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From policy to practice: The role of green organizational culture in shaping employee green behavior in higher education institutions – A human capital perspective

S. Pooja, J. Bhavani*

VIT Business School, Vellore Institute of Technology, Chennai, Tamil Nadu, India.

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ABSTRACT

BACKGROUND AND OBJECTIVES: In the face of growing environmental challenges, universities play a vital role in advancing sustainability through both institutional practices and individual actions. While organisational culture can significantly shape employee green behaviour, limited research has examined how specific elements of green culture drive such practices in academia. This study addresses this gap by exploring the link between green culture enablers and employee green behavior in higher education. As integral parts of the urban ecosystem, HEIs also influence urban management, extending their sustainability impact beyond campuses to support broader city-level environmental goals.

METHODS: Data were collected from 266 university employees through a structured questionnaire. The hypothesized model was tested using regression analysis to determine the predictive power of green culture enablers on employee green behavior in university employees.

FINDINGS: The green culture enablers were found to have a positive relationship with green behavior. Message credibility ($\beta = 0.453$) and employee empowerment ($\beta = 0.296$) were found to be the strongest and most significant predictors of green behavior. Leadership emphasis was found to be a weaker but significant predictor. Surprisingly, Peer involvement was not found to significantly predict green behavior when controlling for other variables.

CONCLUSION: This study concludes that cultivating a supportive green culture through credible communication, engaged leadership, and peer-driven initiatives is crucial for fostering sustainable behaviors in higher education institutions. It contributes to the growing body of sustainability literature by highlighting how internal cultural factors influence individual green behavior. By addressing contextual variables such as institution type, the research also overcomes the generalization limitations found in earlier studies. The findings offer insights for urban policymakers and HEI administrators on leveraging human capital to drive sustainable urban development."

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*Corresponding Author

Email: bhavani.j@vit.ac.in

Phone: 9884843916

ORCID: [0000-0003-3776-3362](https://orcid.org/0000-0003-3776-3362)

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INTRODUCTION

Environmental challenges, such as climate change and global warming, are escalating at an alarming rate, demanding immediate attention from governments and organizations worldwide. In response, strict environmental regulations have been enforced to curb carbon emissions and promote green practices. While technological advancements are critical, human behavior has been identified as both the major cause of these environmental concerns and, conversely, a significant enabler of sustainable change (Tilman & Lehman, 2001; Ukaogo, 2020). Businesses are increasingly incorporating environmental management systems and practices into their daily operations (Guerci et al., 2015). However, the success of these green initiatives depends not only on policies and regulations but also on the green behavior exhibited by employees. Employee green behavior refers to discretionary actions aimed at reducing environmental harm and enhancing sustainable performance (Kim et al., 2019). Emerging research underscores the importance of organizational culture in shaping such behavior. A green organizational culture fosters shared values and norms that prioritize environmental sustainability (Harris and Crane, 2002; Yong et al., 2020). Yet, green culture has not been sufficiently examined through its enablers, such as leadership emphasis, message credibility, employee empowerment, and peer involvement. Existing studies have mainly considered these enablers as mediators between Green Human Resource Management (GHRM) practices and outcomes like environmental performance (Roscoe et al., 2019), organizational citizenship behavior (Musiyo et al., 2021), and green competitive advantage (Musiyo et al., 2022). This highlights the need to investigate the direct relationship between green culture enablers and employee green behavior, particularly in non-corporate contexts such as higher education.

