cognitive activity. When individuals suffer from directed attention fatigue, their ability to concentrate, avoid distractions, and solve difficult problems becomes limited. Recovery happens if people spend some time in the environment, which includes four restorative elements such as fascination (involuntary attention stimulated by interesting landscape), being away (psychological or physical detachment from normal academic activities), extent (coherence and scope enabling immersion in the organized environment), and compatibility (harmony between physical environment and needs of the student). Natural landscaping, landscaped courtyards, quiet reading rooms, and well-organized study commons are examples of resources that promote mental recovery among university students (Browning et al., 2020; Gulwadi et al., 2019; Peters et al., 2020).

Similarly, cognitive psychological capabilities like cognitive resilience become vital in understanding the response of the students to the demands of university. It is a concept that describes the ability of an individual to maintain or regain adaptive control over his or her cognitions, goals and positive affective states in the face of academic adversity, stress, heavy workload, or poor academic performance (Cassidy, 2016; Martin & Marsh, 2006; Southwick et al., 2014).

While the literature on the theoretical proposals, as well as emerging research from around the globe, emphasizes the protective role of restorative environments and psychological resilience (Browning et al., 2020; Liu et al., 2024; Yusli et al., 2021), empirical research exploring students' perceptions of these two constructs is scarce within the context of Pakistani public universities. These public universities in Pakistan may have high student enrollments, limited space, and limited institutional resources, thus impacting their environmental restorativeness and functioning. In light of this research void, the current descriptive study explores the restorativeness of the campus perceived by university students. The present study takes place within the University of Sargodha, Punjab, Pakistan.

Literature Review

The Attention Restoration Theory presents a robust model for understanding how physical surroundings can help individuals recover from mental fatigue (Kaplan, 1995; Kaplan & Kaplan, 1989; Liu et al., 2024). Modern higher education necessitates continuous use of direct attention while listening to lectures, conducting laboratory exercises, solving problems, and studying alone. According to ART, focusing direct attention on tasks while ignoring distractions requires executive

mental resources controlled by the prefrontal cortex. The depletion of such resources causes cognitive fatigue, errors, impatience, and high stress levels among students.

Restorative environments facilitate cognitive recovery through four structural dimensions, including Fascination – stimuli that attract involuntary attention without effort (like rustling leaves, sunshine, fountains) and allow the directed attention system to rest; Being Away – psychological and/or physical separation from the responsibilities, academic assignments, and habitual activities of everyday life; Extent – spatial coherence and size that make the surroundings seem exploreable for students; and Compatibility – high compatibility between the features of the surrounding space and the immediate needs of the students.

Empirical evidence shows that environments created through higher education differ greatly in terms of their restorative affordances. According to Gulwadi et al. (2019), objective greenness positively predicts perceived restorativeness, and this, in turn, positively impacts the quality of life of students. Similarly, Yusli et al. (2021) found out that perceived restorativeness of the campus contributed to the psychological well-being of university students from Malaysia. In their scoping review, Li et al. (2024) indicated that outdoor public spaces of campuses with shaded vegetation and quiet places help buffer university psychological stress.

Academic cognitive resilience is an individual's ability to continue goal-oriented learning, focused cognition, and effective coping in response to academic stressors, challenging academic work, and low performance on examinations (Cassidy, 2016; Martin & Marsh, 2006; Southwick et al., 2014). According to Martin & Marsh (2006), academic resilience is the ability of a student to overcome stress, setbacks, and academic obstacles. Resilient students depend on cognitive flexibility (ability to adjust ineffective study strategies), emotional regulation (coping with the stress of evaluation), and perseverance (ability to stay focused on difficult tasks).

As reported by Hunsu et al. (2023) through a systematic review and meta-analysis, there were statistically significant and positive correlations between psychological resilience and individual protective factors and academic success. Also, Richardson et al. (2012) found that academic self-efficacy, conscientiousness, and effort management were consistent predictors of university GPA. Academic difficulties for non-resilient students result in cognitive burnout, disengagement from academic activities, and poor performance (Lipson et al., 2022; Wang et al., 2024).

