Personality and cross-cultural adjustment: The moderating role of cross-cultural motivation in Chinese students' adjustment to life in Russia

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ABSTRACT

This study explores the moderating role of cross-cultural motivation in the relationship between personality traits and adjustment outcomes among Chinese students in Russia. As internationalization fosters global cooperation, understanding the factors that aid students' cross-cultural and psychological adaptation is critical. The research involved 538 Chinese students with a median age of 23.0 years (IQR: 21.0–25.0) (38.5% male) from four Moscow universities. Emotional stability (Goldberg's IPIP-50), sense of coherence (Antonovsky's scale), and cross-cultural motivation (Ang and Van Dyne's CQ scales) were examined as predictors of cross-cultural adjustment (Black and Stephens' scale) and educational satisfaction (modified Hackman and Oldham scale).

Results showed that cross-cultural motivation moderated the relationship between emotional stability and cross-cultural adjustment ($\beta = -.122$, $p < .01$). Higher motivation weakened the positive link between emotional stability and cross-cultural adjustment, benefiting students with lower emotional stability. Additionally, cross-cultural motivation was a strong independent predictor of adjustment outcomes ($\beta = .429$, $p < .001$ for cross-cultural adjustment; $\beta = .171$, $p < .001$ for educational satisfaction). These findings highlight the importance of cross-cultural motivation for the broader student population, not just those with low personality predispositions, and offer practical insights for improving international students' experiences. This research also contributes to the expansion of the integrative communication theory of cross-cultural adaptation.

Russia's "Development of the Export Potential of the Russian Education System" program seeks to promote educational exports, focusing on enhancing support for international students. Despite a decline in student flow during the 2020s due to geopolitical events and the COVID-19 pandemic, recent years have witnessed stabilization, particularly in the context of growing academic cooperation between Russia and China.

Notable developments include a 2023 protocol for scientific collaboration and engineering agreements between universities, culminating in the establishment of a joint centre by St. Petersburg State University and Harbin Institute of Technology in 2024. This momentum is furthered by plans for inter-university collaborations and the "Priority-2030" program, which aims to strengthen

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international cooperation and attract foreign students.

China has emerged as a significant source of international students for Russia. The number of Chinese students in Russia rose from 32,600 in 2022 to over 44,000 in 2024, and student visas doubled in 2023, according to figures from the Ministry of Education and Science (May 26, 2022) and a by from D. Chernyshev (December 19, 2024).

This growth presents both an opportunity and a challenge for Russia. While the influx of Chinese students enhances the diversity and internationalization of Russian higher education, it necessitates effective integration and cross-cultural adaptation strategies. Understanding the experiences of Chinese students is paramount to ensuring student success, well-being, and program completion.

While Russia boasts a high completion rate for international students (85.47%), it remains slightly lower than the completion rate for domestic students (88.79%) according to the data published on the Ministry of Education and Science's website in 2024. This suggests potential areas for improvement in supporting international student adjustment.

Research underscores the importance of educational satisfaction for student success. Discomfort and unmet expectations can contribute to student dropout, particularly in contexts with lower cultural tolerance. While Russia generally holds positive views towards China, mixed public opinions regarding Chinese residents in Russia may create unique challenges for integration. A February 2025 Levada Center nationwide survey found that 88% of Russians hold a positive view of China; this number dropped from 92% in May 2024. However, an April 2024 survey revealed potentially significant challenges for the integration of Chinese residents. While 9% could consider them family, 8% friends, and 23% residents, a substantial proportion (69%) favor limiting newcomers, with 22% advocating for restrictions on Chinese residents. This suggests that while broader perceptions of China may be positive, attitudes towards Chinese immigrants are more complex.

Existing research on Chinese students in Russia, predominantly qualitative, provides valuable insights but suffers from limitations including subjectivity, bias, and limited generalizability. Future research should incorporate quantitative methodologies, multi-center approaches, and larger sample sizes to gain a more comprehensive understanding of adaptation mechanisms and inform effective interventions.

The aim of this multi-center study is to use quantitative methods to explore how *cross-cultural motivation* influences the relationships between personal factors (*emotional stability* and *sense of coherence)* and *cross-cultural adjustment* and psychological adjustment of Chinese students in Russian universities, measured as *education satisfaction*. In accordance with the research aim of the study, the theoretical justification of hypotheses follows.

Research hypotheses

Within the literature devoted to the study of cross-cultural psychology, there are several co-existing theories that explain the process of cross-cultural adaptation that occurs when moving to a host country. The U-curve model of adaptation is highly popular in cross-cultural psychology research (Black & Mendenhall, 1991). According to this theory, all sojourners follow the predictable consecutive stages of honeymoon, culture shock, adaptation, and mastery that characteristically accompany the learning of a new culture. One of the assumptions identified by J. Black and M. Mendenhall for this curve is that the greater the distance between two cultures, the longer and more difficult the adaptation process can be, particularly during the culture shock stage. Sometimes, culture shock can last for up to six months, followed by the adaptation process, which in some cases can take over four years.

J. Gullahorn and J. Gullahorn (Gullahorn & Gullahorn, 1963) proposed that the U-curve could be logically transformed into a W-curve, demonstrating that one's homeland becomes "foreign" after a prolonged stay abroad, which in turn leads to a similar adaptation process upon returning home.

Despite the high practical and theoretical significance of the U-curve and W-curve theories in studying the process of cross-cultural adaptation, evidence has been found indicating inconsistencies in results when these theories were applied in different contexts. This led to the proposal of an integrative theory of communication and cross-cultural adaptation by (Kim 2001, Kim, 2012, Kim, 2017a, Kim, 2017b).

Y. Kim's integrative theory of communication and cross-cultural adaptation posits that adaptation is a complex, non-linear process characterized by fluctuating stress levels, adaptation, and growth throughout an individual's life. This process is marked by multiple "ups" and "downs". The "draw-back-to-leap" pattern illustrates how stress leads to temporary setbacks, followed by periods of growth and adaptation until new challenges arise. The non-linear nature of this process varies among individuals, resulting in diverse cross-cultural adaptation trajectories that are not necessarily correlated with the duration of stay or overall satisfaction.

Recent cross-cultural studies have increasingly focused on individual stress-resilience qualities, recognizing their significant impact on adaptation and psychological well-being. Y. Kim (2017a) identifies three critical factors in cross-cultural adaptation: readiness, ethnic proximity/distance, and personality predispositions. Y. Kim broadly defines these personality predispositions, which are focal in this study, as unique qualities that facilitate adaptation by enabling individuals to "absorb shocks from the environment and recover without being seriously damaged by them" (Kim, 2017b).

A meta-analysis of quality of life explicitly examined evidence on personality qualities that affect health and wellbeing. Emotional stability and sense of coherence were named comprehensive concepts encompassing both individual and social dimensions, making them applicable across various cultural contexts (Huang et al., 2017). However, the combined effect of these factors remains ambiguous and insufficiently explored, indicating a crucial area for further research (Huang et al., 2017; Kase et al.,2018). This gap in the literature also underscores the need for more comprehensive studies examining the interplay between these personality traits and their collective impact on cross-cultural adaptation and its outcomes. This study employs as a basis the model of influence of personality qualities on adjustment outcomes, where a summary of the non-focal relationships (direct and mediations) are presented in the Supplemental Materials.