Role of HEIs in sustainability

Following the adoption of the UN Sustainable Development Goals (SDGs), the green campus movement and sustainability rankings have positioned HEIs as key leaders in advancing global sustainability agendas (Times Higher Education, 2025). Higher Education Institutions (HEIs) are especially significant in sustainability research as they function as key actors within the urban ecosystem. Sustainable practices

adopted on campuses, such as renewable energy use, rainwater harvesting, tree plantation, sewage treatment plant, and green mobility, offer replicable models that can be scaled up to urban contexts. In this way, HEIs serve as laboratories of sustainable practices and as influential drivers of urban transformation. The diffusion of green knowledge, skills, and practices from HEIs contributes directly to long-term sustainability goals and the advancement of sustainable city development (Education for Sustainable Development, 2011). HEIs can also be understood as microcosms of urban environments, reflecting the same resource consumption patterns, infrastructure needs, and socio-environmental challenges faced by cities. By fostering green behavior among staff and students, universities cultivate sustainable mindsets that extend beyond campuses, influencing broader communities and supporting urban sustainability transitions (Saadatian et al., 2012). Thus, they play a dual role in promoting sustainability internally (through curricula, campus policies, and operations) and externally (by serving as role models for the community) (Dagiliute and Liobikiene, 2015). Meanwhile, the internal behavioral mechanisms through which a green culture is fostered within HEIs remain underexplored. Most studies remain focused on corporate settings, overlooking the unique governance structures, stakeholder expectations, and institutional logics that influence behavior in academic environments. This study aims to address this gap by investigating how specific green culture enablers (leadership emphasis, message credibility, peer involvement, and employee empowerment) directly influence green behavior among employees in Indian HEIs. India, as one of the fastest-growing economies, is at the forefront of sustainability challenges and opportunities. The country has made formal commitments to the United Nations Sustainable Development Goals (SDGs), and its higher education sector is increasingly being recognized as a critical agent for advancing these goals through teaching, operations, and campus culture. Higher Education Institutions (HEIs) in India are thus under mounting pressure to align institutional behavior with sustainability agendas, making them an appropriate and timely context for studying green organizational culture and employee-level green behavior. Furthermore, India has a huge urban capital encompassing a diverse mix of state, central, private, and deemed universities. Given this concentration and di-

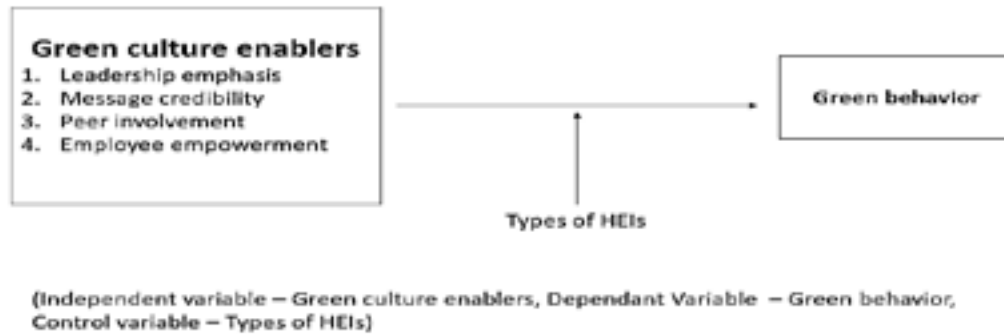


Fig. 1: Conceptual model

versity, the present study aims to explore the HEIs in India. This context provides a rich empirical setting to explore how variations in organisational culture and governance structures influence sustainability-related behaviours among academic staff.

Thus, this study intends:

- To examine the relationship between each green culture enabler and green behavior
- To understand the predictive influence of each green culture enabler on green behavior
- To test whether the relationship between Green Culture Enablers and Green Behavior differs between different types of HEIs.

This study advances our understanding of green culture enablers by highlighting its implications for both theory and practice, particularly in the context of fostering employee green behavior. It fulfils the two core criteria for making a theoretical contribution: originality and utility, as outlined by [Corley \(2011\)](#). The originality of this study lies in its provision of empirical evidence on the link between green organisational culture and employee green behaviour through the lens of employee green behaviour. While previous literature has acknowledged the influence of organisational culture on sustainable outcomes. This study focuses on the specific mechanisms (leadership emphasis, message credibility, peer involvement, employee empowerment) that shape and sustain green behavior at the employee level. Thus, this research addresses this gap by exploring how these EGC dimensions function as behavioral triggers within organisations ([Srinivasan and Kurey, 2014](#)). The study also offers utility by acting as a practical guide to managers and organisations on cultivating a green

organisational culture that supports employee green behaviour. We believe the originality and practical value of this study are particularly relevant to institutions of higher education, where there is a growing need to model and teach green behavior.

