Cross-Cultural Adjustment of International Students in China: The Impact of Educational Services and the Role of Gender

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Abstract
To investigate how educational services (ES) and gender influence international students' cross-cultural adjustment (CCA), the study sampled 411 participants including 210 females and 201 males from Chinese universities. Data were collected using questionnaires and analyzed by SPSS and Smart-Pls. The findings suggest that international students' views on ES significantly impact their personal-emotional adjustments (PEA), social adjustments (SA), and academic adjustments (AA). Notably, female students face more challenges on SA and AA.

Gender significantly moderates the influence of ES on both SA and AA. However, this moderating effect of Gender is not observed in the relationship between ES and PEA. These findings emphasize the influence of ES on international students' CCA and propose to higher educational institutions the need for gender-sensitive strategies.

Keywords: Educational Services, International Students; Cross-Cultural Adjustment, Gender, Personal-Emotional Adjustments, Social Adjustments, Academic Adjustments.

Introduction

International students' journey can be both benefit and challenging (Ward et al., 2020). The process of cross-cultural adjustment（CCA）is a significant issue confronting them. The host university, as the primary location where international students live and study, has the duty to assist them in addressing challenges to attain academic success (Chan et al., 2021; Alasmari, 2023; ARSLAN & POLAT, 2023; Gebregergis et al., 2019). Therefore, it is crucial to assess how the host universities' educational services relate to students' adjustment progress. Numerous studies conducted by scholars from traditional study-abroad destinations such as the UK, US (Cong & Glass, 2019). However, not many researches are examined on how educational services affect cross-cultural adjustment (CCA) in emerging study-abroad destinations like China. Additionally, the combined influence of gender and educational services on CCA is still not fully explored.

Since 2019, China has welcomed 500,000 international students, making it the top study abroad destination in Asia (Wen & Hu, 2023). Unlike other countries, Chinese universities provide separate living and studying arrangements for international students, which limits their interaction with Chinese students and the outside world (Ding, 2016; Tian et al., 2020; Wen & Hu, 2023). In such a unique environment, it becomes particularly important to investigate the role of university educational services in facilitating the cross-cultural adjustment of these international students.

This study aims to fill the literature gap by examining the CCA challenges of international students in China, with a specific focus on how educational service quality and gender influence these adjustments. In doing so, we hope to provide insights that can assist educational institutions in China to improve their services and create a supportive learning environment for all students, regardless of their cultural background or gender.

To achieve the aim，this study tries to answer two Research Questions：

What is the relationship between Educational Service (ES) and CCA?

What role does Gender play in the relationship between ES and CCA?

Literature Review and Research Hypotheses

Introduction to Existing Theories and Research on Cross-Cultural Adjustment

In definition, cross-cultural adjustment is the process of changing the cultural patterns of a group by means of mutual interaction. J.W. Powell first defined it in 1883 (Rudmin, 2003). Cross-cultural adjustment consists of two dimensions, psychological adjustment, and sociocultural adjustment. Psychological adjustment refers to the psychological well-being and satisfaction of cross-cultural contacts, and sociocultural adjustment refers to the acquisition by intercultural contacts of knowledge, knowledge and skills appropriate to the new culture (Searle, 1990). In addition, based on the dimensions of psychological adjustment and

sociocultural adjustment, Ward et al. (2020) put forward the ABC model of cross-cultural adjustment, which consists of three elements: affection (A), behaviour (B), and cognition (C). Although international students have the same problems as other foreigners in the process of cross-cultural adjustment, their adjustment has its own characteristics. For instance, the role of international students in the transition from adolescence to adulthood is evidenced by their higher education institutions (Cecilia & Aguirre, 2019). More importantly, international students have a mission to accomplish their academic tasks and face the psychological and sociocultural adjustments brought about by the change in cultural context (Cao & Meng, 2021). Thus, it is not surprising that international students experience more difficulties in cross-cultural adjustment due to their status (Y. Liu et al., 2016; Cecilia & Aguirre, 2019). Therefore, cross-cultural adjustment of international students is normally classified into three types: personal-emotional, social, and academic adjustment.

The influencing factors on cross-cultural adjustment include, but are not limited to, age, study motivation, intercultural competency, length of residence, social support, language proficiency, and prior knowledge about host countries and universities (Schartner & Young, 2016; Lai et al., 2023).