The interaction between ART and cognitive resilience, according to theory, indicates that the physical environment provides the necessary attention to support self-regulation, determination, and emotions (Kaplan, 1995; Liu et al., 2024). In a restorative environment, students restore the necessary cognitive ability to be able to adjust their methods of learning, reframe their academic failures, and continue making efforts in academics. However, not many research papers have discussed the two dimensions simultaneously through primary survey data among students studying in public universities of Pakistan.

Research Objectives

This study sought to achieve the following specific descriptive objectives:

1. To assess university students' perceptions regarding the psychologically restorative characteristics (fascination, being away, extent/coherence, and compatibility) of their university environment.
2. To examine university students' levels of cognitive resilience across the dimensions of cognitive flexibility, emotional regulation, and persistence.

3. To identify specific campus design strengths and environmental vulnerabilities to inform institutional planning and student support services.

Research Questions

The following are the research questions of the study:

1. How do university students perceive the psychological restorativeness of their campus environment in terms of fascination, being away, extent, and compatibility?
2. What are the reported levels and dominant dimensions of cognitive resilience among university students?
3. Which physical campus features do students identify as most and least supportive of psychological restoration?

Significance of Study

This research is important for educational psychology and campus design in developing higher education institutions. This research uses Attention Restoration Theory to analyze public university campuses in South Asia to understand how the physical and natural environments of a place affect students' cognitive health. This descriptive study is an example that provides data to university administrators, estate managers, and university planners. The recognition of places where there are lower levels of restoration will identify specific areas where cost-effective interventions can be done, such as the biophilic design of the place, noise-free study spaces, and landscaped pathways on campus.

Delimitations of the Study

This research was delimited to undergraduate and graduate students enrolled at the University of Sargodha, Punjab, Pakistan, in the morning and evening batches. The institutions involved include six departments from three faculties – Social Sciences, Sciences, and Arts and Humanities. In terms of theory, the study was delimited to attention restoration theory (Kaplan & Kaplan, 1989), along with cognitive resilience (Cassidy, 2016; Martin & Marsh, 2006). With regard to methodology, the delimitation of this study involves a quantitative descriptive survey methodology through a self-reporting questionnaire.

Research Methodology

Research Design

The current research used a quantitative, non-experimental, cross-sectional descriptive survey design. This type of design is particularly appropriate to measure the frequency distribution, central tendency and frequency of responses to student perceptions about the environment and self-perception of cognitive attributes of students.

Population and Sampling Strategy

All registered students from the University of Sargodha, Punjab, Pakistan, were considered as the target population. The sample was selected using the multistage sampling method. In the first stage, Social Sciences, Sciences, and Arts & Humanities faculties were selected using the simple random sampling technique. In the second stage, two academic departments from each faculty were selected using simple random sampling, which made a total of six departments, including Education, Psychology, Zoology, Mathematics, Urdu, and Islamic Studies. In the third stage, the

stratified sampling technique was used for selecting 360 students as an initial sample, which included 240 undergraduate and 120 graduate students.

Instrumentation

Data collection was done through an integrated 35-item structured questionnaire that was divided into three parts. In the first part, the respondents provided demographic data including their department, academic major, gender, residential background (whether urban or rural), age category, current semester, and Cumulative Grade Point Average (CGPA). In the second part, there is the Psychologically Restorative University Environment (PRE) scale, which has a total of 20 items based on Attention Restoration Theory (Kaplan, 1995; Kaplan & Kaplan, 1989; Liu et al., 2024) and has four subdimensions, namely Fascination, Being Away, Extent/Coherence, and Compatibility. Each subdimension had five items. In the third part, there is the Cognitive Resilience (CR) scale, which has 15 items in three subdimensions, namely Cognitive Flexibility, Emotional Regulation, and Persistence. Each subdimension also had five items. All questionnaire items were scored on a 5-point Likert scale: 1 = *Strongly Disagree* (SDA), 2 = *Disagree* (DA), 3 = *Neutral* (N), 4 = *Agree* (A), and 5 = *Strongly Agree* (SA).