Hypothesized model of the study

The variables hypothesized to predict green behavior are shown below. [Fig. 1](#) shows the conceptual model of the study, with four green culture enablers proposed as predictors of green behavior, with types of HEIs acting as a moderator.

Literature review

A theoretical foundation is required to better understand the relationship between green culture enablers and green behavior. According to the theory of planned behavior, Attitude, Subjective norms, and perceived behavioral control are the components that determine behavior ([Ajzen, 1991](#)). In the context of Green culture, Leadership emphasis and Peer involvement influence subjective norms because when leaders and peers exhibit green behavior, there is a high chance for the individual to engage in green behavior. Similarly, employee empowerment enhances perceived behavioral control since it provides the required resources and support to engage in green behavior. Similarly, messages from credible sources help shape the attitude of employees toward green behavior. Previous studies have shown the positive effect of organizational culture on green behavior ([Trimono and Nawangsari, 2021](#)). Human Capital Theory suggests that employees' knowledge, skills, values, and attitudes function as capital that enhances organisational effectiveness ([Becker, 1964](#)). Within green culture, leadership em-

phasis, peer involvement, message credibility, and employee empowerment contribute to the development of green human capital by strengthening employees' environmental awareness, pro-environmental values, and green competencies. These accumulated capabilities shape employees' attitude towards green behavior, enhance perceived behavioral control by increasing confidence, and reinforce subjective norms by normalizing environmentally responsible practices. Complementing this view, the Resource-Based View (RBV) posits that organizational resources that are valuable, rare, inimitable, and non-substitutable generate sustained competitive advantage (Barney, 1991). Green culture enablers represent intangible, embedded organizational resources that, when consistently enacted, become difficult to imitate and support sustained green behavior among employees. Integrating these perspectives with the Theory of Planned Behavior, RBV explains why green culture enablers are strategically valuable, Human Capital Theory explains how they build green capabilities, and TPB explains how these capabilities are translated into green behavior through attitudes, subjective norms, and perceived behavioral control.

Leadership emphasis

Leadership emphasis refers to the visible prioritisation of environmental responsibility by organisational leaders and their consistent demonstration of pro-environmental behaviours (Sharma & Vredenburg, 1998; Robertson & Barling, 2013). In HEIs, leaders legitimise sustainability as a core organisational goal, creating a vision that motivates employees to follow sustainable practices. Leadership emphasis influences subjective norms under TPB, as employees perceive environmentally responsible behavior to be expected and valued by authority figures. From an RBV perspective, proactive leadership acts as a strategic resource, embedding sustainability values into organisational routines that are difficult to replicate. From a Human Capital Theory perspective, leaders mentor and guide employees, transferring knowledge, shaping attitudes, and enhancing environmental competencies, thereby strengthening organisational human capital. Leadership emphasis also includes assessing employee performance based on environmental criteria, further reinforcing sustainable behaviors across hierarchical levels (Bowen & Ostroff, 2000; Pham et al., 2020).

Message credibility

Message credibility refers to clear, consistent, and trustworthy communication regarding sustainability initiatives from senior management. Credible messaging shapes employee attitudes toward green behavior, as consistent and reliable communication fosters belief in the importance and feasibility of sustainability initiatives (Robertson & Barling, 2013; Graves et al., 2013). The Elaboration Likelihood Model (Petty & Cacioppo, 1986) suggests that messages perceived as credible result in enduring attitude change, particularly in academic settings where evidence-based reasoning is valued. From an HCT perspective, credible messaging builds employees' knowledge and competencies regarding environmental issues, helping them internalize sustainability values. From an RBV lens, consistently communicated and credible messages become an intangible organizational resource, enhancing the firm's capacity to maintain sustainable behavior as a unique capability that competitors cannot easily replicate.

