

Volume 4 Issue 5

Article Number: 25225

Cross-Cultural Adaptation and Overall Satisfaction of International Students in North Indian Higher Education Institutions

Amlan Purkayastha* and Manjinder Singh

Chitkara Business School, Chitkara University, Rajpura, Punjab, India 140401

Abstract

This study investigates the influence of five dimensions of cross-cultural adaptation—psychological adaptation, academic adaptation, sociocultural adaptation, cultural identity maintenance, and language proficiency—on the overall satisfaction of international students enrolled in higher education institutions (HEIs) in North India. A quantitative, cross-sectional design was employed, using purposive sampling to collect data from 411 international students representing diverse nationalities. A pilot test with 66 participants confirmed the reliability and clarity of the questionnaire items. Data analysis was conducted using SPSS 26.0 and AMOS 26.0 through confirmatory factor analysis (CFA) and structural equation modelling (SEM). The findings reveal that four dimensions—psychological, sociocultural, language, and cultural identity maintenance—significantly predict overall satisfaction, whereas academic adaptation shows no significant effect. Among all predictors, cultural identity maintenance exerts the strongest influence, indicating that students who successfully preserve their cultural heritage while adapting to a host environment experience higher satisfaction. The results underscore the importance of emotional stability, social integration, and cultural preservation in shaping the well-being of international students. The study contributes to acculturation and intercultural adaptation theory by emphasizing the multidimensional nature of adaptation and provides practical implications for policy frameworks that foster inclusive and culturally sensitive learning environments.

Keywords: Academic Adaptation; Cross-Cultural Adaptation; Cultural Identity Maintenance; Higher Education Institutions; International Student Satisfaction; Language Proficiency; Psychological Adaptation; Sociocultural Adaptation

1. Introduction

Higher education has undergone profound transformations driven by globalization, technological advancement, and the growing mobility of learners. The internationalization of higher education institutions (HEIs) has expanded access, diversified campuses, and intensified global competition among universities seeking international recognition [1–3]. As a result, education has evolved into a global service industry where student satisfaction plays a critical role in institutional reputation, sustainability, and cross-border appeal. The influx of international students has significantly reshaped higher education systems worldwide. Nations such as the United States, the United Kingdom, Australia, and Canada have long been favored destinations, but emerging economies, including India, Malaysia, and China, have recently gained prominence as alternative study hubs [4]. India, in particular, has positioned itself as a growing education destination in South Asia, hosting a diverse population of students from Africa, East Asia, and neighboring South Asian countries. Despite the expanding inflow, international students often face considerable challenges in academic, linguistic, and cultural adaptation, influencing their academic success and satisfaction with host institutions [5, 6]. Cross-cultural adaptation refers to the psychological, social, and behavioral processes that individuals undergo when adjusting to a new cultural environment [7, 8].

*Corresponding Author: Amlan Purkayastha (amlan_del@rediffmail.com)

Received: 25 Sep 2025; Revised: 10 Oct 2025; Accepted: 22 Oct 2025; Published: 31 Oct 2025

© 2025 Journal of Computers, Mechanical and Management.

This is an open access article and is licensed under a [Creative Commons Attribution-Non Commercial 4.0 License](https://creativecommons.org/licenses/by-nc/4.0/).

DOI: [10.57159/jcmm.4.5.25225](https://doi.org/10.57159/jcmm.4.5.25225).

Within higher education, adaptation encompasses psychological adjustment, social integration, academic orientation, and communication competence. While previous studies have examined cultural adaptation in Western settings, limited attention has been devoted to how international students in developing host nations—such as India—adapt across multiple dimensions and how this adaptation affects their satisfaction levels [9]. Addressing this gap is essential to understanding the unique socio-academic environment of Indian HEIs. Comparatively, research from Southeast Asia (e.g., Malaysia, Indonesia, and Thailand) has highlighted the role of institutional support and cultural inclusivity in enhancing satisfaction among foreign students [10, 11]. Western studies, by contrast, emphasize individual coping mechanisms, social belonging, and perceived institutional fairness [12, 13]. By situating the Indian context within these global findings, this study contributes to a broader understanding of how cultural and institutional variables intersect to shape international student experiences in emerging education destinations.

The present research examines the relationship between five dimensions of cross-cultural adaptation—psychological adaptation, sociocultural adaptation, academic adaptation, language proficiency, and cultural identity maintenance—and overall student satisfaction among international students in North Indian HEIs. Grounded in acculturation and intercultural adaptation theories [14, 15], this study develops and tests a comprehensive structural model using structural equation modelling (SEM). Specifically, it aims to identify which adaptation dimensions most strongly predict satisfaction and to determine the relative importance of cultural identity maintenance within this process. Accordingly, this study seeks to bridge a critical empirical gap by linking multidimensional adaptation factors with satisfaction outcomes in a developing-country context. The findings offer theoretical insight into cross-cultural adaptation processes and provide practical implications for HEI administrators seeking to design culturally inclusive, student-centered strategies that enhance international student satisfaction, retention, and integration.