Validity and Reliability

Validity and construct validity have been confirmed by a review panel comprising educational and psychometric researchers at the University of Sargodha, and they checked the items to ensure that they were culturally relevant to the construct.

Piloting was done on 50 respondents who did not take part in the final data collection. Cronbach's alpha (α) test was used to establish the scale reliability, with the criterion for acceptability being $\alpha \geq .70$ (Kline, 2016; Nunnally, 1978). The PRE scale showed strong internal consistency ($\alpha = .860$), the CR scale was highly reliable ($\alpha = .899$), and the entire 35 items were highly reliable ($\alpha = .919$).

Data Collection and Analytical Approach

Data collection was done during February and March 2026 in the selected departments using paper surveys and Google Forms. After data screening, 300 respondents were taken as the finalized sample to run the data analysis, while 60 questionnaires were rejected due to incomplete information. Data analysis was done using IBM SPSS Statistics. Frequency, percentage, mean, and standard deviation were calculated for each variable as well as the composite subscale. Interpretation of mean scores on a 5-point continuum was done through equal-interval bands, including 1.00 – 1.80 = Very Low, 1.81 – 2.60 = Low, 2.61 – 3.40 = Moderate / Moderately High Lower Tier, 3.41 – 4.20 = Moderately High, and 4.21 – 5.00 = High.

Results and Findings

Demographic Profile of Participants

The following is the demographic profile of participants:

Table 1: *Demographic Profile of Sampled University Students (N = 300)*

Variable	Category	Frequency (n)	Percentage (%)
Department	Education	50	16.7
	Psychology	50	16.7
	Zoology	50	16.7
	Mathematics	50	16.7
	Urdu	50	16.7
	Islamic Studies	50	16.7
Academic Level	Undergraduate (BS)	210	70.0
	Graduate (M.Phil/MS)	90	30.0
Gender	Female	182	60.7
	Male	118	39.3
Residential Origin	Urban	156	52.0
	Rural	144	48.0
Age Group	17–20 Years	80	26.7
	21–24 Years	161	53.7
	25–28 Years	56	18.7
	29 Years and Above	3	1.0
Current Semester	1st–2nd Semester	87	29.0

Variable	Category	Frequency (n)	Percentage (%)
	3rd–4th Semester	101	33.7
	5th–6th Semester	49	16.3
	7th–8th Semester	63	21.0

The sample consisted of equal distribution among the six departments, consisting of 50 respondents in each department. The majority of the respondents comprised undergraduates (70.0%), females (60.7%), and respondents aged 21 to 24 (53.7%). Equal distribution was also evident in terms of urban (52.0%) and rural (48.0%) respondents at different levels of academic education.

Frequency Distribution of PRE Items

The following is the Frequency Distribution of PRE Items:

Table 2: *Item-Wise Frequency Analysis of Psychologically Restorative University Environment (PRE) (N = 300)*

Sr#	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
Fascination									
1.	The natural elements (e.g., plants, gardens) on campus effortlessly hold my attention.	17 (5.7%)	37 (12.3%)	54 (18.0%)	46 (15.3%)	161 (53.7%)	39 (13.0%)	200 (66.7%)	Agreement
2.	I find the university's design and architecture attractive and engaging.	12 (4.0%)	38 (12.7%)	50 (16.7%)	49 (16.3%)	181 (60.3%)	20 (6.7%)	201 (67.0%)	Agreement
3.	Certain areas on campus provide charming views or sensory experiences.	13 (4.3%)	32 (10.7%)	45 (15.0%)	55 (18.3%)	168 (56.0%)	32 (10.7%)	200 (66.7%)	Agreement