Impact of Educational Service on Cross-Cultural Adjustment
As international students increasingly contribute to many higher institutions' revenue, their satisfaction and 'customer' service have gained prominence (Ward et al., 2020). Higher education services are defined by researchers as a wide range of support activities, including academic support services, faculty engagement, support services, social interaction support services, campus life services, and campus climate (Cong & Glass, 2019). Feedback about international students CCA challenges can guide university administrators in enhancing service provision (Zhou et al., 2023; Mukhtar et al., 2022; Nazir & Özçiçek, 2023). Education services can also aid in creating efficient orientation and training programs to smoothen students' academic and cultural adjustment (Xiang et al., 2023; Cong & Glass, 2019).

It is worth noted that, adjustment for international students in China is distinctive and more challenging (Wen & Hu, 2023). Chinese universities typically offer comprehensive on-campus facilities, including restaurants, barber shops, supermarkets, cinemas, and gyms, meeting most of the students' daily and entertainment needs. As a result, students socialize primarily within the campus. Furthermore, most international students in China reside and study in separate class buildings and dormitories from Chinese students, which limited interactions with local students and people (Ding, 2016; Tian et al., 2020). Given that local friend support and a supportive learning environment are broadly considered to influence the Cross-Cultural Adjustment (CCA) of international students (Horgan et al., 2016; Shan et al., 2020; Cao et al., 2023;Ng et al., 2017), it becomes intriguing to investigate the interconnection between educational services and the CCA, especially in the context of Chinese universities with above mentioned distinct on-campus segregation.

This study, therefore, hypothesis:
Hypothesis 1a: Educational Services perceived by international students predicts their personal-emotional adjustments significantly.
Hypothesis 1b: Educational Services perceived by international students predicts their social adjustments significantly.

Hypothesis 1c: Educational Services perceived by international students predicts their academic adjustments significantly.

Role of Gender in Cross-Cultural Adjustment

Gender plays a crucial role in cross-cultural adjustment (Berry, 1997). However, past studies have not reached a consistent conclusion regarding the impact of gender differences on the adjustment of international students. For instance, Koveshnikov (2014) proposed that all three dimensions of CCA tends to be stronger impact for male than female expatriates. In stark contrast, Bethel (2020) pointed out female students experienced more symptoms of psychological issues, such as anxiety and depression. Jin (2023) suggested female students are more likely to have perceived difficulties in the process of adjusting to new foods. Female students are also believed to be more sensitive to environmental changes and gender thus hinder social interaction (ARSLAN & POLAT, 2023).Besides, some researchers believe gender and the three types of adjustment have no relationship and both male and female expatriates perceived themselves as equally capable of adjusting in the host country (Mustaffa & Ilias, 2013;Mao et al., 2023).

Apart from the observed gender disparities in cross-cultural adjustment, there are also gender differences present in the realm of educational services. For instance, with female students both expecting and perceiving higher levels of the quality of service from their school than male students (Ong, 2013). As a result, the evaluation of these services also differs based on gender.

This study, therefore, hypothesis:

Hypothesis 2a: Gender moderates perceived Educational Services and international students' personal-emotional adjustments.

Hypothesis 2b: Gender moderates perceived Educational Services and international students' social adjustments.

Hypothesis 2c: Gender moderates perceived Educational Services and international students' academic adjustments.

