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Perception of Undergraduates on Eco-conscious Academic Space for their Cognitive and Academic Performance

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Abstract

The design and quality of academic environments play a crucial role in shaping students' learning experiences and engagement. Although eco-conscious academic spaces that incorporate natural elements and sustainable design are gaining global attention, empirical evidence from Nepalese higher education remains limited. This study examines undergraduate students' perceptions of eco-friendly academic spaces and assesses the ecological and psychological support provided by existing campus environments.

Grounded in Person–Environment Fit Theory, the study adopts a quantitative, positivist approach using a structured questionnaire administered to students from institutions in the Chitwan and Nawalparasi districts. Data were analyzed using Principal Component Analysis and binary logistic regression. Findings reveal that students generally perceive their campuses as lacking eco-friendly and psychologically supportive features.

This study indicates tha students who associate natural environments with well-being are more likely to prefer green academic spaces, whereas emotional attachment to nature was not a significant predictor. The study proposes MECAS (Mindful Eco-Conscious Academic Space) and offers practical implications for sustainable, student-centered campus design.

Keywords: *academic functioning, cognitive performance, eco-conscious space, undergraduate students, mindful space, satisfaction, sustainable behaviour*

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Introduction

An eco-conscious academic space that operates continuously for students, describing a dynamic educational ecosystem where sustainability is not just a concept taught in lectures, but a lived experience that constantly shapes students' habits, enhances their well-being, develops their skills, and prepares them to contribute to a more sustainable future. Academic libraries with eco-conscious academic spaces that operate continuously are undergoing a significant transformation, adopting a "green" approach that emphasizes the importance of sustainability. This shift arises from an increasing awareness of libraries' environmental impact and demonstrates a strong commitment to sustainable practices among undergraduate students (Shah, Kumar & Shah, 2015).

Green libraries lead the way in promoting eco-friendly operations, services, and infrastructure, encompassing initiatives such as increasing energy efficiency and reducing waste, as well as adopting innovative, environmentally friendly technologies. Library commitment goes beyond simple physical changes; these libraries support overall environmental stewardship. They actively engage in discussions about climate issues and conservation efforts, working with community stakeholders to strengthen their commitment to sustainability (Antonelli & Isernia, 2024), which covers careful site selection, resource conservation, eco-friendly construction, maintaining good indoor air quality, and using renewable energy (Shah, Kumar & Shah, 2015).

Green libraries do more than adopt sustainable practices; they take a visionary approach that guides broader strategic objectives. As leaders in sustainability, they shape and steer strategic initiatives. Academic discussions often emphasize their efforts to cut energy use and enhance recycling. Sustainability is deeply woven into all aspects of their functions, from services and education to community involvement, fostering an eco-conscious mindset. By integrating sustainability into their core strategies, academic libraries actively confront complex ecological issues, aligning their operations with broader environmental objectives Shah, Kumar and Shah (2015). The upcoming sections will outline the specific strategies employed by these institutions to promote sustainability. There are research gaps in knowledge, literature, and specific levels of sample students, as well as the holistic function of eco-friendly academic spaces in the Nepalese context. Additionally, triangulation methods are necessary to provide a double lens for understanding problems from a mixed-methods approach, with a theoretical foundation and identification of policy gaps (Creswell & Planoclark, 2018). Many undergraduate students spend their free time on unproductive activities, such as using their mobile phones for non-academic purposes, discussing unnecessary agendas, and wandering aimlessly. The unmanageable ligature time of students has created psychological problems, which have indirectly impacted their academic performance negatively. Their idle behaviour during leisure time sometimes leads to gang fights inside educational institutions. They are still not aware of sustainability, as environmental degradation has been increasing steadily. Mobile phones have created the problem of social isolation in undergraduate-level students, which leads them the problems of mental health issues. Due to mental health issues, they are struggling to manage their study during the programmes. Creating and establishing an eco-friendly academic space is a cornerstone of informing students about future sustainability (Vella-Brodrick & Gilowska, 2022).