Peer involvement

Peer involvement refers to the active participation and collaboration of employees with one another in supporting environmental initiatives (Srinivasan & Kurey, 2014). It influences subjective norms in TPB, as employees are more likely to adopt green behaviors when they observe peers engaging in environmentally responsible actions. Peer modeling and group norms can amplify or dampen pro-environmental behavior depending on the strength of group cohesion and shared identity (Fielding et al., 2008; Terry & Hogg, 1996). In HEIs, peer involvement promotes informal learning, mentoring, and social reinforcement mechanisms that strengthen a culture of sustainability. From an HCT perspective, peer interactions facilitate the diffusion of green competencies and attitudes among employees. From an RBV standpoint, cohesive peer networks act as social resources, embedding sustainability into collective routines that are difficult to imitate.

Employee empowerment

Employee empowerment is the granting of autonomy, resources, and decision-making authority to staff to implement environmental initiatives (Daily et al., 2012; Srinivasan & Kurey, 2014). Empowerment increases perceived behavioral control under TPB, enabling

employees to take initiative and overcome barriers to sustainable behavior. Empowered employees exhibit higher ecological awareness and discretionary green behavior (Hameed & Naeem, 2019). From a Human Capital Theory perspective, employee empowerment develops green competencies, knowledge, and decision-making skills that enhance sustainability-oriented human capital. From an RBV perspective, empowered employees constitute valuable, rare, and inimitable organisational resources, capable of sustaining a competitive advantage through pro-environmental behavior.

Green behavior

Green behavior refers to the individual actions that aim to reduce environmental harm and promote sustainability. Green behavior can be influenced by the eco-conscious culture prevailing in the organization. This green culture can foster a shared mindset and alter the behavior of employees to be more eco-friendly. A recent study by Naqvi and Siddiqui (2019) has underlined the role of employees' green behavior in transforming an organization's culture to adopt environmentally friendly strategies. This shows a strong relationship between green culture and green behavior. The above literature provides a strong theoretical and empirical base to propose that green culture enablers significantly predict employee green behavior.

Based on the above literature, the following hypotheses are put forth:

H1: Green culture enablers are positively related to employee green behavior

H1a: Leadership emphasis is positively related to employee green behavior

H1b: Message credibility is positively related to employee green behavior

H1c: Peer involvement is positively related to employee green behavior

H1d: Employee empowerment is positively related to employee green behavior

H2: Green culture enablers significantly predict employee green behavior

H2a: Leadership emphasis significantly predicts employee green behavior.

H2b: Message credibility significantly predicts employee green behavior.

H2c: Peer involvement significantly predicts employee green behavior.

H2d: Employee empowerment significantly predicts employee green behavior.

Within the Indian context, South India stands out as a regional leader in sustainability performance, hosting a large number of universities with diverse governance structures and active engagement in environmental initiatives. According to the Times Higher Education Impact Rankings (2025), seven of India's top sixteen globally ranked sustainable universities are from this region. Among these, Chennai emerges as an ideal urban microcosm, hosting three of the region's top-ranked universities and demonstrating active engagement in the Smart Cities Mission. The region encompasses a wide spectrum of state and deemed universities, which differ notably in their governance structures, funding mechanisms, degrees of institutional autonomy, and organizational cultures, positioning Chennai as a representative context for examining how green culture enablers shape behavioral outcomes within India's higher education system. This heterogeneity offers a valuable opportunity to investigate whether the impact of green culture enablers on green behavior is consistent across institutional types in order to ensure the ecosystems of urban development. By leveraging this contextual variation, the study aims to examine the moderating role of institutional type, thereby contributing to a more nuanced understanding of how internal cultural mechanisms function under different organizational conditions.

H3: Institutional type moderates the relationship between green culture enablers and employee green behaviour.

