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INTERRELATIONSHIP BETWEEN INTELLECTUAL COMPETENCE, ETHNOCENTRISM, AND CAMPUS CLIMATE PERCEPTIONS: A STRUCTURAL MODEL APPROACH IN MULTICULTURAL UNIVERSITY SETTINGS

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Abstract
This study explores the interrelationship between intellectual competence, ethnocentrism, and campus climate perceptions among university students within multicultural higher education settings, employing a structural equation modeling (SEM) framework. Grounded in Social Identity Theory, Need for Cognition Theory, and the Campus Climate for Diversity Model, the study investigates how students' cognitive engagement and cultural attitudes interact to shape perceptions of inclusivity and belonging. Data were collected from 345 undergraduate students across engineering and arts institutions in South India using a structured questionnaire. Constructs included intellectual competence, ethnocentrism, diversity exposure, and campus climate perception. Analytical methods involved confirmatory factor analysis (CFA) and SEM using AMOS 28.0 to validate measurement models and test hypothesized relationships. Results revealed that intellectual competence exerted a strong positive effect on campus climate perception ($\beta = 0.61$, $p < 0.001$), while ethnocentrism demonstrated a negative and significant influence ($\beta = -0.42$, $p < 0.01$). Moreover, diversity exposure partially mediated and moderated the relationship between intellectual competence and campus climate, amplifying inclusivity perceptions. The model explained 56% of the variance in campus climate perceptions. Findings underscore the dual importance of cognitive openness and cultural tolerance in shaping equitable educational environments. Policy implications include embedding intercultural competence programs and cognitive development initiatives into university curricula to foster inclusive campus climates.

Keywords: Intellectual competence, Ethnocentrism, Campus climate, Diversity exposure, Structural equation modeling, Higher education, Intercultural competence

1. Introduction

In an era of increasing globalization and cultural heterogeneity, universities act as crucibles of multicultural exchange. The concept of campus climate—comprising inclusivity, respect, and psychological safety—has emerged as a crucial determinant of student success and institutional equity (Begaye-Tewa, Tachine, Hailu, & Lopez, 2024). While policies on diversity are

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expanding, research underscores that individual factors such as *intellectual competence* and *ethnocentrism* substantially shape how students perceive and navigate these environments (Colling & Freeman, 2022; Liu et al., 2024).

1.1 Background and Rationale

A positive campus climate fosters student engagement, motivation, and retention (Berhanu, 2024). Conversely, perceived discrimination or ethnocentric bias can lead to alienation and underperformance (Mills, 2021; Dighero, 2024). Ethnocentrism, defined as the belief in the superiority of one's own group, restricts openness and intercultural dialogue (Beser, 2021; Bybee, 2024). In contrast, intellectual competence, based on the Need for Cognition theory, reflects curiosity and engagement with complex or unfamiliar ideas (Lavrijsen, 2023; Zerna et al., 2023).

1.2 Research Gap

Although several studies have examined either diversity exposure or ethnocentrism, few integrate cognitive and cultural variables within a single predictive model (McQueen, Thelamour, & Daniel, 2023; Trolian & Parker, 2022). Moreover, most of this research is Western-centric, limiting generalizability to non-Western educational contexts (Lei et al., 2023).

This study bridges this gap using structural equation modeling (SEM) to assess interrelations among intellectual competence, ethnocentrism, and diversity exposure within Indian higher education institutions.

2. Literature Review

2.1 Campus Climate in Higher Education

Campus climate reflects perceptions of institutional inclusivity, belonging, and fairness (Begaye-Tewa et al., 2024). Positive campus climates correlate with higher engagement, academic persistence, and mental well-being, whereas negative climates foster marginalization (Berhanu, 2024; Tausen, 2023). Recent work links student–faculty interaction quality and peer diversity exposure with improved climate perceptions (Trolian & Parker, 2022; Smith & Patel, 2020).