Our study aims to examine the influence of perception of undergraduates on eco-consicous academic space for their conginitive and academic performance at Chitwan and Nawalparasi districts, Nepal. To understand students' opinions and experiences regarding environmental sustainability through an eco-friendly academic space, the primary objectives of this study are to create an academic environment that fosters reading and mindfulness, promotes connection with nature, and motivates students to achieve better academic performance within an eco-friendly setting. A quantitative approach is an appropriate methodology for understanding the opinions and experiences of undergraduate-level students, complemented by a survey study to collect data.

Our study has selected three possible theories to gain a clear understanding of the influence of an eco-conscious academic space on the continuous functioning of undergraduate-level students at Oxford College of Engineering and Management, Gaindakot-2. Proper utilization of literature time by undergraduate students is highly beneficial to academic performance and mindfulness, which ultimately enhances the psychological well-being of undergraduate-level students. Our study importantly supports increasing the knowledge of green technology approaches for a sustainable future among undergraduate-level students, which indirectly fosters positive thoughts to support our societies in the Nepalese context. Our study also supports the generation of knowledge about group work, leadership skills enhancement, and environmental protection responsibility, which ultimately enables our society to advance and produce responsible citizens.

Person-Environment Fit Theory

Research on person-environment (PE) fit theory indicates that the level of comfort someone feels in their learning environment significantly influences the relationship between their actual fit and their perceived academic outcomes (Caplan & Harrison, 1993; Edwards & Rothbard, 1999; Tak, 2011). In simple terms, when people feel more positive and at ease in a learning setting, they tend to be more capable and productive. For example, if we enjoy our learning environment or arrangements, our view of the overall situation changes, which may help us find job satisfaction and well-being. Additionally, suppose we perceive a strong PE fit. In that case, we might try to modify our learning environment to better meet our needs—such as negotiating for a flexible study schedule or remote learning—or we might work on adapting ourselves to meet job demands by acquiring new skills (Resick et al., 2007).

Modern Perspectives on Personal Environment Fit

We selected Person-Environment (PE) Fit Theory because it provides a highly suitable framework for understanding how eco-conscious academic spaces influence the academic performance of undergraduate students, offering a robust and comprehensive lens for evaluating their impact. Furthermore, because it accounts for the subjective and objective interplay between the student and the environment, it recognizes the dynamic nature of evaluating the influence of eco-conscious academic spaces on undergraduate students and explicitly links the congruence to critical outcomes, such as continuous learning activities, well-being, and academic performance.

It moves beyond simply describing the features of a space to understanding how those features are perceived and how that perception translates into tangible impacts on students (Pasca, 2023). Recent developments in PE fit research emphasize that the relationship between a person and their environment should not be viewed in isolation. Instead, it is crucial to consider all external stressors and influences that impact this relationship, which can include family dynamics, societal expectations, cultural background, and ethnic origin (Edwards & Rothbard, 1999; Gati, 1989; Yost & Lucas, 2002), highlighting the dynamic nature of the person-environment relationship, where both sides often need to adjust and fine-tune themselves to maintain a healthy balance.

Literature Review

We chose ten relevant articles to examine research on how eco-friendly academic spaces affect students' ability to continue working at Oxford College of Engineering and Management. We used these keywords to look through the literature

Conceptual framework of this study

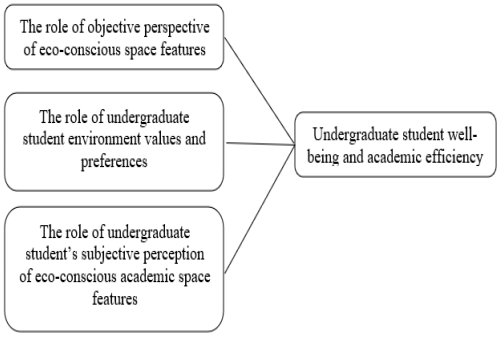

Figure 1. Association between independent and dependent variables

Literature review

Our review concentrated on the impact of environmentally conscious academic environments on the sustained performance of undergraduate students.