MATERIAL AND METHODS

The data was collected from university staff in Chennai, including teaching and non-teaching personnel from various departments and institution types. The study comprises 30 items, each measured on a 5-point Likert scale. In addition, the questionnaire sought data on demographic details (Age, Gender, Educational qualification, Department, Type of institution, Designation, Experience). Google Forms were used to collect data. Since all items were mandatory, none of the responses were rejected. A total of 266 samples were collected over 8 weeks (May to June 2025). The demographics were diverse. For in-

Table 1: Respondents' profile

		Frequency	Percent
Gender	Male	123	46.24
	Female	143	53.75
Types of Universities	State	130	48.87
	Deemed	136	51.12
Work Experience	Less than 5 years	72	27.06
	5 to 10 years	29	10.90
	11 to 15 years	10	3.75
	16 to 20 years	6	2.25
	Above 21 years	13	4.88
Educational qualification	PG	146	54.88
	M.Phil	34	12.78
	Ph. D	86	32.33
Designation	Assistant Professor	125	46.99
	Associate Professor	33	12.40
	Professor	49	18.42
	Administrative staff	59	22.18

stance, the sample included 123 males and 143 females. The respondents' ages ranged from 25 to 60, and their work experience ranged from less than 5 years to more than 21 years. The respondent's profile is given in [Table 1](#).

Purposive sampling with a maximum variation strategy was employed. This approach enabled the selection of diverse staff members from different types of higher education institutions (state and deemed) and across various roles (teaching and non-teaching), ensuring rich and varied perspectives. This method is particularly suitable for studies where contextual knowledge is crucial and where the goal is to understand depth and patterns of behavior, rather than to generalize to an entire population ([Palinkas et al., 2015](#); [Etikan et al., 2016](#)). Furthermore, purposive sampling is suitable when the complete population is unknown or not fully accessible, as is often the case with large and distributed academic institutions ([Salman, 2020](#)). To ensure no violations of key assumptions such as linearity, normality, multicollinear-

ity, and homoscedasticity, a preliminary analysis was performed. Normality was confirmed using graphical and statistical methods. Skewness and kurtosis values were within the acceptable range, indicating a normal distribution. All the measurement scales were already validated and applied in previous studies. A 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was employed in the study. Green culture enablers with 4 dimensions were adapted from [Chams and Blandon \(2019\)](#). Green behavior items were adapted from [Aboramadan \(2020\)](#). The Cronbach alpha values were around 0.70 and above, confirming reliability as suggested by [Nunnally \(1978\)](#). It is shown in [Table 2](#).

RESULTS AND FINDINGS

Correlation between the variables

Pearson correlation analysis was conducted as an initial step to examine the strength and direction of the bivariate relationships between green culture enablers (leadership emphasis, peer involvement,

Table 2: Means, standard deviations, and scale reliabilities

	Leadership emphasis	Message credibility	Peer involvement	Employee empowerment	Green behavior
Mean	3.9286	4.0895	4.0135	4.0406	4.2382
Median	3.8000	4.0000	4.0000	4.0000	4.0909
Standard deviation	.60127	.46391	.55447	.6516	.52733
Minimum	2.60	3.00	2.80	2.50	2.91
Maximum	5.00	5.00	5.00	5.00	5.00
Alpha	0.802	0.699	0.750	0.827	0.929