The role of communication in cross-cultural adaptation is central, as emphasized by Y. Kim (2017). Y. Kim's model identifies three subcategories of communicative competence: cognitive, affective, and operational. The affective component, which encompasses emotional and motivational abilities to overcome adaptation challenges, closely aligns with the concept of cross-cultural motivation, a dimension of cultural intelligence (CQ) (Ang et al., 2007; Wu & Ang, 2011). Specifically, motivational CQ includes intrinsic motive, extrinsic motive and self-efficacy motive. Intrinsic motivation is self-granted and comes when something is meaningful or gives sense of purpose. Good examples are job contentment (statement of being happy and satisfied), individual growth, and achievement. Extrinsic motivation comes from outside and usually involves a reward. Self-efficacy is confidence in one's own ability to achieve intended results. In other words, it is the power to produce a desired result.

In this study, cross-cultural motivation, or motivational cultural intelligence, encompasses cultural self-efficacy and cultural intrinsic motivation. These qualities are reflections of an individual's belief in their ability to function effectively in a culturally diverse setting and their inherent interest in other cultures. Cross-cultural motivation refers to an individual's drive to learn about, engage with, accept, and assimilate into a culturally diverse environment (Ang et al., 2007). Individuals with high cross-cultural motivation exhibit openness to new experiences, behavioral flexibility, cultural empathy, and a proactive approach to learning about and engaging with the host culture. This motivation has been positively associated with work adjustment, expatriate engagement (Firth et al., 2014), cross-cultural adjustment (Chen et al., 2010), and work success (Wu & Ang, 2011).

The "Cultural Learning" perspective from the Theory of Intercultural Contacts (Yue & Lê, 2012) suggests that motivation to integrate may catalyze the process linking personal traits to cross-cultural adjustment and educational satisfaction. The investigation of this phenomenon is particularly relevant given the tendency of some Chinese students to adopt a "cultural isolation" strategy while studying in Russia (Liu & Abramov, 2019). By examining cross-cultural motivation as a potential mechanism for activating adaptation processes, this study aims to contribute to a more nuanced understanding of the factors influencing successful cross-cultural adaptation and satisfaction among international students.

Previous research argued that cross-cultural motivation can be seen as a mediator in studies of personality qualities and cross-cultural adaptation (Ang et al., 2007). Rather than assuming it as a mediator between personality and adaptation, I propose that motivation acts as an independent factor that changes how effectively personality traits translate into successful adaptation in this study. I argue that culture itself, the fast-changing geopolitical environment where one grows, and the values of one's social circle form an individual's cross-cultural motivation in relation to a particular country and may change due to life experiences (e.g., Pidduck et al., 2022) in a situational rather than a dispositional manner. The motivation may depend on a willingness to settle down in a country, a willingness to find a job, or excel in gaining international contacts to advance in studies or travel across the country. These factors are usually related to one's life circumstances more than to one's personality, especially in the case of Chinese people. Previous research indicates that career success is often much more important to Chinese individuals than leisure or even family. For example, a study of the psychological profile of average Chinese students in Russia noted that Chinese students' motivation is more external (for employment or not to let down their family or/and those who sent them to study) rather than internal (knowledge for the sake of knowledge) (Aldakimova, 2020). Therefore, I see cross-cultural motivation as a catalyzer of the effects of personality qualities on cross-cultural adjustment and education satisfaction. Cross-cultural motivation can possibly enhance or diminish the impact of personality traits on adaptation. For instance, even individuals with less favorable personality traits for adaptation might adjust well when highly motivated, while those with advantageous personality traits might struggle if lacking cross-cultural motivation. Therefore, the study tests the hypothesis that cross-cultural motivation moderates the relationship between personal traits (emotional stability and sense of coherence) and adaptation outcomes (cross-cultural adjustment and educational satisfaction) among Chinese students in
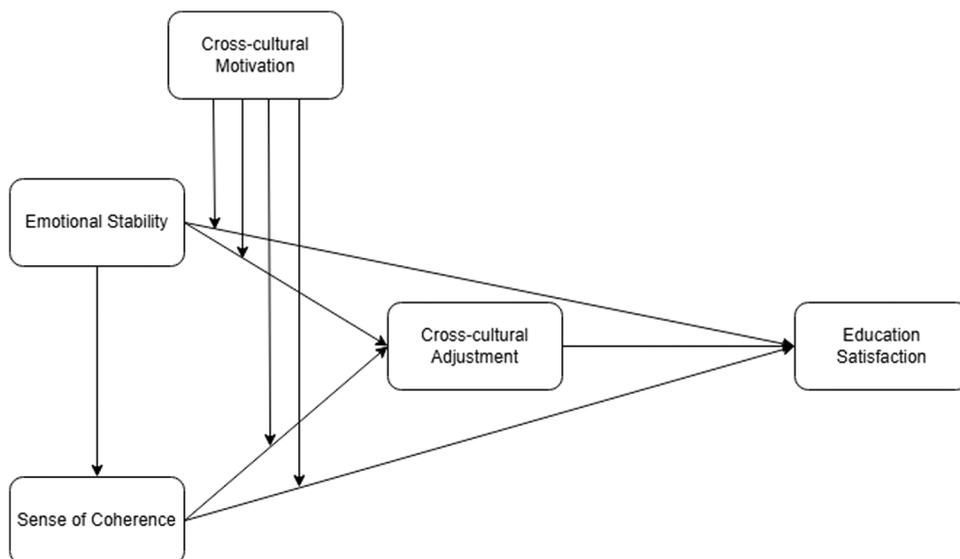

Fig. 1. Conceptual model of the study without control variables.

Russia:

Hypothesis H1a.   There is a significant interaction between emotional stability and cross-cultural motivation in predicting education satisfaction in Russian universities.

Hypothesis H1b.   There is a significant interaction between emotional stability and cross-cultural motivation in predicting cross-cultural adjustment in Russia.

Hypothesis H1c.   There is a significant interaction between sense of coherence and cross-cultural motivation in predicting education satisfaction in Russian universities.

Hypothesis H1d.   There is a significant interaction between sense of coherence and cross-cultural motivation in predicting cross-cultural adjustment in Russia.

The resulting conceptual model is illustrated in Fig. 1.

The study employed a rigorous approach to identify and control for potential confounding factors that could influence the relationships between the main constructs of interest. This process followed established methodologies, including the use of a 6-step causal directed acyclic graph approach (Shrier & Platt, 2008) and consideration of factors associated with the study constructs (Wysocki et al., 2022). Fig. 2 shows the final conceptual model with all constructs and control variables.

