

ORIGINAL ARTICLE

Academic adaptation: Mediating the relationship between intercultural sensitivity and life satisfaction in international postgraduate students in China

Wenjie Pei¹, Yue Chen^{2*}¹Institute of Modern Vocational Education, Hangzhou Polytechnic, Hangzhou 311402, Zhejiang Province, China²Human Resources Department, Zhejiang Financial College, Hangzhou 310018, Zhejiang Province, China**ABSTRACT**

Since 2017, China has emerged as the third-largest destination globally and the largest in Asia for international students. However, a significant structural imbalance exists among these students. This study investigated how intercultural sensitivity affects life satisfaction among international postgraduate students in China, with a specific focus on the mediating role of academic adaptation. Using survey data from 444 students across four universities in Zhejiang, Shanghai, and Chongqing, this study employed structural equation modeling to examine these relationships. The findings show that intercultural sensitivity positively predicts both academic adaptation and life satisfaction, and that academic adaptation partially mediates this relationship. This study offers important implications for improving international students' educational experiences in China by enhancing intercultural competence and academic support mechanisms.

Key words: international postgraduate students in China, intercultural sensitivity, academic adaptation, life satisfaction

INTRODUCTION

By 2017, China hosted 489,200 international students, making it Asia's leading destination and the world's third most popular country for international education. This demonstrates that China's higher education internationalization efforts have reached significant milestones. However, despite a substantial increase in the number of international students, the structural imbalances within this population remain pronounced.


Specifically, at the educational level before the coronavirus disease 2019 pandemic, the levels of overseas education programs in China continued to increase, but the proportion of students for degrees was

low; that of students with high academic qualifications was even lower. In 2016, academic degree-seeking international students comprised just 47.4% of China's total foreign student population. Among these, undergraduate students accounted for 31.9%, while master's and doctoral students constituted merely 10.3% and 4.1%, respectively. By comparison, during the 2016-2017 academic year, the United States hosted 903,127 international students, of whom 830,143 were degree-seeking students, representing 91.9% of the total. Non-degree students numbered 72,984, accounting for 8.9%. Furthermore, undergraduate students made up 48.6%, master's students made up 26.3%, and doctoral students made up 13.8% (Baer *et al.*, 2018). These figures demonstrate that, compared to countries with longer

***Corresponding Author:**

Yue Chen, Human Resources Department, Zhejiang Financial College, 118 Xueyuan Street, Xiasha Higher Education Park, Hangzhou 310018, Zhejiang Province, China. Email: chen Yue2018@zjfu.edu.cn; <https://orcid.org/0009-0005-4033-7745>

Received: 15 May 2025; Revised: 13 June 2025; Accepted: 16 September 2025
<https://doi.org/10.54844/vte.2025.0990>

 This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, which allows others to copy and redistribute the material in any medium or format non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

histories of hosting international students, studying in China is less appealing to students with high-level academic qualifications.

Although international mobility has far-reaching significance for students and host countries, challenges involved in the process of mobility are inevitable (Bauböck & Heller, 1996). International students suffer from "culture" shock when they encounter a host country's culture, leading to an adaptation problem. In addition to social and cultural issues, such as language, daily communication, and racial and ethnic discrimination (Ward & Kennedy, 1993), academic difficulties (Barker *et al.*, 1991) and psychological problems are also prevalent. Depression, physical and mental illness, anxiety, paranoia, and complaints are considered to be the characteristics of foreign students (Ward, 1962).

Some studies have pointed out that while international students face numerous challenges, many successfully adjust appropriately to a host country's culture and system of colleges and universities (Church, 1982). However, limited research has systematically investigated the factors that influence international students' successful adaptation to the study abroad experience or their satisfaction with it. Thus, it is necessary to understand how international students turn seemingly demanding situations into satisfactory adaptations (Sam, 2001).

Life satisfaction constitutes a comprehensive evaluation of the extent to which an individual's aspirations and goals are fulfilled. By studying international students' life satisfaction and its influencing factors, we can better understand their adaptation processes and the mechanisms that affect them. Research on the life satisfaction of international students in China, especially international postgraduate students, is still scant. Drawing on prior literature, several studies have identified key factors affecting the life satisfaction of foreign students in China, such as individual coping ability, campus support services, education quality, language barriers, and limited integration between domestic and international students, as well as relevant policy recommendations (Jiang *et al.*, 2020).

From the perspective of Sino-African educational cooperation, some studies have employed mixed-methods research to explore the overseas study satisfaction of African students at a Chinese university. The results show that satisfaction with teaching is higher than with administrative services. African students expressed dissatisfaction with Chinese teachers' English proficiency and the quality of teacher-student interactions (Niu *et al.*, 2023). Given the insufficient appeal of Chinese universities to international postgraduate students, it is crucial to investigate their life

satisfaction and the associated influence mechanisms.

Life satisfaction is a component of subjective well-being that involves cognition and judgment (Neto, 1995). For international students, achieving this satisfaction necessitates navigating cultural adaptation. Neto's (1995) research specifically focuses on identifying the factors influencing life satisfaction by examining obstacles to their smooth adaptation. Bochner *et al.* (1977) further categorized the adaptation challenges faced by international students in host countries into four primary sources: culture shock, academic pressure, the ambassador role, and adolescent emancipation.

International students at Chinese universities, especially international graduate students studying for master's and doctoral degrees, often encounter cultural shock and academic pressure. Intercultural sensitivity is the key quality that individuals need to have to cross from one culture to another, that is, to stimulate their ability to recognize, understand, accept, and appreciate cultural differences, and to adapt to differences by actively adjusting their behaviors.

