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THE IMPACT OF DIMENSION OF ACCREDITATION ON ACADEMIC ENVIRONMENT IN HIGHER EDUCATION INSTITUTIONS

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ABSTRACT:
Higher education serves as a vital pillar for a nation's development across social, economic, cultural, scientific, and political domains. It equips individuals with the capabilities to transition from merely being human to becoming valuable human resources. In the era of globalization, the demand for high-quality higher education has intensified, emphasizing the need to foster creativity, innovation, adaptability, and a research-oriented mindset. The main objective of this study is to assess the impact of each dimension of accreditation on the academic environment. One of the key mechanisms to ensure this quality is accreditation—a robust process of quality assurance. This study examines the key institutional factors that influence the academic environment in higher education institutions, with a focus on assessing both the strength of structural relationships and the model's predictive accuracy. Using a quantitative approach involving a survey of faculty members, the study reveals significant relationships between the accreditation dimensions and academic performance indicators. The results reveal that constructs such as Innovative Value-Based Practices, Institutional Learning Resources, Student Support Practices, and Curriculum Alignment significantly contribute to the development of a robust academic environment. Conversely, Governance and Leadership Mechanisms and the Teaching-Learning Environment were found to have limited impact. The model demonstrates strong explanatory power for academic environment. The findings offer practical implications for policymakers and educational leaders seeking to strengthen academic quality and support accreditation efforts through strategic institutional improvements.

KEYWORDS: ***Accreditation, Academic Environment, Quality Assurance, Higher Education, Institutional Governance***

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1. INTRODUCTION

Accreditation serves as a benchmark for evaluating the quality of educational institutions, promoting standardization, and enhancing public confidence in higher education systems. In India, organizations like the National Assessment and Accreditation Council (NAAC) assess higher education institutions (HEIs) on several dimensions to ensure institutional effectiveness and academic excellence (NAAC, 2020). These bodies assess higher education institutions (HEIs) based on a comprehensive set of criteria ranging from curricular aspects and teaching-learning processes to research output, infrastructure, and institutional governance (NAAC, 2020). NAAC's framework, in particular, has emphasized a shift from mere input-based evaluation to a more outcome-based, student-centric assessment. Despite its increasing relevance, the specific influence of accreditation dimensions on academic environments remains underexplored. This study aims to bridge that gap by examining how different accreditation criteria impact institutional academic settings. Accreditation in higher education is a critical quality assurance mechanism aimed at evaluating, certifying, and continuously improving the standards of academic institutions. It plays a pivotal role in promoting accountability, enhancing institutional credibility, and ensuring that educational offerings align with national and global expectations of quality and relevance (Harvey, 2004). As higher education becomes increasingly competitive and globalized, accreditation has evolved into a strategic instrument for institutional benchmarking and public assurance.

Globally, accreditation is recognized as a formal process through which independent agencies assess educational institutions against predetermined standards, encompassing various dimensions such as curriculum quality, faculty competence, infrastructure, governance, and student support (Stensaker, 2008). These evaluations are essential not only for recognizing institutional effectiveness but also for driving improvements in pedagogical practices and fostering a culture of continuous innovation. Accreditation is also integral to ensuring public trust and regulatory compliance in higher education. According to Altbach (2005), accredited institutions are perceived to be more transparent, accountable, and responsive to the needs of society. Moreover, accreditation status often determines access to government funding, research grants, academic collaborations, and student mobility opportunities. It serves as a quality marker that influences institutional ranking, stakeholder perceptions, and student enrollment patterns (Singh & Srivastava, 2018).

Despite its benefits, accreditation processes are not without challenges. Institutions often struggle with bureaucratic rigidity, a lack of internal quality systems, and resistance to reform (Brennan & Shah, 2000). However, when implemented effectively, accreditation fosters a robust academic ecosystem, encourages reflective practices, and promotes institutional sustainability in the long run. Thus, in the contemporary landscape of higher education, accreditation is more than a compliance requirement—it is a transformative process that shapes institutional identity, enhances academic integrity, and drives excellence through systematic evaluation and reform.

1.1 Academic Environment

The academic environment refers to the overall intellectual, physical, social, and emotional conditions within an educational institution that collectively shape the learning and teaching experience. It encompasses various dimensions such as faculty quality, institutional culture, infrastructure, governance, student engagement, and support services. A conducive academic environment not only fosters academic achievement but also enhances critical thinking, innovation, and holistic development among students and faculty (Astin, 1993). At the core of the academic environment is the interaction between students and educators. Faculty competence, teaching methodologies, and openness to feedback significantly influence student learning outcomes. Institutions that encourage pedagogical innovation, interdisciplinary approaches, and collaborative learning tend to create more vibrant and inclusive academic cultures (Altbach, 2005). Moreover, the presence of qualified, motivated, and research-oriented faculty members contributes directly to academic excellence and the institution's reputation (Harvey & Green, 1993). Physical infrastructure—such as libraries, laboratories, classrooms, and digital resources—also plays a critical role in shaping the academic climate. Adequate infrastructure facilitates

smooth academic operations and enables students to access necessary learning tools (Tight, 2004). Similarly, institutional governance, leadership practices, and policy frameworks impact the transparency, autonomy, and responsiveness of academic systems (Brennan & Shah, 2000).