Sr#	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
4.	The campus environment has surprising or unexpected features that catch my interest.	11 (3.7%)	51 (17.0%)	62 (20.7%)	72 (24.0%)	136 (45.3%)	30 (10.0%)	166 (55.3%)	Agreement
5.	Looking at the campus scenery gives me a pleasant and relaxing mental break.	10 (3.3%)	44 (14.7%)	54 (18.0%)	68 (22.7%)	146 (48.7%)	32 (10.7%)	178 (59.3%)	Agreement
Being Away									
6.	In certain campus locations, I feel free from academic pressure.	18 (6.0%)	37 (12.3%)	55 (18.3%)	68 (22.7%)	132 (44.0%)	45 (15.0%)	177 (59.0%)	Agreement
7.	The university provides spaces where I can mentally take a break from my studies.	21 (7.0%)	49 (16.3%)	70 (23.3%)	68 (22.7%)	116 (38.7%)	46 (15.3%)	162 (54.0%)	Agreement
8.	The university has quiet areas where I can escape noise, crowds, and daily distractions.	13 (4.3%)	59 (19.7%)	72 (24.0%)	75 (25.0%)	121 (40.3%)	32 (10.7%)	153 (51.0%)	Agreement
9.	I feel mentally relaxed and away from my stress when I spend time in calm areas on campus.	7 (2.3%)	35 (11.7%)	42 (14.0%)	74 (24.7%)	136 (45.3%)	48 (16.0%)	184 (61.3%)	Agreement

Sr#	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
10.	The campus has places where I can temporarily forget my academic responsibilities.	20 (6.7%)	41 (13.7%)	61 (20.3%)	72 (24.0%)	129 (43.0%)	38 (12.7%)	167 (55.7%)	Agreement
Extent/Coherence									
11.	The various components of the university feel connected and well organized.	15 (5.0%)	30 (10.0%)	45 (15.0%)	44 (14.7%)	149 (49.7%)	62 (20.7%)	211 (70.3%)	Agreement
12.	There is enough space on campus for everyone to find a place that suits their needs.	19 (6.3%)	55 (18.3%)	74 (24.6%)	50 (16.7%)	140 (46.7%)	36 (12.0%)	176 (58.7%)	Agreement
13.	The university environment feels engaging and large enough to explore and discover.	13 (4.3%)	38 (12.7%)	51 (17.0%)	54 (18.0%)	161 (53.7%)	34 (11.3%)	195 (65.0%)	Agreement
14.	The campus layout and design make it easy to navigate and find what I need.	22 (7.3%)	37 (12.3%)	59 (19.7%)	64 (21.3%)	146 (48.7%)	31 (10.3%)	177 (59.0%)	Agreement
15.	I perceive that the university provides adequate space and facilities for my work/activities.	7 (2.3%)	33 (11.0%)	40 (13.3%)	45 (15.0%)	155 (51.7%)	60 (20.0%)	215 (71.7%)	Agreement

Sr#	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
Compatibility									
16.	The university environment supports the things I want to do (e.g., studying, relaxing, socializing).	10 (3.3%)	37 (12.3%)	47 (15.6%)	45 (15.0%)	155 (51.7%)	53 (17.7%)	208 (69.4%)	Agreement
17.	I find quiet, suitable spots on campus when I need to concentrate on my work.	13 (4.3%)	41 (13.7%)	54 (18.0%)	50 (16.7%)	149 (49.7%)	47 (15.7%)	196 (65.3%)	Agreement
18.	The campus design meets my expectations for a higher education setting.	10 (3.3%)	33 (11.0%)	43 (14.3%)	57 (19.0%)	170 (56.7%)	30 (10.0%)	200 (66.7%)	Agreement
19.	The campus provides suitable areas for studying and academic work.	10 (3.3%)	25 (8.3%)	35 (11.6%)	32 (10.7%)	182 (60.7%)	51 (17.0%)	233 (77.7%)	Agreement
20.	I can express myself and pursue my interests at university.	22 (7.3%)	45 (15.0%)	67 (22.3%)	56 (18.7%)	133 (44.3%)	44 (14.7%)	177 (59.0%)	Agreement

Note. $N = 300$. Percentages are rounded to one decimal place. Total DA = Strongly Disagree (SDA) + Disagree (DA); Total A = Agree (A) + Strongly Agree (SA).