2. Review of Literature

2.1. Theoretical Background

Cross-cultural adaptation refers to the process through which individuals adjust cognitively, emotionally, and behaviorally to a new cultural environment [7, 8]. In the context of higher education, it captures how international students align themselves with host-country academic norms, social expectations, and communication patterns while maintaining their own cultural identity. According to Berry’s acculturation framework [14], adaptation involves balancing two key orientations—preserving one’s original culture and engaging with the host culture. Successful integration occurs when individuals achieve equilibrium between these orientations, resulting in improved well-being and satisfaction. Earlier models by Ward and Kennedy [15] and subsequent extensions by Haslberger [16] emphasized that adaptation comprises both psychological and sociocultural dimensions. Psychological adaptation reflects emotional stability and mental health in the host culture, whereas sociocultural adaptation denotes behavioral competence in everyday interactions. Later, scholars expanded the concept to include academic and linguistic dimensions, recognizing that international students’ satisfaction and success depend not only on emotional resilience but also on their ability to navigate academic and communication challenges [13]. Cultural identity maintenance has since emerged as a fifth dimension, highlighting the importance of preserving one’s heritage while assimilating into a new educational and social environment [17, 4]. Incorporating Hofstede’s collectivism–individualism dimension [18], this study assumes that sociocultural adaptation within Indian HEIs is shaped by collectivist cultural values that emphasize interdependence, interpersonal harmony, and group belonging. Such cultural orientations encourage international students to integrate through shared community experiences rather than purely individual achievement. Consequently, collectivist contexts may strengthen the role of sociocultural and psychological adaptation in determining satisfaction, while moderating the relative impact of academic adjustment. This integration of Hofstede’s cultural framework complements Berry’s acculturation theory by highlighting how national cultural orientations influence the mechanisms of cross-cultural adaptation in higher education environments.

2.2. Empirical Insights Across Contexts

Studies in Western countries have consistently demonstrated that psychological and sociocultural adjustment significantly enhance international students’ academic performance, social belonging, and life satisfaction [19, 12]. However, most of these investigations were conducted in highly developed higher education systems with extensive internationalization infrastructure. Comparatively, research in Southeast Asia—particularly in Malaysia, Thailand, and Indonesia—reveals that institutional practices, such as orientation programs, peer mentorship, and intercultural training, strongly mediate adaptation outcomes [10, 11, 20]. In developing contexts like India, institutional support remains inconsistent, and adaptation challenges are often amplified by linguistic diversity, local cultural norms, and differing pedagogical practices [5, 3]. Scholars such as Bethel et al. [6] and Yilmaz and Temizkan [5] emphasize that satisfaction among international students depends on the combined influence of psychological stability, social inclusion, and language proficiency. Similarly, research by Jiang et al. [4] and Almukdad and Karadag [21] shows that the maintenance of cultural identity significantly predicts both well-being and satisfaction. These findings support the argument that emotional and identity-based factors often outweigh academic adjustment in determining overall satisfaction.

2.3. Relevance to the Indian Higher Education Context

Despite India's emerging role as a regional education hub, systematic empirical studies exploring international students' cross-cultural adaptation and satisfaction remain limited. Indian HEIs host a culturally heterogeneous student body, including learners from Africa, East and South Asia, and the Middle East. The diversity of this population offers a unique opportunity to examine how multiple adaptation dimensions jointly shape satisfaction in a non-Western, multicultural setting. Understanding these dynamics is crucial for enhancing retention, student support, and the institution's reputation in global rankings. Building upon the reviewed literature, the current study adopts a multidimensional approach to cross-cultural adaptation encompassing five constructs—psychological, sociocultural, academic, language, and cultural identity maintenance—and examines their combined impact on international student satisfaction within North Indian HEIs. The subsequent section develops hypotheses based on these theoretical and empirical foundations.

3. Hypotheses Formulation

Grounded in Berry's acculturation theory [14] and the intercultural adaptation framework by Ward and Kennedy [15], this study proposes that multiple dimensions of adaptation jointly shape the satisfaction levels of international students. Drawing upon empirical findings from cross-cultural and educational psychology research, five hypotheses are developed to examine the impact of psychological, sociocultural, academic, linguistic, and cultural-identity dimensions on overall student satisfaction.

3.1. Psychological Adaptation and Student Satisfaction

Psychological adaptation refers to an individual's emotional stability, mental well-being, and ability to manage acculturative stress in a new environment. Students who successfully cope with cultural stressors and maintain a positive self-concept are more likely to experience satisfaction and academic success [7, 19]. Therefore:

H1: Psychological adaptation positively influences overall student satisfaction.

3.2. Sociocultural Adaptation and Student Satisfaction

Sociocultural adaptation reflects behavioral competence and social integration within the host culture. Prior studies have established that international students who adapt effectively to social norms and develop supportive peer networks report higher satisfaction and engagement [5, 12]. Hence:

H2: Sociocultural adaptation positively influences overall student satisfaction.

3.3. Academic Adaptation and Student Satisfaction

Academic adaptation entails the ability to adjust to host-country pedagogical practices, evaluation systems, and academic expectations. Students who adapt well to instructional methods and learning environments often display improved academic performance and satisfaction [22, 20]. Therefore:

H3: Academic adaptation positively influences overall student satisfaction.