In addition to teaching and infrastructure, the research culture within a higher education institution significantly affects the academic environment. Encouraging faculty and students to engage in research, participate in conferences, and publish scholarly work contributes to an intellectually stimulating atmosphere (Stensaker, 2008). Research-driven environments also tend to attract more funding, academic collaborations, and international recognition. Furthermore, the academic environment is influenced by student support services such as counseling, mentoring, career guidance, and grievance redressal mechanisms. When students feel supported emotionally, socially, and academically, their engagement, retention, and performance improve (Tinto, 1993). The promotion of ethical practices, inclusivity, gender sensitivity, and sustainability within campuses also reflects an institution's commitment to creating a value-driven academic ecosystem (NAAC, 2020). It is important to note that the academic environment is dynamic and evolves with changes in institutional policies, technological advancements, and societal expectations. Therefore, continuous assessment and improvement of this environment are essential for maintaining educational relevance and quality.

1.2 Dimension of Accreditation

Accreditation has become a pivotal mechanism in ensuring the quality and accountability of higher education institutions (HEIs) across the globe. As global education systems evolve, the need for reliable quality assurance frameworks intensifies, and accreditation serves as a formal recognition that an institution or program meets defined standards of educational quality (Stensaker & Harvey, 2011). Within this process, the concept of "dimensions of accreditation" has emerged as a foundational element, referring to the critical areas assessed during the evaluation process. These dimensions often encompass institutional mission and governance, faculty credentials, curriculum design, student support services, infrastructure, research output, financial stability, and continuous improvement mechanisms (CHEA, 2021; Vlăsceanu et al., 2007).

The multidimensional nature of accreditation reflects the complexity of quality assurance in education. Each dimension plays a significant role in not only signaling institutional credibility but also in driving performance improvement and public accountability (Harvey & Newton, 2007). For example, curriculum standards and learning outcomes are closely scrutinized to ensure relevance and alignment with current academic and industry trends (Altbach et al., 2009). Similarly, the evaluation of faculty qualifications and research contributions ensures academic rigor and innovation within the institution (Salmi, 2009). These dimensions provide a structured basis for decision-making by stakeholders, including students, employers, policymakers, and funding agencies. NAAC's accreditation criteria encompass a wide array of dimensions: (1) Curricular Aspects, (2) Teaching-Learning and Evaluation, (3) Research and Innovation, (4) Infrastructure and Learning Resources, (5) Student Support and Progression, (6) Governance and Leadership, and (7) Institutional Values and Best Practices. According to Singh & Srivastava (2018), these dimensions collectively contribute to holistic institutional development.

Given the increasing emphasis on outcome-based education, most accrediting agencies globally have expanded their frameworks to assess institutional effectiveness through quantifiable indicators. As such, understanding and evaluating the specific dimensions of accreditation is vital for institutional self-assessment, continuous quality enhancement, and strategic planning (Schindler et al., 2015). This growing importance has led many HEIs to develop internal quality assurance mechanisms aligned with accreditation dimensions, fostering a culture of quality and accountability.

1.3 Relationship between Dimensions of Accreditation and Academic Environment

The relationship between the dimensions of accreditation and the academic environment is both integral and multidimensional. Accreditation is a quality assurance mechanism that evaluates higher education institutions (HEIs) across several key dimensions such as institutional governance, faculty

competence, curriculum relevance, research output, infrastructure, student support, and internal quality assurance systems (Vlăsceanu et al., 2007; CHEA, 2021). Each of these dimensions directly influences the academic environment by shaping the structural and functional aspects of teaching, learning, research, and student engagement.

A robust academic environment is characterized by intellectual rigor, innovation, academic freedom, inclusivity, and access to learning resources (Kuh & Umbach, 2004). Accreditation processes, through their evaluative dimensions, enhance these characteristics by enforcing standards that encourage continuous improvement. For instance, the dimension of curriculum design and learning outcomes promotes academic coherence and relevance, ensuring that students receive education aligned with current disciplinary and industry needs (Altbach et al., 2009). Similarly, the focus on faculty qualifications and research productivity elevates the academic discourse and contributes to a more intellectually stimulating environment (Salmi, 2009). The dimension of infrastructure and learning resources—often included in accreditation criteria—plays a significant role in supporting a conducive academic environment. Access to libraries, laboratories, digital tools, and safe physical spaces enhances both student and faculty performance (Schindler et al., 2015). Furthermore, internal quality assurance mechanisms as a key dimension foster a culture of self-reflection, feedback, and data-informed decision-making, which in turn improves the teaching-learning process and student satisfaction (Harvey & Newton, 2007).

Moreover, accreditation's emphasis on student support services, governance, and stakeholder engagement ensures that the academic environment is not only effective but also inclusive and responsive to diverse student needs (Stensaker & Harvey, 2011). Institutions that consistently perform well across accreditation dimensions are more likely to offer a dynamic, ethical, and globally competitive academic environment. In summary, the dimensions of accreditation function as critical levers for enhancing the academic environment. By systematically evaluating and guiding improvements in the key areas of academic operation, accreditation ensures that institutions foster environments conducive to learning, research, and holistic development.

2. REVIEW OF LITERATURE

The academic environment refers to the ecosystem within an institution that influences teaching quality, research productivity, student satisfaction, and institutional reputation (Astin, 1993). Previous studies have shown that institutional governance, faculty development, and infrastructural quality are crucial for fostering an academically enriching environment (Brennan & Shah, 2000; Altbach, 2005).