Table 2 shows the agreement on the restorative nature of the university campus. There was high agreement on the availability of functional study places (Item 19; 77.7%), adequacy of space and facilities (Item 15; 71.7%), and organizational structure of the campus (Item 11; 70.3%). Agreement on the architecture of the university (Item 2; 67.0%) and fascination of natural features of the campus (Item 1; 66.7%) were also high. Spaces that provide quiet refuge from noisy and crowded places had low agreement (Item 8; 51.0%).

Frequency Distribution of Cognitive Resilience Items

The following is the Frequency Distribution of Cognitive Resilience Items:

Table 3: *Item-Wise Frequency Analysis of Cognitive Resilience (CR) (N = 300)*

Sr #	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
Cognitive Flexibility									
1.	When a study plan fails, I can quickly generate a new, workable alternative.	27 (9.0%)	50 (16.7%)	77 (25.7%)	59 (19.7%)	132 (44.0%)	32 (10.7%)	164 (54.7%)	Agreement
2.	I can quickly refocus when I move from one subject or assignment to another.	18 (6.0%)	49 (16.3%)	67 (22.3%)	39 (13.0%)	167 (55.7%)	27 (9.0%)	194 (64.7%)	Agreement
3.	I can easily adjust my learning strategy when faced with difficult course material.	11 (3.7%)	41 (13.7%)	52 (17.4%)	47 (15.7%)	161 (53.7%)	40 (13.3%)	201 (67.0%)	Agreement
4.	I consider multiple perspectives when solving academic problems.	11 (3.7%)	26 (8.7%)	37 (12.3%)	57 (19.0%)	169 (56.3%)	37 (12.3%)	206 (68.7%)	Agreement
5.	I view academic challenges as opportunities, not failures.	14 (4.7%)	29 (9.7%)	43 (14.3%)	45 (15.0%)	172 (57.3%)	40 (13.3%)	212 (70.7%)	Agreement
Emotional Regulation									
6.	I recover quickly from academic stress.	15 (5.0%)	45 (15.0%)	60 (20.0%)	70 (23.3%)	135 (45.0%)	35 (11.7%)	170 (56.7%)	Agreement
7.	Academic concerns do not	16 (5.3%)	54 (18.0%)	70 (23.3%)	66 (22.0%)	130 (43.3%)	34 (11.3%)	164 (54.7%)	Agreement

Sr #	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
	overwhelm me emotionally.								
8.	I handle pre-exam or presentation stress in a healthy way.	9 (3.0%)	41 (13.7%)	50 (16.7%)	42 (14.0%)	167 (55.7%)	41 (13.7%)	208 (69.3%)	Agreement
9.	I stay emotionally stable when receiving critical feedback on my work.	12 (4.0%)	52 (17.3%)	64 (21.3%)	56 (18.7%)	146 (48.7%)	34 (11.3%)	180 (60.0%)	Agreement
10.	After academic challenges, I consciously look for positives.	5 (1.7%)	42 (14.0%)	47 (15.7%)	40 (13.3%)	169 (56.3%)	44 (14.7%)	213 (71.0%)	Agreement
Persistence									
11.	I stay committed to tasks, even if they feel boring.	13 (4.3%)	49 (16.3%)	62 (20.7%)	52 (17.3%)	153 (51.0%)	33 (11.0%)	186 (62.0%)	Agreement
12.	I can stay focused on difficult or complex study tasks for extended periods.	13 (4.3%)	59 (19.7%)	72 (24.0%)	42 (14.0%)	157 (52.3%)	29 (9.7%)	186 (62.0%)	Agreement
13.	I finish challenging assignments, even when they require more effort.	10 (3.3%)	33 (11.0%)	43 (14.3%)	37 (12.3%)	163 (54.3%)	57 (19.0%)	220 (73.3%)	Agreement
14.	I recover quickly from a poor grade or academic disappointment .	6 (2.0%)	31 (10.3%)	37 (12.3%)	55 (18.3%)	171 (57.0%)	37 (12.3%)	208 (69.3%)	Agreement