3.4. Language Proficiency and Student Satisfaction

Language proficiency facilitates communication and comprehension in academic and social settings. Higher proficiency reduces barriers in classroom participation and interpersonal interactions, leading to greater satisfaction [13, 23]. Accordingly:

H4: Language proficiency positively influences overall student satisfaction.

3.5. Cultural Identity Maintenance and Student Satisfaction

Cultural identity maintenance denotes an individual's capacity to preserve personal cultural values and traditions while integrating into the host society. Studies indicate that maintaining cultural continuity enhances psychological comfort, resilience, and satisfaction among international students [4, 17]. Thus:

H5: Cultural identity maintenance positively influences overall student satisfaction.

3.6. Proposed Conceptual Framework

Based on the theoretical and empirical foundations, this study proposes a conceptual model illustrating the relationships between the five adaptation dimensions and overall satisfaction, as shown in Fig. 1. The next section outlines the methodological procedures employed to empirically validate these hypotheses.

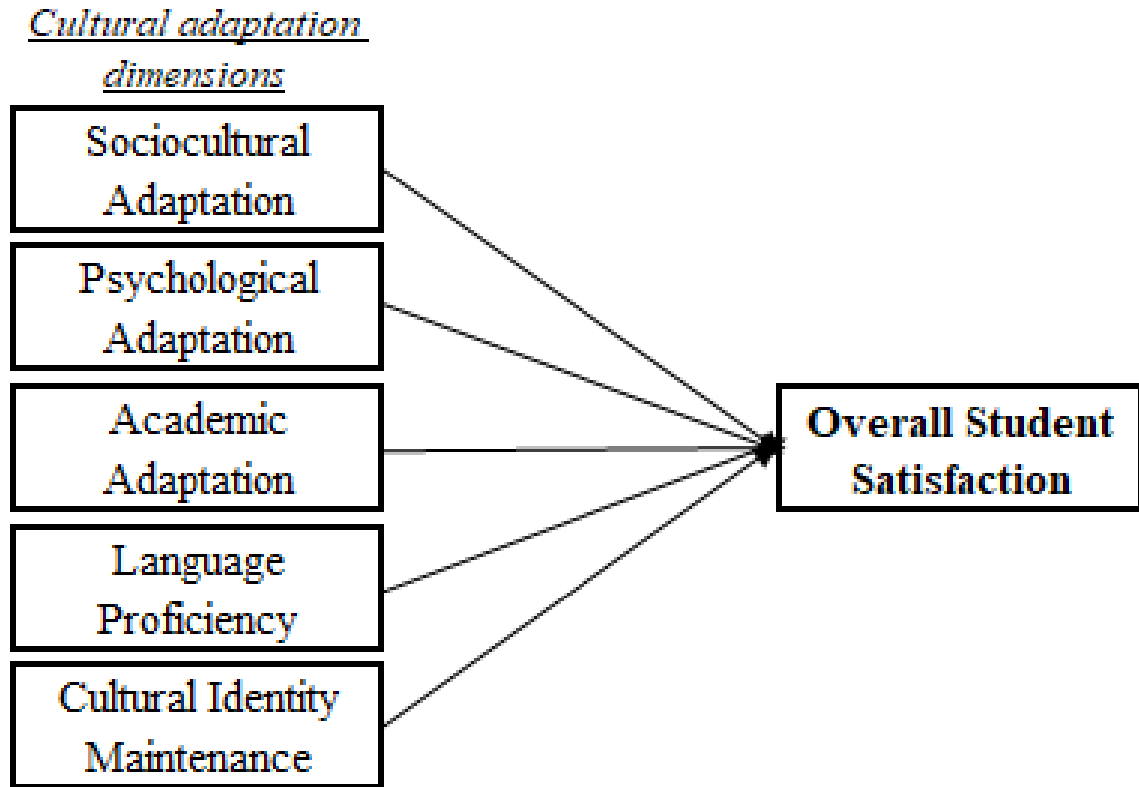


Figure 1: Proposed Conceptual Framework Integrating Hofstede's Collectivism Dimension

4. Methodology

4.1. Research Design

This study employed a quantitative, cross-sectional design to examine the influence of multiple dimensions of cross-cultural adaptation on overall student satisfaction among international students enrolled in higher education institutions (HEIs) in North India. The design was deemed appropriate for testing hypothesized relationships within a structural framework using covariance-based structural equation modelling (SEM).

4.2. Sampling and Data Collection

A non-probability purposive sampling approach was adopted to ensure inclusion of participants relevant to the research objectives. The final sample comprised 411 international students representing diverse nationalities across Africa, East Asia, and South Asia. The inclusion criteria required that each respondent had completed at least one academic semester in an Indian HEI. This ensured that participants possessed adequate exposure to academic, social, and cultural conditions in the host environment. Data were collected through a structured questionnaire distributed both electronically and in paper form. Respondents were assured anonymity and informed that the data would be used solely for academic research. Ethical clearance for the study was obtained from the Institutional Review Board of Chitkara University (Approval ID: CU/IRB/24/061). The authors affirm compliance with JCMM's ethical publication standards.