Conceptual Framework

Derived from previous literatures, Figure. 1 shows the conceptual framework of this study. The independent variable is student perceived Educational Services (ES). The dependent variables are three dimensions of cross-cultural adjustment, specifically Academic Adjustment (SA), Social Adjustment (AA), and Personal Emotional Adjustment (PEA). Gender is the moderating Variable.
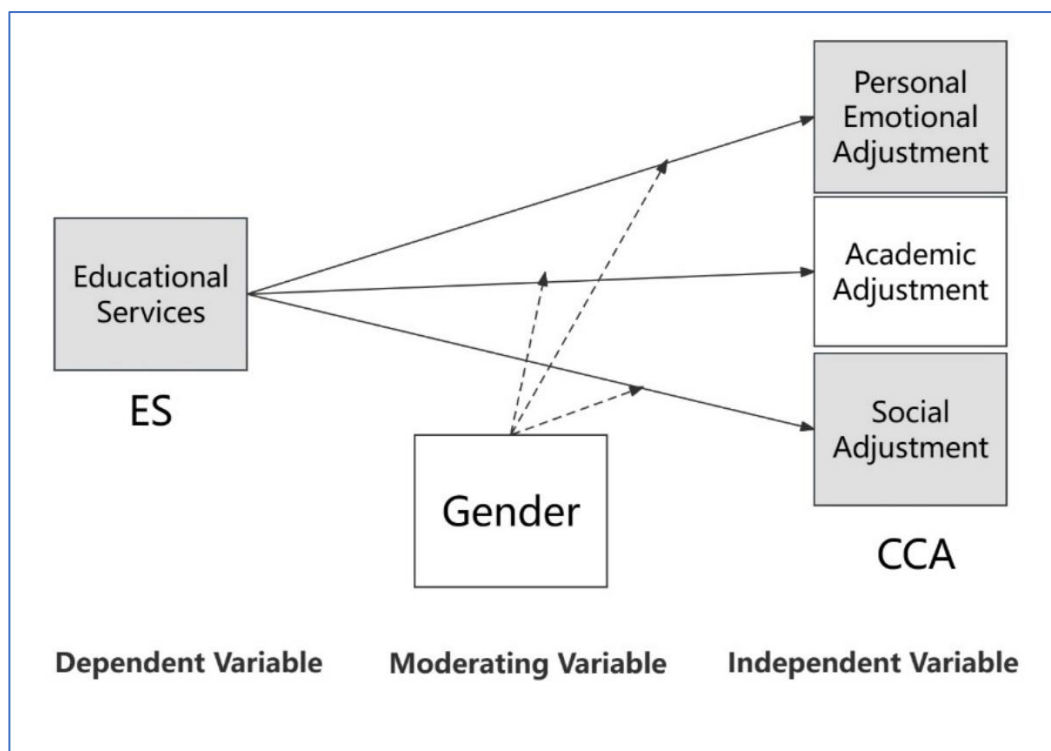
Figure 1. Conceptual Framework

Research Methodology

Participants

In this study, participants are all older than 18 or older, hold a X1 student VISA, and be registered students for at least one semester. The selection criteria ensure representative respondents. In total, 411 respondents successfully completed four questionnaires.

Measure

Data for all variables were gathered using self-report surveys. Four well-established scales with good reliability were adopted in this study.

Educational Service (Appendix 1)**:** Educational Service (ES) scale was utilized to evaluate student perceived educational services. The scale was developed by Nara Martirosyan, a researcher at Sam Houston State University in Texas, USA, and was used in her study evaluating School Services quality in Armenian higher education (Martirosyan, 2015). The scale consists of 24 items that use a five-point Likert scale ranging from "strongly disagree" to "strongly agree." These items cover various four dimensions of educational services, namely faculty service, academic experience, student support facilities, campus life & social integration.

The ES scale's reliability coefficient was tested and found to be 0.907, indicating high data reliability.

Personal-emotional Adjustment (Appendix 1)**:** This study used the Zung Self-Rating Depression Scale (SDS) to assess students' personal-emotional adjustment. The SDS, a 20-item Likert scale with 10 positive and 10 negative items. Positive feelings score from 4 (rarely) to 1 (most of the time), while negative feelings score from 1 (rarely) to 4 (most of the time). The maximum score is 80, with higher scores indicating more depression. The depression index

(total score/80) measures depression level: under 0.50 is none, 0.50-0.59 is mild, 0.60-0.69 is moderate, and over 0.70 is severe.

The reliability coefficient of the SDS scale was determined to be 0.807, exceeding the 0.8 threshold, data reliability is of high quality.

Social Adjustment (Appendix 1)**:** Derivate from Ward's most recent Social and Cultural Adaptation Scale (Ward et al., 2020), a 21-item Likert scale questionnaire was adapted. Each item scores from 1 (not difficult) to 5 (most difficult), with higher scores indicating greater adjustment difficulty. Difficulty coefficients were used to measure difficulty level (total score/105), with a coefficient of 0.20 and below indicating not difficult, up to 0.81-1.00 indicating most difficult.

The reliability coefficient of the SA scale was determined to be 0.892, signifying the study's data reliability is of high quality.

Academic Adjustment (Appendix 1)**:** This study used an 18-item questionnaire by Dr. Zhu for academic adjustment (Guohui, 2013). Each item scores from 1 (not difficult) to 5 (most difficult), with a max score of 90. Scores are summed, with higher scores indicating more academic adjustment difficulty. The difficulty coefficient (total score/max score) measures difficulty level: 0.20 and below is easy, 0.21-0.40 is somewhat difficult, 0.41-0.60 is average, 0.61-0.80 is difficult, and 0.81-1 is most difficult. The reliability coefficient of the AA scale was determined to be high quality (a = 0.887).