Several demographic and experiential factors were identified as potentially influential on the research outcomes and were thus included as control variables. Gender was controlled due to observed differences in stress adaptation between men and women (Deane et al., 2001). Russian language proficiency was included because language issues significantly affect Chinese students' cross-cultural adjustment and educational satisfaction (Asatryan, 2019; Kiyashchuk et al., 2018). Age was controlled since it has been shown to predict life satisfaction and cross-cultural adjustment (Wechtler et al., 2015). Socioeconomic status was included due to its impact on well-being and adaptation (Navarro-Carrillo et al., 2020; Ishii & Eisen, 2020). I also controlled for previous exchange program experience, as it can improve adaptation through better cultural and language skills. Time spent in Russia was included to account for the potential effects of duration of stay on adjustment and satisfaction. Finally, I controlled for university of enrollment to address differences in educational conditions and integration approaches that might influence education satisfaction levels.
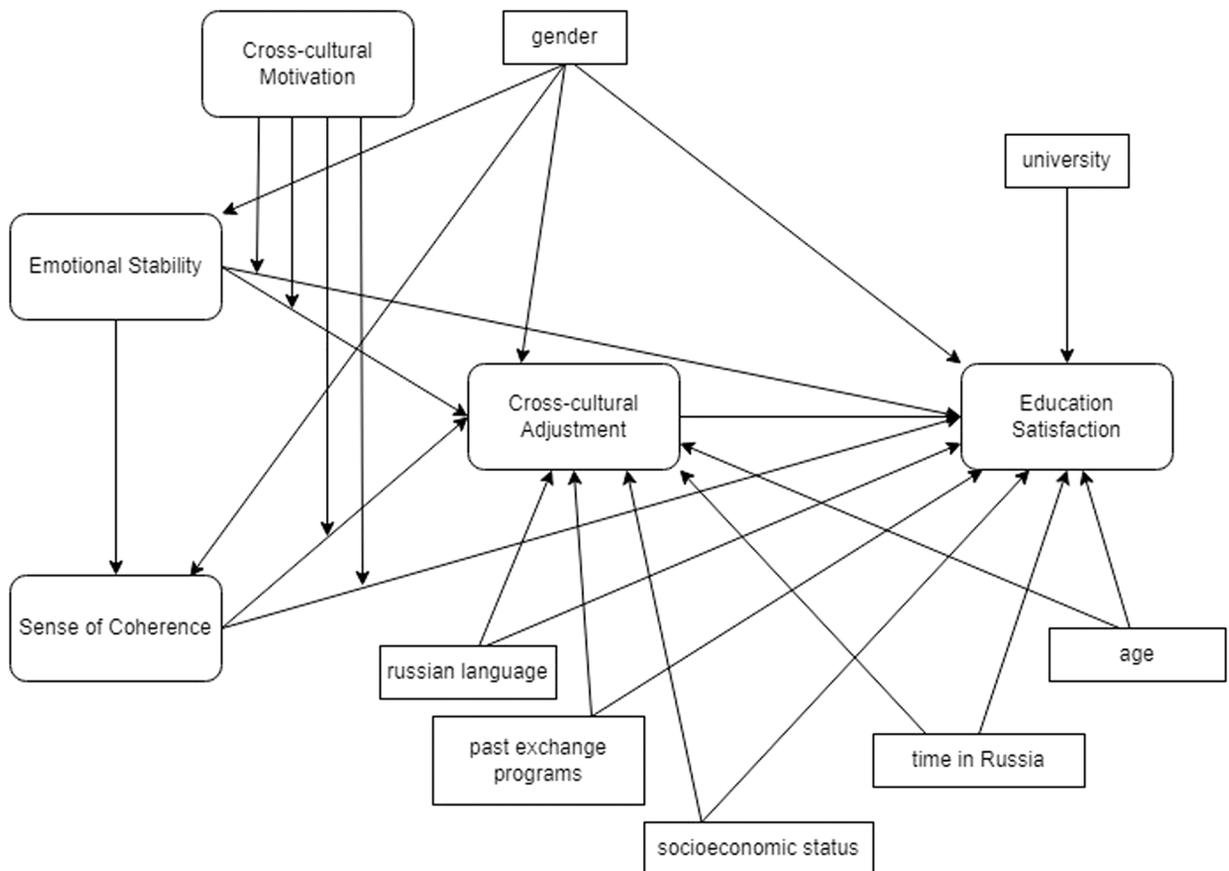

Fig. 2. Conceptual model of the study with control variables. The research variables of interest are represented by rounded rectangles. Control variables are represented by sharp-edged rectangles.

By incorporating these control variables, the study isolates the effects of the primary variables of interest (emotional stability, sense of coherence, and cross-cultural motivation) on the outcome measures (cross-cultural adjustment and educational satisfaction). This comprehensive approach enhances the robustness of the findings by minimizing the influence of extraneous factors on the observed relationships.

Method

Transparency and openness

The study adhered to rigorous ethical and methodological standards throughout its execution. Ethical approval was obtained from the Ethics Committee of the Saint Petersburg Psychological Society (approval number #IRB00012426, protocol No. 29, dated February 8, 2024). Prior to data collection, the study design, including hypotheses and data analysis plan, was preregistered in Saint Petersburg University's PURE system (an Elsevier product) as an initiative project (id 117577479). This preregistration was subsequently reviewed and approved by the Scientific Committee at SPbU (protocol No. 11.7.19-0204, dated March 11, 2024).

In the interest of transparency and reproducibility, an English version of the preregistration document has been made publicly available on the Open Science Framework (OSF) platform (Muzychenko, 2024b). Furthermore, the analysis code for both data pre-processing and main analyses, implemented in SPSS and R, has been deposited on Zenodo (Muzychenko, 2024a) and is accessible via the link provided. This code is released under the CC BY-NC-SA 4.0 license, allowing for non-commercial use with appropriate attribution.

While the raw data are not publicly available due to privacy considerations, they can be obtained upon request from the primary author. This approach balances the need for scientific scrutiny with the protection of participants' confidentiality.

It is worth noting that this manuscript has been prepared in accordance with the Journal Article Reporting Standards (JARS) guidelines for design and analysis transparency, further enhancing the study's credibility and facilitating its evaluation by the scientific community.

Participants

Sample size estimation

The study targeted Chinese nationals pursuing education at Russian higher education institutions, with no additional criteria imposed on the sample selection. The sample size determination was based on a two-step analysis approach: Confirmatory Factor Analysis (CFA) and path analysis with extracted latent variables, after removing common method variance.

For the CFA, a sample size of 300 was deemed adequate, following recommendations by J. Hair et al. (2019) for models with no more than seven constructs and potentially low extracted variance (< 0.45) for observed variables. The path analysis sample size was calculated using R. Klein's method (Nasledov, 2013). This study used the formula $T = P(P + 1)/2 - df$, where P represents the number of observed variables (15 in this case, including three dummy variables for "university") and df denotes the degrees of freedom (107). R. Klein recommends an ideal sample size (N) of 20 times the number of parameters (T), with 10 times being acceptable. This calculation yielded an acceptable sample size of 290 and an ideal size of 580.

Considering both the CFA and path analysis requirements, a sample size of 300 was determined to be optimal, while 580 was considered ideal. However, in order to account for potential careless respondents in online surveys, which can range from 1% to 30% in social psychology research (Curran, 2016), the researchers adjusted these figures. Assuming a maximum of 30% "poor-quality" data, the optimal sample size was increased to 429 respondents, and the ideal sample size to 829 respondents.

This approach ensures adequate statistical power while accounting for potential data quality issues, improving the study's reliability.

Sample

The study sample comprised Chinese students pursuing higher education in Moscow during 2024. Participants were enrolled at four prominent institutions: Peoples' Friendship University of Russia (RUDN), National Research University "Moscow Power Engineering Institute" (MEI), Moscow Pedagogical State University (MPGU), and the State Institute of Russian Language named after A. S. Pushkin. After applying quality control measures to eliminate careless responses (Ward & Meade, 2023; Gaskin, 2017), the final sample consisted of 538 individuals (86.66% of the initial pool). Data combination feasibility was assessed using Levene's test for individual variables (Bollen & Curran, 2005).

The sample included 207 males (38.5%) and 331 females (61.5%). The median age of participants was 23 years (Q1 = 21, Q3 = 25, Min = 15, Max = 47). Socioeconomic status ranged from the lowest to the highest, with the interquartile range of distribution varying between 5 and 6 on a 10-point Likert scale. The sample consisted of 308 undergraduate students (56.9%), 165 master's students (30.5%), and 68 doctoral candidates (12.6%).

Regarding Russian language proficiency, the following distribution was observed: A1 (Beginner) – 153 individuals (28.4%), A2 (Elementary) – 140 individuals (26.0%), B1 (Intermediate) – 108 individuals (20.1%), B2 (Upper Intermediate) – 108 individuals (20.1%), C1 (Advanced) – 23 individuals (4.3%), and C2 (Proficient) – 6 individuals (1.1%).

Half of the students in the sample had been in Russia for less than six months, with the longest stay being 60 months (five years).

Fifty-two participants (9.7%) had previously participated in exchange programs at other universities, and 172 (32%) had undergone cross-cultural training.