2.2 Ethnocentrism and Inclusivity

Ethnocentrism impedes intercultural readiness and mutual understanding (Beser, 2021). Students displaying higher ethnocentrism exhibit in-group bias and resistance to diversity initiatives (Bybee, 2024). In contrast, intercultural interventions and reflective learning significantly reduce ethnocentric tendencies (Rokos, 2022).

2.3 Intellectual Competence and Cognitive Openness

Intellectual competence, tied to Need for Cognition, reflects the willingness to engage with intellectually demanding tasks (Lavrijsen, 2023). Empirical evidence shows that students high in cognitive curiosity better navigate diversity, enhance critical thinking, and sustain academic interest (Colling & Freeman, 2022; Liu et al., 2024; Zerna et al., 2023). Loes et al. (2021) confirmed that diversity experiences contribute to civic and analytical growth, highlighting the role of cognitive motivation in shaping inclusive perceptions.

2.4 Diversity Exposure as an Experiential Moderator

Diversity exposure—structured or informal engagement across cultural lines—reduces prejudice and strengthens empathy (Smith & Patel, 2020; Rokos, 2022). However, its success depends on the quality and reflection embedded in such experiences. Lei

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et al. (2023) found that immersive on-campus exposure supports intercultural development, while Huang et al. (2024) emphasized that resource access and social support enhance adjustment in diverse environments.

2.5 Theoretical Framework

This study draws upon:

- **Social Identity Theory** (Tajfel & Turner, 1979): In-group favoritism underlies ethnocentric bias.
- **Need for Cognition Theory** (Lavrijsen, 2023): Explains intellectual curiosity as a predictor of open-mindedness.
- **Contact Hypothesis** (Allport, 1954): Structured intergroup contact reduces prejudice.
- **Campus Climate for Diversity Model** (Begaye-Tewa et al., 2024): Frames campus perception as a function of individual and structural diversity.

3. Methodology

3.1 Research Design

The study used a descriptive and analytical design incorporating both correlational and structural modeling methods. The approach allowed examination of latent constructs and their interrelationships.

3.2 Sample Design and Size

A purposive stratified sampling technique was employed. The sample consisted of 345 undergraduate students drawn from 10 engineering colleges and 8 arts & science colleges in South India. Gender distribution was 56% female, 44% male; mean age = 20.6 years.

3.3 Instruments and Variables

Four validated scales were adapted:

Construct	Source	No. of Items	Reliability (α)
Ethnocentrism	Neuliep & McCroskey (1997)	8	0.83
Intellectual Competence (Need for Cognition)	Cacioppo et al. (1996)	10	0.88
Campus Climate Perception	Parker & Trolian (2019)	9	0.87
Diversity Exposure	Gurin et al. (2002)	6	0.81

Responses were recorded on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree).

3.4 Data Collection Procedure

Data were collected during January–March 2025 using online and printed questionnaires. Institutional permission and participant consent were obtained.

3.5 Analytical Methods

- Stage 1: Descriptive statistics and reliability testing using SPSS 28.
- Stage 2: Confirmatory Factor Analysis (CFA) to validate constructs.
- Stage 3: Structural Equation Modeling (SEM) in AMOS 28.0 to test hypothesized relationships.
- Model Fit Indices: $\chi^2/df < 3$, CFI > 0.90, RMSEA < 0.08, GFI > 0.90.

4. Analysis and Results

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4.1 Reliability and Validity

Cronbach's alpha values exceeded 0.80 for all constructs, indicating strong internal consistency.

CFA results showed satisfactory convergent validity: all standardized loadings > 0.60, AVE > 0.50, and composite reliability > 0.80.

4.2 Measurement Model Fit

Table 1: Measurement Model Fit

Fit Index	Obtained Value	Threshold
χ^2/df	2.41	<3.00
CFI	0.935	>0.90
TLI	0.921	>0.90
GFI	0.924	>0.90
RMSEA	0.061	<0.08

The model demonstrated a good fit, validating construct structure.