employee empowerment, and message credibility) and green behavior. This technique is essential for identifying potential associations and ensuring a meaningful relationship between variables. In the context of behavioral studies, correlation analysis provides foundational evidence of construct interrelationships (Hair *et al.*, 2010). According to Nakagawa (2004), when the correlation coefficient value is between .30 to .49, the relationship strength between the variables is considered as low; similarly, when the correlation coefficient value is between .30 to .49, the relationship strength is medium, and the correlation coefficient values between .50 to 1.0 implies high relationship strength between the variables (Taylor, 1990). The Pearson correlation analysis revealed a significant positive relationship between green behavior and all four enablers of green culture. Message credibility ($r=.609$, $p < .001$) shows a strong, significant positive correlation with green behavior, followed by Leadership emphasis ($r=.506$, $p < .001$). Employee empowerment ($r=.483$, $p < .001$) and Peer involvement ($r=.453$, $p < .001$) show a moderate positive correlation with green behavior. All four enablers are showing a significant positive relationship with green behavior, indicating that stronger green cultural practices are generally associated with more environmentally conscious behavior. Thus, hypothesis 1 (H1a, H1b, H1c, H1d) is fully supported. This aligns with theoretical foundations from the Theory of Planned Behavior (Ajzen, 1991), where organizational cues and reinforcement mechanisms can shape behavioral intentions and actions. To get a more nuanced picture, multiple regression was carried out. Additionally, multicollinearity should be low to perform multiple regression. Multicollinearity occurs when there is a high correlation among independent variables, leading to redundant information. Toler-

ance and VIF (Variance Inflation Factor) values help to detect multicollinearity among the variables. If all the variables have tolerance > 0.20 and $VIF < 5$, there is no serious multicollinearity. Variables with an R value of more than .70 show a high correlation and can cause multicollinearity. In this study, the tolerance values of leadership emphasis, peer involvement, employee empowerment, and message credibility are 0.586, 0.454, 0.517, and 0.656, respectively, all above 0.20, indicating no multicollinearity. This is also supported by the VIF values (1.706, 2.204, 1.933, and 1.524), which are all below 5. Hence, regression analysis can be carried out.

Regression analysis

To understand the predictive influence of each green culture enabler on green behavior, regression analysis was performed. Multiple regression assumes that there is a linear relationship between the independent variables and the dependent variable. Given that green behavior is likely influenced by multiple interrelated factors, regression provides a robust analytical framework to quantify these effects, identify key predictors, and evaluate the overall model fit. This approach also aligns with previous sustainable behavior studies in organizational contexts that rely on regression to validate theoretical models (Afsar *et al.*, 2016). The results revealed that message credibility ($\beta = .453$, $p < .001$), employee empowerment ($\beta = .296$, $p < .001$), and leadership emphasis ($\beta = .134$, $p < .001$) were significant predictors of green behavior, whereas peer involvement ($\beta = -.023$, $p < .726$) didn't predict green behavior. The results show that the overall model is statistically significant and explains 47.6% of the variance in green behavior, which is quite a good variance for behavioral research. This indicates the model has good predictive power. Re-

Table 3: Regression results

Predictor	B	STDEV	β	T	P	VIF
Leadership emphasis	0.118	0.051	0.134	2.295	.023	1.706
Peer involvement	-0.022	0.063	-0.023	-0.351	.726	2.204
Employee empowerment	0.239	0.050	0.296	4.751	<.001	1.933
Message credibility	0.515	0.063	0.453	8.193	<.001	1.524

(B = Beta coefficient; STDEV= Standard error; β = Regression coefficient; T= Statistics; P = Probability value; VIF = Variance Inflation Factor).

gression results are given in Table 3. While message credibility and employee empowerment emerged as the strongest predictors of green behavior, leadership emphasis had a weaker but still significant influence. Thus, hypothesis H2a, H2b, H2d are supported. The influence of peer involvement became statistically non-significant in the presence of other predictors. Thus, H2c is not supported. This suggests that although peer networks are influential at a surface level, their impact may be overshadowed by structural or communication-related enablers when modeled concurrently. This partially contradicts earlier studies that emphasize the role of social norms in green behavior (Ramus and Killmer, 2007) but may reflect contextual differences in hierarchical organizational cultures, which are typical of Indian academia. The significant influence of message credibility underscores the importance of consistent, trustworthy, and transparent communication about environmental policies and initiatives. Likewise, employee empowerment through enabling participation in environmental decisions enhances ownership and accountability, driving green behavior beyond mere compliance.