Table 1. Summary of the previous studies

Authors (Year)	Research Objective	Methods Used	Key Findings	Research Gaps
Cui and Leary (2018)	To explore the concept of 'classroom consciousness' through student-staff collaborative observation.	Qualitative case study, collaborative observation cycles.	Emergence of 'classroom consciousness' as a shared awareness, enhancing teaching and learning.	Limited generalizability beyond specific contexts.
Dadvandet al. (2015)	To assess the impact of greenness exposure on working memory and inattentiveness.	Cohort, satellite greenness measurement, cognitive tests (n = 2,60)	Average working memory increased by 22.8%, superio working memory by 15.2% inattentiveness decreased by 18.9%	Beyond pollution, mechanisms and cross-context replication remain understudied.
Barrett, et al. (2013)	To link environmental design factors to performance	Observational-751 pupils, ten environmental variables	Positve behavioral and academic improvement among students in classrooms with natural view	Theorical causality, methodological and longitudinal designs
Reinius et al. (2020)	To examine the impact of flexible learning spaces on teaching and learning practices.	Case study, participant observation, and interviews.	Flexible learning spaces fostered collaborative learning and teacher-student interactions.	Limited scope to a single classroom setting.
Shelton and Yao (2019)	To explore the development of critical consciousness in higher education and student affairs undergraduate students.	Literature review, theoretical analysis.	Emphasis on social justice and inclusion as core competencies for educators.	Need for empirical studies to validate theoretical frameworks.
Yin, et al. (2018)	To test physiological/ cognitive response.	Controlled indoor exposure	Enhanced physiological health and cognitive performance	Method age diversity, practical low cost design
Baker, L., & Bernstein, H. (2012)	To observe school building conditions impact on student health and academic performance	Conducted comparative assessment of building conditions linked to health and academic performance indicators	Better school buidling conditions lead to healthier students and improved academic performance	Lack of long term comprehensive studies on combined environmental factors
Van den Bogerd et al. (2020)	To tests indoor plants affect on students mood and cognitive performance	Field Experiments	A classroom with plants or flowers boosted students attention, lecture ratings and perceived environmental quality compared to controlled rooms	Practical, scalable, larger samples, plants models
Jandrić and Loretto (2021)	Examine how interior design influences the experiences of postundergraduate students in business school spaces.	Qualitative interviews and thematic analysis in a corporate-style academic setting.	Spatial layouts influence students' sense of belonging and comfort, even when unintentionally hierarchical.	Single institution and discipline; needs broader, multi-context validation.
Laage et al. (2019)	Evaluate the impact of indoor green spaces on student productivity and overall well-being.	Mixed-method: surveys, t-tests, chi-square tests at Dalhousie University.	Increased productivity and well-being are perceived in green environments; there is a strong preference for more vegetation indoors.	Self-reported perceptions only; lacks behavioral or physiological measures.

McFarland, Waliczek, and Zajicek (2010)	Investigate the use of campus green areas by undergraduate students and their impact on their quality of life.	Online survey; descriptive statistics.	No significant correlation was found between the use of green space and the perceived quality of life among undergraduate students.	Cross-sectional; perception-focused; possible confounding factors unexamined.
Barrett et al. (2017).	Analyse how physical classroom attributes affect learning progress.	Quantitative modelling across reading, writing, and math achievement.	Natural light and flexible layout enhance learning; biophilic elements benefit writing; moderate visual stimulation is optimal.	Primary school context; may not apply to graduate-level environments.
Chen et al (2020)	Identify campus standard space features that foster psychological restoration.	Survey of 478 students; statistical mediation analysis.	Landscape and activity facilities have the most significant influence on restoration; active behaviours amplify these effects.	Focused on the general student population; lacks graduate-specific insights.