3.3 Procedure

Teachers from nine universities in Jiangxi Province distributed survey forms to international students during their classes. To ensure full comprehension of the survey items, an English version was utilized. Participation in this study was purely voluntary, with no compensation provided. Following the completion of the surveys, participants were debriefed and expressed gratitude. The data collection process spanned a one-month period.

3.4 Data Analysis

Non-parametric tests, correlation analysis, and regression analysis were conducted to analyze the data, using SPSS version 26.0 and Smart-Pls 4.0.

Results and Findings

Demographic Information

Table 1 provides a detailed of the demographic characteristics of the study sample, comprised of 411 participants in total. The majority of participants, 76.89% or 316 individuals, were attending public schools, while the remaining 23.11% or 95 individuals were enrolled in private institutions. In terms of gender distribution, the sample was nearly evenly split, with males making up 48.91% (201 individuals) and females making up 51.09% (210 individuals). A largest group being Pakistani (36.98%, or 152 individuals), followed by Africans (32.85% or 135 individuals), Indians (20.68% or 85 individuals), Bangladeshis (6.08% or 25 individuals), and Malaysians (3.41% or 14 individuals). Their age ranged from 18 to 45, with the majority falling within the 22-25 age range (53.53% or 220 individuals). The largest group having resided for over 36 months (42.58% or 175 individuals). And many participants were undergraduates (71.29% or 293 individuals), followed by doctoral students (11.44% or 47 individuals), language students (10.22% or 42 individuals), and postgraduates (7.06% or 29 individuals). The participants were primarily majoring in medical fields (63.75% or 262 individuals), followed by Chinese Language (19.46% or 80 individuals) and Humanities and Social Science (16.79% or 69 individuals). In terms of Chinese language proficiency, the majority rated their level as 'moderately' (47.45% or 195 individuals), followed by 'good'

(30.41% or 125 individuals), 'poor' (10.22% or 42 individuals), 'very good' (9% or 37 individuals), and 'very poor' (2.92% or 12 individuals). Finally, most participants were self-funded (79.08% or 325 individuals), while 20.92% or 86 individuals received government scholarships.

Table 1
Demographic Information

Items	Categories	No.	Percent (%)	Cumulative percentage (%)
School Type	Public	316	76.89	76.89
	Private	95	23.11	100
Gender	Male	201	48.91	48.91
	Female	210	51.09	100
Nationality	Pakistani	152	36.98	36.98
	Indian	85	20.68	57.66
	Bangladesh	25	6.08	63.75
	Malaysian	14	3.41	67.15
	African (each less than 10)	135	32.85	100
Age	18-21	99	24.09	24.09
	22-25	220	53.53	77.62
	26-30	73	17.76	95.38
	31-45	19	4.62	100
Length of Residence	1-6 months	39	9.49	9.49
	7-12 months	36	8.76	18.25
	13-24 months	55	13.38	31.63
	25-36 months	106	25.79	57.42
	over 36 months	175	42.58	100
Degree	Undergraduate	293	71.29	71.29
	Postgraduate	29	7.06	78.35
	Doctorate	47	11.44	89.78
	Language	42	10.22	100
Major	Chinese Language	80	19.46	19.46
	Humanities & Social Science	69	16.79	36.25
	Medical Science	262	63.75	100
Chinese level	very good	37	9	9
	good	125	30.41	39.42
	moderately	195	47.45	86.86
	poor	42	10.22	97.08
	very poor	12	2.92	100
Tuition Payment	Government Scholarship	86	20.92	20.92
	Self-funded	325	79.08	100
Total		411	100	100

The Relationship Between Educational Service and Cross-cultural Adjustment
Findings suggest that ES and CCA are interrelated. This table presents the Pearson correlations, means, and standard deviations for Educational Services (ES), Social Adjustment

(SA), Academic Adjustment (AA), and Personal Emotional Adjustment (PEA). Educational Services has a mean of 88.384 and a standard deviation of 16.65. It is significantly negatively correlated with Social Adjustment (r=-0.292, p<0.01), Academic Adjustment (r=-0.378, p<0.01), and Personal Emotional Adjustment (r=-0.262, p<0.01), suggesting that higher levels of Educational Services are associated with lower levels of these adjustment measures. Social Adjustment has a mean of 39.377 and a standard deviation of 13.599. It is significantly positively correlated with Academic Adjustment (r=0.761, p<0.01) and Personal Emotional Adjustment (r=0.300, p<0.01). Academic Adjustment has a mean of 29.409 and a standard deviation of 11.689. It is positively correlated with Personal Emotional Adjustment (r=0.333, p<0.01). Personal Emotional Adjustment has a mean of 38.414 and a standard deviation of 8.689.