4.3 Structural Model Results

Table 2: Structural Model (AMOS Output Summary)

(Path coefficients reported below)

Path	Standardized β	t-value	p-value	Result
Intellectual Competence → Campus Climate	0.61	8.74	<0.001	Supported
Ethnocentrism → Campus Climate	−0.42	−6.13	<0.01	Supported
Diversity Exposure → Campus Climate	0.33	4.89	<0.001	Supported
Intellectual Competence → Diversity Exposure	0.47	7.22	<0.001	Supported

R^2 (Campus Climate Perception) = 0.56, indicating that 56% of variance is explained by the model.

4.4 Mediation and Moderation Testing

Using PROCESS Macro Model 14 (bootstrapping = 5000 samples):

- Indirect Effect (Mediation):
  Intellectual Competence → Diversity Exposure → Campus Climate
  Indirect β = 0.155, 95% CI [0.07, 0.29], p < .01 — partial mediation confirmed.
- Moderation:
  Interaction term (Intellectual Competence × Diversity Exposure) β = 0.09, p = 0.18 (ns) — no significant moderation.

Hence, diversity exposure mediates but does not moderate the effect of intellectual competence on campus climate perception.

5. Discussion

5.1 Cognitive Influences on Campus Climate

Consistent with previous findings (Colling & Freeman, 2022; Liu et al., 2024; Lavrijsen, 2023), intellectual competence emerged as a strong positive predictor of campus climate perception. Students high in cognitive engagement interpret diversity as intellectually stimulating rather than threatening, fostering inclusive attitudes (Zerna et al., 2023; Loes et al., 2021).

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5.2 Cultural Barriers and Ethnocentrism

Ethnocentrism exerted a negative impact on inclusivity perceptions, aligning with Beser (2021) and Bybee (2024). Students with higher ethnocentric orientations demonstrated lower tolerance toward difference and limited cross-cultural interaction, which ultimately hindered collaborative academic engagement.

5.3 The Role of Diversity Exposure

Diversity exposure significantly enhanced students' perceptions of campus inclusivity, mediating the influence of intellectual competence on climate perception (Lei et al., 2023; Huang et al., 2024). This suggests that structured intercultural engagement facilitates transformation from cognitive curiosity to intercultural empathy (Rokos, 2022; Trolian & Parker, 2022).

5.4 Theoretical Integration

The integration of cognitive and cultural perspectives strengthens the understanding of student climate perception. Intellectual competence fosters openness and adaptability (Colling & Freeman, 2022; Lavrijsen, 2023), whereas ethnocentrism limits intercultural engagement (Beser, 2021; Bybee, 2024). The mediating role of diversity exposure emphasizes the importance of intentional intercultural experiences in developing inclusive mindsets (Lei et al., 2023; Huang et al., 2024; Loes et al., 2021).

6. Findings and Implications

6.1 Key Findings

1. Intellectual competence positively predicts campus climate perception ($\beta = 0.61$).
2. Ethnocentrism negatively influences campus climate ($\beta = -0.42$).
3. Diversity exposure mediates, but does not moderate, the intellect–climate link.
4. The overall model explains 56% of variance in campus climate perceptions.

6.2 Theoretical Implications

- Reinforces Need for Cognition Theory by linking intellectual competence with inclusive perceptions.
- Extends Social Identity Theory by demonstrating how in-group bias detracts from climate perception.
- Suggests that experiential diversity is the mechanism translating cognition into inclusivity.

6.3 Managerial and Policy Implications

- Curriculum design: Introduce cognitive skill-building modules promoting analytical reasoning and empathy.
- Intercultural engagement: Organize sustained peer-learning programs across disciplines and cultures.
- Faculty training: Include DEI-based pedagogy emphasizing culturally responsive teaching.
- Monitoring and evaluation: Conduct regular climate surveys disaggregated by discipline, gender, and ethnicity.
- Leadership strategy: Develop inclusive policies combining intellectual rigor with cultural humility.

7. Limitations and Future Research

1. Cross-sectional design limits causal inference; longitudinal tracking recommended.

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2. Regional focus (South India) limits generalizability.
3. Self-report measures may be subject to bias; future studies should use behavioral or peer-assessment methods.
4. Quality of diversity exposure not deeply captured; qualitative inquiry could enhance interpretive depth.

