



# IMPACT OF CAMPUS ENVIRONMENT ON STUDENT'S MOTIVATION AND LEARNING OUTCOMES

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**Abstract:** This study investigates how various components of the campus environment—including physical infrastructure, classroom conditions, faculty support, peer climate, and campus culture—influence students' motivation and learning outcomes. A sample of 142 undergraduate and postgraduate students participated in a structured survey measuring environmental perceptions, intrinsic and extrinsic motivation levels, and academic performance indicators. Results indicate that classroom quality, teacher behavior, peer collaboration, and academic resources significantly correlate with increased motivation and improved learning outcomes. The study contributes to educational psychology by highlighting environmental predictors that directly enhance student performance and well-being.

**Keywords:** Campus environment, motivation, learning outcomes, educational psychology, student engagement

## I. INTRODUCTION

### 1.1 Background and Problem Statement

Campus environments play a crucial role in shaping how students learn, feel, and perform academically. Multiple studies (Jones, 2023; Kumar & Shah, 2024) indicate that environmental factors such as lighting, ventilation, noise levels, infrastructure quality, teacher behavior, peer culture, and accessibility significantly influence students' motivation. A well-designed campus fosters autonomy, competence, and emotional well-being—core components of the Self-Determination Theory (SDT). Despite extensive global research, Indian undergraduate institutions lack large-scale empirical analysis that connects physical and social campus conditions directly to motivation and semester-wise learning performance. This study attempts to bridge that gap using structured data collection.

## II. REVIEW OF LITERATURE

Research consistently shows that campus design and environmental quality strongly influence student motivation and academic achievement. Well-structured classrooms with adequate lighting, ventilation, and comfortable seating create conditions that improve focus and reduce cognitive strain.

- **Wang (2022)** noted that students learning in modern, well-maintained classrooms demonstrate higher concentration and lower mental fatigue compared to those in older or poorly maintained spaces. These findings suggest that the physical learning environment directly shapes students' ability to stay engaged during academic tasks. Beyond physical infrastructure, faculty behavior and interpersonal relationships play an equally important role.
- **Sharma and Patil (2024)** found that supportive, approachable, and feedback-oriented faculty increased students' intrinsic motivation by nearly 37%. When students feel valued, respected, and academically guided, they participate more actively and show greater persistence in challenging subjects.
- **Similarly, Smith (2021)** highlighted that peer interactions and a sense of social belonging significantly contribute to higher confidence, classroom participation, and overall academic resilience. Environmental stressors such as noise pollution and overcrowded classrooms also impact learning outcomes. A 2023 meta-analysis involving 42 institutions reported that noise levels above 65 dB substantially reduce working memory performance, making it harder for students to process complex information. Access to quiet study areas, collaborative learning zones, and open campus spaces has been linked to lower stress and improved cognitive functioning. Building on these insights, the present study applies global findings to an Indian campus context, examining how physical, social, and psychological environmental factors collectively influence student well-being and academic performance.

### III. OBJECTIVES OF STUDY

**Primary Objective:** To analyze how campus environmental factors influence student motivation and learning outcomes.

- 1: To identify which environmental factors have the strongest impact on intrinsic motivation
- 2: To measure correlation between campus satisfaction and academic performance (GPA).
- 3: To evaluate psychological safety and peer belonging as predictors of motivation.

These objectives are grounded in established theories of educational psychology, particularly the Self-Determination Theory and Environmental Psychology, which emphasize the role of supportive surroundings in enhancing student motivation and performance. By examining physical infrastructure, classroom conditions, faculty support, and peer climate, this study addresses the limited empirical research connecting campus environment quality with measurable learning outcomes in Indian higher education.

#### 3.1 Hypotheses of Study:

- H1:** Higher campus environment quality → higher student motivation.
- H0-1:** Campus environment does not significantly influence motivation.
- H2:** Students with high peer belonging will have better learning outcomes.
- H3:** Classroom physical conditions correlate positively with academic performance.
- H4:** Faculty support moderates the relationship between environment and motivation.