Table 2
Pearson correlations

	Mean	Standard Deviations	ES	SA	AA	PEA
Educational Services	88.384	16.65	1			
Social Adjustment	39.377	13.599	-0.292**	1		
Academic Adjustment	29.409	11.689	-0.378**	0.761**	1	
Personal -emotional Adjustment	38.414	8.689	-0.262**	0.300**	0.333**	1
* p<0.05 ** p<0.01						

CCA Difference between Gender
Findings indicate that gender may play a significant role in Academic and Social Adjustment, but not in Personal Emotional Adjustment (Table 3). This table presents the results of a non-parametric Mann-Whitney U test comparing the medians (and interquartile ranges) of Personal Emotional Adjustment (PEA), Academic Adjustment (AA), and Social Adjustment (SA) between two gender groups (1.0 and 2.0).

Table 3
Non-parametric Mann-Whitney U test

	Gender M(P25，P75)		MannWhitneyTest U Value	Mann Whitney Test z Value	p
	1.0(n=201)	2.0(n=210)			
PEA	38.000(32.0,44.0)	39.000(30.0,46.3)	20711	-0.328	0.743
AA	26.000(20.0,33.0)	26.000(22.0,35.0)	18428	-2.228	0.026 *
SA	35.000(28.0,46.0)	40.000(32.0,48.3)	18424.5	-2.228	0.026 *
* p<0.05 ** p<0.01					

Note: Educational Services=ES; Personal-emotional Adjustment=PEA; Social Adjustment=SA; Academic Adjustment=AA.
For PEA, the median for group 1.0 (n=201) was 38.000 (IQR: 32.0 - 44.0) and for group 2.0 (n=210) was 39.000 (IQR: 30.0 - 46.3). The Mann-Whitney U statistic was 20711, the z-value was -0.328, and the p-value was 0.743. This suggests that there is no significant difference in PEA between the two groups.

Figure 1 PEA Distinguished by Gender

In the case of Academic Adjustment, the median score for group 1.0 was 26.000 (IQR: 20.0 - 33.0) and for group 2.0 was 26.000 (IQR: 22.0 - 35.0). The U statistic was 18428, the z-value was -2.228, and the p-value was 0.026. This indicates a significant difference in Academic Adjustment between the two groups.
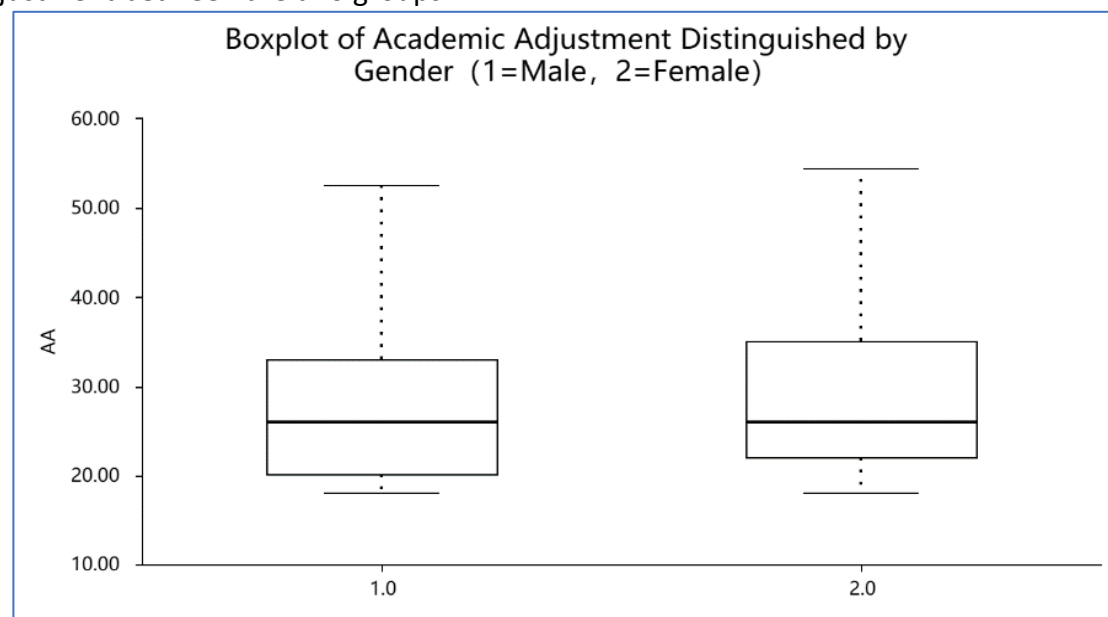