In the process of cultural adaptation, international students should be "students" rather than "foreigners" (Elliott, 1967). To address "cultural shock", particularly "academic culture shock", international postgraduate students in China require intercultural sensitivity to effectively adapt to university life, achieve academic integration, and enhance overall life satisfaction. Intercultural sensitivity can be considered an explanatory variable for evaluating the life satisfaction of international postgraduate students. Drawing on the mediating role of academic adaptation, this study investigates the impact mechanism of intercultural sensitivity on the life satisfaction of inbound international postgraduate students in China to enrich research in this field.

This study explored the following research questions: (1) What is the overall level of life satisfaction among inbound international postgraduate students in China? (2) Are there significant correlations between intercultural sensitivity, academic adaptation, and life satisfaction, and how do these factors interact with one another? (3) Does academic adaptation serve as a mediator between intercultural sensitivity and life satisfaction?

THEORETICAL BACKGROUND

Intercultural sensitivity and life satisfaction

During the transition from ethnocentrism to ethno-relativism, individuals predominantly rely on intercultural communication rather than independent existence (Bennett, 1986). Intercultural sensitivity,

defined as "the essential capability for navigating across cultural environments, encompassing the understanding of potential behavioral differences, maintaining an open attitude toward cultural diversity, and actively adjusting one's behaviors to accommodate actual cultural variations" (Bhawuk & Brislin, 1992), serves as a critical competency for cultural adaptation. International students possessing this competency demonstrate a greater willingness to respect cultural differences and modify their behaviors after recognizing and comprehending these variations (Hammer *et al.*, 2003). Life satisfaction constitutes an individual's subjective appraisal of goal attainment (Nilsson, 2015) and overall quality of life based on self-selected criteria (Diener *et al.*, 1985). For international postgraduate students, it specifically represents their "subjective perception of satisfaction within the new sociocultural environment" (Jiang *et al.*, 2020).

While existing research has seldom examined the direct relationship between intercultural sensitivity and life satisfaction among international postgraduate students, studies have established that international students' life satisfaction is closely associated with their intercultural adaptation in a host country (Zhang & Goodson, 2011). As intercultural adaptation represents the primary challenge for international students (Lazarus & Folkman, 1984), successful adaptation becomes crucial for enhancing life satisfaction. Given that intercultural sensitivity serves as the predominant factor influencing adaptation outcomes—with higher sensitivity correlating with better adaptation (Chen & Starosta, 2000)—these findings collectively suggest a strong positive relationship between intercultural sensitivity and life satisfaction.

Therefore, we propose the following hypothesis—H1: International postgraduate students' intercultural sensitivity positively predicts their life satisfaction.

Intercultural sensitivity and academic adaptation

Academic adaptation constitutes a multidimensional adjustment process wherein international students modify their behaviors and cognitions to achieve academic success in foreign educational systems (Baker & Siryk, 1984; Kaur, 2007). This construct encompasses three core competencies: (1) navigating discipline-specific learning requirements, (2) adapting to host-country pedagogical approaches (Ballard, 1987), and (3) maintaining optimal motivation and performance standards (Rienties *et al.*, 2012). As empirically established by Ward *et al.* (2001), academic adaptation is the strongest predictor of degree completion.

Tinto's (1975) longitudinal model of institutional

departure posits that universities comprise two interdependent systems: the academic system, which requires integration through intellectual development and achievement, and the social system, which requires integration through interpersonal relationships and campus engagement. Failure to achieve integration in either system may result in attrition or psychological distress (Zhu, 2011). Thus, complete academic adaptation necessitates successful navigation of both systems. Effective academic adaptation requires more than academic achievement; it demands successful social integration within a university community. Intercultural sensitivity is a critical facilitator in this process, as demonstrated by Laurosana's (2018) study of Indonesian students, which revealed a significant positive correlation between intercultural sensitivity and academic adaptation outcomes.

Based on this theoretical and empirical foundation, we propose the following hypothesis—H2: International postgraduate students' intercultural sensitivity positively predicts their academic adaptation.

Academic adaptation and life satisfaction

Academic culture shock represents a significant challenge confronting most international students when transitioning to educational environments that diverge from their prior academic experiences (Sovic, 2008). This phenomenon, conceptually defined as the dissonance between higher education systems in students' countries of origin and their host institutions (Gilbert, 2000), manifests primarily through challenges in several key dimensions of the academic environment: linguistic communication, pedagogical approaches, assessment methodologies, and student-instructor dynamics (Li *et al.*, 2010).

Within the Chinese higher education context, international students encounter particularly salient adaptation difficulties. Empirical research has documented initial challenges in comprehending English-medium instruction delivered by Chinese faculty members, with reported difficulties including accented pronunciation, limited lexical range, and imprecise academic discourse (Tian & Lu, 2018). Furthermore, students frequently exhibit suboptimal learning behaviors, including inadequate preparatory study, passive classroom engagement, and difficulties integrating knowledge, all of which contribute to diminished academic experiences (Su, 2019). At the postgraduate level, these challenges intensify, with scholars identifying significant obstacles in research comprehension, limited access to faculty mentorship, and an unclear understanding of degree requirements (Hussain & Shen, 2019). Crucially, the extant literature demonstrates a robust positive correlation between successful academic adaptation and

measurable educational outcomes (Rienties *et al.*, 2012), underscoring the importance of overcoming academic culture shock.

This emphasis on academic challenges aligns with Furnham and Bochner's (1982) seminal assertion regarding international students' primary identification as scholars rather than cultural outsiders. Successful navigation of academic adaptation challenges constitutes a fundamental determinant of overseas study outcomes. Importantly, academic adaptation emerges as a critical predictor variable in models of international student life satisfaction, with longitudinal studies consistently demonstrating that enhanced adaptation correlates with elevated subjective well-being measures.