Measures

Data were collected using validated and adapted questionnaires administered in Chinese. Cross-cultural Adjustment scale and Education satisfaction scale' measures underwent a back-translation procedure following R. Brislin's (1970) guidelines. Initially, the first author modified the original items of the job satisfaction scale (Hackman & Oldham, 1976) to pertain to the current academic setting abroad rather than to work (e.g., " Generally speaking, I am very satisfied with my assignment."). Next, an independent bilingual expert educated in business management translated the original English scales into Chinese. Piloting of the subscales present in this study happened in 2019 on another sample of Chinese students at BMSTU. The first author additionally distributed the new set of scales among four native speakers before the research in 2024 to identify discrepancies and ensure cultural appropriateness, focusing on maintaining conceptual equivalence rather than literal translation. Later on, another bilingual expert, a specialist in Chinese hieroglyphics and a PhD student at the Department of Chinese Philology, was also invited to cross-validate the translation.

Satisfactory factor loadings, along with McDonald's omega and composite reliability after some adjustments (see below) (Table 1), indicate the scales comprehensively capture the constructs of interest, maintaining the original factor structure.

Reliability was assessed using composite reliability (CR), with values exceeding .7 indicating strong alignment between observed and true scores. Convergent validity was established by examining average variance extracted (AVE), with values greater than .5 confirming the construct's internal consistency. Discriminant validity was assessed by ensuring that the squared root of AVE for each latent variable was higher than its correlations with other variables, and that the mean squared variance (MSV) was less than AVE (Malhotra & Dash, 2011).

To improve model fit and factor loadings, items soc1, soc2, soc3, soc7, and soc10 were removed from the Sense of Coherence scale. Internal consistency was assessed using Cronbach's alpha, McDonald's omega, and composite reliability. McDonald's omega and composite reliability provide corrected estimates of reliability when the tau-equivalent model criteria are not met (Raykov, 1997). Omega1 was employed due to the absence of covariances and interpreted similarly to Cronbach's alpha.

Emotional stability

Emotional stability was evaluated using the 50-item International Personality Item Pool (IPIP-50) scale (Goldberg, 1992). Participants indicated their level of agreement with various statements on a 5-point Likert scale. The CFA indicated that all factor loadings were above the recommended .4 threshold (Cheung et al., 2024), with the lowest being .632. However, five items had loadings below .7 (see Supplemental Materials). Although the version used in this study is not commonly found in Chinese literature, the IPIP-50 is a well-recognized and frequently utilized measure, having been translated into many languages. Previous studies have supported the scale's convergent validity, with a correlation of $r = .901$ ($p < .01$) between the IPIP-15 and IPIP-50 scales for emotional stability in a Taiwanese sample (Chen, 2014). Additionally, the scale has demonstrated criterion validity in its associations with positive emotions ($r = .10$, $p < .05$), negative emotions ($r = -.55$, $p < .05$), and self-esteem ($r = .42$, $p < .05$) (Li & Chen, 2016). In this research, the internal consistency of the IPIP-50, assessed using McDonald's omega and Cronbach's alpha, was found to be .922 and .920, respectively.

Sense of coherence

Sense of coherence was measured using the validated 13-item scale developed by A. Antonovsky (1993), adapted into Chinese by (Bao & L, 2005). Participants responded using a 7-point semantic differential scale. While A. Antonovsky originally identified three dimensions of sense of coherence, more recent research (Bonacchi et al., 2012) supports a unidimensional approach as a more accurate representation of the construct.

Attempts to apply a second-order model resulted in Heywood cases, where factor loadings exceeded 1, suggesting issues with model specification. Analysis of the three first-order factor sub-models revealed strong correlations, indicating that a first-order model was more appropriate. This model demonstrated good convergence indicators and did not present any Heywood cases. To enhance the CFA

Table 1
Assessment of discriminant and convergent validity, and reliability.

Variable	CR	MSV	AVE	ES	SOC	CCM	CCA	EdS
ES	.921	.368	.599	**.774**				
SOC	.809	.368	.400	.607	**.632**			
CCM	.881	.206	.651	.326	.345	**.807**		
CCA	.886	.216	.786	.288	.314	.454	**.887**	
EdS	.722	.216	.541	.440	.431	.411	.465	**.736**

Note. ES = Emotional Stability; SOC = Sense of Coherence; CCM = Cross-cultural Motivation; CCA = Cross-Cultural Adjustment; EdS = Education Satisfaction; *CR* = Composite Reliability; *AVE* = Average Variance Extracted; *MSV* = Maximum Shared Variance; the square root of *AVE* for each latent variable is presented in bold on the diagonal. Correlations between latent variables are significant at $p < .001$.

model fit, modification indices were reviewed. Based on these indices and low factor loadings, items soc1, soc2, soc3, soc7, and soc10 were removed.

The Chinese adaptation of the scale, initially translated by Sun Yat-sen University and published in a 2000 book on quality of life assessment by Peking University Medical Press, has a robust history in Chinese research. The scale's criterion validity is supported by significant correlations with the Center for Epidemiologic Studies Depression Scale (CES-D) ($r = -.55$, $p < .01$) and the World Health Organization Well-Being Index (WHO-5) ($r = .73$, $p < .01$) among Chinese adults (Bao & L, 2005). The Guttman split-half coefficient was .828, and test-retest reliability was confirmed with an intraclass correlation coefficient (ICC) of .872 ($p < .01$) (Bao & L, 2005).

In this study, McDonald's omega was .824, and Cronbach's alpha was .821. All factor loadings in the confirmatory factor analysis were above .4 (Cheung et al., 2024), with the lowest being .424. Seven items had loadings below .7 (see Supplemental Materials).

Cross-cultural adjustment

To assess cross-cultural adaptation in this study, I employed the Sociocultural Adaptation Scale developed by J. Black and G. Stephens (Black & Stephens, 1989) and later adapted by S. Ang et al. (2007). Participants rated their agreement with various statements using a 7-point Likert scale. In the CFA of the "Cross-Cultural Adaptation" scale, all factor loadings were above .7 (see Supplemental Materials).

This study utilized a shortened version of the scale, which had been previously used alongside the "Cross-Cultural Motivation" scale. The shortened version helped minimize the length of the questionnaire. In the earlier research, Cronbach's alpha was reported as .79 and .75 in two separate samples from different countries (Ang et al., 2007). The first sample included 235 undergraduates from the Midwestern USA (45% female, average age 22), and the second sample comprised 358 undergraduates from Singapore (76% female, average age 19).

The internal consistency of the scale in this study, as measured by McDonald's omega and Cronbach's alpha, was .893. The CFA results (see Supplemental Materials) confirmed that all items in the scale had factor loadings exceeding .7, indicating that the scale effectively represents the construct of cross-cultural adaptation.

Education satisfaction

To evaluate psychological adaptation, this study focused on educational satisfaction as a component of psychological well-being related to the primary activities at the host location. The study employed a scale adapted from the Job Satisfaction Survey developed by J. Hackman and G. Oldham (Hackman & Oldham, 1976). Participants rated their agreement with statements on a 5-point Likert scale.

The survey was conducted from late February to March 2024, avoiding major holidays and exam periods (Cook & Campbell, 1980). Students were informed that the study was approved by the Ethics Committee of the Saint Petersburg Psychological Society, #IRB00012426 (protocol No. 29, February 8, 2024). Factor loadings from the CFA are detailed in the Supplemental Materials, showing that all loadings were above .4 (Cheung et al., 2024), with the lowest loading being .546. Previous studies of the English version of the scale reported a Cronbach's alpha of .94 (Firth et al., 2014). In this study, McDonald's omega and Cronbach's alpha, indicators of internal consistency, were .705 and .699, respectively.