Figure 2 AA Distinguished by Gender

Regarding Social Adjustment, the median score for group 1.0 was 35.000 (IQR: 28.0 - 46.0) and for group 2.0 was 40.000 (IQR: 32.0 - 48.3). The U statistic was 18424.5, the z-value was -2.228, and the p-value was 0.026. This suggests a significant difference in Social Adjustment between the two groups.
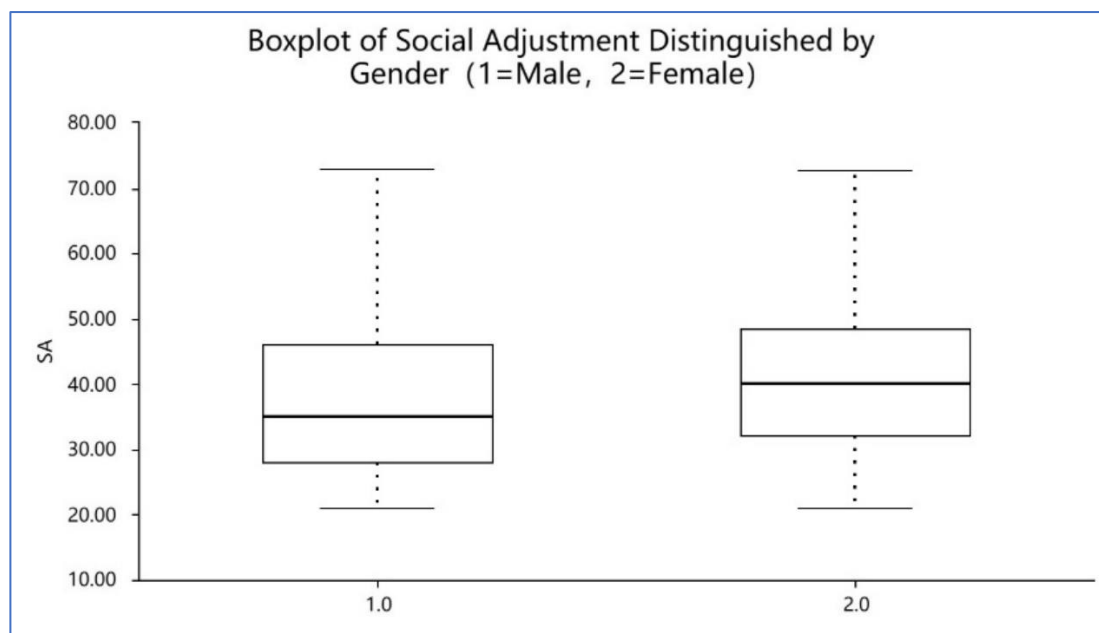
Figure 3 SA Distinguished by Gender

Hypotheses Test

To make the data clearly reported and visualized, this study adapted Smart-Pls to test six hypotheses. Findings suggest that the perceptions of Educational Services (ES) by international students negatively predicted their personal-emotional adjustments (PEA), social adjustment (SA), and academic adjustment (AA). Furthermore, these findings indicate that Gender plays a significant moderating role in the relationship between ES and both SA and AA. However, no such moderating effect of Gender is observed in the relationship between ES and PEA.

In statistical analysis using PLS-SEM, the process involves primarily three steps. The first step is to evaluate measurement model's reliability and validity (Hair et al., 2019). With the measurement model validated, the analysis proceeds to the structural model (Hair et al., 2019). The Q square test is conducted to assess structural model' s predictability. Finally, the Path Coefficient Analysis delves into the intricate path relationships. The subsequent section outlines these analysis steps.

Measurement Model Test

As depicted in the Table 4, the Cronbach's alpha coefficients for each variable exceed 0.7, surpassing the well-established threshold set by Hair et al. (2019). This indicates a high level of internal consistency in the measurements. Furthermore, the composite reliability scores are above 0.798, which are widely accepted as indicators of satisfactory reliability levels. The Average Variance Extracted (AVE) values for each variable exceed 0.5, demonstrating substantial variance captured by the constructs. In terms of discriminant validity, all values are below 0.90, affirming the distinctiveness of the variables. Importantly, the Variance Inflation Factor (VIF) values remain below 5, indicating the absence of multicollinearity issues. This comprehensive assessment attests to the robustness and reliability of the measurement model.