Based on this theoretical and empirical foundation, we propose the following hypothesis—H3: International postgraduate students' academic adaptation positively predicts their life satisfaction.

Mediating role of academic adaptation

Empirical evidence suggests that the dual pressures of academic demands and sociocultural adjustment in cross-border educational contexts exert significant negative effects on international students' life satisfaction (Lardier *et al.*, 2020). Academic adaptation emerges as a robust predictor of life satisfaction, with longitudinal studies demonstrating that students who successfully integrate into host institutions through academic engagement, peer interactions, and extracurricular participation exhibit both higher graduation rates and enhanced psychological well-being (Severiens & Wolff, 2008).

The failure to achieve adequate academic adaptation generates substantial psychological distress among international students. Maladaptive responses to academic challenges frequently precipitate perceptions of existential futility regarding overseas study, ultimately diminishing overall life satisfaction (Luzio-lockett, 1998). For international postgraduate students at Chinese universities, successful academic adaptation hinges on four key dimensions (Zhu *et al.*, 2023): (1) understanding and adapting to local academic conventions, (2) actively managing academic culture shock, (3) effectively handling coursework and supervisory dynamics, and (4) cultivating discipline-specific research capabilities. This adaptive process enables international postgraduate students to achieve their academic goals and improve their life satisfaction in China.

In summary, intercultural sensitivity serves as a key antecedent of international postgraduate students' academic adaptation, while life satisfaction represents a significant outcome. Enhancing intercultural sensitivity facilitates successful academic adaptation, which in turn

promotes higher life satisfaction. Prior research confirms that academic adaptation mediates the relationship between intercultural sensitivity (independent variable) and life satisfaction (dependent variable).

Based on this theoretical and empirical foundation, we propose the following hypothesis—H4: Academic adaptation mediates the effect of intercultural sensitivity on international postgraduate students' life satisfaction.

METHODS

Sample

A cluster random sampling of 517 international postgraduate students from four Chinese universities (two universities in Zhejiang and one each in Shanghai and Chongqing) was recruited. The inclusion criteria were as follows: international postgraduate students studying in mainland China for a master's or doctoral degree, who have studied in China for at least one semester, and who can read and understand English. All questionnaires were returned. However, 73 of the students were eliminated from the sample due to incomplete responses, leaving a total sample of 444 subjects. Hence, the collection rate was 85.9%.

Measures

International postgraduate students' intercultural sensitivity was assessed using the revised five-point Likert-type intercultural sensitivity scale (Wang & Zhou, 2016). Researchers developed an 11-item Academic Adaptation Scale to assess international postgraduate students' adjustment in China, structured into three dimensions: (1) course learning (*e.g.*, "completing course assignments on time"), (2) research training (*e.g.*, "employing appropriate research methods to conduct research"), and (3) academic communication (*e.g.*, "attending academic exchange activities (*e.g.*, conferences, salons, and forums)").

The scale was informed by prior instruments, including Dunn's (2006) 53-item U.S.-focused adaptation scale and Wen *et al.*'s (2014) survey of institutional support and interpersonal dynamics. After the initial design, the English-language questionnaire was refined *via* interviews with four international postgraduate students and expert consultations. Key revisions included adding a research methods item, consolidating overlapping academic communication items, and improving terminology (*e.g.*, from "classroom teachers" to "course instructors"). The final scale consisted of 11 items measured on a five-point Likert-type scale (from 1 = "Extremely difficult" to 5 = "No difficulty"). Higher scores indicated fewer academic adaptation challenges, reflecting better academic adaptation among international postgraduate students in China.

The final measurement model demonstrated acceptable fit indices ($\chi^2/\text{df} = 1.522$, goodness-of fit index [GFI] = 0.933, root mean square error of approximation [RMSEA] = 0.072), with all incremental fit indices (comparative fit index [CFI] = 0.936, incremental fit index [IFI] = 0.939) exceeding the recommended threshold of 0.90. The scale's reliability (Cronbach's $\alpha = 0.776$) satisfied DeVellis's standards for research instruments. The life satisfaction variables were measured using Diener *et al.*'s (1985) seven-point Likert-type Satisfaction with Life Scale. The entire questionnaire was translated from English to Chinese and then back-translated to English by two independent bilingual scholars to ensure translation quality and guarantee equivalence of meaning (Brislin, 1970).

Control variables

Prior research has demonstrated that gender, age, degree level, overseas experience, and medium of instruction may influence international postgraduate students' academic adaptation (Quan *et al.*, 2016; Rienties *et al.*, 2012; G. H. Zhu, 2011; J. N. Zhu, 2012). Consequently, these variables were included as controls in the analysis. Female students and individuals with higher stress levels experience more physical symptoms and stress-related behaviors, potentially reducing life satisfaction (Zhang & Goodson, 2011). This necessitates controlling for gender to isolate its distinct effects. Similarly, older students tend to utilize more adaptive coping strategies, such as problem-solving, cognitive restructuring, and emotional expression, which may impact their academic adaptation and life satisfaction abroad (Monteiro *et al.*, 2014), warranting age control to account for developmental and experiential differences. Additionally, since language proficiency correlates positively with intercultural sensitivity (Ng *et al.*, 2025) and 67.1% of participants were enrolled in English-taught programs, controlling for the medium of instruction was essential to minimize its confounding influence on academic and sociocultural outcomes. Multicollinearity diagnostics using variance inflation factors (VIFs) confirmed no concerning collinearity, with all values below 2.0—well under the conventional threshold of 5.0.