4.3. Instrument Development and Validation

The constructs were operationalized using previously validated scales from the literature. Psychological adaptation items were adapted from Demes and Geeraert [24]; sociocultural adaptation items from Ward and Kennedy [15] and Wang et al. [25]; academic adaptation from Anderson et al. [22]; language proficiency from Pan et al. [26]; cultural identity maintenance from Ryder et al. [27]; and overall satisfaction from Alavijeh et al. [28]. All items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). A pilot study was conducted with 82 international students, of which 66 valid responses were received. Feedback from academic experts and pilot participants led to refinement of wording and clarity. Reliability analysis using Cronbach's alpha yielded values above 0.70 for all constructs, confirming acceptable internal consistency.

4.4. Common Method Bias Control

Since data were self-reported, both procedural and statistical remedies were implemented to mitigate common method bias (CMB). Procedurally, the questionnaire incorporated varied scale anchors, ensured respondent anonymity, and separated measurement of predictor and criterion variables. Statistically, Harman’s single-factor test revealed that the first factor accounted for 44.6 % of the total variance—below the 50 % threshold—indicating no dominant single-factor influence. Additionally, confirmatory factor analysis (CFA) with a common latent factor showed negligible improvement in fit indices, further confirming minimal CMB impact.

4.5. Data Analysis

Data were analyzed using SPSS 26.0 and AMOS 26.0. Preliminary screening confirmed normality, reliability, and absence of multicollinearity. The measurement model was assessed through CFA to establish convergent and discriminant validity using average variance extracted (AVE), composite reliability (CR), and Cronbach’s alpha. Model fit was evaluated using standard indices— χ^2/df , CFI, TLI, RMSEA, and SRMR—within recommended thresholds [29, 30]. The structural model was subsequently tested via SEM to examine hypothesized relationships and compute standardized path coefficients with corresponding significance levels and confidence intervals.

4.6. Ethical and Generative AI Compliance

The study complied with the ethical standards of research involving human participants and institutional guidelines. In accordance with JCMM Section 3.3, the authors declare that no generative AI tools were used in data collection, analysis, or manuscript preparation. All interpretations and conclusions reflect human scholarly effort.

5. Data Analysis and Results

5.1. Preliminary Analysis

Prior to model testing, the dataset was examined for missing values, outliers, and normality. All variables met acceptable skewness (< 2.0) and kurtosis (< 7.0) thresholds [30]. Descriptive statistics confirmed adequate variance and internal consistency across constructs, with Cronbach’s alpha values exceeding 0.90 for all latent variables, indicating strong reliability and scale homogeneity.

5.2. Measurement Model Evaluation

Confirmatory factor analysis (CFA) was conducted using AMOS 26.0 to assess the reliability and validity of the measurement model. The model demonstrated satisfactory fit to the data: $\chi^2/\text{df} = 3.263$, CFI = 0.952, TLI = 0.941, RMSEA = 0.071, and SRMR = 0.045. These indices lie within the recommended thresholds ($\chi^2/\text{df} < 5.0$; CFI/TLI > 0.90 ; RMSEA < 0.08 ; SRMR < 0.08) [29, 31]. All standardized factor loadings exceeded 0.80 ($p < 0.001$), confirming convergent validity. The average variance extracted (AVE) values ranged from 0.78 to 0.92, while composite reliability (CR) values ranged from 0.93 to 0.97, establishing internal consistency. Discriminant validity was verified using the Fornell–Larcker criterion, as each construct’s square root of AVE exceeded inter-construct correlations (Table 1).

Table 1: Divergent Validity Analysis of Constructs

Construct	SCA	PSY	ACD	LAN	CUL	OSS
SCA	0.94					
PSY	0.65	0.96				
ACD	0.59	0.65	0.92			
LAN	0.51	0.60	0.67	0.92		
CUL	0.53	0.54	0.51	0.62	0.94	
OSS	0.64	0.63	0.59	0.59	0.62	0.89

5.3. Structural Model and Hypotheses Testing

The structural equation model (SEM) was tested to evaluate hypothesized causal relationships among constructs. The structural model exhibited good fit: $\chi^2/\text{df} = 3.865$, CFI = 0.944, TLI = 0.933, RMSEA = 0.074, and SRMR = 0.049, confirming model adequacy. Table 3 presents the standardized path coefficients (β), t -values, significance levels, and 95% confidence intervals. Four of the five hypothesized relationships were supported.

Table 2: Psychometric Summary of Constructs

Construct	AVE	CR	α
Psychological Adaptation	0.919	0.978	0.977
Sociocultural Adaptation	0.876	0.966	0.963
Academic Adaptation	0.852	0.958	0.948
Language Proficiency	0.846	0.956	0.951
Cultural Identity Maintenance	0.889	0.970	0.966
Overall Student Satisfaction	0.784	0.935	0.927

Table 3: Structural Model Results

Hypothesis	Independent Variable	β	t-Value	p-Value	95% CI	Decision
H1	Psychological Adaptation	0.181	4.203	<0.001	[0.10, 0.26]	Supported
H2	Sociocultural Adaptation	0.149	3.508	<0.001	[0.07, 0.23]	Supported
H3	Academic Adaptation	0.061	1.552	0.121	[-0.02, 0.14]	Not Supported
H4	Language Proficiency	0.092	2.262	0.024	[0.01, 0.17]	Supported
H5	Cultural Identity Maintenance	0.329	7.446	<0.001	[0.25, 0.41]	Supported