Sr #	Item Statement	SDA	DA	Total DA	N	A	SA	Total A	Result
15.	I do not give up easily on challenging academic tasks.	7 (2.3%)	24 (8.0%)	31 (10.3%)	32 (10.7%)	165 (55.0%)	72 (24.0%)	237 (79.0%)	Agreement

Note. $N = 300$. Percentages are rounded to one decimal place. Total DA = Strongly Disagree (SDA) + Disagree (DA); Total A = Agree (A) + Strongly Agree (SA).

As indicated in Table 3, participants agreed with the items in all three dimensions of cognitive resilience. The items that got the most agreement were those related to task persistence, specifically: Not easily giving up on difficult tasks (Item 15; 79.0%) and completing difficult tasks despite extra effort required (Item 13; 73.3%). With regard to cognitive flexibility and positive reframing, 71.0% consciously searched for positives after experiencing setbacks (Item 10), and 70.7% considered academic problems as learning opportunities (Item 5). The least agreement was with Item 1, where 54.7% of the participants agreed, and 25.7% disagreed.

Descriptive Item Statistics for Psychologically Restorative Environments

The following is the Descriptive Item Statistics for Psychologically Restorative Environments:

Table 4: Descriptive Statistics and Mean Rankings for PRE Items ($N = 300$)

Rank	Item Statement	M	SD	Dimension	Interpretation
1st	The campus provides suitable areas for studying and academic work.	3.797	0.934	Compatibility	Moderately High
2nd	I perceive that the university provides adequate space and facilities for my work/activities.	3.760	0.972	Extent	Moderately High
3rd	The various components of the university feel connected and well organized.	3.710	1.060	Extent	Moderately High
4th	The university environment supports the things I want to do.	3.680	1.010	Compatibility	Moderately High
5th	I feel mentally relaxed and away from my stress when I spend time in calming areas on campus.	3.610	0.967	Being Away	Moderately High
6th	The campus design meets my expectations for a higher education setting.	3.590	0.930	Compatibility	Moderately High

Rank	Item Statement	M	SD	Dimension	Interpretation
7th	I find quiet, suitable spots on campus when I need to concentrate on my work.	3.587	1.045	Compatibility	Moderately High
8th	Certain areas on campus provide charming views or sensory experiences.	3.580	0.966	Fascination	Moderately High
9th	The natural elements (e.g., plants, gardens) on campus effortlessly hold my attention.	3.560	1.047	Fascination	Moderately High
10th	The university environment feels engaging and large enough to explore and discover.	3.550	0.995	Extent	Moderately High
11th	I find the university's design and architecture attractive and engaging.	3.530	0.937	Fascination	Moderately High
12th	In certain campus locations, I feel free from academic pressure.	3.497	1.077	Being Away	Moderately High
13th	Looking at the campus scenery gives me a pleasant and relaxing mental break.	3.487	0.980	Fascination	Moderately High
14th	I can express myself and pursue my interests at university.	3.440	1.133	Compatibility	Moderately High
15th	The campus layout and design make it easy to navigate and find what I need.	3.423	1.068	Extent	Moderately High
16th	The campus has places where I can temporarily forget my academic responsibilities.	3.413	1.083	Being Away	Moderately High
17th	The campus environment has surprising or unexpected features that catch my interest.	3.410	1.003	Fascination	Moderately High
18th	There is enough space on campus for everyone to find a place that suits their needs.	3.396	1.109	Extent	Moderately High