Data analysis strategy

To test the hypothesized model, structural equation modeling (SEM) with analysis of moment structure (AMOS) 24.0 was used in this study. The researchers adopted Anderson and Gerbing's (1988) two-step strategy to test the hypothesized model. First, the measurement model was confirmed using confirmatory factor analysis (CFA), and then an SEM analysis was performed to measure the fit and path coefficients of the hypothesized model. The *chi-square* (χ^2) value, degrees of freedom (df), the value of χ^2/df , standardized root mean square residual (SRMR), RMSEA, CFI, and Tucker-

Lewis index (TLI) were adopted to estimate the model fit. This study followed the recommended reference values of these indices by Hu and Bentler (1999) and Browne and Cudeck (1992): χ^2/df ratio (desirable if less than 2), SRMR (best if close to 0.08 or less), RMSEA (best if close to 0.06 or less), CFI (best if greater than 0.95), and TLI (best if greater than 0.95).

FINDINGS

Preliminary analyses

Table 1 shows the means, standard deviations, reliabilities, and correlations of the variables. Intercultural sensitivity was positively related to academic adaptation ($r = 0.380$, $P < 0.01$) and life satisfaction ($r = 0.437$, $P < 0.01$). Academic adaptation was positively related to life satisfaction ($r = 0.439$, $P < 0.01$).

Table 1: Descriptive statistics, reliability, and correlations of the 3-factor measurement model

Construct	Mean	SD	IS	AA	LS
1. IS	59.69	9.642	(0.80)	-	-
2. AA	40.03	9.146	0.380**	(0.85)	-
3. LS	24.55	6.603	0.437**	0.439**	(0.74)

The square roots of AVE for discriminant validity are in parentheses along the diagonal. **, $P < 0.01$ (two-tailed); $n = 444$. SD, standard deviation; IS, intercultural sensitivity; AA, academic adaptation; LS, life satisfaction; AVE, average variance extracted.

A CFA analysis of the three constructs of intercultural sensitivity, academic adaptation, and life satisfaction was performed to measure the internal consistency reliability, convergent validity, and discriminant validity of the constructs in the proposed model. As shown in Table 2, the results revealed that the composite reliability (CR) of each construct ranged from 0.86 to 0.96, exceeding the 0.60 CR threshold value, indicating internal consistency reliability (Bagozzi & Yi, 1989; Fornell & Larcker, 1981).

Meanwhile, the factor loadings of the individual items in the three-factor model were all significant (all $P < 0.001$), giving preliminary evidence for the convergent validity of the measurement model. Also, the average variance extracted (AVE) of all constructs ranged from 0.55 to 0.72, exceeding the 0.50 AVE threshold value (Bagozzi & Yi, 1989; Fornell & Larcker, 1981), and the convergent validity was acceptable. Table 1 shows that the estimated interrelations among all constructs were less than the square roots of the AVE in each construct; thus, discriminant validity was preliminarily supported (Dunn, 2006).

Overall, the measurement model in this study indicated a good model-data fit: $\chi^2/\text{df} = 1.906$, SRMR = 0.065, RMSEA = 0.045, CFI = 0.952, TLI = 0.947. All the

Table 2: Coefficients for the 3-factor measurement model

Construct	No. of items	Cronbach's alpha	Variable	Standardized factor loadings	SE	Critical ratio (t-value)	AVE	CR
IS	15	0.86	IS1	0.991	-	-	0.64	0.96
			IS2	0.666	0.044	14.492***		
			IS3	0.712	0.045	15.565***		
			IS4	0.805	-	-		
			IS5	0.808	0.060	16.799***		
			IS6	0.751	0.060	15.734***		
			IS7	0.673	-	-		
			IS8	0.910	0.085	14.031***		
			IS9	0.744	0.069	13.568***		
			IS10	0.799	-	-		
			IS11	0.761	0.060	15.846***		
			IS12	0.816	0.057	16.792***		
			IS13	0.896	-	-		
			IS14	0.784	0.045	18.683***		
			IS15	0.824	0.049	19.636***		
AA	11	0.78	AA1	0.772	-	-	0.72	0.96
			AA2	0.858	0.058	18.498***		
			AA3	0.803	0.058	17.285***		
			AA4	0.800	0.059	17.215***		
			AA5	0.892	-	-		
			AA6	0.784	0.038	19.809***		
			AA7	0.873	0.043	22.592***		
			AA8	0.873	-	-		
			AA9	0.823	0.038	22.656***		
			AA10	0.870	0.037	25.148***		
			AA11	0.938	0.041	28.961***		
LS	5	0.87	LS1	0.683	-	-	0.55	0.86
			LS2	0.725	0.059	16.140***		
			LS3	0.942	0.080	15.796***		
			LS4	0.622	0.072	12.096***		
			LS5	0.685	0.071	13.230***		

***, $P < 0.001$ (two-tailed); $n = 444$. SE, standard error; AVE, average variance extracted; IS, intercultural sensitivity; CR, composite reliability; AA, academic adaptation; LS, life satisfaction.

model-fit indices exceeded their respective acceptance levels, and all factor loadings of the observed indicators on the latent variables were significant at the level of $P < 0.001$. It can be concluded that the three-factor model (*i.e.*, the proposed model) is the best way to examine the distinct characteristics of the three constructs considered in this study.

Structural model

The structural modeling results indicate that the hypothesized model fits the data well. Following Baron and Kenny (1986), the researchers used a causal steps strategy to examine the first condition of mediation in relation to Hypothesis 1. Table 1 shows the correlation coefficients revealed that intercultural sensitivity was positively and significantly related to life satisfaction ($r = 0.437$, $P < 0.01$) as well as positively and significantly

related to academic adaptation ($r = 0.380$, $P < 0.01$). Meanwhile, the results of the direct effect of intercultural sensitivity on life satisfaction (standardized direct effect = 0.35, $P < 0.01$; Figure 1) and the direct effect of intercultural sensitivity on academic adaptation (standardized direct effect = 0.57, $P < 0.01$) were both statistically significant. Thus, Hypotheses 1 and 2 were supported.