5.4. Model Explanatory Power and Robustness Checks

The final structural model accounted for a substantial proportion of variance in the endogenous construct. Specifically, the model explained 68.3 % of the variance in Overall Student Satisfaction ($R^2 = 0.683$), indicating high explanatory power within behavioral-science benchmarks [?]. Prior to estimation, multivariate assumptions were assessed. Mardia’s multivariate kurtosis coefficient revealed mild non-normality; therefore, a bootstrapping procedure with 5,000 resamples was applied to obtain robust standard errors and confidence intervals. Examination of residual plots confirmed that the data satisfied linearity and homoscedasticity assumptions, and variance-inflation factors (VIFs) were below 3.0, suggesting no multicollinearity concerns.

5.5. Effect Sizes and Practical Significance

Although the standardized path coefficients ranged from 0.06 to 0.33, these are considered meaningful within behavioral and social science contexts [?]. Cultural identity maintenance ($\beta = 0.329$) exhibited the strongest influence, representing a moderate-to-strong effect on satisfaction. Psychological ($\beta = 0.181$) and sociocultural ($\beta = 0.149$) adaptation displayed small-to-moderate effects, while language proficiency ($\beta = 0.092$) contributed a smaller but significant effect. Academic adaptation ($\beta = 0.061$, $p > 0.05$) was found insignificant, suggesting that emotional and identity-related factors are stronger determinants of satisfaction than purely academic adjustments.

5.6. Model Visualization

Figure 2 displays the final structural model with standardized coefficients and significance levels. Solid arrows indicate significant paths, while dashed arrows represent non-significant relationships. The visualization confirms that cultural identity maintenance serves as the most substantial predictor of overall student satisfaction among international students in North India.

6. Discussion

The present study investigated how different dimensions of cross-cultural adaptation influence overall satisfaction among international students enrolled in higher education institutions in North India. The empirical results validate four of the five hypothesized relationships, confirming that psychological adaptation, sociocultural adaptation, language proficiency, and cultural identity maintenance significantly contribute to student satisfaction, while academic adaptation was not found to have a significant direct effect.

6.1. Interpretation of Findings in Light of Theory

The findings substantiate the theoretical premises of Berry’s acculturation framework [14], which conceptualizes adaptation as a dual process involving maintenance of cultural identity and engagement with the host culture. The strong influence of cultural identity maintenance ($\beta = 0.329$) indicates that international students derive satisfaction not only from integrating into their host environment but also from preserving their cultural distinctiveness.

