

AN EMPIRICAL ANALYSIS OF THE CORRELATION BETWEEN INSTITUTIONAL ENVIRONMENT DIMENSIONS AND MENTAL STRESS AMONG COACHING INSTITUTE STUDENTS IN KOTA CITY

*A Gender-Segregated Quantitative Investigation Evaluated Across Multi-Level
Environmental Strata*

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Abstract

This research paper provides an empirical evaluation of the statistical correlation between various dimensions of the institutional environment and mental stress among coaching institute students in Kota City. The study stratifies the cohort by gender (Female and Male) and segments their perceived institutional environment into high, average, low, and total operational tiers. Statistical tests utilize a significance level of 0.05 with 298 degrees of freedom. The institutional environment is evaluated through six specialized dimensions: physical, administrative, educational, supporting, community, and overall institutional framework. The empirical results demonstrate distinct correlation dynamics across genders and environment tiers, selectively rejecting or accepting the null hypotheses across multiple institutional dimensions.

1. Introduction

The coaching institute ecosystem in Kota city attracts a substantial population of students preparing for competitive examinations. Understanding the environmental determinants of mental stress in these settings is critical for educational policy and student welfare. This paper systematically explores the relationship between institutional environment dimensions—namely physical, administrative, educational, supporting, and community environments—and the corresponding levels of mental stress reported by female and male students. By analyzing data distributed across different baseline levels of environmental quality (high, average, low, and total framework integration), this study aims to clarify which environmental factors exacerbate or mitigate psychological strain.

2. Methodology

The quantitative investigation measures the correlation coefficient (r) between institutional parameters and mental stress. The statistical significance of each correlation coefficient is verified against a threshold significance level of 0.05 with degrees of freedom (df) specified as 298. Calculated values are cross-checked against a critical baseline parameter value noted as 113 within the records to evaluate significance. A null hypothesis is formulated for each dimension,

stating that there is no significant correlation between that specific environmental dimension and the mental stress of coaching institute students. The rejection of the null hypothesis confirms the presence of a statistically significant relationship.

3. Data Analysis and Results

3.1 Quantitative Assessment for Female Students

The evaluation for the female cohort is segmented into four distinct institutional environment profiles: high, average, low, and overall total.

3.1.1 High Institutional Environment Profile (Female)

table 1: correlation analysis for female students within a high institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.193	Significant
Administrative Environment	Mental Stress	0.2014	Significant
Educational Environment	Mental Stress	0.1323	Significant
Supporting Environment	Mental Stress	0.030	Non-Significant
Community Environment	Mental Stress	-0.206	Significant
Overall Institutional Environment	Mental Stress	0.000185	Non-Significant

Physical Dimension: The correlation coefficient between the physical environment and mental stress is -0.193, indicating a negative correlation. The calculated value exceeds the threshold parameter of 113 at the 0.05 significance level with 298 degrees of freedom. Therefore, the null hypothesis is rejected, indicating a significant relationship.

Administrative Dimension: The correlation coefficient is 0.2014 (noted with an inverse sign textually as -0.2014). It exceeds the significance threshold at 0.05 level for 298 degrees of freedom. The null hypothesis is rejected, indicating a significant relationship.

Educational Dimension: The correlation coefficient is 0.1323, showing a negative correlation contextually. The value is lower than the 0.05 significance level critical marker. However, the null hypothesis is rejected, establishing a significant correlation.

Supporting Dimension: The correlation coefficient is 0.030, falling below the critical value of 113 at the 0.05 significance level with 298 degrees of freedom. There is no negative correlation, and the null hypothesis is accepted, indicating no significant relationship.

Community Dimension: The correlation coefficient is -0.206, reflecting a negative correlation. The calculated value exceeds the 0.05 significance level threshold with 298 degrees of freedom. The null hypothesis is rejected, demonstrating a significant relationship.

Overall Institutional Environment: The correlation is 0.000185, which falls below the significance threshold value with 298 degrees of freedom at the 0.05 level. The text identifies a negative correlation structure where the null hypothesis is rejected, establishing that a significant relationship is absent.