Research gaps

A review of the literature highlights significant gaps, indicating that much of the current research on co-conscious academic spaces and related learning environments is constrained by narrow contexts and methodological limitations. Many studies are confined to single institutions, disciplines, or classrooms, which limit the applicability of their findings across diverse educational settings. The literature also suggests that the lack of longitudinal and follow-up studies hampers the ability to evaluate long-term impacts on student outcomes. Several studies rely heavily on self-reported perceptions or indirect measures, often without incorporating behavioral, physiological, or performance data to enhance validity.

Theoretical contributions often lack extensive empirical validation, and some focus exclusively on specific areas like introductory physics or primary education, leaving gaps in understanding at the undergraduate level. Furthermore, the widespread use of cross-sectional designs restricts causal analysis and neglects potential confounding factors. While some research addresses the broader student population, there is a notable dearth of studies focused on undergraduate students, thus overlooking their distinct cognitive, social, and emotional challenges.

Methods and materials

A quantitative research approach is applied as the research philosophical foundation. This approach is based on positivist philosophy, where the research phenomenon is objective because positivists believe that there is a single reality that is already apprehended. This approach is based on a deductive approach because it tests the existing theory (Adhikari, 2022). We chose a quantitative approach because it enables us to use statistical tools to describe patterns and explore numerical relationships between variables. This method is especially effective for establishing measurable links, though it is less suitable for uncovering the underlying reasons or causal processes behind those connections. For instance, quantitative research can demonstrate how local governments deliver services to their citizens (Adhikari, 2022; Pathak, Baral & Adhikari, 2024).

Approach to quantitative research

Quantitative research typically follows a deductive framework, which starts with existing theories and uses them to guide the entire process. In political science, this process begins with reviewing key literature, identifying dominant theories, and pinpointing gaps or debates that require further investigation. These insights enable us to formulate hypotheses that address unresolved questions (Stockemer & Bordeleau, 2023). Quantitative methods can also be used to test existing theories using new data, to determine the boundaries of those theories, or to identify specific contexts where they are applicable. Regardless of the goal, strong research starts with a theoretically grounded research question and hypothesis. Ideally this question

should focus on a politically significant issue and seek to advance theory, whether by extending, revising, or questioning it. The hypothesis must clearly define independent and dependent variables, propose a plausible relationship between them, and account for potential control variables (Cohen, Manion, & Morrison, 2017). Practical constraints, such as access to existing data, influenced both the measurement of our variables and the scope of our study. Once we gathered the data, we applied appropriate statistical methods to evaluate our research question and contribute to theoretical understanding (Cohen et al., 2017).

It is important to recognize the limitations of cross-sectional data. Because both independent and dependent variables are collected simultaneously, we cannot claim that one causes the other. Therefore, our findings must be interpreted in consideration of existing theory, reasoning, or informed judgment. This type of data is most effective when theories already suggest how variables are related over time (Stockemer & Bordeleau, 2023).

Survey design overview

This diagram shows how we structured the survey design process, starting with a clear statement of the study's purpose and the selection of relevant research questions. It then discusses the construction phase, when you develop valid and reliable survey items that align with the research goals. After this, the survey is given to the people who are supposed to answer it, to gather data in an organised way.

The last steps are to analyse the data we collected using appropriate methods and report the results clearly in a research-aligned way. This completes the survey design framework for our study. This sequential design not only makes the research more credible but also ensures that the study's goals, data collection process, and results are aligned, which strengthens the overall methodological rigour of the investigation.

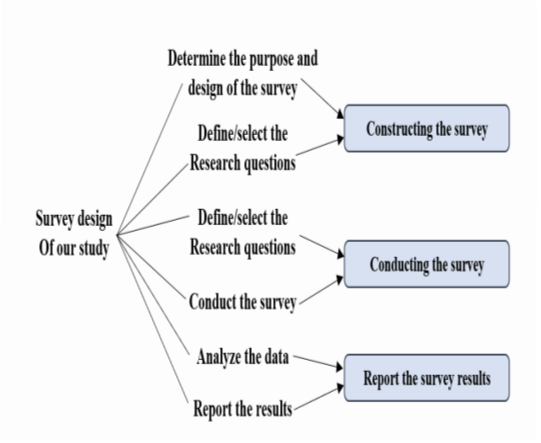

Figure 1. Survey Design Steps (Stockemer & Bordeleau, 2023)