Table 4

Measurement Model Test (Loading, Cronbach, AVE, Discriminate Validity, etc.)

Research Variables	Loading	VIF	Cronbach's alpha	Composite reliability	AVE	Discriminate Validity			
						AA	ES	PEA	SA
Academic Adjustment			0.887	0.919	0.746	1			
AA1(Adjustment to Class ， Assignment，& Exam)	0.869	2.497							
AA2(Academic Regulations & Teacher-Student Relationship)	0.894	2.831							
AA3(Extracurricular Activities)	0.902	2.603							
AA4(Peer Relationship)	0.785	1.868							
Educational Services			0.907	0.916	0.782	0.42	1		
ES1(Faculty Service)	0.917	3.835							
ES2(Academic Experience)	0.883	3.106							
ES3(Student Support Facilities)	0.842	2.586							
ES4(Campus life & Social Integration)	0.893	3.072							
Personal-emotional Adjustment			0.807	0.855	0.835	0.377	0.303	1	
PEA1(Body Symptoms)	0.939	1.842							
PEA2(Phycological Feelings)	0.888	1.842							
Social Adjustment			0.892	0.906	0.821	0.866	0.322	0.357	1
SA1(Making Friends etc.)	0.904	2.805							
SA2(Obeying Social Norm etc.)	0.912	2.436							
SA3(Chinses Perspective etc.)	0.903	2.757							

Structural Model Test

As shown in Figure 1, the ES can explain 7.2% of the variance in Personal-emotional adjustment (PEA), 19.9% in AA and 10.6% in SA. Besides, as presented in Table 5, all items in this model exhibit Q square values above 0, confirming the model's predictability.
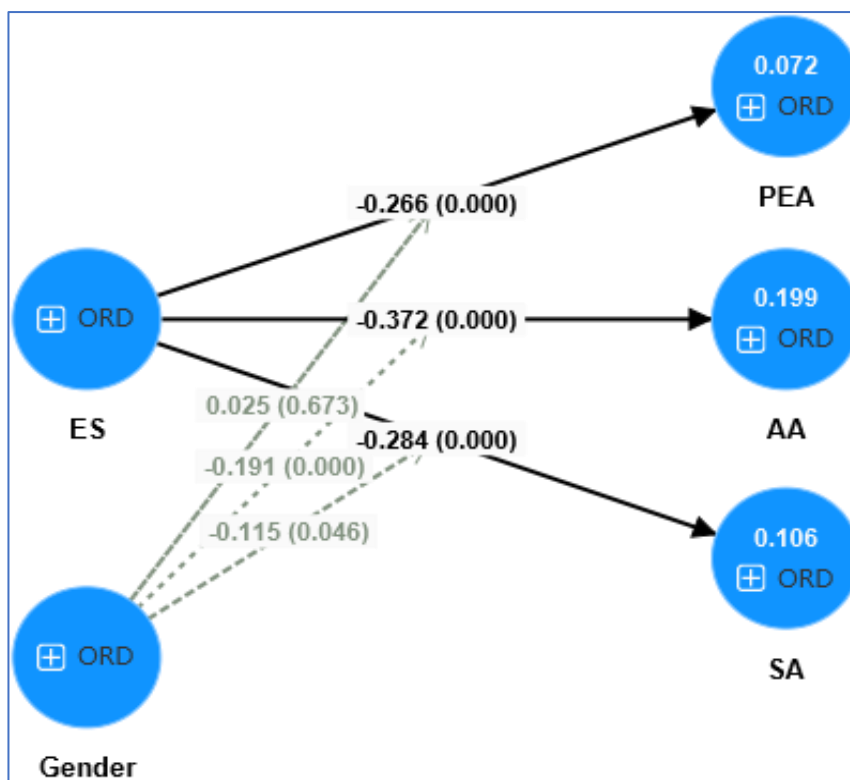
Figure 4 Moderating role of Gender between ES and CCA (PEA, AA, SA)

Table 5
Q Square Test

	SSO	SSE	Q² (=1-SSE/SSO)
Academic Adjustment (AA)	1644	709.457	0.568
Educational Services (ES)	1644	621.552	0.622
Gender	411	0	1
Personal-emotional Adjustment (PEA)	822	467.451	0.431
Social Adjustment (SA)	1233	488.795	0.604