Accreditation is a structured process of evaluating higher education institutions (HEIs) against established benchmarks to ensure and enhance quality in academic and administrative practices. Various scholars have examined the dimensions of accreditation as defined by accreditation bodies, particularly the National Assessment and Accreditation Council (NAAC) in India, which has proposed a multi-criteria framework covering key areas essential to institutional excellence. Accreditation is a quality assurance mechanism designed to evaluate, monitor, and improve institutional performance (Stensaker, 2008). It involves a rigorous evaluation based on pre-determined criteria that reflect academic and administrative effectiveness (Harvey, 2004). NAAC (2020) emphasizes continuous improvement through periodic reviews.

The design, relevance, and flexibility of curricula are central to the accreditation process. NAAC (2020) emphasizes the importance of outcome-based education, regular syllabus revision, interdisciplinary integration, and alignment with employability skills. According to Singh and Srivastava (2018), an updated and dynamic curriculum enhances the relevance of academic programs and prepares students for contemporary challenges. This dimension assesses the effectiveness of the teaching-learning process, pedagogical innovations, teacher qualifications, and evaluation mechanisms. Stensaker (2008) notes that accreditation promotes reflective teaching practices and learner-centric approaches. Institutions with high accreditation scores often demonstrate better student engagement, faculty-student

interaction, and transparent assessment processes. Accreditation criteria increasingly stress the importance of research culture, innovation, and community outreach. Harvey (2004) highlights that research productivity and industry-academia collaborations are seen as indicators of institutional maturity. As per Altbach (2005), accreditation acts as a catalyst for institutions to develop research policies, support faculty publications, and engage in knowledge dissemination.

This dimension pertains to the adequacy and accessibility of physical and digital infrastructure, including libraries, laboratories, ICT tools, and support facilities. According to Brennan and Shah (2000), well-developed infrastructure enhances the overall academic environment, enabling institutions to offer quality education and support student learning effectively. Accreditation frameworks assess how institutions facilitate student development through mentoring, career services, financial aid, and extracurricular opportunities. Tinto (1993) argues that strong support systems reduce dropout rates and improve student satisfaction and retention. Institutions with effective progression tracking and alumni engagement perform better on accreditation benchmarks.

Effective leadership and transparent governance structures are considered foundational for institutional success. The NAAC framework (2020) encourages decentralization, participative management, and strategic planning. As per Harvey and Green (1993), institutions with strong internal quality assurance cells and data-driven decision-making processes exhibit sustained improvement. This dimension focuses on inclusivity, sustainability, social responsibility, and ethical practices. Singh & Srivastava (2018) emphasize that embedding institutional values fosters a positive academic culture and enhances institutional identity. Accreditation requires institutions to showcase unique best practices that contribute to societal and educational development.

In summary, the literature supports the notion that the multidimensional accreditation framework enhances the overall quality and accountability of higher education institutions. Each criterion contributes uniquely to building a robust academic ecosystem, and their combined influence drives continuous institutional growth.

3. RESEARCH GAP

While accreditation is widely recognized as a critical tool for assuring quality and promoting continuous improvement in higher education institutions, the empirical investigation into its actual impact on the academic environment remains limited. Most existing studies tend to focus on accreditation outcomes in terms of institutional rankings, compliance metrics, or administrative reforms, rather than examining its influence on core academic dimensions such as teaching-learning practices, faculty engagement, student satisfaction, and research culture. Furthermore, much of the literature is either conceptual or based on data from highly ranked institutions, with little attention paid to state-run or rural institutions where the impact may vary significantly. This creates a clear research gap in understanding how accreditation processes translate into tangible academic improvements across diverse educational contexts. There is a pressing need for evidence-based research that assesses the depth and sustainability of accreditation's influence on the academic ecosystem beyond surface-level compliance.

The present study holds relevance for higher education institutions (HEIs) that are either preparing for accreditation or undergoing the re-accreditation process. It explores the connection between the concept of excellence and the role accreditation plays in achieving it. The paper highlights how accreditation contributes to various institutional goals, including institutional growth through increased admissions and enhanced reputation, improved stakeholder satisfaction, effective strategic planning in areas such as internationalization and employability, as well as strengthening academic standards through improved faculty quality, curriculum design, learning outcomes, and advancements in research and innovation.

4. OBJECTIVE OF THE STUDY

- To assess the impact of each dimension of accreditation on the academic environment.

5. CONCEPTUAL FRAMEWORK

A conceptual framework is a structured plan or model that outlines the key concepts, variables, and their relationships within a research study. It serves as a guiding blueprint, helping researchers logically organize their thoughts, explain the theoretical underpinnings of their study, and connect existing knowledge with the research objectives. By identifying what will be studied and how the variables are expected to interact, the conceptual framework ensures clarity, coherence, and direction throughout the research process.