The results in Table 1 indicate that academic adaptation was positively and significantly related to life satisfaction ($r = 0.439$, $P = 0.01$), and the results of the direct effect of academic adaptation on life satisfaction (standardized direct effect = 0.38, $P = 0.01$). Thus, the direct effect of academic adaptation on life satisfaction was also statistically significant. To assess mediation effects, the researcher employed bootstrapping techniques with

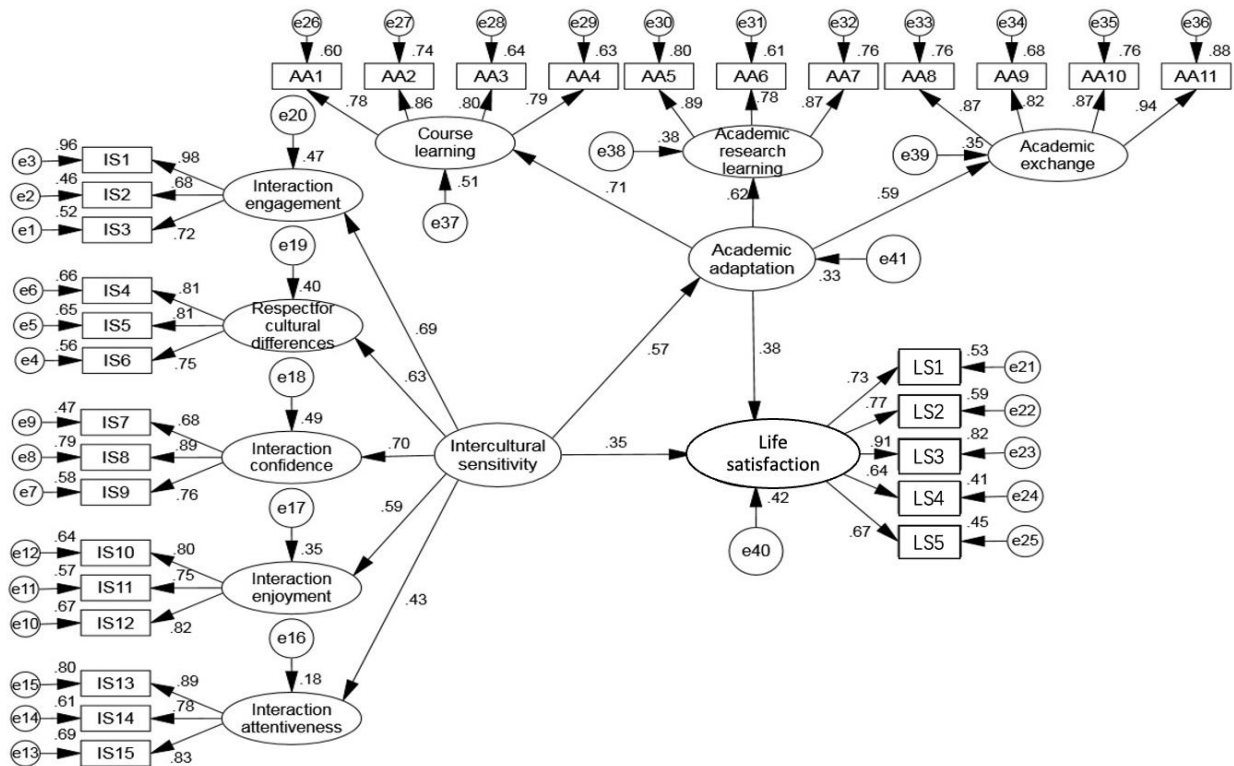


Figure 1. Structural equation modeling of the hypothesized model. AA, academic adaptation; LS, life satisfaction; IS, intercultural sensitivity.

1000 samples, calculating both bias-corrected and standard percentile bootstrap confidence intervals (95% CI) to determine the statistical significance of indirect effects between variables. The indirect effect is statistically significant at the 0.05 level if the CI does not include zero (Shrout & Bolger, 2002). The researchers calculated the indirect effect among variables by multiplying 1000 estimates of the path coefficients from intercultural sensitivity to life satisfaction *via* the mediation of academic adaptation.

Table 3 indicates that the 95% CI for the indirect effect did not include zero, and the results of the bootstrap test confirmed the existence of a positive and significant mediating effect for academic adaptation between intercultural sensitivity and life satisfaction; thus, Hypothesis 3 is supported. Furthermore, as the direct effect of intercultural sensitivity on life satisfaction was still significant ($P < 0.01$), the relationship of intercultural sensitivity to life satisfaction was partially mediated by academic adaptation.

DISCUSSION

The statistical analysis revealed moderate life satisfaction levels among international postgraduate students in China (Mean = 2.85, standard deviation [SD] = 0.46), suggesting generally positive living experiences. These

findings align with the existing literature on international student satisfaction in China. Specifically, our results confirm Niu *et al.*'s (2021) conclusion regarding African students' general satisfaction with their Chinese study experience, and mirror Wen *et al.*'s (2013) Beijing-based findings, where 77% of international students reported satisfaction with their residential experience. Most significantly, our mediation analysis establishes academic adaptation as a mediating variable between intercultural sensitivity and life satisfaction, offering new insights into the mechanisms underlying international students' life satisfaction.

The intercultural sensitivity of international postgraduate students in China positively predicts their life satisfaction and academic adaptation

Statistical analyses confirm that intercultural sensitivity significantly predicts both life satisfaction and academic adaptation among international postgraduate students in China. This positive correlation indicates that enhanced intercultural sensitivity corresponds to improved academic adaptation and life satisfaction. These findings align with Sarwari *et al.*'s (2017) study of 108 international postgraduate students in Malaysia, which established that intercultural sensitivity facilitates communicative competence, thereby enhancing cross-cultural interactions and life satisfaction.