Cross-cultural motivation

The scale was adapted from S. Ang et al. (2007), where respondents indicated their level of agreement with statements on a 7-point Likert scale. The Chinese adaptation of the scale is freely available in T.-F. Long (2018). The Cronbach's alpha for the Chinese version of the scale in earlier studies was .850, with AVE= 0.530 and CR= 0.847 (Long, 2018). In this study, internal consistency was measured using McDonald's omega and Cronbach's alpha (.884 and .899, respectively), with composite reliability at .881.

The factor loadings from the CFA can be found in Supplemental Materials. Only one factor loading was below .7, at .634. Satisfactory factor loadings, as well as McDonald's omega and composite reliability measures, indicate that the scale is constructed to comprehensively cover the measured phenomenon and that the factor structure aligns with that originally identified during the scale's development. These measures suggest sufficient reliability of the obtained scores.

Control variables

Following the methodology outlined by (Bernerth & Aguinis, 2016), control variables were selected based on theoretical considerations and the 6-step DAG technique. A correlation analysis was also performed to check for multicollinearity, which could bias the results. Results of the correlation analysis, detailed in the Supplemental Materials, showed significant associations. These were: gender with emotional stability ($r_{pb} = -.106$, $p < .05$), socioeconomic status with cross-cultural adjustment ($r = .131$, $p < .01$) and educational satisfaction ($r = .183$, $p < .001$), past educational experience with educational satisfaction ($r_{pb} = .099$, $p < .05$), duration in the program (time in Russia) with educational satisfaction ($r_{pb} = -.098$, $p < .05$), and age with educational satisfaction ($r = .111$, $p < .01$). Not all expected associations were found, and results without control variables are also provided in Supplemental Materials. Multicollinearity was not an issue as correlations were small to medium, and the sample size ensured accurate correlation estimates.

Control variables in this study included the "MacArthur Ladder" subjective socioeconomic status scale (Adler et al., 2000), adapted to Chinese by D. Ding et al. (2021), and the CEFR scale for measuring Russian language proficiency (Council of Europe, 2001).

Unstandardized path coefficients can be found in the Supplemental Materials under "Comparison of regression coefficients in nested models with and without control variables (on imputed dataset)".

Procedure

To gather data, the author reached out to ten Russian universities with the largest Chinese student populations. These were: Saint Petersburg State University (SPbU), Moscow State University (MSU), Herzen State Pedagogical University (Herzen University), Pushkin State Russian Language Institute, Peoples' Friendship University of Russia (RUDN), Kazan Federal University (Kazan University), Moscow Pedagogical State University (MPGU), Moscow Power Engineering Institute (MPEI), Far Eastern Federal University (FEFU), and Moscow State Linguistic University (MSLU).

After negotiations, seven institutions agreed to distribute the survey: MSU, RUDN, MPEI, MPGU, MSLU, Pushkin State Russian Language Institute, and FEFU. However, MSU, MSLU, and FEFU did not yield sufficient responses. Exclusions were due to various issues: SPbU's restrictions on independent projects, Herzen University's conflict with another study, Kazan University's lack of response, and FEFU's email domain change, MSU refused the study, and MSLU only provided ten responses. All collected data came from Moscow universities, which may limit generalizability.

Staff from MPEI, MPGU, Pushkin Institute, and RUDN distributed the survey via email and student communities. The anonymous online survey, hosted on YandexForms, covered topics such as personality traits and international program experiences. Informed consent was obtained, and participation was voluntary with no financial incentive. Students were not constrained by time when completing the scale and were encouraged to consider each item carefully to choose the response that best reflected their own views. The survey was conducted from late February to March 2024, avoiding major holidays and exam periods. (Cook & Campbell, 1980). Students were informed that the study was approved by the Ethics Committee of the Saint Petersburg Psychological Society, #IRB00012426 (protocol No. 29, February 8, 2024). Participation was voluntary, anonymous, and followed ethical guidelines, with consent forms provided. Following three reminder emails, 625 responses were received, meeting the sample size requirement and minimizing potential bias.

Analytic strategy

Data were analyzed using IBM SPSS Statistics v.27 and R Studio 2023.09.01. Out of all value cells, 405 (1.71%) were missing, with missing data ranging from 0.2% to 19.5% across variables; only one variable exceeded 3% missing data, which could bias results (Newgard & Haukoos, 2007). The missing data pattern was "underidentified" (Enders, 2010), and participants with missing values were considered "partial respondents" (Newman, 2014). Details on missing values are in the Supplemental Materials. Given that the missing data were assumed to be MCAR (missing completely at random), multiple imputation was used to obtain accurate statistics under MCAR and MAR (missing at random) conditions (Newman, 2014).

Technical issues led to 105 participants (19.5% of the dataset) not reporting their university affiliation. This issue required the application of multiple imputation, shown to perform well with up to 80% missing data (Hyuk Lee & Huber Jr, 2021; Groenwold et al., 2012; Newgard & Haukoos, 2007). Little's MCAR test suggested the missing data were MCAR ($\chi(1229) = 1118.856$, $p = .989$). Following best practice, additional variables were included in the imputation process to address potential MAR conditions (van Buuren, 2018).

In line with established practices, additional variables were included in the imputation process to address potential MAR conditions (van Buuren, 2018), even if the data were MNAR (missing not at random). These variables included measures of altruism, perceived stress, SF-36 health status, and various demographic factors such as age, gender, education level, language proficiency, time spent in Russia, and prior exchange program experience. Latent variable analysis benefits from this approach, as each latent variable links to multiple observed variables, improving the recovery of missing responses through related questions. Sensitivity analysis (extreme imputations, complete case analysis) was performed to verify the accuracy of the multiple imputations (Supplemental Materials).

The mice package with the pmm method was used for multiple imputation (Buuren & Groothuis-Oudshoorn, 2011), generating twenty datasets. This number was earlier shown to achieve high efficiency for datasets with up to 30% of missing data (Woods et al., 2021; Newgard & Haukoos, 2007). Model fit was assessed through discriminant validity, convergent validity, and overall fit indices using the R packages lavaan (Rosseel, 2012) and semTools (Jorgensen et al., 2022). ULSM was preferred for CFA due to its performance with ordinal variables and asymmetric distributions (Li, 2016; Shi et al., 2018), while MLR was used for path analysis to control type I error rates (Bandalos, 2014). Despite non-normal distributions, ULSM and MLR were deemed suitable methods for the analysis (Rhemtulla et al., 2012; Bandalos, 2014).

The following indicators were calculated to evaluate the model fit: chi-square (*CMIN*), degrees of freedom (*DF*), Comparative Fit Index (*CFI*), Root Mean Square Error of Approximation (*RMSEA*), and Standardized Root Mean Square Residual (*SRMR*). The cut off criteria were *CMIN/DF* < 5, *CFI* > 0.8, *RMSEA* < 0.1, and *SRMR* < 0.09 (Hu & Bentler, 1999) as interpreted by J. Gaskin (2017), which have proven reliable in previous literature (Gaskin, 2017). The CFA model, which included indicators of all methods, had an acceptable fit (*CMIN/DF* = 4.82, *robust CFI* = 0.833, *robust RMSEA* = 0.094, 90%*CI RMSEA* [0.090; 0.099], *SRMR* = 0.057).

Data for this study, encompassing both independent and dependent variables, were collected simultaneously from the same source. To address common method variance (CMV), several procedural remedies were implemented prior to the data collection (Podsakoff et al., 2003). These included using different scales (Likert and semantic differential) and placing questions about the dependent variable before those about predictor and mediator variables to mitigate order effects (Treadwell & Davis, 2019). Participant anonymity was ensured through data collection using Yandex Forms.