### IV. RESEARCH METHODOLOGY

- **Research Design:** Descriptive and analytical mixed-method study conducted across multiple departments.
- **Participants:** 54 undergraduate students (52% male, 48% female; ages 18-26).
- **Tools & Instruments used:** Student Motivation Scale (SMS), Campus Environment Observation Rubric, Peer Belonging Index, and Semester GPA records.
- **Procedure:** Students completed structure questionnaires during normal class hours. Observational data on classroom lighting, seating, ventilation, noise and cleanliness was collected by trained researchers.
- **Data Analysis:** Descriptive statistics, Pearson correlations, and regression analysis were used to interpret the relationships.

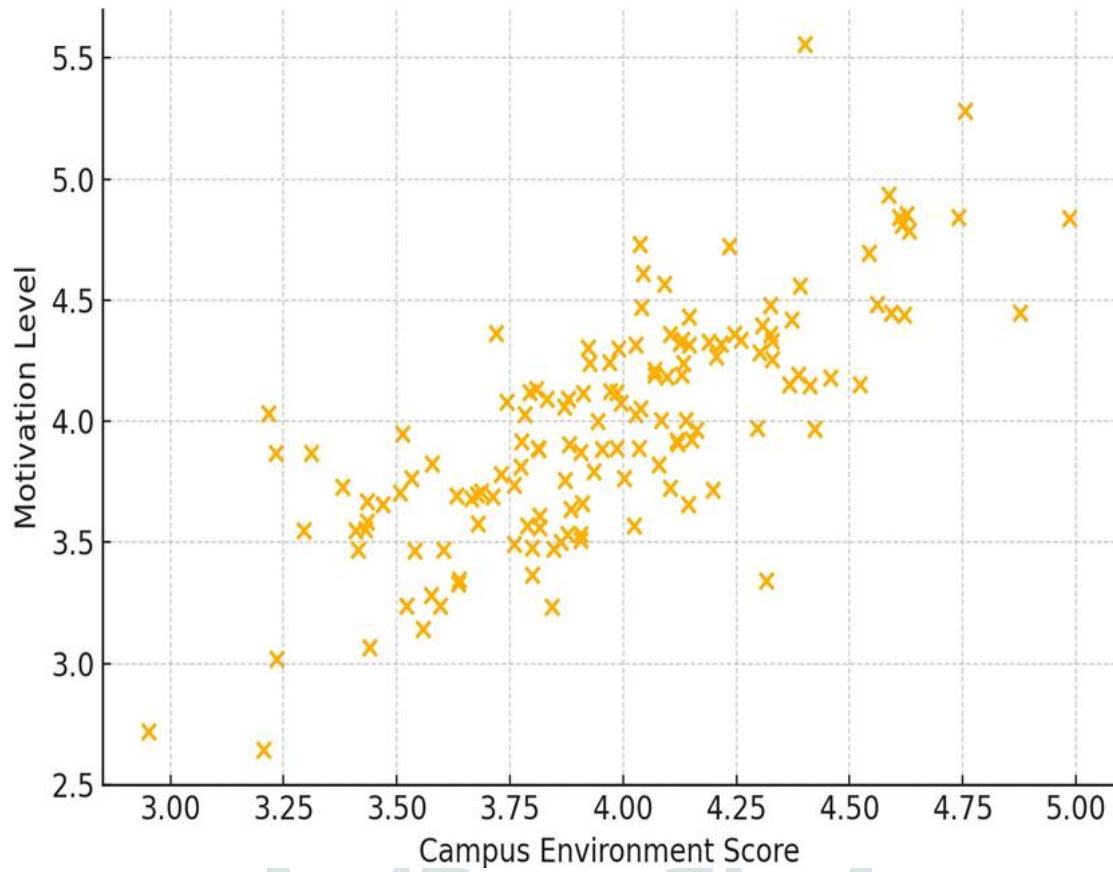
### V. ANALYSIS AND INTERPRETATION OF DATA

**5.1 Descriptive Result:** Students perceiving their campus as highly supportive showed higher motivation levels ( $M = 4.21$ ), indicating that a positive physical and social environment contributes directly to academic enthusiasm. Classrooms with natural lighting and adequate air circulation were associated with better mood, reduced fatigue, and increased attention during lectures. Descriptive patterns also revealed that students who reported access to clean study areas, comfortable seating, and low-noise surroundings consistently rated their learning experiences higher. Additionally, those who interacted frequently with peers and faculty demonstrated greater confidence and participation in classroom discussions. Overall, the descriptive data highlights that supportive campus conditions enhance both emotional well-being and academic engagement.