Table 3: Standardized direct, indirect, and total effects of the hypothesized model (IS to LS)

Effects	Point estimate	Product of coefficients		Bootstrapping				Two-tailed significance
				Bias-Corrected 95% CI		Bias-Corrected 95% CI		
		SE	Z	Lower	Upper	Lower	Upper	
Total Effects	1.826	0.343	5.32	1.358	2.757	1.278	2.731	< 0.001**
Indirect Effects	0.707	0.253	2.79	0.312	1.327	0.333	1.332	0.005**
Direct Effects	1.119	0.351	3.19	0.452	1.848	0.401	1.829	0.001**

Standardized estimating of 1000 bootstrap samples, ** $P < 0.01$. SE, standard error; CI, confidence intervals; IS, intercultural sensitivity; LS, life satisfaction.

Cultural shock represents an inevitable phase in the adaptation process (Kluckhohn, 1951; Oberg, 1960). Seminal work characterizes this experience as involving the loss of familiar cultural reference points, creating significant adjustment challenges regardless of individual predispositions. Successful adaptation requires a three-fold process: cognitive recognition of cultural differences, affective acceptance of cultural diversity, and behavioral modification to align with host cultural norms. As Mulvey (2020) demonstrated, host-country cultural values actively shape international students' cognitive frameworks and behavioral patterns.

Within this context, intercultural sensitivity emerges as a critical competency that facilitates the navigation of cultural discontinuities, mediates cross-cultural interactions, and promotes psychosocial adjustment. Therefore, the development of intercultural sensitivity serves as a crucial mechanism for enhancing both the academic adaptation and life satisfaction of international postgraduate students in China. Institutional support programs aimed at cultivating this competency could significantly improve student outcomes across multiple domains.

The academic adaptation of international postgraduate students in China plays a part in mediating effects

The statistical analysis revealed that intercultural sensitivity influences international postgraduate students' life satisfaction *via* two pathways: a direct effect and an indirect effect mediated by academic adaptation. This mediation mechanism indicates that heightened intercultural sensitivity facilitates academic adjustment, which in turn enhances life satisfaction. These findings position academic adaptation as a critical psychological process that enables students to transform cross-cultural awareness into improved well-being.

This study highlights academic adaptation's central role in international graduate education. The conceptual dropout model suggests that successful academic adaptation protects against attrition while accelerating adjustment to host-country academia. Supporting evidence shows that academic stressors can undermine

motivation and satisfaction (Lardier *et al.*, 2020), with adaptation difficulties potentially triggering profound distress (Luzio-lockett, 1998). The "academic culture shock" concept (Gilbert, 2000) encapsulates these challenges, manifesting across language barriers, pedagogical differences, assessment methods, and student-teacher dynamics (Li *et al.*, 2010). When students develop competencies to recognize and adapt to these differences, they mitigate culture shock, facilitating smoother transitions and greater satisfaction.

Given the demonstrated importance of academic adaptation, Chinese universities should improve international postgraduate students' educational experiences in China by enhancing intercultural competence and academic support mechanisms. First, a prearrival digital acculturation program should be developed, featuring mandatory online modules that cover discipline-specific research ethics guidelines and introduce Chinese academic norms. Subsequently, this digital preparation should be complemented by structured onboarding support upon arrival, including intercultural orientation workshops and academic expectation seminars.

More importantly, universities need to establish a dual-channel mentoring program that pairs each international postgraduate with both an academic mentor and a cultural navigator. Faculty academic mentors would provide regular progress reviews using standardized rubrics while facilitating research integration through co-publication opportunities. Simultaneously, cultural navigators—typically senior international postgraduate students—would offer practical guidance on institutional systems, such as course registration, and help bridge connections with domestic research teams. This integrated approach addresses adaptation challenges at multiple levels, from initial preparation through ongoing academic and cultural support.

Research limitations

While this study provides valuable insights into the relationship between intercultural sensitivity, academic adaptation, and life satisfaction among international postgraduate students in China, several limitations should be acknowledged. First, despite our adequate

sample size ($n = 444$), geographic limitations to universities in Zhejiang, Shanghai, and Chongqing restrict generalizability, particularly to inland or less economically developed regions of China. Second, while we examined the multidimensional constructs of intercultural sensitivity and academic adaptation, the analysis was restricted to exploring basic relationships rather than employing more complex statistical approaches, such as multiple linear regression. Third, the cross-sectional design precludes causal inferences and cannot capture the dynamic nature of adaptation processes over time—an area that warrants longitudinal investigation. Fourth, our focus on academic factors means that we did not account for other potential determinants of life satisfaction (e.g., financial circumstances, social integration, or living conditions) that future research should consider. These limitations highlight important directions for more comprehensive future studies while contextualizing the interpretation of our current findings.

CONCLUSION

This study demonstrates that intercultural sensitivity contributes to international postgraduate students' life satisfaction *via* both direct and indirect pathways, with academic adaptation serving as a significant mediator. These findings provide important implications for China's international education development amid its world-class university initiatives. Specifically, the research findings suggest that improving international postgraduate students' educational experiences in China by enhancing intercultural competence and academic support mechanisms may significantly enhance the quality of international education and students' life satisfaction. Such holistic approaches would better synchronize China's international education framework with graduate students' psychosocial needs, enhancing both institutional excellence and student well-being in China's pursuit of world-class university status.

DECLARATIONS

Acknowledgement

None.

Author contributions

Pei WJ: Conceptualization, Methodology, Investigation and Validation, Data curation, Writing—Original draft. Chen Y: Investigation, Formal analysis, Writing—Review and Editing. All authors have read and approved the final version of the manuscript.