To assess CMV for the presence of common method bias (CMB), a latent method factor was employed within a bifactor model that included all study latent variables and an additional variable, altruism, which was collected but not analyzed in this study (Simmering et al., 2015; Podsakoff et al., 2003). While the literature review found no significant relationship between altruism and sense of coherence, there were small, marginally significant associations between altruism and job satisfaction ($r = .11, p < .1$) (Koster, 2014). Altruism was linked to increased education satisfaction ($\beta = .264, p = .035$) and cross-cultural adjustment ($\rho = .23, p < .05$), but not significantly to emotional stability (Muzychenko et al., 2023; Muzychenko & Pochebut, 2023). Including altruism in the model showed small to medium correlations with other constructs (min $r = .287$, max $r = .616$, $M = 0.384$, $SD = 1.134$) (Supplemental Materials). Comparing correlation coefficients before and after including altruism revealed no significant differences, with a mean change of.0006 ($SD = .0007$) (Field, 2018; Fisher, 1921).

In the CMV assessment using the single-common-method factor approach with altruism as the marker variable, the average factor loading for latent variables was .722, while the method factor loading was much lower at .182. The addition of the method factor resulted in minimal changes in factor loadings, averaging .03 with an absolute change of .07. These results suggest that CMV is unlikely to be a significant source of CMB. A chi-square difference test with zero constraints confirmed these findings, indicating no statistically significant error (Gaskin, 2018; Simmering et al., 2015). For further analysis, factor values were extracted due to computational intensity.

The variable "university" was then dummy-coded. When evaluating the structural model, the fit indices were not as good; they were measured while evaluating the model without interaction effects: $CMIN/DF = 6.779$, $robust\ CFI = 0.841$, $robust\ RMSEA = 0.106$, 90% $CI\ RMSEA$ [0.090; 0.123], $SRMR = 0.083$. Importantly, it is important to note that some sources (e.g., Kenny et al., 2015) recommend not computing RMSEA for models with low degrees of freedom. However, in this study, RMSEA was adjusted by adding a control regression path between emotional stability and cross-cultural motivation, and incorporating a covariance between sense of coherence and cross-cultural motivation, based on modification indices. The fit indices reached a good level to continue the moderation analysis: $CMIN/DF = 3.292$, $robust\ CFI = 0.925$, $robust\ RMSEA = 0.065$, $90\%CI\ RMSEA$ [0.050; 0.080], $SRMR = 0.060$.

The next global test after assessing the convergence indices was to check that all R^2 values were above .025; in our case, the minimum value was .285, meaning the smallest explained variance was above 28.5%. The R^2 metric was applied to assess the total explained variance of the dependent variable by other variables. Since no post-hoc testing was applied, there was no control of experiment-wise error rate.

Results

The main text of the article presents the standardized path analysis results incorporating control variables, while the results excluding these variables are detailed in the Supplemental Materials. According to C. Clogg et al.'s method for comparing regression coefficients (Clogg et al., 1995), there were no significant differences between the path coefficients of models with and without control variables. This finding is likely due to the weak relationships between control variables and the primary variables of interest, as evidenced by the standardized regression coefficients ranging from .084 to .184 and minimal changes in standard errors of the main path coefficients after the removal of the control variables. These results suggest that the study's findings are robust and not significantly affected by external variables. This robustness supports the conclusion that the initial path model accurately reflects the strong predictive role of personality traits on outcomes such as cross-cultural adjustment and psychological adaptation among Chinese students in Russia.

The consistency across sensitivity analyses, full data analyses, and imputed data analyses reinforces the reliability of the results and

Table 2
A comparison of fit models with and without control variables from the moderation SEM (standardized regression coefficients, without interaction effects).

Predictor	Predicting Cross-cultural Adjustment		Predicting Education Satisfaction	
	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model
ES	.077(.060)	.068(.060)	.228***(.051)	.208***(.053)
CCM	.428***(.049)	.429***(.049)	.171***(.045)	.171***(.047)
SOC	.131**(.056)	.122*(.055)	.189***(.049)	.191***(.048)
CCA			.325***(.040)	.315***(.041)
gender		−.005(.038)		.051(.036)
language		.032(.038)		.014(.038)
ses		.069*(.042)		.070*(.039)
exchProg		.039(.037)		.051(.031)
cctraindue		−.054(.037)		−.029(.034)
age		.007(.041)		.061*(.035)
School1_2				−.054(.045)
School1_3				.066(.052)
School1_4				−.038(.052)
R^2	.287	.285	.479	.478
R^2 change	.005, ns		.007, $p = .021$	

Note. ES=Emotional Stability; CCM=Cross-cultural Motivation; SOC=Sense of Coherence; CCA=Cross-cultural Adjustment; language=Russian language proficiency; ses=socioeconomic status; exchProg=past experience in exchange programs; cctraindue=time in Russia; School=University, *p < .05, **p < .01, ***p < .001

suggests that missing values did not significantly impact the findings. This enhances confidence in the generalizability of the results by indicating that outcomes are not dependent on the specific imputation method used. Detailed direct effects of control variables are provided in the Supplemental Materials. Cross-cultural motivation was positively associated with cross-cultural adjustment of international students ($\beta = .429$, $p < .001$). Further examination using the Wald test for comparing regression coefficients (Klopp, 2020) indicated that path coefficients between personality traits (cross-cultural motivation and emotional stability) and cross-cultural adjustment differ significantly ($\chi^2(1) = 26.126$, $p < .001$). These differences can also be seen in path coefficients between personality traits (cross-cultural motivation and sense of coherence) and cross-cultural adjustment ($\chi^2(1) = 20.237$, $p < .001$). Cross-cultural motivation was significantly associated with the education satisfaction of Chinese students ($\beta = .171$, $p < .001$) (Table 2).

Among all the proposed moderation effects, only one was found: the effect of cross-cultural motivation on the relationship between emotional stability and cross-cultural adjustment (Table 3).

To interpret this relationship, a Simple Slope Analysis was conducted. The results can be seen in Table 4 and Fig. 3.

The effect of cross-cultural motivation can be observed. At lower levels of cross-cultural motivation, cross-cultural adjustment was less pronounced at low levels of emotional stability and more pronounced at higher levels of emotional stability ($\beta = .198$, $p < .05$) (Table 4). Therefore, at below-average levels of cross-cultural motivation, higher levels of emotional stability contribute to better cross-cultural adjustment. Interestingly, strong motivation has a compensatory effect: the relationship between emotional stability and cross-cultural adjustment in this case is difficult to consider statistically significant, meaning that this effect may be equivalent to random variation—regardless of whether emotional stability is high or low, it does not statistically significantly predict the level of cross-cultural adjustment.

In other words, for individuals with high cross-cultural motivation, the level of emotional stability was less critical for achieving higher levels of cross-cultural adjustment. On the other hand, individuals who were not motivated still had a greater chance of having a good cross-cultural adjustment level when they had higher levels of emotional stability. This is confirmed by the statistically significant coefficient of the relationship between cross-cultural motivation and cross-cultural adjustment among Chinese students in Russia ($\beta = .474$, $p < .05$).

Discussion

Interpretation of the results

The authors of this study exercise caution in interpreting causal relationships due to the inherently correlational nature of the research. However, recent scholarship suggests that dismissing causality in correlational studies may lead to interpretative confusion (Grosz et al., 2020). Although the conceptual model is based on established theoretical frameworks, the use of personality traits as independent variables limits the study's ability to explore causality since these traits cannot be manipulated. Despite this, the observed correlations indicate significant relationships between the variables, and the theoretical arguments provide support for these interpretations, thus, meet the requirements for causality interpretations in correlational studies proposed by (Grosz et al., 2020).