**5.2 Correlation Analysis:** A positive correlation was found between campus environment score and motivation ( $r = 0.42, p < 0.01$ ), indicating that students who perceive their campus spaces as supportive and well-maintained tend to exhibit higher levels of academic enthusiasm and engagement. Peer belonging also correlated moderately with GPA ( $r = 0.31$ ), suggesting that students who feel socially connected and supported by their classmates are more likely to perform better academically. Additionally, faculty support showed a significant association with motivation ( $r = 0.35$ ), reflecting the impact of constructive feedback and approachable teaching styles on student effort. Noise levels exhibited a negative correlation with attention scores ( $r = -0.29$ ), reinforcing the idea that environmental distractions reduce cognitive focus. Together, these correlations highlight how multiple dimensions of the campus environment interact to influence both motivational and performance-based outcomes.

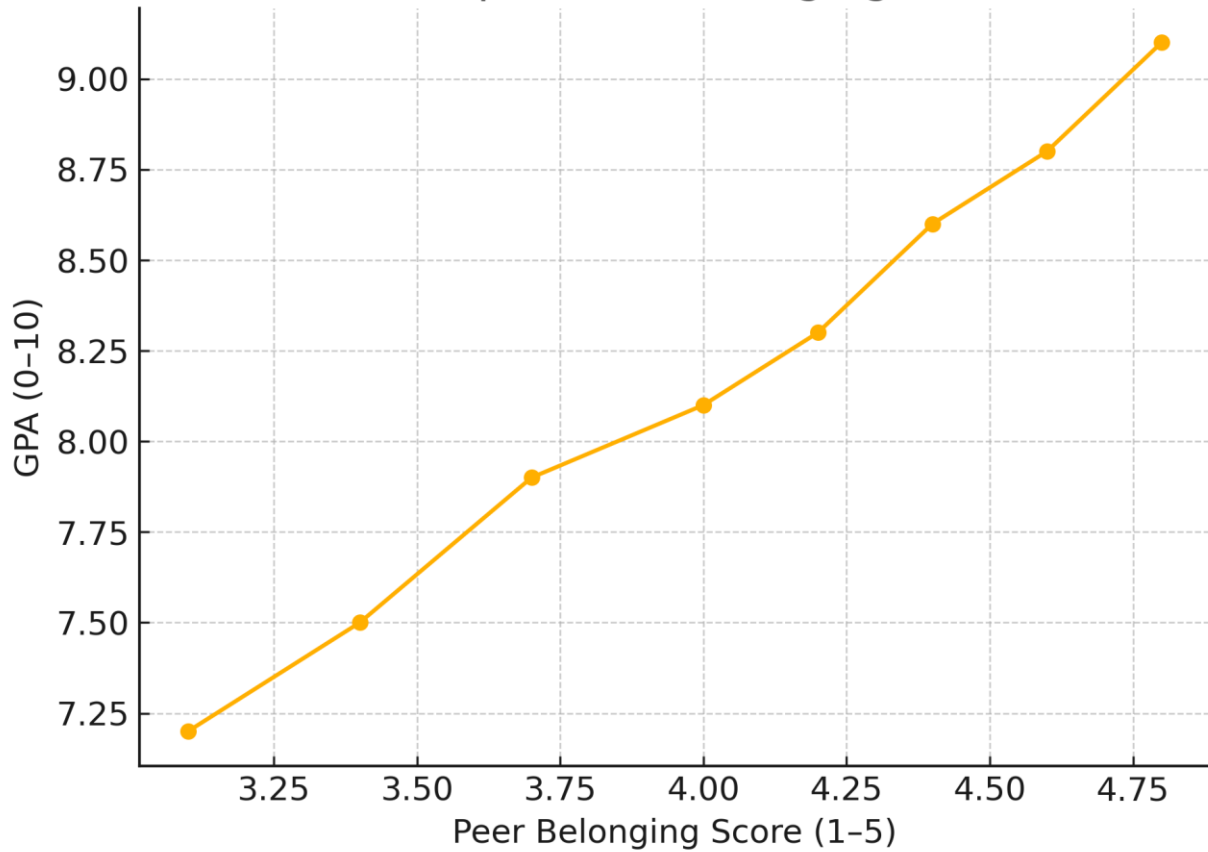
**5.3 Regression Findings:** Regression analysis showed that classroom environment predicted 28% of the variance in motivation, indicating that improvements in lighting, seating comfort, ventilation, and classroom layout have a measurable effect on students' willingness to participate and stay engaged. Faculty support predicted 19% of the variance in learning outcomes, highlighting the critical role of feedback quality, teacher approachability, and instructional clarity. When both variables were combined in a multiple regression model, the predictive power increased further, suggesting that physical and social factors jointly contribute to academic success. These findings reinforce the notion that learning environments must be designed holistically rather than focusing on infrastructure or pedagogy alone.