Source of funding

This research received no external funding.

Ethical approval

Not require.

Informed consent

All participants provided written informed consent. Personal identifiers (e.g., names, ID numbers) were removed to ensure confidentiality, and data were anonymized before analysis.

Conflict of interest

The authors have no conflicts of interest to declare.

Use of large language models, AI and machine learning tools

None.

Data availability statement

All data has been included in this paper.

REFERENCES

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Baer, J., Bhandari, R., Andrejko, N., & Mason, L. (2018). *Open Doors 2018 Report on International Educational Exchange*. Institute of International Education.
- Bagozzi, R. P., & Yi, Y. (1989). On the use of structural equation models in experimental designs. *Journal of Marketing Research*, 26(3), 271-284. <https://doi.org/10.1177/002224378902600302>
- Baker, R. W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31(2), 179-189. <https://doi.org/10.1037/0022-0167.31.2.179>
- Ballard, B. (1987). Academic adjustment: the other side of the export dollar. *Higher Education Research & Development*, 6(2), 109-119. <https://doi.org/10.1080/0729436870060203>
- Barker, M., Child, C., Gallois, C., Jones, E., & Callan, V. J. (1991). Difficulties of overseas students in social and academic situations. *Australian Journal of Psychology*, 43(2), 79-84. <https://doi.org/10.1080/00049539108259104>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Bauböck, R., & Heller, Á. (1996). *The challenge of diversity: integration and pluralism in societies of immigration*. Avebury.
- Bennett, M. J. (1986). A developmental approach to training for intercultural sensitivity. *International Journal of Intercultural Relations*, 10(2), 179-196. [https://doi.org/10.1016/0147-1767\(86\)90005-2](https://doi.org/10.1016/0147-1767(86)90005-2)
- Bhawuk, D. P. S., & Brislin, R. (1992). The measurement of intercultural sensitivity using the concepts of individualism and collectivism. *International Journal of Intercultural Relations*, 16(4), 413-436. [https://doi.org/10.1016/0147-1767\(92\)90031-O](https://doi.org/10.1016/0147-1767(92)90031-O)
- Bochner, S., McLeod, B. M., & Lin, A. (1977). Friendship patterns of overseas students: a functional model. *International Journal of Psychology*, 12(4), 277-294. <https://doi.org/10.1080/00207597708247396>
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185-216. <https://doi.org/10.1177/135910457000100301>
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21(2), 230-258. <https://doi.org/10.1177/0049124192021002005>
- Chen, G. M., & Starosta, W. J. (2000). The development and validation of the intercultural sensitivity scale. *Human Communication*, 3(1), 3-14.
- Church, A. T. (1982). Sojourner adjustment. *Psychological Bulletin*, 91(3), 540-