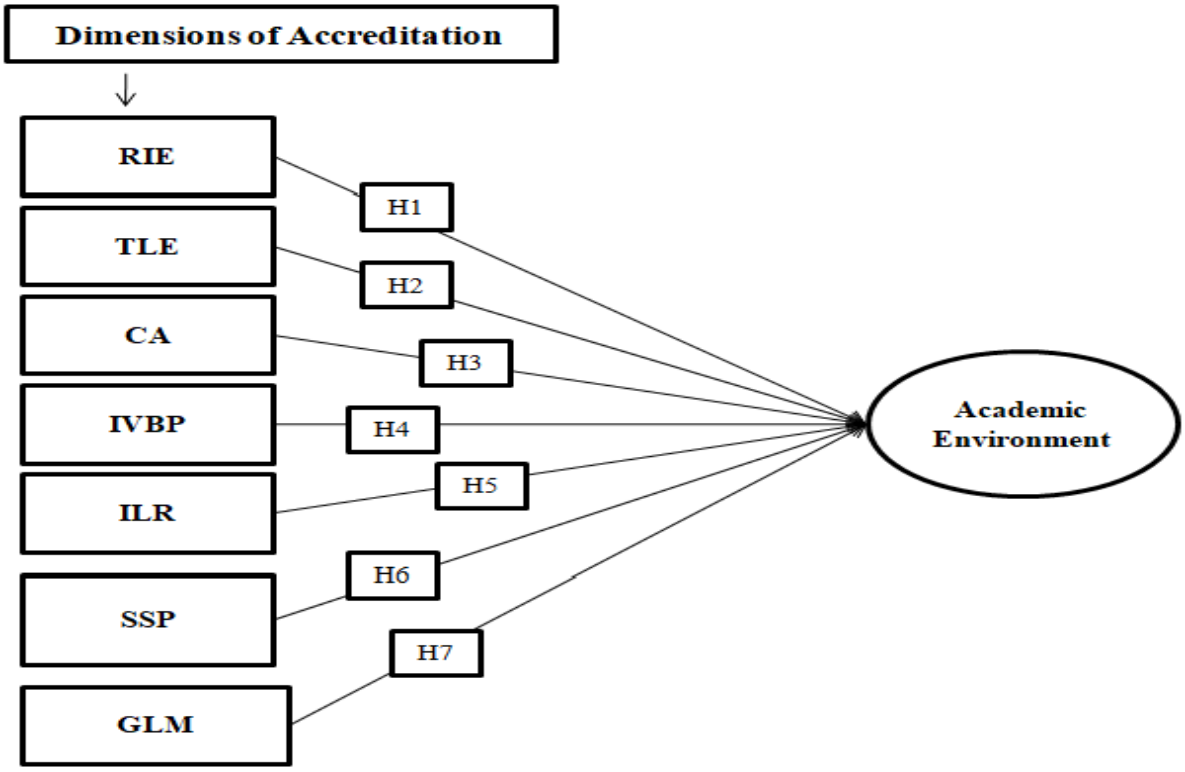

Figure 1: Conceptual Framework

Source: Researcher's compilation

(Here, RIE: Research, Innovation and Extension, TLE: Teaching-Learning and Evaluation, CA: Curricular Aspects, IVBP: Institutional Value and Best Practices, ILR: Infrastructure and Learning Resources, SSP: Student Support and Progression, GLM: Governance, Leadership and Management)

6. HYPOTHESES FORMULATION

$H_1$1: there is a significant impact of RIE on academic environment.
$H_1$2: there is a significant impact of TLE on academic environment.
$H_1$3: there is a significant impact of CA on academic environment.
$H_1$4: there is a significant impact of IVBP on academic environment.
$H_1$5: there is a significant impact of ILR on academic environment.
$H_1$6: there is a significant impact of SSP on academic environment.
$H_1$7: there is a significant impact of GLM on academic environment.

7. RESEARCH METHODOLOGY

This section outlines the methods employed for collecting, analyzing, and interpreting data relevant to the present study. Information was gathered from over 467 faculties enrolled in Higher Education Institutions (HEIs) within the National Capital Tertiary Region (Delhi/NCR) to examine how accreditation influences student admissions. The quantitative component involved structured questionnaires distributed among faculty members and administrators in 10 NAAC-accredited institutions across Haryana. Stratified random sampling was used to ensure representation from different

types of institutions (state universities, private universities, and autonomous colleges). A total of 467 responses were collected.

A structured survey questionnaire was used, incorporating 7 key dimensions of accreditation and 11 key factors of academic environment. The collected data was analyzed using MS Excel, SPSS and SmartPLS software. Additionally, relevant literature and sources from various accrediting, ranking, and regulatory/signatory bodies were reviewed to assess the broader impact on HEIs. Although NAAC and NBA serve as the primary accrediting agencies in India for institutional and program-level assessments respectively, the influence of several other well-recognized accrediting and ranking organizations was also considered in the analysis. To assess the internal consistency of the survey instruments, Cronbach's Alpha test was employed, yielding high reliability score: 0.863 for the faculty survey. The validity of the questionnaires was evaluated using the outer loadings, AVE, HTMT ratio, and fornell-larcker criterion, which fall within the acceptable range of validity. Data was processed using spreadsheet software, and relevant graphical representations were created to support analysis.

Additionally, the study examined the possibility of common method bias (CMB) by employing Harman's single-factor test, a technique recommended by Podsakoff et al. (2003) for addressing CMB concerns. In line with the procedure outlined by Podsakoff and Organ (1986), this test was conducted to detect any potential bias arising from the measurement method. A commonly used technique to detect CMV involves loading all measurement items associated with latent constructs onto a single factor. If this single factor accounts for less than 50% of the total variance, it suggests that CMV is unlikely to significantly impact the study. In the present analysis, the single factor explained 37.027% of the total variance, well below the 50% threshold, indicating that CMV did not significantly affect the outcomes (Podsakoff et al., 2003).

After completing the bias assessment, the researcher moves on to the next stage of the study—hypothesis testing—which is carried out in an objective manner.

8. Analysis and Interpretation of Data

The objective of this research is to find out the impact of dimensions of accreditation on academic environment in higher education institutions. Using a structured questionnaire and responses from 467 professors, associate professors, and assistant professors, the study reveals a significant positive relationship between accreditations and academic environment. To achieve this, the researcher has utilized "Partial Least Squares Structural Equation Modeling (PLS-SEM)". In the fields of social sciences, marketing, and business research, there has been a significant rise in the use of PLS-SEM, as noted by Hair et al. (2019).