Survey Implementation and Analysis

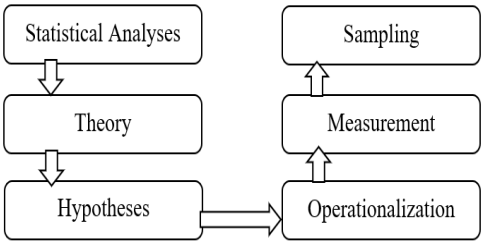

Figure 2. Survey Process of our study

We sent out the survey in both print and online formats so everyone could take part, even those without internet access. Out of the two hundred and nine (N = 209) respondents who took part, one hundred and fifteen answered online, and ninty four participated in a survey in person.

Once we had all the data, we cleaned it up so we could analyse it more. Next, we used a factor-reduction method to find the most important parts. After that, we used Principal Component Analysis (PCA) and Binary Logistic Regression (BLR) to look at how the variables were related. We also used a Chi-square test to look at how undergraduate students' opinions and experiences differed by gender (see Figure 2).

Results

This section presents the results of the collected data in relation to the research questions.

Table 1. Factor loadings of the first independent variable

Variables/Principal component (PC)	Factors loading	
Plants(greenery) help you feel more focused.	.790	Nature's role in enhancing study and mental clarity (1st PC)
Being near nature enhances my thoughts and feelings.	.737	
Fresh air makes my study space better.	.736	
I feel more connected to nature in this environment.	.637	
Sunlight makes a study space better.	.882	(2nd PC) Emotional Bo nd with Nature
Earthy materials (like wood and stone) feel calm to me.	.782	
Nature in a room makes studying more enjoyable.	.459	

The results show that seven survey variables group into two factors: (the role of nature in enhancing focus and mental clarity, and emotional connection with nature). The highest factor loading is for "Plants (greenery) help you feel more focused" at .790, and the lowest is for "fresh air makes my study space better" at .637. The second principal component has the highest loading of .882 and the lowest of .459 (see Table 1).

Scales	Mean	SD	Alpha	Variances	KMO
Nature's role in enhancing study and mental clarity	1.813	.711	.742	33.07%	.812
Emotional Bond with Nature	2.212	.791	.612	23.55%	

Table 2. Mean, SD, Alpha. Variances and KMO values

In summary, the "nature's role in enhancing study and clarity" scale demonstrates strong reliability and is suitable for factor analysis. In contrast, the "emotional bond with nature" scale shows marginal reliability and accounts for less variance, indicating the need for further refinement. The results also reveal that respondents reported their experiences as leaning towards disagreement with the variables of the first PC (see Table 2).

They still demonstrated their expertise in the dispute, but they were unaware of the variables in the second PC. The results also show that students disagree with statements like "plants (greenery) help them feel more focused," "being near nature enhances their thoughts and feelings," "fresh air improves their study space," "they feel more connected to nature in this environment," "sunlight improves a study space," "earthy materials (like wood and stone) feel calming," and "nature in a room makes studying more enjoyable" (see Table 2).

Table 3. Summary of the table of independent T-test results

Variable	Male mean	M. SD	Females mean	F. SD	Significance
Nature's role in enhancing study and mental clarity."	1.807	.638	1.806	0.77	P= .218 > 0.05
Emotional Bond with Nature	2.295	.739	2.138	0.82	P = .076 > 0.05

The student's independent t-test results showed that the mean score for male students (n = 96) on the first subscale, Nature's role in enhancing study and mental clarity (M = 1.807, SD = 0.638), was not significantly different [t (207) = .005, p = .996] from that of female students (N = 113) for the same variable (M = 1.8068, SD = 0.770).

Likewise, the findings indicate that the mean score for male students (N = 96) on the second subscale, emotional bond with nature (M = 2.295, SD = 0.739), did not significantly differ [t (207) = 1.428, p = .076] from that of female students (N = 113) for the same variable (M = 2.138, SD = 0.829) (Table 3).