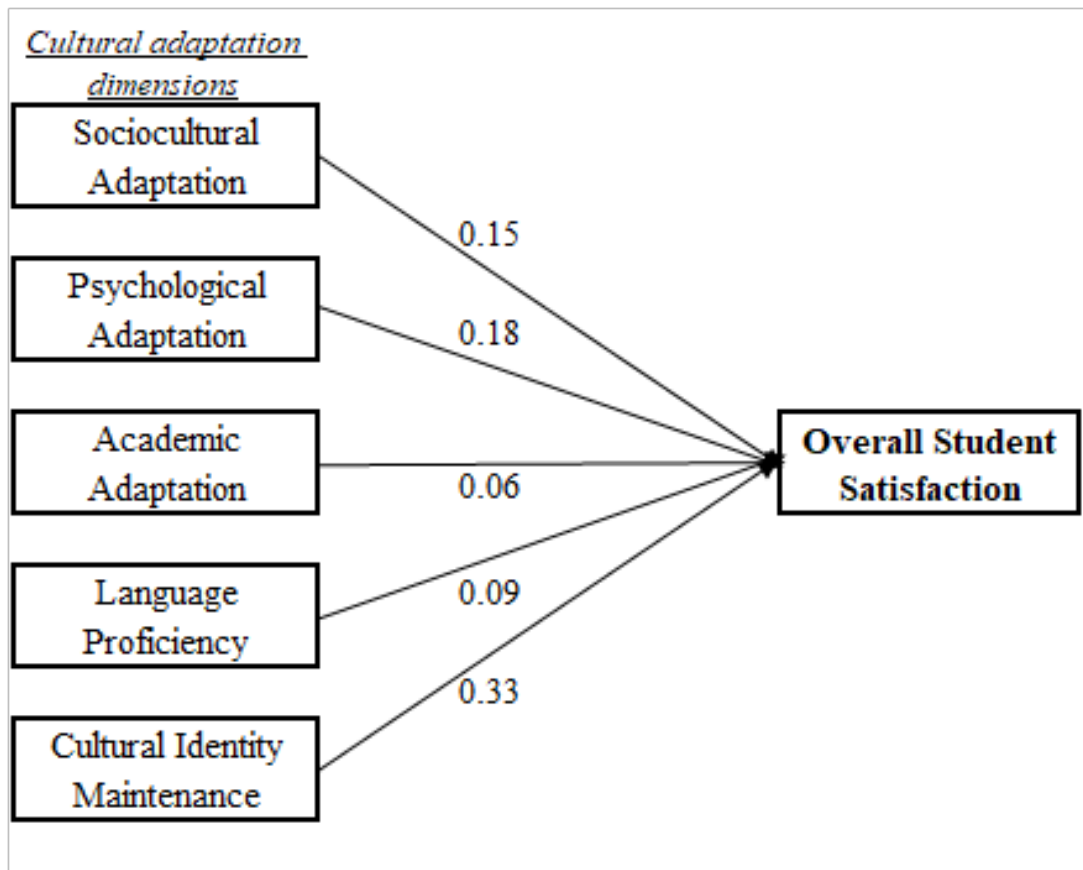


Figure 2: Final Structural Equation Model with Standardized Path Coefficients

This duality reinforces the notion of “integration strategy,” which Berry posits as the most adaptive form of acculturation. Similar findings have been reported by Jiang et al. [4] and Bethel et al. [6], who emphasized the psychological benefits of maintaining cultural continuity in unfamiliar contexts. The significance of psychological and sociocultural adaptation aligns with Ward and Kennedy’s [15] two-dimensional model, where psychological well-being and sociocultural functioning jointly determine successful cross-cultural transition. Students who are emotionally stable and socially engaged demonstrate higher satisfaction levels, underscoring the importance of interpersonal networks and coping mechanisms in fostering adjustment. The findings corroborate prior research by Yilmaz and Temizkan [5] and Yeh and Inose [32], which highlighted that effective social integration and stress management enhance satisfaction in transnational education environments.

In contrast, the non-significance of academic adaptation in predicting satisfaction suggests that academic adjustment, while essential for performance, may not be the primary determinant of emotional well-being or institutional contentment. This observation supports the argument of Cho et al. [33] and Anderson et al. [22] that pedagogical adaptation is often overshadowed by emotional, linguistic, and social challenges during early acculturation stages. It also reflects the hierarchical importance international students assign to psychosocial support over curricular alignment when evaluating their educational experiences.

6.2. Cross-Regional Comparison and Contextualization

The Indian higher education context presents distinctive characteristics compared to Western and Southeast Asian systems. In India, host institutions often emphasize collectivist values, interpersonal relationships, and inclusive community structures. These attributes align with Hofstede’s [18] dimensions of collectivism and high-context communication, which facilitate a sense of belonging among culturally diverse students. Consequently, sociocultural adaptation emerges as a significant satisfaction driver in the Indian context. Comparatively, in Western contexts such as the United States, Canada, or Australia, previous studies [13, 34] have demonstrated that academic adaptation and autonomy carry stronger weight in predicting satisfaction due to individualistic learning cultures. Conversely, research from Southeast Asia (e.g., Malaysia and Thailand) [10, 11] highlights that social integration and institutional support networks are dominant determinants. The present findings position India closer to the Southeast Asian pattern, emphasizing the cultural and emotional rather than academic facets of adjustment. This comparative lens enriches the global discourse on international student experience by situating India as an emerging educational hub with hybrid socio-academic characteristics—collectivist in ethos yet increasingly globalized in practice.

6.3. Policy and Practical Implications

Institutional Policy Implications

The findings underscore the importance of institutional strategies that promote cultural inclusivity and diversity. HEIs should establish formal intercultural exchange programs, cultural celebration events, and student organizations that allow international learners to maintain and express their cultural identity while engaging with the host community. Embedding these initiatives into institutional policy aligns with the collectivist ethos of Indian higher education and enhances international student retention and institutional reputation. Furthermore, administrators should integrate continuous feedback mechanisms to monitor adaptation challenges and satisfaction trends among diverse student cohorts.

Pedagogical Practice

The results reveal that *psychological* and *sociocultural* adaptation exert stronger influence on satisfaction than academic adjustment. Consequently, faculty members should adopt pedagogical practices that prioritize empathy, intercultural awareness, and flexible instructional design. Incorporating multicultural content, collaborative learning, and culturally responsive assessment strategies can create an inclusive learning environment. Professional development workshops on intercultural teaching competence can further equip educators to manage cultural heterogeneity in classrooms effectively.

Student Support Services

Comprehensive support structures are essential for facilitating adaptation and well-being. Universities should expand orientation programs, peer-mentorship schemes, and counseling services tailored to international students. Language proficiency initiatives—such as conversation labs, writing clinics, and intercultural communication workshops—can mitigate linguistic barriers and improve confidence. Embedding mental health and wellness resources within international offices can directly enhance *psychological adaptation* and overall satisfaction ($R^2 = 0.683$). By integrating these interventions, institutions can provide a holistic ecosystem that supports both academic success and cultural adjustment.

6.4. Synthesis and Contribution

This study contributes to the broader literature by empirically validating a multidimensional model of cross-cultural adaptation in a developing-country context. It extends Berry's theoretical framework to an emerging educational market and demonstrates the primacy of identity-based and psychological variables in determining satisfaction. By highlighting the interplay between adaptation dimensions, the findings offer an integrated understanding of how emotional, linguistic, and cultural factors coalesce to shape international student experiences in India. Furthermore, the comparative discussion situates the Indian case within the global higher education landscape, providing valuable insights for countries aspiring to become regional education hubs. The emphasis on maintaining cultural identity and fostering emotional stability reveals that sustainable internationalization of higher education requires not only academic excellence but also deep cultural sensitivity and institutional empathy.