3.1.2 Average Institutional Environment Profile (Female)

table 2: correlation analysis for female students within an average institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.0786	Significant
Administrative Environment	Mental Stress	0.4910	Significant
Educational Environment	Mental Stress	0.0067	Non-Significant

Supporting Environment	Mental Stress	0.0900	Significant
Community Environment	Mental Stress	-0.0443	Significant
Overall Institutional Environment	Mental Stress	0.0195	Non-Significant

Physical Dimension: The correlation coefficient is -0.0786 (noted textually as 0.0786). It exceeds the threshold value of 113 at a 0.05 significance level with 298 degrees of freedom. The null hypothesis is rejected, establishing a significant correlation.

Administrative Dimension: The correlation is 0.4910 (textually referenced as -0.0491). The value is greater than the significance threshold for 298 degrees of freedom. The null hypothesis is rejected, meaning a significant relation exists.

Educational Dimension: The correlation coefficient is 0.0067, which is less than the critical value of 113 at a 0.05 level for 298 degrees of freedom. The text shows a negative correlation arrangement where the null hypothesis is rejected, confirming no significant relation.

Supporting Dimension: The correlation is 0.0900, which is below the critical threshold value of 113 for 298 degrees of freedom at a 0.05 level. The null hypothesis is rejected, establishing a significant relationship.

Community Dimension: The correlation is -0.0443 (textually noted as 0.0443). It is higher than the baseline significance requirement for 298 degrees of freedom. The null hypothesis is rejected, proving a significant relationship.

Overall Institutional Environment: The correlation is 0.0195, which is greater than the value 113 threshold at a 0.05 significance level with 298 degrees of freedom. The negative correlation framework rejects the null hypothesis, indicating that there is no significant relationship.

3.1.3 Low Institutional Environment Profile (Female)

table 3: correlation analysis for female students within a low institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.3727	Significant
Administrative Environment	Mental Stress	0.2021	Significant
Educational Environment	Mental Stress	0.1809	Significant
Supporting Environment	Mental Stress	0.1831	Significant
Community Environment	Mental Stress	-0.0786	Significant
Overall Institutional Environment	Mental Stress	0.1391	Significant

Physical Dimension: The correlation coefficient is -0.3727 (noted textually as 0.3727). This value is greater than the 113 value baseline at 0.05 significance with 298 degrees of freedom. The null hypothesis is rejected, showing a significant relationship.

Administrative Dimension: The correlation value is 0.2021 (textually represented as -0.2021). This exceeds the standard significance level requirement. The null hypothesis is rejected, confirming a significant relationship.

Educational Dimension: The correlation measures 0.1809, which is less than the 0.05 significance level parameters. The null hypothesis is rejected, establishing a significant relationship.

Supporting Dimension: The correlation is 0.1831, which is less than the critical indicator value 113 for 298 degrees of freedom. The null hypothesis is rejected, indicating a significant correlation.

Community Dimension: The correlation is -0.0786 (textually noted as 0.0786). This exceeds the baseline value for 298 degrees of freedom. The null hypothesis is rejected, indicating a significant correlation.

Overall Institutional Environment: The correlation is 0.1391, which is less than the critical baseline value at a 0.05 significance level with 298 degrees of freedom. The null hypothesis is accepted, indicating that a significant relationship exists within this tracking segment.

3.1.4 Total Institutional Environment Evaluation (Female)

table 4: complete comprehensive institutional environment correlation analysis for female students

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.043	Non-Significant
Administrative Environment	Mental Stress	0.1099	Significant
Educational Environment	Mental Stress	0.0786	Significant
Supporting Environment	Mental Stress	0.050	Non-Significant
Community Environment	Mental Stress	-0.0326	Significant
Overall Institutional Environment	Mental Stress	0.0767	Significant

Physical Dimension: The correlation matches -0.043, which is lower than the standard value 113 threshold at 0.05 significance with 298 degrees of freedom. The null hypothesis is accepted, indicating that a significant relationship is not present.

Administrative Dimension: The correlation coefficient is 0.1099 (textually noted as -0.1099). It exceeds the significance requirement at the 0.05 level. The null hypothesis is rejected, demonstrating a significant relationship.

Educational Dimension: The correlation is 0.0786 (textually identified as 0.0768). This exceeds the standard threshold requirements for 298 degrees of freedom. The null hypothesis is rejected, demonstrating a significant relationship.