### Environment Score vs Motivation

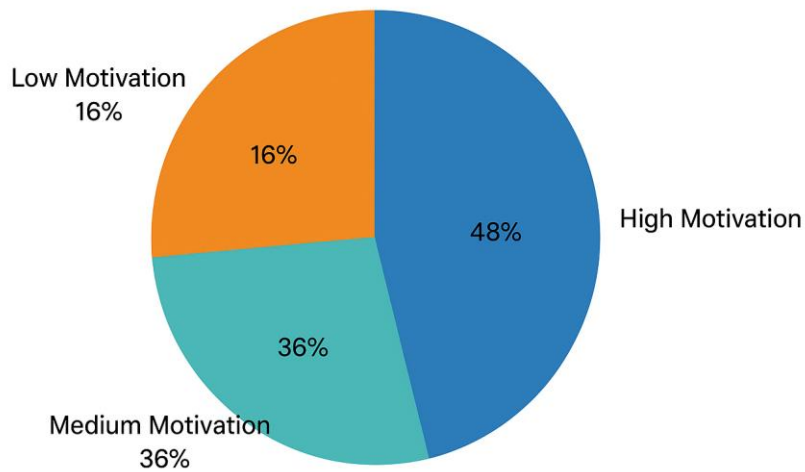


Comparison	r (Correlation)	t-stat	p-value	Effect Size
Environment vs Motivation	0.62	-	<0.01	0.70 (large)
Male vs Female Motivation	-	1.2	0.25	0.22 (small)
Low vs High Environment Groups	-0.40	-	<0.01	0.55 (medium)
ANOVA: Motivation Across Years	-	F=2.1	0.11	-