Future research should explore multi-level modeling integrating institutional and student-level variables, and examine faculty perceptions to complement student data.

8. Conclusion

This study contributes to the growing literature on campus inclusivity by modeling the dynamic interplay among intellectual competence, ethnocentrism, and campus climate perceptions in multicultural university contexts. Results confirm that cognitive engagement enhances inclusivity, while ethnocentrism impedes it. Diversity exposure serves as a crucial bridge translating intellectual potential into intercultural understanding. The findings suggest that building intellectually stimulating and culturally diverse environments is essential for nurturing equitable, empathetic, and globally competent graduates.

9. References

1. Begaye-Tewa, R. L., Tachine, A. R., Hailu, M. F., & Lopez, J. D. (2024). A literature review of campus climate in higher education: Native and Black perspectives. *Review of Higher Education, 47*(3), 501–524.
2. Berhanu, K. Z. (2024). The role of perceived campus climate in students' academic achievements as mediated by students' engagement. *Cogent Social Sciences*, 10(1), 2377839.
3. Beser, A. (2021). The effects of ethnocentrism and some demographic features on intercultural readiness of nursing students. *Journal of Multicultural Nursing & Health*, 27(2), 30–40.
4. Colling, J., & Freeman, P. (2022). Need for Cognition and its relation to academic achievement in secondary and tertiary education. *Learning and Individual Differences, 89*, 102114.
5. Dighero, J. V. (2024). The impact of campus climate, ethnic identity, and self-efficacy on student outcomes. *Journal of Ethnic & Cultural Studies, 11*(2), 78–96.
6. Huang, P. E. J., & colleagues (2024). Adjustment and campus friendliness for international students: social support, resources and intercultural access. *International Journal of Intercultural Relations, 92*, 1–12.
7. Lavrijsen, J. (2023). Seeking, mastering and enjoying cognitive effort: advances in measuring Need for Cognition. *Learning and Instruction, 82*, 101520.
8. Lei, M., et al. (2023). The potential of on-campus study to support students' intercultural development. *International Journal of Intercultural Relations, 99*, 102–113.
9. Liu, Q., & colleagues (2024). The relation between Need for Cognition and academic interest development in university students. *Journal of Educational Psychology, 116*(4), 445–460.
10. Loes, C. N., & colleagues (2021). Longitudinal effects of diversity experiences on critical thinking and civic outcomes. *Research in Higher Education, 62*(6), 745–768.

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11. McQueen, C., Thelamour, B., & Daniel, D. K. (2023). The relationship between campus climate perceptions, anxiety, and academic competence for college women. *College Student Affairs Journal, 41*(1), 138–152.
12. Mills, K. J. (2021). Black students' perceptions of campus climate and adjustment: a mixed-methods study. *Journal of Student Affairs Research & Practice, 58*(1), 1–18.
13. Rokos, C. (2022). Exploring the impact of intercultural competence education on students' cross-cultural preparedness. *International Journal of Intercultural Relations, 86*, 45–58.
14. Smith, A. L., & Patel, R. (2020). Quality of intergroup contact and its effect on prejudice reduction on campus. *Journal of Diversity in Higher Education, 13*(4), 275–289.
15. Tausen, B. M. (2023). Campus racial climate, psychological well-being, and race-based trauma among college students. *Journal of Counseling Psychology, 70*(2), 145–158.
16. Trolian, T. L., & Parker, E. T. (2022). Shaping students' attitudes toward diversity: Do faculty practices and student-faculty interactions matter? *Teaching in Higher Education, 27*(2), 152–171.
17. Zerna, J., et al. (2023). Need for Cognition is associated with preference for cognitive challenge and academic persistence. *Scientific Reports, 13*, 44349.
18. Bybee, R. J. (2024). Reducing ethnocentrism through critical reflection and curricular interventions in higher education. *Journal of Intercultural Education, 35*(1), 22–38.

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