Supporting Dimension: The correlation is 0.050, falling below the critical value threshold of 113 at the 0.05 level with 298 degrees of freedom. The null hypothesis is accepted, confirming no significant relationship exists.

Community Dimension: The correlation is -0.0326 (textually reported as 0.0326). This is greater than the standard baseline at a 0.05 significance level. The null hypothesis is rejected, indicating a significant correlation.

Overall Institutional Environment: The correlation is 0.0767, which is lower than the significance value for 298 degrees of freedom. The null hypothesis is accepted, identifying a significant relationship within this cohort.

3.2 Quantitative Assessment for Male Students

The empirical evaluation for male students is similarly structured across high, average, low, and combined comprehensive institutional dimensions.

3.2.1 High Institutional Environment Profile (Male)

table 5: correlation analysis for male students within a high institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.1176	Significant
Administrative Environment	Mental Stress	-0.2779	Significant
Educational Environment	Mental Stress	0.5363	Significant
Supporting Environment	Mental Stress	-0.4649	Significant
Community Environment	Mental Stress	-0.6314	Significant
Overall Institutional Environment	Mental Stress	0.0032	Non-Significant

Physical Dimension: The correlation is -0.1176, which is higher than the standard baseline value 113 at the 0.05 significance level with 298 degrees of freedom. The null hypothesis is rejected, verifying a significant correlation.

Administrative Dimension: The correlation is -0.2779, which exceeds the critical index value for 298 degrees of freedom. The null hypothesis is rejected, showing a significant relationship.

Educational Dimension: The correlation coefficient is 0.5363, which is lower than the critical marker threshold at the 0.05 level. The null hypothesis is rejected, confirming a significant correlation.

Supporting Dimension: The correlation is -0.4649, which is less than the value 113 parameter standard at a 0.05 significance level. The null hypothesis is rejected, indicating a significant relationship.

Community Dimension: The correlation is -0.6314, exceeding the computed threshold level for 298 degrees of freedom. The null hypothesis is rejected, indicating a significant relationship.

Overall Institutional Environment: The correlation is 0.0032, exceeding the critical marker value 113 for 298 degrees of freedom at the 0.05 level. The negative correlation tracking rejects the null hypothesis, confirming that there is no significant relationship.

3.2.2 Average Institutional Environment Profile (Male)

table 6: correlation analysis for male students within an average institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	0.0198	Non-Significant
Administrative Environment	Mental Stress	0.0243	Significant
Educational Environment	Mental Stress	-0.1045	Significant
Supporting Environment	Mental Stress	0.0505	Significant
Community Environment	Mental Stress	-0.0183	Significant
Overall Institutional Environment	Mental Stress	0.0144	Non-Significant

Physical Dimension: The correlation measures 0.0198, which is lower than the critical value 113 with 298 degrees of freedom at the 0.05 level. The null hypothesis is accepted, showing no significant correlation.

Administrative Dimension: The correlation matches 0.0243 (textually cited with high-tier overlap as -0.2779). The value exceeds the 0.05 significance level guidelines. The null hypothesis is rejected, confirming a significant relationship.

Educational Dimension: The correlation is -0.1045 (textually listed as 0.5363). It is less than the critical value baseline. The null hypothesis is rejected, showing a significant relationship.

Supporting Dimension: The correlation is 0.0505 (textually noted as -0.4649). It is lower than the critical indicator value 113. The null hypothesis is rejected, indicating a significant correlation.

Community Dimension: The correlation is -0.0183 (textually noted as -0.6314). It is higher than the standard baseline value at a 0.05 level. The null hypothesis is rejected, establishing a significant relationship.

Overall Institutional Environment: The correlation is 0.0144 (textually listed as -0.0144). It is greater than the value 113 marker at the 0.05 significance level with 298 degrees of freedom. The null hypothesis is rejected, confirming no significant relationship.

3.2.3 Low Institutional Environment Profile (Male)

table 7: correlation analysis for male students within a low institutional environment tier

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	0.1819	Non-Significant
Administrative Environment	Mental Stress	0.2799	Significant
Educational Environment	Mental Stress	-0.0026	Non-Significant

Supporting Environment	Mental Stress	-0.1175	Significant
Community Environment	Mental Stress	-0.1195	Significant
Overall Institutional Environment	Mental Stress	0.2204	Significant

Physical Dimension: The correlation is 0.1819 (textually stated as -0.1819). It is greater than the value 113 indicator threshold at the 0.05 significance level with 298 degrees of freedom. The null hypothesis is rejected, showing a significant relationship.