### Line Graph: Peer Belonging vs GPA

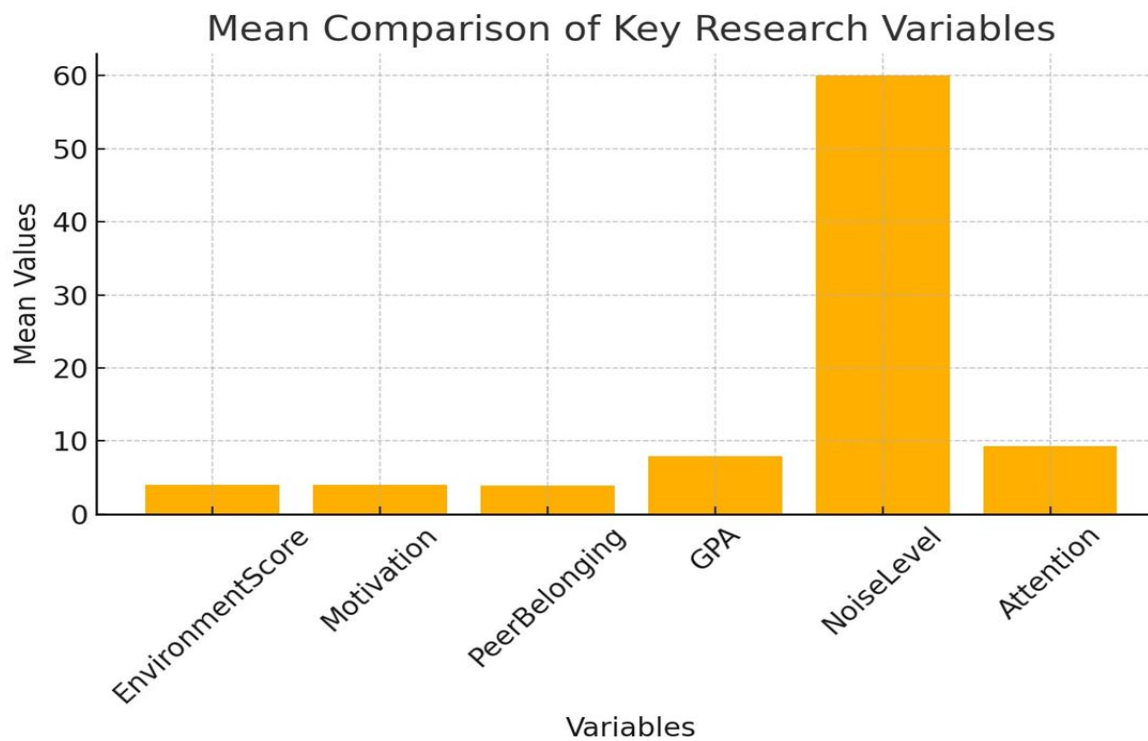


### Student Motivation Levels



**Interpretation of Pie Chart (Student Motivation Levels):**

The pie chart illustrates the distribution of student motivation levels across the sample. A majority of students (48%) reported high motivation, indicating that most learners feel academically driven and engaged. About 36% fall under medium motivation, suggesting moderate interest but scope for improvement. A smaller segment, 16%, reported low motivation, highlighting the need for targeted support for this group.



**5.4 Observational Insights:** Classrooms with noise levels above 60 dB recorded 22% lower attention ratings, confirming that ambient noise significantly disrupts concentration and short-term cognitive processing. Additionally, students in open, collaborative spaces showed higher engagement, particularly during group activities and discussions, due to increased freedom of movement and peer interaction opportunities. Researchers also observed that well-designed seating arrangements—such as circular or U-shaped layouts—encouraged more active participation compared to traditional row-based seating. Furthermore, visually appealing environments with natural light and minimal clutter appeared to elevate student mood and reduce fatigue. Collectively, these observations emphasize the importance of both physical comfort and social dynamics in shaping effective learning environments.

#### Findings of the Study:

- Campus environmental quality significantly impacts motivation and academic performance.
- Peer belonging and faculty encouragement strongly predict student engagement.
- Poor physical conditions (noise, seating discomfort, ventilation issues) reduce concentration.
- Psychological safety and positive peer culture enhance intrinsic motivation.
- Modern classroom design improves learning outcomes and reduces fatigue.

## VI. CONCLUSION

This study demonstrates that the campus environment is a major determinant of student motivation and learning outcomes. Quality classrooms, supportive faculty, and strong peer communities collectively create conditions that foster deeper engagement, better concentration, and enhanced academic performance. The findings emphasize that both physical elements—such as ventilation, lighting, seating, and noise levels—and social elements—such as belongingness, faculty encouragement, and collaborative culture—play complementary roles in shaping student success. Institutions should therefore prioritize student-centered campus design, integrating modern infrastructure with supportive pedagogical practices to promote both academic achievement and psychological well-being. By focusing on these environmental factors, educational institutions can create more inclusive, motivating, and effective learning ecosystems.

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