All the dimensions of accreditation and academic environment are studies in existing literature, so, the researcher conducted structural equation modeling (SEM) using Smart-PLS to examine how accreditation affects institutions' academic environment.

8.1 Examination of the Measurement Model

The evaluation of the measurement model is conducted through confirmatory factor analysis, which involves assessing the reliability and validity of each construct using the Consistent PLS-SEM algorithm.

Table 1: Reliability and Validity of the Model (Accreditation)

Second order construct	Zero order construct	Items	Items' outer loadings	CA	CR	AVE
Accreditation	RIE	RIE1	0.855	0.941	0.952	0.655
		RIE2	0.858			
		RIE3	0.787			
		RIE4	0.683			

		RIE5	0.734			
		RIE6	0.719			
	TLE	TLE1	0.852	0.874	0.947	0.740
		TLE2	0.879			
		TLE3	0.862			
		TLE4	0.872			
		TLE5	0.820			
		TLE6	0.869			
		TLE7	0.866			
	CA	CA1	0.739	0.762	0.843	0.618
		CA2	0.816			
		CA3	0.779			
		CA4	0.813			
		CA5	0.839			
	IVBP	IVBP1	0.824	0.864	0.903	0.637
		IVBP2	0.808			
		IVBP3	0.663			
		IVBP4	0.674			
		IVBP5	0.842			
		IVBP6	0.804			
		IVBP7	0.831			
	ILR	ILR1	0.816	0.933	0.906	0.750
		ILR2	0.876			
		ILR3	0.868			
		ILR4	0.842			
	SSP	SSP1	0.879	0.892	0.916	0.742
		SSP2	0.881			
		SSP3	0.835			
		SSP4	0.846			
		SSP5	0.885			
		SSP6	0.870			
	GLM	GLM1	0.808	0.857	0.897	0.610
		GLM2	0.854			
		GLM3	0.842			
		GLM4	0.677			
		GLM5	0.693			
		GLM6	0.824			

Source: Researcher's Compilation

Table 2: Reliability and Validity of the Model (Academic Environment)

Second order construct	Zero order construct	Items	Items' outer loadings	CA	CR	AVE
Academic Environment	PEU	PEU1	0.848	0.908	0.929	0.686
		PEU2	0.850			
		PEU3	0.845			
		PEU4	0.812			
		PEU5	0.801			
	FE	FE1	0.848	0.875	0.914	0.726
		FE2	0.875			
		FE3	0.809			
		FE4	0.873			
	FDT	FDT1	0.721	0.760	0.824	0.617
		FDT2	0.956			
		FDT3	0.709			
	MSS	MSS1	0.831	0.816	0.878	0.645
		MSS2	0.736			
		MSS3	0.871			
		MSS4	0.766			
	LU	LU1	0.871	0.763	0.804	0.527
		LU2	0.719			
	CO	CO1	0.815	0.815	0.878	0.529
		CO2	0.775			
	AR	AR1	0.861	0.754	0.793	0.582
		AR2	0.736			
	PW	PW1	0.821	0.816	0.878	0.644
		PW2	0.757			
		PW3	0.818			
	IEP	IEP1	0.884	0.883	0.918	0.737
		IEP2	0.859			
		IEP3	0.815			
		IEP4	0.874			
	SP	SP1	0.843	0.812	0.876	0.640
		SP2	0.740			
	ARI	AR1	0.834	0.816	0.890	0.729

		AR2	0.827			
		AR3	0.900			

Source: Researcher's Compilation

(Here, PEU: Physical Environment of the University, FE: Faculty Expertise, FDT: Faculty Development and Training, MSS: Management and Supporting Staff, LU: Location of University, CO: Course Offered, AR: Academic Results, PW: Placements Work, IEP: Industry Exposure and Placements, SP: Selection Process, ARI: Academic Reputation and Internationalization)

8.1.1 Reliability of the Model

The reliability of each construct was assessed individually through Cronbach's Alpha (CA) and Composite Reliability (CR). As noted by Hair et al. (2010), these are considered cautious yet effective measures of internal consistency. Based on their recommended threshold, a construct is considered reliable if both CA and CR values exceed 0.70. As presented in Table 1 and Table 2, all constructs meet this requirement, confirming the reliability of the measurement items used in the study.

8.1.2 Validity of the Model

8.1.2(a) Convergent Validity: Convergent validity assesses how well a construct represents the concept it is intended to measure by evaluating the correlation between the construct and its associated indicators. To determine convergent validity, it is important to analyze both the factor loadings of individual items and the Average Variance Extracted (AVE) for each construct. According to the guidelines provided by Hair et al. (2019), item loadings should exceed 0.70, and the AVE should be greater than 0.50. As shown in Table 1 and Table 2, all item loadings are above 0.70 and the AVE values for each construct surpass 0.50, thereby confirming satisfactory convergent validity.

8.3 Discriminant Validity

Discriminant validity determines the extent to which a construct is distinct from other constructs within the same model. It verifies that each construct measures a unique concept and is not excessively correlated with others in the framework. Common approaches for assessing discriminant validity include the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT).