Rank	Item Statement	M	SD	Dimension	Interpretation
19th	The university provides spaces where I can mentally take a break from my studies.	3.390	1.138	Being Away	Moderately High
20th	The university has quiet areas where I can escape noise, crowds, and daily distractions.	3.333	1.045	Being Away	Moderately High

As shown in Table 4, all 20 PRE items were moderately high (M=3.333 to 3.797). The PRE grand mean was M=3.535, revealing that the students found their university environment moderately restorative. The most highly rated attributes involved facilities for study (M=3.797, SD=0.934) and adequacy of space (M=3.760, SD=0.972). On the other hand, the least preferred aspects were those related to the Being Away scale, especially access to quiet places for escaping noise and congestion (M=3.333, SD=1.045), and places for mentally taking breaks from study (M=3.390, SD=1.138).

Descriptive Item Statistics for Cognitive Resilience

The following is the Descriptive Item Statistics for Cognitive Resilience:

Table 5: *Descriptive Statistics and Mean Rankings for Cognitive Resilience Items (N = 300)*

Rank	Item Statement	M	SD	Dimension	Interpretation
1st	I do not give up easily on challenging academic tasks.	3.903	0.933	Persistence	Moderately High / High
2nd	I finish challenging assignments, even when they require more effort.	3.747	0.996	Persistence	Moderately High
3rd	After academic challenges, I consciously look for positives.	3.683	0.945	Emotional Regulation	Moderately High
4th	I recover quickly from a poor grade or academic disappointment.	3.673	0.892	Persistence	Moderately High
5th	I consider multiple perspectives when solving academic problems.	3.650	0.933	Cognitive Flexibility	Moderately High
6th	I view academic challenges as opportunities rather than failures.	3.650	0.985	Cognitive Flexibility	Moderately High
7th	I handle pre-exam or presentation stress in a healthy way.	3.633	0.981	Emotional Regulation	Moderately High
8th	I can easily adjust my learning strategy when faced with difficult course material.	3.593	1.002	Cognitive Flexibility	Moderately High

Rank	Item Statement	M	SD	Dimension	Interpretation
9th	I stay committed to tasks, even if they feel boring.	3.480	1.029	Persistence	Moderately High
10th	I stay emotionally stable when receiving critical feedback on my work.	3.460	1.032	Emotional Regulation	Moderately High
11th	I can quickly refocus when I move from one subject or assignment to another.	3.453	1.057	Cognitive Flexibility	Moderately High
12th	I recover quickly from academic stress.	3.433	1.040	Emotional Regulation	Moderately High
13th	I can stay focused on difficult or complex study tasks for extended periods.	3.433	1.047	Persistence	Moderately High
14th	Academic concerns do not overwhelm me emotionally.	3.373	1.070	Emotional Regulation	Moderately High
15th	When a study plan fails, I can quickly generate a new, workable alternative.	3.307	1.142	Cognitive Flexibility	Moderately High

The findings revealed in Table 5 show that there were moderate-high levels of cognitive resilience among the students in all items ($M=3.307$ to 3.903), having a grand mean of $M=3.578$ on the scale. There were very high levels of persistence, starting with not easily giving up on hard tasks ($M=3.903$, $SD=0.933$) and hard assignments ($M=3.747$, $SD=0.996$). Positive reframing and recovery after academic failures were also favored. The lowest scores were achieved in coming up with alternative plans to study when initial attempts failed ($M=3.307$, $SD=1.142$) and emotional resilience towards academic worries ($M=3.373$, $SD=1.070$).

Discussion

This research assessed the perceptions of university students concerning a psychologically restorative university environment, cognitive resilience, and academic performance at a public university in Punjab, Pakistan. This paper uses insights from Attention Restoration Theory (ART) to empirically assess the perceptions of university students concerning their educational environment and their psychological capacity for dealing with challenges related to academics.