Table 4. Regression analysis of Model 1

Statistical tools	Model summary	Hosmer and Lemeshow Test	Omnibus Tests of Model Coefficient
Chi-Square		19.620	12.741
df		8	2
Significance		.012	.002
Cox & Snell R Square	.059		
Nagelkerke R Square	.123		
-2 Log likelihood	123.585		

The Omnibus test, with a chi-square value of 12.741 (df = 2, p = .002), indicated that the model fits the data better than a null model that includes

no predictors. The Hosmer-Lemeshow test, with a p-value of 0.123, also indicated a good fit of the model. This means the model's predictions match the data it was actually trained on. The model's predictive accuracy went up from 89% to 90% when the explanatory variables in Block 1 were added. The final model's predictions were correct 89.9% of the time. The results also show that the baseline model accurately predicts the number of bachelor-level students who choose a green academic space [188 (89.95%)]. Howerver it does not accurately guess which students do not pick a green academic space [21 (10.07%)] (see Table 4).

Table 5. Binary Logistic Regression model to predict nature's role in enhancing study, mental clarity, and emotional bond with nature

Variables of the equation	B	S.E.	Wald	df	Sin	Exp (B)	Exp (B)	
Natural environment benefits	1.102	.329	11.227	1	.001	3.011	**Lower**	**Upper**
Emotional bond with nature	-.210	.347	.366	1	.545	.811	1.580	5.73
Constant	-3.94	.805	23.94	1	.000	.019	.410	1.601

The results also show a significant association between the benefits of the natural environment and undergraduate student academic efficiency ($p < 0.05$, odds ratio = $3.011 > 1$, $B = 1.102 > 0$). This means that the benefits of the natural environment and of choosing a green academic space during college mutually enhance one another. However the results show no association between emotional bond with nature and undergraduate student academic efficiency.

Table 6. Factor loadings of the first independent variable

Variables/Principal component (PC)	Factors loading	
Nature-based spaces reflect personal values.	.803	Eco-conscious, supportive spaces
Studying in spaces that support well-being and the planet brings pride.	786	
Well-designed spaces help build emotional resilience.	.783	
Eco-conscious spaces on campus are worth supporting.	.465	
Calmness is a valued part of the study experience.	.794	Mentally supportive learning environment
Spaces affect how people think and feel.	780	
Learning spaces should support mental health.	.751	

Table 7. Summary of the table of the PCs

Scales	Mean	SD	Alpha	Variances	KMO
Eco-conscious, supportive spaces	2.020	.698	.700	30.211%	
Mentally supportive learning environment	1.983	.740	.760	29..58%	.81

The fndings show that the third subscales has higher avearge scores then the fourth. However, respondents choose the second option on the Five-pont Likert Scale Type in each survey, indicating they disagreed with the statements that nature-based spaces reflect personal values, that studying in spaces that support well-being is important, that the planet brings pride, that well-designed spaces help build emotional resilience, and that eco-conscious spaces on campus are worth supporting. In the same way, they disagree with the statements that calmness is an important part of the study experience, that spaces affect how people think and feel, that learning spaces should be good for mental health, and that surroundings affect motivation (see Table 7).

Table 8. Summary of the table of independent T-test results

Variable	Male mean	M. SD	Females mean	F. SD	Significance
Eco-conscious, supportive spaces	2.049	.6434	1.995	.7432	P= .315 > 0.05
Mentally supportive learning environment	2.013	.7083	1.958	.7683	P = .515 > 0.05

The student's independent t-test results indicated that the average score for male students (N = 96) on the first subscale, Nature's role in enhancing study and mental clarity (M = 2.049, SD = 0.64345), did not significantly differ [t (207) = .555, p = .315] from that of female students (N = 113) for the same variable (M = 1.995, SD = 0.7432). The findings reveal that the average score for male students (N = 96) on the second subscale, emotional bond with nature (M = 2.013, SD = 0.7083), did not significantly differ [t (207) = .535, p = .515] from that of female students (N = 113) for the same variable (M = 1.958, SD = 0.7683) (refer to Table 8).