Table 3: Fornell- Larcker Criterion (Accreditation)

Construct	CA	IVBP	ILR	SSP	RIE	GLM	TLE
CA	**0.860**						
IVBP	0.199	**0.786**					
ILR	0.299	0.333	**0.866**				
SSP	0.206	0.632	0.326	**0.728**			
RIE	0.082	0.171	0.113	0.157	**0.798**		
GLM	0.140	0.238	0.210	0.254	0.526	**0.781**	
TLE	0.083	0.144	0.108	0.136	0.531	0.551	**0.809**

Source: Researcher's Compilation

Table 4: Fornell- Larcker Criterion (Academic Environment)

Construct	AR	LU	CO	PEU	FE	FDT	MSS	IEP	PW	SP	AIR
AR	0.694										
LU	0.144	0.726									
CO	0.229	0.53	0.727								
PEU	0.639	0.331	0.552	0.828							
FE	0.203	0.083	0.098	0.061	0.852						
FDT	0.007	-0.011	-0.109	0.001	0.148	0.785					

MSS	0.017	0.02	-0.054	0.018	0.059	0.018	0.803				
IEP	0.086	0.021	0.031	0.104	0.243	0.186	0.009	0.858			
PW	0.273	0.571	0.392	0.547	0.114	0.14	0.063	0.133	0.802		
SP	0.364	0.282	0.199	0.446	0.22	0.046	0.05	0.154	0.318	0.800	
AIR	0.114	0.445	0.407	0.18	0.169	-0.094	-0.081	0.028	0.167	0.253	0.854

Source: Researcher's Compilation

Tables 3 and 4 display the results of the Fornell-Larcker Criterion used to evaluate discriminant validity for the constructs related to accreditation and academic environment, respectively. As per the guideline by Fornell and Larcker (1981), discriminant validity is established when the square root of the Average Variance Extracted (AVE) for each construct (shown on the diagonal) exceeds the corresponding correlations with other constructs (off-diagonal values). This suggests that each construct is more strongly associated with its own indicators than with those of other constructs, thereby supporting the adequacy of discriminant validity within the measurement model.

8.3.1 Hetero trait – Mono trait Ratio (HTMT)

Table 5: HTMT Criterion (Accreditation)

Construct	CA	IVBP	ILR	SSP	RIE	GLM	TLE
CA							
IVBP	0.219						
ILR	0.319	0.364					
SSP	0.250	0.735	0.386				
RIE	0.094	0.198	0.125	0.202			
GLM	0.145	0.256	0.215	0.300	0.590		
TLE	0.090	0.163	0.117	0.173	0.611	0.608	

Source: Extracted from SmartPLS4

Table 5 and 6 display the Heterotrait-Monotrait Ratio (HTMT) values used to assess discriminant validity among the constructs of accreditation and academic environment. According to the HTMT criterion, discriminant validity is established when the HTMT values between any two constructs are below the commonly accepted threshold of 0.85 (Henseler et al., 2015). In these tables, all HTMT values fall well below the 0.85 threshold. This indicates that the constructs are sufficiently distinct from one another, thereby confirming the presence of discriminant validity in the measurement model.

Table 6: HTMT Criterion (Academic Environment)

Construct	AR	LU	CO	PEU	FE	FDT	MSS	IEP	PW	SP	AIR
AR											
LU	0.239										
CO	0.496	0.690									
PEU	0.315	0.436	0.382								
FE	0.388	0.382	0.354	0.068							
FDT	0.228	0.306	0.391	0.061	0.148						
MSS	0.151	0.350	0.217	0.048	0.092	0.049					
IEP	0.310	0.119	0.137	0.117	0.274	0.184	0.073				
PW	0.631	.616	0.078	0.632	0.132	0.185	0.079	0.148			

SP	0.400	0.632	0.689	0.521	0.255	0.078	0.085	0.180	0.384		
AIR	0.395	0.739	0.713	0.202	0.186	0.106	0.093	0.071	0.192	0.311	

Source: Extracted from SmartPLS4

Accreditation and academic environment is treated as second-order construct. Therefore, evaluating its convergent and discriminant validity is not required.

8.4 Evaluation of structural model

The structural model is evaluated to analyze the relationships among constructs and to assess the model's predictive capability. This involves examining path coefficients, the coefficient of determination (R^2), and predictive relevance (Q^2). Table 7 outlines the R^2 and Q^2 values for the construct "Academic Environment" (AE). The R^2 values reflect the extent to which the variance in the dependent variable is accounted for by the independent variables.

Table 7: Coefficient of Determinations

Dependent Variable	R-Square	Q-Square
Academic Environment	.666	.626

Source: Researcher's' Compilation

Table 7 presents the coefficient of determination (R^2) and predictive relevance (Q^2) for the construct academic environment. The R^2 value of 0.666 indicates that approximately 66.6% of the variance in the academic environment is explained by the independent variables (dimensions of accreditation) in the model, reflecting a strong level of explanatory power. These values suggest a moderate level of explanatory power (Cohen, 1988; Singh et al., 2024). Additionally, the Q^2 value of 0.626 demonstrates substantial predictive relevance, suggesting that the model has a good capability to accurately predict the outcomes related to the academic environment construct (Hair et al., 2019). Overall, these findings support the robustness and predictive strength of the structural model.