7. Conclusions

The study investigated the influence of multiple dimensions of cross-cultural adaptation—psychological, sociocultural, academic, linguistic, and cultural identity—on the overall satisfaction of international students enrolled in higher education institutions in North India. The empirical findings confirmed that four of these five dimensions significantly affected satisfaction, with cultural identity maintenance emerging as the most influential predictor, followed by psychological and sociocultural adaptation and language proficiency. Academic adaptation, while conceptually important, did not demonstrate a significant direct effect in the present model. The results reinforce the theoretical propositions of Berry's acculturation framework and Hofstede's cultural dimensions, underscoring the importance of identity preservation and cultural inclusion in educational environments characterized by high cultural diversity. Psychological well-being and sociocultural connectedness were found to be essential mediators of satisfaction, indicating that affective and social variables outweigh purely academic factors in shaping students' perceptions of their overseas learning experience. The findings carry important implications for international education management and policy. Institutions aiming to enhance international student satisfaction should prioritize intercultural engagement initiatives, peer support systems, and structured counseling services that foster both cultural identity maintenance and psychological resilience. Establishing platforms for cultural expression, mentorship programs, and language enhancement modules can strengthen integration and retention outcomes. Policymakers should emphasize the design of inclusive campus ecosystems that balance academic rigor with cultural empathy, thereby advancing India's position as a competitive and culturally responsive higher education destination.

This study also contributes to the advancement of the United Nations Sustainable Development Goal 4 (Quality Education) by promoting inclusive and equitable educational practices for globally mobile learners. By emphasizing the importance of cultural empathy, psychological well-being, and institutional inclusivity, the research highlights how HEIs can strengthen internationalization agendas while upholding global educational equity. The findings thus offer policy relevance not only for India but also for other emerging education destinations seeking to align their international education strategies with global sustainable development priorities.

Overall, this research contributes to the global discourse on international student adaptation by extending the cross-cultural adaptation model to a developing-country context. It provides empirical evidence that emotional stability, social belonging, and cultural preservation jointly determine satisfaction. Future research may explore longitudinal perspectives or cross-national comparisons to further validate the interplay between adaptation dimensions and satisfaction trajectories in diverse host cultures.

Acknowledgment

The authors express sincere gratitude to Chitkara University, Punjab, India, for providing academic support and research infrastructure. Appreciation is also extended to the participating international students for their valuable time and responses, which made this study possible.

Declaration of Competing Interests

The authors declare no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author Contributions

Amlan Purkayastha: Conceptualization, Supervision, Data Analysis, Writing – Review and Editing; **Manjinder Singh:** Methodology, Validation, Investigation, Writing – Original Draft.

References

- [1] A. K. Paswan and G. Ganesh, “Higher education institutions: Satisfaction and loyalty among international students,” *Journal of Marketing for Higher Education*, vol. 19, no. 1, pp. 65–84, 2009.
- [2] K. S. Mallika Appuhamilage and H. Torii, “The impact of loyalty on the student satisfaction in higher education: A structural equation modeling analysis,” *Higher Education Evaluation and Development*, vol. 13, no. 2, pp. 82–96, 2019.
- [3] M. Wilczewski and I. Alon, “Language and communication in international students’ adaptation: a bibliometric and content analysis review,” *Higher Education*, vol. 85, no. 6, pp. 1235–1256, 2023.
- [4] Q. Jiang, M. Yuen, and H. Horta, “Factors influencing life satisfaction of international students in mainland china,” *International Journal for the Advancement of Counselling*, vol. 42, no. 4, pp. 393–413, 2020.
- [5] K. Yilmaz and V. Temizkan, “The effects of educational service quality and socio-cultural adaptation difficulties on international students’ higher education satisfaction,” *Sage Open*, vol. 12, no. 1, p. 21582440221078316, 2022.
- [6] A. Bethel, C. Ward, and V. H. Fetvadjev, “Cross-cultural transition and psychological adaptation of international students: The mediating role of host national connectedness,” *Frontiers in Education*, vol. 5, p. 539950, 2020.
- [7] Y. Zhou, D. Jindal-Snape, K. Topping, and J. Todman, “Theoretical models of culture shock and adaptation in international students in higher education,” *Studies in Higher Education*, vol. 33, no. 1, pp. 63–75, 2008.
- [8] A. Rajab, H. A. Rahman, S. A. Panatik, and N. S. Mansor, “Acculturative stress among international students,” *Shock*, vol. 2, no. 4, pp. 2–5, 2014.
- [9] K. Schotte, P. Stanat, and A. Edele, “Is integration always most adaptive? the role of cultural identity in academic achievement and psychological adaptation of immigrant students in germany,” *Journal of Youth and Adolescence*, vol. 47, no. 1, pp. 16–37, 2018.