Moderation by type of Institutions

In the context of green behavior, demographic variables have received comparatively less attention than organizational and psychological factors (Aboramadan, 2020; Fawehinmi et al., 2020). In particular, empirical evidence on the moderating role of demographic variables in shaping employees' green behavior within educational institutions remains limited. Addressing this gap, the present study examines the moderating effect of institution type on the relationship between green culture enablers and employee green behavior. A moderation analysis using hierarchical regression was conducted. The inclusion of interaction terms led to a significant improvement in model fit ($\Delta R^2 = .028$, $p < .001$), indicating that insti-

tution type plays a contingent role in influencing how green culture enablers influence green behavior, as shown in Table 4. The results further revealed that the interaction between employee empowerment and institution type was statistically significant ($\beta = 0.261$, $p = 0.004$), suggesting that the positive effect of employee empowerment on green behavior is stronger in deemed universities than in state universities. In contrast, the interaction effects for leadership emphasis, peer involvement, and message credibility were not statistically significant. Therefore, institution type does not uniformly moderate the relationship between all green culture enablers and green behavior, leading to partial rather than full support for the moderation hypothesis. Accordingly, H3 is not supported. These findings imply that certain institutional contexts may provide greater autonomy, resources, or cultural support, enabling empowered employees to translate empowerment into green behavior more effectively. This result aligns with contingency theory, which posits that the effectiveness of organizational practices depends on contextual conditions (Donaldson, 2001). The absence of significant moderation effects for leadership emphasis, peer involvement, and message credibility may indicate a relatively consistent reliance on leadership-driven communication and cultural signaling across different types of higher education institutions.

DISCUSSION

This study contributes to understanding sustainability in higher education institutions (HEIs) by examining how green culture enablers shape employee green behavior. Message credibility and employee empowerment emerged as the strongest predictors, indicating that staff are more likely to engage in green behavior when communication is trustworthy and autonomy is granted. These results align with prior research showing that credible communication and

Table 4: Moderation effect of Institution type

Model	R ²	ΔR ²	Sig. ΔF
Step 1 (Main effects)	.481	—	.000
Step 2 (Interactions)	.509	.028	.000

empowerment drive organizational citizenship toward the environment (Muisyo et al., 2022; Ooi et al., 2022; Faezah et al., 2024). Leadership emphasis was positively associated with green behavior but became weak once other variables were controlled, suggesting that leadership commitment requires support from credible communication and decentralized empowerment. Peer involvement, initially correlated with green behavior, lost significance in regression models, echoing findings that peer effects are often mediated or moderated by institutional factors (Muisyo et al., 2022). The study also highlights that institutional context moderates these relationships. Empowerment had a stronger effect in deemed universities than in state universities, emphasizing that administrative flexibility enhances the effectiveness of green initiatives. From a managerial perspective, the findings underscore that message credibility and empowerment are strategic investments in green human capital, fostering competence, motivation, and ecological efficacy. Urban policymakers can leverage these insights by integrating empowerment-based training, participatory decision-making, and transparent reporting to promote green behavior among municipal employees and urban residents, particularly under initiatives like the Smart Cities Mission. Theoretically, the study reinforces a contingency perspective, showing that the impact of green culture enablers depends on governance, institutional type, and urban context. While the Theory of Planned Behavior provides a useful lens, incorporating structural and contextual variables can enhance models predicting employee green behavior in HEIs. In summary, this study confirms that message credibility and employee empowerment are key levers for fostering green behavior, while institutional characteristics shape their efficacy, offering actionable insights for both higher education and urban sustainability strategies.