572. <https://doi.org/10.1037/0033-2909.91.3.540>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13
- Dunn, J. W. Academic adjustment of Chinese graduate students in US institutions of higher education. University of Minnesota. (Doctoral dissertation). 2006.
- Elliott, A. J. A. (1967). Foreign students in perspective. *Social Science Information*, 6(6), 189-202. <https://doi.org/10.1177/053901846700600614>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Furnham, A., & Bochner, S. (1982). Social difficulty in a foreign culture: An empirical analysis of culture shock. In B. Stephen (Ed.), *Cultures in contact* (pp. 161-198). Pergamon Press.
- Gilbert, S. Japanese students in American higher education: A cross-cultural analysis of academic culture. Stanford University. (Doctoral dissertation). 2000.
- Hammer, M. R., Bennett, M. J., & Wiseman, R. (2003). Measuring intercultural sensitivity: the intercultural development inventory. *International Journal of Intercultural Relations*, 27(4), 421-443. [https://doi.org/10.1016/S0147-1767\(03\)00032-4](https://doi.org/10.1016/S0147-1767(03)00032-4)
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Jiang, Q., Yuen, M., & Horta, H. (2020). Factors influencing life satisfaction of international students in mainland China. *International Journal for the Advancement of Counseling*, 42(4), 393-413. <https://doi.org/10.1007/s10447-020-09409-7>
- Kaur, D. International students and American higher education: a study of the academic adjustment experiences of six Asian Indian international students at a research level II university. The University of North Carolina at Charlotte. (Doctoral dissertation). 2007.
- Kluckhohn, C. (1951). Values and value-orientations in the theory of action: An Exploration in Definition and Classification. In T. Parsons, & E. A. Shils (Eds.), *Toward a general theory of action* (pp. 388-433). Harvard University Press.
- Laurosana, L. [The Research of intercultural adaptation of Indonesian students in China]. Central China Normal University. (Master's thesis). 2018.
- Lardier, D. T. Jr, Lee, C. S., Rodas, J. M., Garcia-Reid, P., & Reid, R. J. (2020). The effect of perceived college-related stress on depression, life satisfaction, and school satisfaction: the coping strategies of hispanic college students from a hispanic serving institution. *Education and Urban Society*, 52(8), 1204-1222. <https://doi.org/10.1177/0013124519896845>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, coping and appraisal*. Springer.
- Li, G., Chen, W., & Duanmu, J. L. (2010). Determinants of international students' academic performance. *Journal of Studies in International Education*, 14(4), 389-405. <https://doi.org/10.1177/1028315309331490>
- Luzio-lockett, A. (1998). The squeezing effect: the cross-cultural experience of international students. *British Journal of Guidance & Counselling*, 26(2), 209-223. <https://doi.org/10.1080/03069889808259702>
- Monteiro, N. M., Balogun, S. K., & Oratile, K. N. (2014). Managing stress: the influence of gender, age and emotion regulation on coping among university students in Botswana. *International Journal of Adolescence and Youth*, 19(2), 153-173. <https://doi.org/10.1080/02673843.2014.908784>
- Hussain, M., & Shen, H. (2019). A study on academic adaptation of international students in China. *Higher Education Studies*, 9(4), 80. <https://doi.org/10.5539/hes.v9n4p80>
- Mulvey, B. (2020). International higher education and public diplomacy: a case study of Ugandan graduates from Chinese universities. *Higher Education Policy*, 33(3), 459-477. <https://doi.org/10.1057/s41307-019-00174-w>
- Neto, F. (1995). Predictors of satisfaction with life among second generation migrants. *Social Indicators Research*, 35(1), 93-116. <https://doi.org/10.1007/BF01079240>
- Ng, K. Y., Rockstuhl, T., & Ang, S. (2025). Language proficiency and cultural intelligence: a meta-analysis based on conservation of resources theory and the overt-covert model of culture. *Applied Psychology*, 74(1), e12603. <https://doi.org/10.1111/apps.12603>
- Nilsson, P. A. (2015). Life satisfaction among outbound students in northern Sweden. *World Journal of Education*, 5(4), 87-92. <https://doi.org/10.5430/wje.v5n4p87>
- Niu, C., Liao, S. A., & Sun, Y. (2023). African students' satisfaction in China: from the perspectives of China-Africa educational cooperation. *Journal of Studies in International Education*, 27(2), 298-315. <https://doi.org/10.1177/10283153211052771>
- Oberg, K. (1960). Cultural shock: adjustment to new cultural environments. *Practical Anthropology*, 7(4), 177-182. <https://doi.org/10.1177/009182966000700405>
- Quan, R., He, X., & Sloan, D. (2016). Examining Chinese postgraduate students' academic adjustment in the UK higher education sector: a process-based stage model. *Teaching in Higher Education*, 21(3), 326-343. <https://doi.org/10.1080/13562517.2016.1144585>
- Rienties, B., Beausaert, S., Grohnert, T., Niemantsverdriet, S., & Kommers, P. (2012). Understanding academic performance of international students: the role of ethnicity, academic and social integration. *Higher Education*, 63(6), 685-700. <https://doi.org/10.1007/s10734-011-9468-1>
- Sam, D. L. (2001). Satisfaction with life among international students: an exploratory study. *Social Indicators Research*, 53(3), 315-337. <https://doi.org/10.1023/A:1007108614571>
- Sarwari, A. Q., Wahab, M. N. A., & Ki, E. J. (2017). Study of the relationship between intercultural sensitivity and intercultural communication competence among international postgraduate students: a case study at University Malaysia Pahang. *Cogent Social Sciences*, 3(1), 1-11. <https://doi.org/10.1080/23311886.2017.1310479>
- Severiens, S., & Wolff, R. (2008). A comparison of ethnic minority and majority students: social and academic integration, and quality of learning. *Studies in Higher Education*, 33(3), 253-266. <https://doi.org/10.1080/03075070802049194>
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological Methods*, 7(4), 422-445. <https://doi.org/10.1037/1082-989X.7.4.422>
- Sovic, S. (2008). Coping with stress: the perspective of international students. *Art, Design & Communication in Higher Education*, 6(3), 145-158. https://doi.org/10.1386/adch.6.3.145_1
- Su, Y. (2019). A study of curriculum learning experience and influence factors of international doctoral students studying in China under the background of "the Belt and Road". *International and Comparative Education*, 41(9), 18-26. <https://doi.org/10.20013/j.cnki.ice.2019.09.003>
- Tian, M., & Lu, G. (2018). Intercultural learning, adaptation, and personal growth: a longitudinal investigation of international student experiences in China. *Frontiers of Education in China*, 13(1), 56-92. <https://doi.org/10.1007/s11516-018-0003-3>
- Tinto, V. (1975). Dropout from higher education: a theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125. <https://doi.org/10.3102/00346543045001089>
- Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock*. Routledge.
- Ward, C., & Kennedy, A. (1993). Where's the "culture" in cross-cultural transition? *Journal of Cross-Cultural Psychology*, 24(2), 221-249. <https://doi.org/10.1177/0022022193242006>
- Ward, L. E. (1962). Some observations of the underlying dynamics of conflict in foreign students. *Student Medicine*, 10, 430-440.
- Wang, W., & Zhou, M. (2016). Validation of the short form of the intercultural sensitivity scale (ISS-15). *International Journal of Intercultural Relations*, 55, 1-7. <https://doi.org/10.1016/j.ijintrel.2016.08.002>
- Wen, W., Chen, L., Bai, Y., & Cao, H. S. (2013). [A comparative study of

- international students' experiences and satisfaction in Beijing]. *Social Sciences of Beijing*, (2), 63-70. <https://doi.org/10.13262/j.bjsshkxy.bjshkx.2013.02.028>
- Wen, W., Wang, Z. X., & Chen, Q. (2014). [An empirical study on the learning experience and satisfaction of graduate students studying in China]. *Academic Degrees & Graduate Education*, (10), 55-62. <https://doi.org/10.16750/j.adge.2014.10.014>
- Zhu, J., Gu, M., Yang, L., Xun, S., Wan, M., & Li, J. (2023). Academic adaptation of international students in China: evidence from the grounded theory and structure equation model. *Sustainability*, 15(1), 692. <https://doi.org/10.3390/su15010692>
- Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: a systematic review. *International Journal of Intercultural Relations*, 35(2), 139-162. <https://doi.org/10.1016/j.ijintrel.2010.11.011>
- Zhu, G. H. [Cross cultural adaptation among international students in P.R.C. institutions of higher education]. East China Normal University. (Doctoral dissertation). 2011.
- Zhu, J. N. Academic adjustment of Chinese students at German universities. Humboldt University of Berlin. (Doctoral dissertation). 2012.