Administrative Dimension: The correlation tracks at 0.2799 (textually noted as -0.2779). It exceeds the significance baseline requirement for 298 degrees of freedom. The null hypothesis is rejected, confirming a significant relationship.

Educational Dimension: The correlation is -0.0026 (textually noted as 0.0026). This is less than the critical baseline value of 113. The null hypothesis is rejected, indicating no significant relationship.

Supporting Dimension: The correlation coefficient is -0.1175 (textually reported as 0.1175). This is lower than the value 113 index threshold at the 0.05 level. The null hypothesis is rejected, showing a significant correlation.

Community Dimension: The correlation equals -0.1195 (textually listed as 0.1195). This is greater than the standard reference line at the 0.05 level. The null hypothesis is rejected, demonstrating a significant relationship.

Overall Institutional Environment: The correlation is 0.2204, which is lower than the calculated significance guidelines. The null hypothesis is accepted, confirming a significant relationship.

3.2.4 Total Institutional Environment Evaluation (Male)

table 8: complete comprehensive institutional environment correlation analysis for male students

Institutional Environment Dimension	Correlated Variable	Correlation Coefficient (r)	Statistical Significance
Physical Environment	Mental Stress	-0.0066	Non-Significant
Administrative Environment	Mental Stress	0.0242	Significant
Educational Environment	Mental Stress	-0.0455	Significant
Supporting Environment	Mental Stress	-0.0260	Significant
Community Environment	Mental Stress	-0.1177	Significant
Overall Institutional Environment	Mental Stress	0.2204	Significant

Physical Dimension: The correlation parameter is -0.0066 (textually identified as 0.0066). It is lower than the value 113 benchmark at 0.05 significance with 298 degrees of freedom. The null hypothesis is accepted, indicating no significant relationship.

Administrative Dimension: The correlation value is 0.0242 (textually listed as -0.0242). This exceeds the standard significance limits for 298 degrees of freedom. The null hypothesis is rejected, validating a significant relationship.

Educational Dimension: The correlation reaches -0.0455 (textually listed as 0.0455). This is below the significance marker threshold. The null hypothesis is rejected, establishing a significant correlation.

Supporting Dimension: The correlation is -0.0260, which is lower than the critical 113 value baseline at the 0.05 level with 298 degrees of freedom. The null hypothesis is rejected, showing a significant relationship.

Community Dimension: The correlation is -0.1177, which exceeds the calculated significance limits for 298 degrees of freedom. The null hypothesis is rejected, showing a significant correlation.

Overall Institutional Environment: The correlation is 0.2204 (textually listed as -0.0494). This is lower than the calculated threshold level with 298 degrees of freedom. The null hypothesis is accepted, confirming that a significant relationship is present.

4. Discussion

The empirical verification across multiple strata shows that institutional environmental sub-dimensions influence mental stress differently based on gender perceptions. For instance, within high institutional environments, the physical environment shows negative correlations for both female ($r = -0.193$) and male ($r = -0.1176$) cohorts, which are statistically significant. This suggests that improvements in physical facilities are associated with variations in student stress levels. Conversely, administrative dimensions uniformly generate significant positive or structural impacts across most profiles, confirming that administrative frameworks within coaching institutions play an important role in tracking student stress levels.

An important finding is that the overall institutional environment framework shows a non-significant relationship for female students at high ($r = 0.000185$) and average tiers ($r = 0.0195$), but shows a significant relationship at low ($r = 0.1391$) and total comprehensive levels ($r = 0.0767$). For male students, the total comprehensive overall institutional environment correlates significantly ($r = 0.2204$), indicating that variations in the complete organizational atmosphere have clear associations with mental stress parameters within this group.

5. Conclusion

This study investigated the relationship between institutional environments and mental stress among coaching institute students in Kota City. The results indicate that sub-dimensions like the administrative, physical, community, and educational environments have a significant relationship with student mental stress. The structural dynamics differ between female and male cohorts, as well as across high, average, and low baseline environment classifications. These results emphasize the need for coaching institutes to monitor specific environmental factors to better support student mental well-being.

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