The benefit of having cross-cultural motivation was demonstrated in its role as a moderator. The relationship between emotional stability and cross-cultural adjustment was statistically significant for Chinese students with lower levels of cross-cultural motivation. Specifically, below-average levels of motivation showed a statistically significant positive relationship, where low adaptation was observed among students with low emotional stability. In contrast, for Chinese students with high levels of cross-cultural motivation,

Table 3

A comparison of models with and without control variables from the moderation SEM (standardized regression coefficients, with interaction effects).

Predictor	Predicting Cross-cultural Adjustment		Predicting Education Satisfaction	
	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model
ES	.083(.059)	.072(.031)	.228***(.051)	.208***(.053)
CCM	.420***(.049)	.042***(.049)	.169***(.045)	.169***(.047)
ESxCCM	−.123*(.061)	−.122*(.061)	−.051(.052)	−.055(.052)
SOC	.135**(.055)	.126*(.055)	.193***(.049)	.195***(.049)
SOCxCCM	.011(.062)	.008(.061)	.031(.047)	.028(.049)
CCA			.319***(.041)	.309***(.042)
gender		−.009(.038)		.049(.036)
language		.030(.038)		.016(.038)
ses		.068(.042)		.071(.038)
exchProg		.043(.037)		.049(.032)
cctraindue		−.053(.038)		−.029(.034)
age		.006(.041)		.060*(.036)
School1_2				−.054(.045)
School1_3				.069(.052)
School1_4				−.039(.052)
R^2	.300	.298	.483	.482
R^2 change	.004, ns		.006, $p = .021$	

Note. ES=Emotional Stability; CCM=Cross-cultural Motivation; SOC=Sense of Coherence; CCA=Cross-cultural Adjustment; language=Russian language proficiency; ses=socioeconomic status; exchProg=past experience in exchange programs; cctraindue=time in Russia; School=University, *$p < .05$, ***$p < .001$

Table 4
Conditional direct effect of emotional stability on cross-cultural adjustment.

Dataset	CCM -SD on ES-CCA	CCM +SD on ES-CCA
Imputed dataset	0.198* (0.089)	−0.037 (0.089), p = 0.679

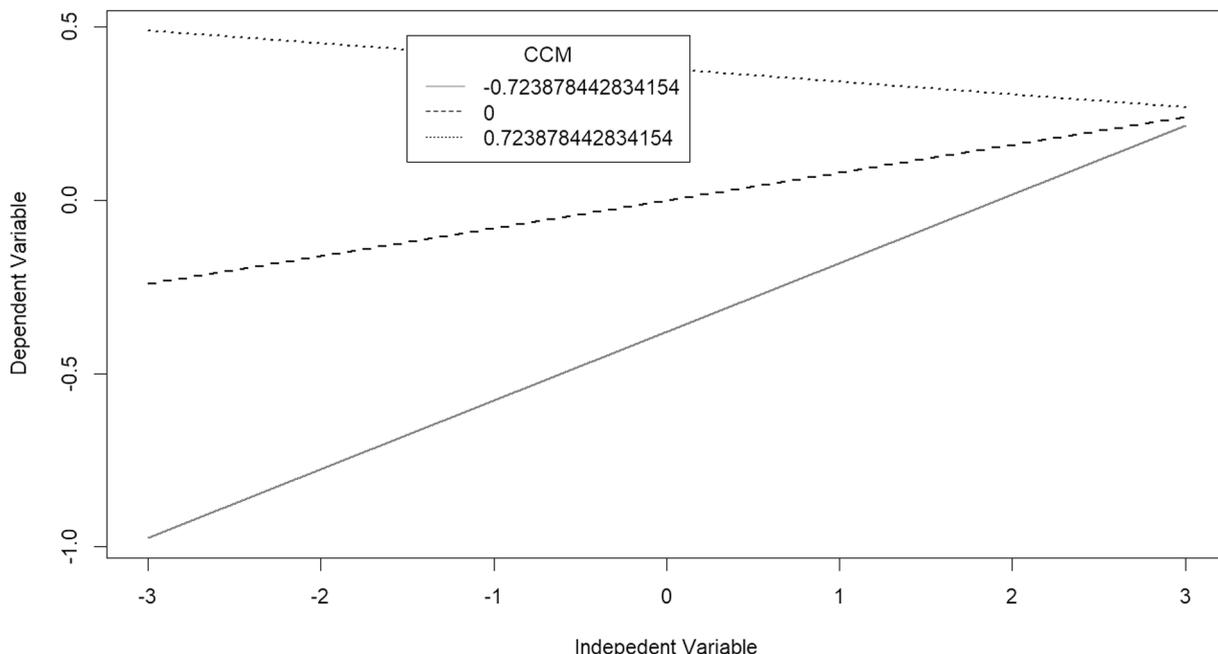*Note.* ES=Emotional Stability; CCM=Cross-cultural Motivation; CCA=Cross-cultural Adjustment, *$p < .05$

Fig. 3. The moderating effect of cross-cultural motivation on the relationship between emotional stability and cross-cultural adjustment (results based on the imputed data, with additional lines of approximation using the mean level of cross-cultural motivation, as well as plus and minus one standard deviation from this level).

no relationship was found between emotional stability and cross-cultural adjustment. A possible explanation could be that low motivation is associated with poorer expectations, increased anxiety, negative thoughts, and reluctance to interact with others. Conversely, individuals with higher motivation may exhibit it through a desire to learn languages, try new foods, participate in cultural events, make new acquaintances, and be open to new experiences, which mitigates the importance of resilience during stressful events.

Interestingly, cross-cultural motivation played a direct role as a predictor or factor influencing not only cross-cultural adjustment but also education satisfaction. Cross-cultural motivation is the desire and readiness of a student to learn more about the host country and to build international connections. This is particularly intriguing given that building relationships is considered very important in Chinese culture. I interpret the results to mean that students with a higher willingness for international contact would be more satisfied in an international environment where building such relationships and useful connections is possible. These connections could facilitate the advancement of their academic projects and participation in interesting collaborations within the educational framework.

The study supports several hypotheses and reveals that cross-cultural adjustment and education satisfaction are more strongly influenced by personal qualities than by the duration of time spent abroad. This finding aligns with the stress-adaptation-growth model proposed by Y. Kim (2017a), as the variable measuring time spent abroad did not exhibit a statistically significant relationship with the outcomes under investigation.

The data analysis involved imputing missing values and performing sensitivity analyses using two different methods for managing incomplete data (Supplemental Materials). This process was also applied to models excluding control variables (Supplemental Materials). The stability of coefficients and the consistency of standard errors across various analytical approaches enhance the robustness and reproducibility of the hypothesized relationships and their mechanisms, thereby reinforcing confidence in the statistical validity of the findings.

Implications of the findings

This study is significant due to its large sample of Chinese students from various universities, which provides insights into the relationships between personality traits, cross-cultural adjustment, and education satisfaction among Chinese students in Russia. It highlights the impact of emotional stability and sense of coherence on students' psychological well-being during their educational

relocation.

Results show that students' overall adaptation averaged 4.7 out of 7, while educational satisfaction was 3.6 out of 5. This underscores the need for targeted interventions to improve these aspects, as there was no significant difference in satisfaction across institutions. Earlier research at MSU and RUDN also indicated a need for increased university support during adaptation (Ledeneva et al., 2022).

The findings have both practical and theoretical implications. Existing literature on higher education internationalization is fragmented (Kim, 2017a), and more research is needed on strategic implementation within universities from a global perspective (Jiang & Carpenter, 2013). Empirical evidence suggests that universities can enhance program quality and student well-being through reflective practices and targeted interventions (Leask & Carroll, 2011). Addressing students' individual needs can improve educational satisfaction and support their personal and career development. All students should have equal opportunities at all levels of organizational structure (supervisor, teachers, international students' office, administration at the university, and outside of the educational system).