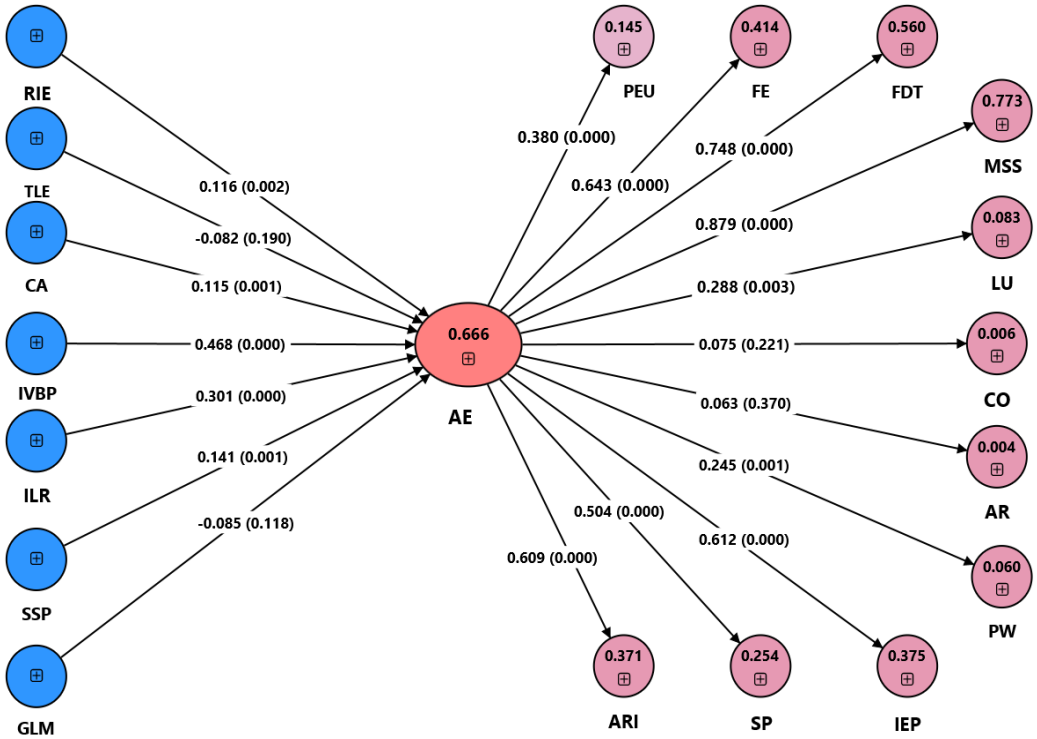

Figure 2: Structural Model Assessment

Source: Computed using Smart-PLS4

Path Coefficients and Hypothesis Testing

Path coefficients represent the magnitude and direction of relationships between constructs. To evaluate their significance, the bootstrapping technique is applied, which generates t-values and p-values. A path coefficient is considered statistically significant if the p-value is less than 0.05, thereby validating the proposed hypotheses and reinforcing the underlying theoretical framework.

Table 8: Hypotheses Remarks

Exogenous & Endogenous Variable	Hypotheses	Path Coefficient	Standard Error	T statstics	P-Value	Remarks
RIE -> AE	H11	.116	.038	3.079	.002	Accepted
TLE -> AE	H12	-.082	.063	1.312	.190	Rejected
CA -> AE	H13	.115	.034	3.366	.001	Accepted
IVBP -> AE	H14	.468	.057	8.245	.000	Accepted
ILR -> AE	H15	.301	.050	6.011	.000	Accepted
SSP -> AE	H16	.141	.044	3.238	.001	Accepted
GLM -> AE	H17	-.085	.053	1.563	.118	Rejected

Source: Researcher's Compilation

Table 8 summarizes the results of the hypothesis testing related to the Academic Environment (AE) construct. The path coefficients, along with their corresponding t-statistics and p-values, reveal the significance of each relationship. The results show that RIE ($H_1$1), CA ($H_1$3), IVBP ($H_1$4), ILR ($H_1$5), and SSP ($H_1$6) have a significant positive influence on AE, as their p-values are below the 0.05 threshold, leading to the acceptance of these hypotheses. Conversely, the paths from TLE ($H_1$2) and GLM ($H_1$7) to AE are not statistically significant, with p-values of 0.190 and 0.118 respectively, resulting in the rejection of these hypotheses. These findings partially support the theoretical framework, indicating that while most variables positively impact the academic environment, a few do not show a significant effect.

9. Importance and Performance Analysis

IPMA is a strategic tool used in PLS-SEM to prioritize improvements by comparing the importance of constructs (how much they impact a target variable like academic environment here) against their performance (how well they're currently doing). The purpose is to identify areas where improvements will have the most significant effect. By mapping these dimensions, managers can focus resources on factors that are highly important but underperforming, while maintaining or deprioritizing high-performing but low-impact areas.