Managerial implications

The study provides managerial implications to call for a strategic shift in how higher education institu-

tions approach environmental sustainability. Rather than relying solely on top-down directives or symbolic commitments, institutions should invest in systems that foster credible communication and empower stakeholders at all levels. Universities aiming to enhance sustainable practices must ensure that environmental messaging is not only frequent but also trustworthy and aligned with operational realities. Simultaneously, providing staff with the opportunity to contribute meaningfully to green initiatives can cultivate a sense of ownership and intrinsic motivation, thereby translating organizational intent into tangible action. For urban policymakers and municipal human capital managers, these insights underscore the importance of integrating sustainability principles into the broader urban workforce strategy. Under initiatives like the Smart Cities Mission and National Urban Learning Platform, credible communication and empowerment can be leveraged to enhance green behavior among city employees and residents alike. Establishing open reporting systems, participatory decision platforms, and community engagement mechanisms can help translate sustainability goals into everyday behavioral practices. Moreover, aligning performance management systems with city-level sustainability indicators such as carbon reduction or waste minimization can reinforce accountability and ensure that individual actions contribute directly to collective urban outcomes.

FUTURE DIRECTIONS

Future studies could examine how green behaviors in academic institutions influence broader urban sustainability metrics, such as carbon footprint reduction, waste minimisation or community engagement in green initiatives. Further research may also explore the longitudinal effects of cultivating a green culture on employees sustained environmental commitment and institutional performance. It can also extend the current framework by integrating psychological and behavioral theories, such as Social Learning Theory

and Norm Activation Theory, to capture deeper motivational mechanisms that drive employees' ecological actions within HEIs. Integrating Institutional Theory could further enrich understanding by examining how universities act as change agents that diffuse green norms and practices into the surrounding urban environment. Cross-country or cross-sectoral investigations could provide valuable insights into how variations in national culture, governance structures, and environmental policies moderate the relationship between green culture and green behavior. In addition, future studies could consider the mediating role of institutional partnerships, stakeholder collaboration, and policy support in amplifying the impact of green behavior on urban sustainability outcomes. Finally, longitudinal and multi-level analyses could help identify the pathways through which individual and collective green behaviors within HEIs foster broader urban sustainability outcomes.

CONCLUSION

The findings of this study offer important theoretical and practical contributions to the growing body of literature on sustainability in higher education institutions. By examining how green culture enablers influence green behavior, the study highlights the critical role of organizational elements such as message credibility, employee empowerment, leadership emphasis, and peer involvement. Among these, message credibility and employee empowerment emerged as the most influential predictors, suggesting that employees are more likely to exhibit green behavior when institutional communication is perceived as credible and when individuals are given autonomy and agency to act. Leadership emphasis, while positively associated with green behavior, exerted a weaker influence when controlling for other variables. Notably, peer involvement, though initially correlated with green behavior, did not remain significant in the regression model, suggesting that its effect may be mediated or overridden by other factors. The study further reveals that institutional context significantly moderates the relationship between green culture enablers and behavioral outcomes. Specifically, the positive effect of empowerment on green behavior was stronger in deemed universities than in state universities. This finding shows that Deemed universities provide a more flexible and conducive environment for employees to flourish.

This variation underscores the importance of institutional characteristics in shaping the efficacy of green initiatives and highlights the need for context-sensitive policy formulation. The study also contributes to theory by reinforcing the contingency perspective, which posits that the impact of organizational practices is not universal but is shaped by internal and external contexts. It cautions against assuming uniform outcomes of green culture enablers across different institutional settings and encourages scholars to consider structural and cultural nuances when analyzing sustainability behavior. While the Theory of Planned Behavior provided a useful lens for understanding how organizational factors can influence individual actions, the findings suggest that additional contextual variables, such as institutional governance, can be integrated into future models.

AUTHOR CONTRIBUTIONS

Pooja S: Data collection, analysis, and manuscript writing. Bhavani J: supervision, validation, manuscript review, and editing

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CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy, have been completely witnessed by the authors.

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ABBREVIATIONS

β	Regression coefficient
B	Beta coefficient
HEI	Higher Education Institution
HRM	Human Resource Management
<i>p-value</i>	Probability value
R^2	Coefficient of determination
ΔR^2	Adjusted Coefficient of Determination
SDG	Sustainable Development Goals
Sig. ΔF	Significance of Delta
STDEV	Standard Error
T value	Student's t statistic
UN	United Nations
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
VIF	Variance Inflation Factor

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