Table 9. Regression analysis of Model 1

Statistical tools	Model summary	Hosmer and Lemeshow Test	Omnibus Tests of Model Coefficient
Chi-Square		5.116	5.729
df		8	2
Significance		.749	.047
Cox & Snell R Square	.027		
Nagelkerke R Square	.058		
-2 Log likelihood	125.549		

The Omnibus test, with a chi-square value of 5.729 (df = 2, p = .047), indicated that the model fits the data better than a null model without predictors. The Hosmer-Lemeshow test, with a p-value of .749 (not statistically significant), also indicated that the model fit well. This means that the model's predictions match what was actually seen. The model's predictive accuracy went up from 90% to 90.5% when the explanatory variables in Block 1 were added. The final model was 90% accurate in its predictions. The results also show that the baseline model correctly predicts the number of bachelor-level undergraduate students who choose a green academic space [186 (88.99%)] but not those who do not [20 (9.56%)] (see Table 9). The Omnibus test, with a chi-square value of 5.729 (df = 2, p = .047), indicated that the model fits the data better than a null model without predictors. The Hosmer-Lemeshow test, with a p-value of .749 (not statistically significant), also indicated that the model fit well. This means that the model's predictions match what was actually seen. The model's predictive accuracy went up from 90% to 90.5% when the explanatory variables in Block 1 were added. The final model was 90% accurate in its predictions. The results also show that the baseline model correctly predicts the number of bachelor-level undergradute students who choose a green academic space [186 (88.99%)] but not those who do not [20 (9.56%)] (see Table 9).

Table 10. Binary Logistic Regression to predict eco-conscious, supportive spaces and a mentally supportive learning environment (N = 209)

Variables of the equation	B	S.E.	Wald	df	Sin	Exp (B)	Exp (B)	
Eco-conscious, supportive spaces	-.394	.265	2.209	1	.133	.725	Lower	Upper
Mentally supportive learning environment	-.378	.203	3.468	1	.049	.698	.477	1.103
Constant	-2.348	.258	82.778	1	.000	.019	.469	1.032

The findings demonstrate a significant correlation between a mentally supportive learning environment and the selection of a green academic space during college ($p < 0.05$, odds ratio = .698 < 1, B = -.378 < 0), suggesting a detrimental effect of a mentally supportive environment on the choice of a green academic space in college. Nonetheless, the results indicate no significant correlation between environmentally conscious, supportive environments and the selection of a green academic space during college ($p > 0.05$) (refer to Table 10).

Key findings

The factor analysis of the original variables identified two primary components: the significance of nature in facilitating study and mental clarity, and the emotional connection with nature. The first part was very reliable ($\alpha = 0.742$, accounting for 33.07% of the variance), while the second part was only slightly reliable ($\alpha = 0.612$, accounting for 23.55% of the variance). In general, people who answered disagreed with statements about both factors. Independent t-tests indicated no significant gender differences for either component. A secondary factor analysis revealed two supplementary components: eco-conscious, supportive spaces ($\alpha = 0.700$, accounting for 30.21% of the variance) and a mentally supportive learning environment ($\alpha = 0.760$, accounting for 29.58% of the variance).

Participants predominantly disagreed with statements about these factors, and no significant gender differences were observed. Logistic regression demonstrated a significant association between a mentally supportive learning environment and the selection of a green academic space (odds ratio = 0.698, $p < 0.05$), indicating a negative correlation. Conversely, eco-friendly and supportive spaces exhibited no significant correlation. Logistic regression also showed that thinking that the natural environment was good for you made you much more likely to choose a green academic space (odds ratio = 3.011, $p < 0.05$). Nevertheless, the emotional connection with nature did not emerge as a significant predictor (Desembrianita et al., 2024).