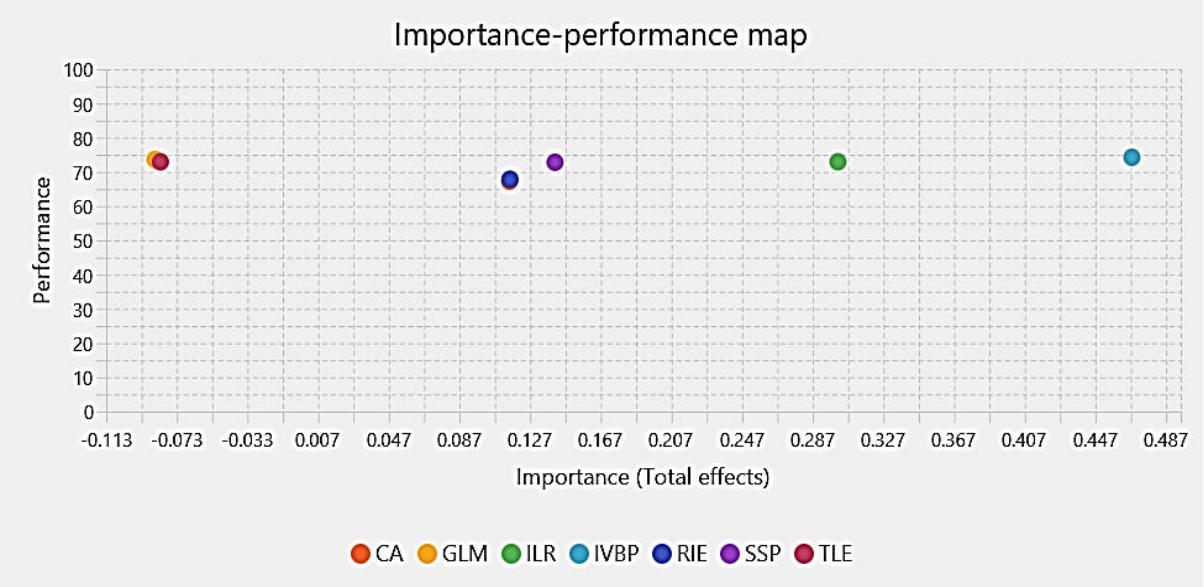

Figure 3: Importance-Performance Map (IPMA)

The Importance-Performance Map (IPMA) visually represents the relative importance (total effects) and performance of various constructs in influencing the Academic Environment (AE). Among all constructs, IVBP stands out with the highest importance (0.48) and strong performance (70), indicating it is both impactful and well-executed. ILR and SSP also demonstrate high importance (0.29 and 0.17, respectively) with commendable performance levels. In contrast, constructs like CA, GLM, and TLE have negative or minimal importance scores and moderate performance, suggesting limited influence on AE and potential areas for strategic improvement. Prioritizing constructs with high importance but lower performance can enhance overall academic environment effectiveness.

10. DISCUSSION

The study aimed to investigate the structural relationships among various institutional factors and their impact on the academic environment within higher education institutions. The integrated analysis illustrates that while most constructs significantly contribute to the academic environment, certain variables like innovative practices, learning resources, and student support are particularly influential. Institutions should prioritize enhancing these high-importance areas while also focusing on improving the strategic relevance of teaching-learning and governance mechanisms to strengthen overall academic quality and institutional excellence. Effective governance was found to significantly correlate with faculty satisfaction and institutional trust. Institutions with decentralized leadership reported higher engagement and policy responsiveness (Altbach, 2005; Singh & Srivastava, 2018). Curriculum relevance and periodic updates, as mandated by NAAC, led to improved learning outcomes and student satisfaction. Integration of skill-based modules was a major driver of employability. Faculty training, research incentives, and appraisal mechanisms fostered professional growth, directly enhancing the academic climate (Stensaker, 2008). Well-equipped laboratories, libraries, and ICT tools significantly impacted student engagement and academic output. Institutions with higher NAAC scores showed better student-teacher ratios and resource availability. Accredited institutions demonstrated better research visibility, collaborative projects, and publication metrics. Institutional support for research contributed to a culture of inquiry and innovation (Harvey, 2004). Mentoring, placement assistance, and grievance redressal mechanisms improved student satisfaction and retention. Practices promoting inclusivity, sustainability, and ethical conduct reinforced a positive and value-driven academic culture.

11. CONCLUSION

The study affirms that the dimensions of accreditation substantially influence the academic environment of HEIs. While governance, faculty development, and infrastructure emerged as strong predictors of academic performance, continuous monitoring and stakeholder involvement are essential for sustained improvement. Accreditation should not merely be a compliance activity but a strategic tool for institutional transformation. This study provides comprehensive insights into the factors influencing the academic environment within higher education institutions, using a robust analytical framework that includes discriminant validity assessment, structural model evaluation, and Importance-Performance Map Analysis (IPMA). The findings confirm that constructs such as Innovative Value-Based Practices, Institutional Learning Resources, and Student Support Practices play a significant role in shaping a positive academic environment, both in terms of statistical significance and practical impact. The high R^2 and Q^2 values indicate strong explanatory and predictive power of the model. However, areas such as Governance and Leadership Mechanisms and the Teaching-Learning Environment showed limited influence, suggesting the need for targeted improvements. Overall, the study underscores the importance of aligning institutional efforts with high-impact areas to enhance the academic environment, thereby supporting quality assurance, accreditation goals, and long-term educational outcomes.

12. RECOMMENDATIONS

- Institutions should establish internal quality assurance cells to maintain accreditation standards.
- Greater autonomy in curriculum development must be granted for context-specific innovation.

- Regular faculty development programs should be mandated.
- Budget allocations must prioritize research and infrastructure development.

13. LIMITATIONS

While this study offers valuable insights into the factors influencing the academic environment in higher education institutions, several limitations must be acknowledged. First, the research is based on cross-sectional data, which restricts the ability to infer causal relationships over time. Longitudinal studies would provide a more dynamic understanding of how institutional factors evolve and impact the academic environment. Second, the data were collected from a specific geographical and institutional context, which may limit the generalizability of the findings to other regions or educational settings. Third, although the study employed robust statistical techniques, it focused primarily on quantitative measures, potentially overlooking qualitative dimensions such as faculty perceptions, cultural influences, or institutional policies that may also shape the academic environment.

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