Students had a moderate perception of their university environment as being restorative ($M=3.535$). The maximum score was recorded for environmental compatibility and extent, where students appreciated the presence of appropriate study places, facilities, and environmental coherence. All these elements are consistent with the core concepts of ART, which suggest that a congruent campus infrastructure helps to reduce the risk of directed attention fatigue (Kaplan, 1995; Liu et al., 2024). The other element that was well appreciated by the students was nature-

related elements such as gardens and architectural design of the campus environment, confirming the earlier finding that the campus greenery acts as a daily resource for restoration (Browning et al., 2020; Gulwadi et al., 2019; Peters et al., 2020).

On the other hand, the least rated PRE items were those that had something to do with the being away dimension, specifically the presence of areas where they could have some peace of mind away from noise, crowds, and university distractions ($M=3.333$). As can be observed, the problem lies in the structure of public universities since high enrollments and heavy foot traffic mean that there would not be places where they could get away from distractions to allow attentional recovery (Li et al., 2024; Pouso et al., 2021).

In terms of cognitive resilience, the students showed moderately high scores ($M=3.578$), with persistence as their most prominent aspect. High levels of persistence, completing difficult tasks, and overcoming setbacks indicate high levels of academic perseverance (Cassidy, 2016; Martin & Marsh, 2006). The students also showed their cognitive flexibility through the way they saw academic challenges as learning experiences.

On the other hand, the lowest resilience results were recorded in cognitive flexibility in generating alternative study strategies when initial plans do not work ($M=3.307$) and managing academic concerns to avoid emotional overload ($M=3.373$). In light of such findings, it is possible to assume that even though determination to overcome obstacles is characteristic of the participants, additional assistance might be necessary in developing flexible academic coping mechanisms and managing emotions (Cassidy, 2016; Hunsu et al., 2023). The combination of restorative campus design and cognitive strategy training can facilitate such a process (Browning et al., 2020; Kaplan, 1995; Wang et al., 2024).

Conclusions

The descriptive quantitative research has revealed the following major conclusions concerning students' perception of their university environment and cognitive resources. Students at the University of Sargodha found their environment to be moderately restorative overall, giving the highest evaluations to functional spaces for studying, infrastructure, and arrangement.

Natural elements and architecture contributed to students' attention restoration; however, quiet spaces away from noise and crowds were rated low, revealing a weakness of the campus environment.

Students have shown moderate-high levels of cognitive resilience, which means that they were persistent in dealing with challenging tasks and reinterpreted failures in academic performance positively. The generation of alternative approaches to studying and coping with anxiety was rated relatively low.

Recommendations

On the basis of the above descriptive analysis, the following recommendations are proposed for university administration, estates management, and student counseling divisions:

1. Since quiet places to relieve oneself from noise and overcrowding got the least priority rating, it is recommended that the university administrators create quiet places in the form of landscaped courtyards and reading rooms free of noise in different faculties.
2. Campus development should incorporate elements of nature, including tree-lined pathways and gardens for relaxation.

3. Student counseling divisions and academic departments should conduct workshops on cognitive flexibility, restructured studying and coping with test anxiety alongside perseverance of students.
4. It is necessary to make sure that study places are clean, well-lit, ergonomic and temperature-controlled for sustaining attention.

Suggestions for Future Researchers

1. Based on this exploratory baseline study, future research must employ inferential approaches such as structural equation modeling or mediation regression models (Hayes Process) to look into the predictive relations between the dimensions of PRE, cognitive resilience components and CGPA.
2. Future researchers may apply qualitative methods, like semi-structured interviews, focus group discussions, and the photo voice approach, to understand the detailed views of students regarding particular restorative affordances on the campus.
3. Future studies must include students from different public and private universities in Pakistan in order to see if there is variation in the perception of campus restorativeness depending on the scale of institutions and urban environment.
4. Further research may explore the moderating effect of commuting distance, hostel status of students and economic backgrounds of students on the relation between restorativeness of campus and academic engagement.

Conflict of interest

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