- [10] S. Chelliah, M. J. Khan, T. Krishnan, M. E. B. M. Kamarulzaman, and N. E. Goh, "Factors influencing satisfaction and revisit intention among international exchange students in malaysia," *Journal of International Education in Business*, vol. 12, no. 1, pp. 111–130, 2019.
- [11] K. Yousapronpaiboon, "Servqual: Measuring higher education service quality in thailand," *Procedia-Social and Behavioral Sciences*, vol. 116, pp. 1088–1095, 2014.
- [12] B. Yu and E. Wright, "Socio-cultural adaptation, academic adaptation and satisfaction among international postgraduate students in australia," *Journal of International Students*, vol. 6, no. 3, pp. 702–716, 2016.
- [13] M. S. Andrade, "International students in english-speaking universities: Adjustment factors," *Journal of Research in International Education*, vol. 5, no. 2, pp. 131–154, 2006.
- [14] J. W. Berry, "Immigration, acculturation, and adaptation," *Applied Psychology*, vol. 46, no. 1, pp. 5–34, 1997.
- [15] C. Ward and A. Kennedy, "The measurement of sociocultural adaptation," *International Journal of Intercultural Relations*, vol. 23, no. 4, pp. 659–677, 1999.
- [16] A. Haslberger, "Facets and dimensions of cross-cultural adaptation: refining the tools," *Personnel Review*, vol. 34, no. 1, pp. 85–109, 2005.
- [17] S. J. Schwartz, M. J. Montgomery, and E. Briones, "The role of identity in acculturation among immigrant people," *Human Development*, vol. 49, no. 1, pp. 1–30, 2006.
- [18] G. Hofstede, "Dimensionalizing cultures: The hofstede model in context," *Online Readings in Psychology and Culture*, vol. 2, no. 1, p. 8, 2011.
- [19] Q. Wang and K. Hannes, "Academic and socio-cultural adjustment among asian international students in belgium: A photovoice project," *International Journal of Intercultural Relations*, vol. 39, pp. 66–81, 2014.
- [20] S. Ali, N. H. Yoenanto, and D. Nurdibyanandaru, "Acculturative stress among international students at airlangga university-indonesia.," *Online Submission*, vol. 8, no. 1, pp. 123–135, 2020.
- [21] M. Almukdad and E. Karadag, "Culture shock among international students in turkey: an analysis of the effects of self-efficacy, life satisfaction and socio-cultural adaptation on culture shock," *BMC psychology*, vol. 12, no. 1, p. 154, 2024.
- [22] J. R. Anderson, Y. Guan, and Y. Koc, "The academic adjustment scale: Measuring the adjustment of permanent resident or sojourner students," *International Journal of Intercultural Relations*, vol. 54, pp. 68–76, 2016.
- [23] E. Sawir, S. Marginson, A. Deumert, C. Nyland, and G. Ramia, "Loneliness and international students: An australian study," *Journal of Studies in International Education*, vol. 16, no. 2, pp. 157–173, 2012.
- [24] K. A. Demes and N. Geeraert, "Measures matter: Scales for adaptation, cultural distance, and acculturation orientation revisited," *Journal of Cross-Cultural Psychology*, vol. 45, no. 1, pp. 91–109, 2014.
- [25] K. T. Wang, P. P. Heppner, L. Wang, and F. Zhu, "Cultural intelligence trajectories in new international students: Implications for the development of cross-cultural competence," *International Perspectives in Psychology*, vol. 4, no. 1, pp. 51–65, 2015.
- [26] J.-Y. Pan, D. F. K. Wong, L. Joubert, and C. L. W. Chan, "Acculturative stressor and meaning of life as predictors of negative affect in acculturation," *Australian & New Zealand Journal of Psychiatry*, vol. 41, no. 9, pp. 740–750, 2007.
- [27] A. G. Ryder, L. E. Alden, and D. L. Paulhus, "Is acculturation unidimensional or bidimensional?," *Journal of Personality and Social Psychology*, vol. 79, no. 1, p. 49, 2000.
- [28] M. R. K. Alavijeh, A. Esmaeili, A. Sepahvand, and V. Davidaviciene, "The effect of customer equity drivers on word-of-mouth behavior with mediating role of customer loyalty and purchase intention," *Engineering Economics*, vol. 29, no. 2, pp. 236–246, 2018.
- [29] L.-t. Hu and P. M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," *Structural Equation Modeling*, vol. 6, no. 1, pp. 1–55, 1999.
- [30] R. B. Kline, *Principles and Practice of Structural Equation Modeling*. The Guilford Press, 3rd ed., 2011.
- [31] K. Joreskog and D. Sorbom, *Structural equation modelling: Guidelines for determining model fit*. University Press of America, 1993.

- [32] C. J. Yeh and M. Inose, "International students' reported english fluency, social support satisfaction, and social connectedness as predictors of acculturative stress," *Counselling Psychology Quarterly*, vol. 16, no. 1, pp. 15–28, 2003.
- [33] Y. J. Cho, Y. Jang, J. E. Ko, S. H. Lee, and S. K. Moon, "Acculturation, acculturative stress, and depressive symptoms in vietnamese migrants in south korea," *Journal of Immigrant and Minority Health*, vol. 20, no. 5, pp. 1103–1108, 2018.
- [34] S. Wilkins and J. Huisman, "The international branch campus as transnational strategy in higher education," *Higher Education*, vol. 64, no. 5, pp. 627–645, 2012.