Discussion, conclusion, and recommendation

The results indicate a significant negative correlation between a mentally supportive learning environment and the selection of a green academic space in college ($p < 0.05$), suggesting that such an environment negatively influences the selection of a green space. This finding is corroborated by Liu et al. (2025), who proposed potential explanations for a negative relationship in specific contexts (for instance, if a "mentally supportive" indoor environment fulfils students' social and psychological needs, they may favour indoor green spaces over outdoor ones). Nevertheless, no research has directly examined this hypothesis and reported findings ($p < .05$). Our study identified a negative correlation between perceptions of benefits from the natural environment and the likelihood of selecting a green academic space ($p < 0.05$). This finding is corroborated by Chen et al. (2020), who demonstrated that perceived health benefits of green spaces significantly predicted the willingness to utilise parks. However, the connection to actual park usage in terms of frequency and duration was less robust.

This means may not always choose green spaces based on what they think will benefit them. Our research examines the impact of an environmentally conscious academic environment on the sustained performance of undergraduate students, a novel concept introduced by Chitwan and Nawalparasi districts and their research division.

This new practice might prompt undergraduate students to seek a new quiet place to study. We just started this idea based on our lab for an eco-friendly academic space that will help undergraduate students at Chitwan and Nawalparasi districts keep going. In two years, we expect more students to participate in our academic lab so we can conduct more comprehensive research and learn new things.

Conclusion

This study examined the perception of undergraduates on eco-consicous academic space for their conginitive and academic performance. The results indicated that students showed minimal

agreement with assertions about nature-based design, emotional connections to natural elements, eco-friendly spaces, and psychologically supportive learning environments, suggesting that the current academic setting may not adequately provide robust ecological or psychological support. According to regression analysis, thinking that natural environments are good for you made it much more likely that we would choose a green academic space.

However, feeling emotionally connected to nature did not. In the same way, mentally supportive learning environments had a negative but significant relationship, which means that students can now be more likely to use traditional indoor supportive spaces than eco-friendly ones, which indicate a disparity between environmental awareness and active participation in eco-friendly environments. In general, the study shows that academic institutions need to do a better job of integrating biophilic elements, sustainable design features, and awareness-raising programs. Improving green academic spaces can help undergraduate students stay focused, feel better, and stay in school for a long time.

Recommendations

Strengthen eco-conscious academic spaces

To improve cognitive clarity and focus, add more natural elements, such as plants, sunlight, and natural materials.

To help people feel better and focus better, make the air inside your home cleaner and better ventilated.

Set up special green study areas that are quiet, comfortable, and inspired by nature.

Enhance awareness and environmental education

Hold orientation programs for undergraduate students on how to be environmentally friendly.

Run campaigns to raise awareness of the importance of eco-friendly academic spaces.

Integrate sustainability themes into college events, classes, and workshops.

Address students disconnect with nature-based spaces

Start programs that help students see the benefits of learning in nature, since the results showed that few people agreed with these benefits.

Set up mindfulness or study sessions in nature to help students get used to eco-friendly spaces.

Improve mentally supportive learning environments

Make study areas better for mental health by adding more quiet areas, stress-free zones, and comfortable seating.

Add mental health and counselling support to eco-friendly places.

Encourage the use of green academic spaces

Give students who often use eco-friendly labs or study rooms rewards, such as help with research or recognition programs.

Make sure these areas are easily accessible, clean, and free of noise.

Strengthen policy alignment with sustainability goals

Put in place campus-wide policies that promote sustainability and take into account students' preferences for eco-friendly spaces.

Ensure the choices you make regarding design, materials, and energy-use systems meet green infrastructure standards.

Foster student participation and ownership

Get students involved in creating eco-friendly spaces, keeping them up, and improving them.

Promote sustainability on campus by encouraging group projects, student clubs, and volunteer work.

Expand research and continuous improvement

Do long-term studies to find out how eco-friendly spaces affect learning, mental clarity, and productivity over time.

To strengthen future findings, use a mix of methods, such as surveys, behavioural observations, and physiological measures.

Based on student feedback and new research, regularly update eco-friendly academic spaces

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