Career development during university is dynamic, with evolving interests (Brown & Cinamon, 2016). Social-cognitive career theory suggests aligning activities with skills and interests for success (Camargo et al., 2020). Universities should help international students leverage their personality qualities to improve well-being and, thus, develop more accessible education, especially by allocating resources for cross-cultural training and support services. Effective programs can reduce turnover intentions and enhance satisfaction by developing students' cross-cultural motivation and reducing stress.

Currently, Russian universities focus on engaging students in volunteering activities, as the Ministry of Education and Science reported in the overview in 2022. This is one of the first steps in the active building of support services for international students in Russia through the involvement in additional activities. However, this study indicates that the development of willingness to acquire knowledge of other cultures and participate in cross-cultural interactions may increase adaptation outcomes and even educational outcomes. Universities may introduce training in which more details about cultural norms and traditions are taught, with a participatory approach. Students may learn there about how to deal with common problems that their countrymen most commonly face in Russia in a culturally-appropriate way. Addressing educational satisfaction issues (problems, support resources, etc.) should be a priority, as discussed in ongoing research.

An additional effort should be placed on developing an atmosphere where an individual feels included, valued, and genuinely welcomed. This could involve: adapting educational materials to foreign languages, developing infographics and interactive maps with useful tips, creating cultural events, and providing more opportunities for finding international friends – student buddy programs, extracurricular tutoring, sports clubs, and others. Willingness to learn about other countries may depend on different factors, including personal history of stressful experiences with foreigners and other cultures. In this case, personal consultations may be relevant to support students far from home and help them set priorities. Integrating career guidance into the educational process can boost engagement, motivation, and confidence, enhancing cultural self-efficacy through participatory teaching methods.

Limitations of the study

The key limitation in generalizing this study's findings to the broader population of Chinese students in Russia is the sample's restriction to higher education institutions in Moscow. Despite attempts to reach students in multiple institutions in all regions, data was only able to be sourced from 4 universities out of 10 approached. Therefore, the results are most applicable to Chinese students' cross-cultural and psychological adjustment specifically in Moscow. It is important to note that most Chinese students study in Moscow.

Additionally, the study did not weight the sample to better represent demographic indicators due to the complex nature of missing data and sensitivity analyses, which took precedence. This limitation affects the generalizability of the findings.

The study may also suffer from self-selection bias, as volunteers may have specific sociodemographic characteristics and pronounced personality traits, such as a high need for approval (Kaźmierczak et al., 2023). To address this, the "marker" variable method was used, and the anonymous survey design aimed to reduce volunteer bias. However, the study's invitation, which highlighted benefits for both students and the university, might have attracted participants with a strong interest in the topic.

Central tendency bias could also affect the average ratings of cross-cultural adjustment and educational satisfaction. Respondents might avoid extreme answers, providing more moderate or neutral responses due to cultural norms or the institutional context. Despite anonymity, the voluntary nature of participation may lead to acquiescence bias or conflict avoidance, resulting in responses that may not fully capture students' true opinions. This pattern, common among Chinese populations (Smith, 2004), suggests that actual levels of adjustment and satisfaction may be lower than reported. When interpreting these results, readers should note that future research may employ additional qualitative methods of data collections, such as interviews to get a deeper understanding of these phenomena. Our project collected qualitative data within a survey with open-ended questions, and an additional publication is currently being developed.

To mitigate these issues in this study, data cleaning procedures were used to identify careless responses, employing techniques like the "longstring" methods to detect repetitive patterns. Efforts to reduce common method bias (CMB) included using mathematical techniques to assess common variance and incorporating a marker variable.

Finally, although the study aimed to enhance ecological validity by allowing participants to complete the survey at their convenience without time restrictions when completing it, achieving this for every respondent cannot be guaranteed. Further research is needed to refine these methodologies and address these limitations.

From the conceptual point of view, this article focused on how to ease the cross-cultural adaptation period in educational settings.

Therefore, the main outcome of adaptation (or KPI of university work) is subjective psychological wellbeing, which is measured by educational satisfaction. The underlying logic was to examine factors that can enhance psychological wellbeing based on the previous rigorous meta-analysis (Huang et al., 2017). However, I should note that other well-established traits can predict cross-cultural adaptation outcomes (e.g., openness to experience), and these can be addressed in further research.

Suggestions for future research

This study primarily focused on personality traits and their role in adaptation processes. However, adaptation is also influenced by organizational processes within universities and external factors. Although this study does not delve deeply into these organizational and external aspects, the authors strongly agree with D. Mukhamejanova's (2019) call for a dual approach that considers both personal and institutional challenges in student integration.

Empirical research highlights the importance of universities actively addressing student needs to improve the perceived quality of educational services (Leask & Carroll, 2011). This is particularly pertinent as over 60% of Chinese students report rarely feeling at home, according to recent studies from RUDN and Moscow State University (Ledeneva et al., 2022).

Future research should build on this model by including factors such as locus of control, social support, coping strategies, and emotional regulation.

To address the limited generalizability of existing research on cross-cultural adaptation of Chinese students in Russia, which typically includes only 50–150 students from single universities, I prioritized obtaining a large, representative sample through anonymous data collection. While this approach prevented us from tracking individual students' responses over time, it enabled us to gather data from a substantially larger population across Moscow universities, better representing Chinese students in Russian higher education institutions. Although I could not match individual responses at different time points, I included "time in Russia" as a control variable to examine general patterns of cross-cultural adaptation across different durations of stay. This cross-sectional approach, while different from longitudinal tracking, provides valuable insights through its broader representation of the student population. In further studies, longitudinal studies could offer deeper insights into how personality traits impact stress and adaptation over time. Such research would contribute to the integrative communication theory of cross-cultural adaptation (Kim, 2017b) and aid in developing more effective educational and support programs within universities.

Conclusion

The materials obtained from the study allow for the following conclusions:

1. Cross-cultural motivation cultivates cross-cultural adaptation among Chinese students and acts as a moderator: students with lower levels of motivation had a more pronounced positive relationship between emotional stability and cross-cultural adjustment.
2. Cross-cultural motivation is a greater predictor of cross-cultural adjustment than personality qualities for Chinese students in Russia.
3. Cross-cultural motivation is a greater predictor of education satisfaction than personality qualities for Chinese students in Russian universities.

The major contribution is related to identifying the moderating role of cross-cultural motivation in the relationships between personality traits and cross-cultural adjustment. The author identified the boundary conditions of the effect of emotional stability on the cross-cultural adjustment of Chinese students and expanded the application of integrative communication theory and cross-cultural adaptation.

This study utilized cross-cultural motivation to express individual intentions to "fit in", explore a new culture, and adapt. It examined its moderating role between personality traits and adaptation outcomes, which served as a new idea for applying integrative communication theory and cross-cultural adaptation.

This research broadened the scope of integrative communication theory and cross-cultural adaptation, showing that cross-cultural motivation acts as a moderator of the positive relationship between emotional stability and cross-cultural adjustment. According to the findings of this study, in the context of being in a new country or cross-cultural environment, an individual's motivation to integrate into the culture can be seen as a "catalyst" for the cross-cultural adaptation process. Cross-cultural motivation can attenuate the relationship between emotional stability and cross-cultural adjustment for Chinese students with low personality predispositions, thereby enabling them to achieve higher levels of adjustment in Russia.

Moreover, comparing the size of standardized regression coefficients of personality qualities, cross-cultural motivation was found to be twice as important for higher levels of cross-cultural adjustment and education satisfaction.

Author note

CRediT authorship contribution statement

Yulia Muzychenko: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Olga Morozova:** Writing – review & editing.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.ijintrel.2025.102231.

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