Path Coefficient Analysis
Based on the Smart-Pls analysis and the findings discussed earlier, the present study tested 6 hypotheses. Hypotheses 1a,1b,1c,2b,2c were supported by the data, while Hypothesis 2a were rejected (Table 6). Findings indicate that gender significantly predicts AA (P= 0.043). However, Gender does not show significant impact on PEA and SA with a p-value of 0.682 and 0.2. For the ES variable influencing AA, PEA, and SA, the p-values are 0, indicating a highly significant relationship. Lastly, the interaction of Gender and ES influencing AA, PEA, and SA showed mixed results. For AA, the interaction was significant with a p-value of 0. The SA interaction was significant with a p-value of 0.046, just under the 0.05 threshold. For PEA, the interaction was not significant with a p-value of 0.673.

Table 6
Path Coefficient Analysis and Hypotheses Test

Hypotheses/Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
Gender -> AA	0.093	0.092	0.046	2.021	0.043	\
Gender -> PEA	0.021	0.021	0.05	0.409	0.682	\
Gender -> SA	0.065	0.065	0.051	1.282	0.2	\
(H1a) ES -> PEA	-0.266	-0.27	0.054	4.91	0	Accepted
(H1b) ES -> SA	-0.284	-0.287	0.049	5.782	0	Accepted
(H1c) ES -> AA	-0.372	-0.377	0.043	8.644	0	Accepted
(H2a) Gender x ES -> PEA	0.025	0.022	0.058	0.421	0.673	Rejected
(H2b) Gender x ES -> SA	-0.115	-0.112	0.057	1.993	0.046	Accepted
(H2c) Gender x ES -> AA	-0.191	-0.188	0.054	3.513	0	Accepted

Note: Educational Services=ES; Personal-emotional Adjustment=PEA; Social Adjustment=SA; Academic Adjustment=AA.

Discussion and Conclusion

Key Findings Summary
To investigate how educational services and gender influence international students' cross-cultural adjustment, the study sampled 411 participants including 210 females and 201 males. The equal number has been intentionally achieved to provide a balanced perspective from both genders. Most participants are from Chinese public schools, self-funded, primarily aged between 22-25, residing for over 36 months, and are undergraduates majoring in medical fields. The findings suggest that international students' views on Educational Services (ES) significantly impact their personal-emotional (PEA), social (SA), and academic adjustments (AA). Notably, female students face more challenges on SA and AA. Gender significantly moderates the influence of ES on both SA and AA. However, this moderating effect of Gender is not observed in the relationship between ES and PEA.

Educational Service Significantly Impact Cross-Cultural Adjustment
The Pearson correlation analysis revealed significant negative correlations between students perceived Educational Services and the three dimensions of cross-cultural adjustment. Specifically, Higher levels of personal emotional adjustment, social adjustment, and academic adjustment difficulties are associated with lower score of educational services. Furthermore, by using Smart-pls, the results confirmed that international student perceived Educational Services (ES) predict their personal-emotional adjustments (PEA), social adjustments (SA), and academic adjustments (AA). As previously stated, international students in China reside and pursue their education in a distinct and well-provisioned Chinese university town. This could

potentially account for why educational services significantly influence all three dimensions of their CCA. This findings are also consistent to previous studies that suggested international students experienced much pressure while becoming accustomed to academic life in the local community (Cong & Glass, 2019), and in a supportive environments, international students tend to adapt better to their new cultural and academic surroundings while experiencing improved psychological well-being (Law & Liu, 2023;Raižiene et al., 2017).

Female International Students Face More CCA Challenges than Male
The non-parametric Mann-Whitney U test revealed significant differences in both social and academic adjustment between the two gender groups. In other word, female international students in China, on average, face higher adjustment difficulties than their male counterparts, specifically in the areas of social and academic adjustment.

According to the result of SA and AA questionnaires (Appendix 1). Female international students face more challenges in social adjustments including "making friends", "dealing with people in authority", "seeing things from a Chinese perspective", "managing unpleasant interactions", "dealing with people staring at them", and "communicating with people of a different ethnic group". The observations align with recent research in the Cross-Cultural Adjustment (CCA) field. For instance, Jin's (2023) study indicated that female students are more likely to face challenges when adapting to new dietary habits. Arslan and Polat's work in 2023 also suggested that female students might be more sensitive to changes in their environment, which could potentially impact their social interactions (ARSLAN & POLAT, 2023). As indicated in the demographic table, most participants of this study are form muslin countries, certain societal norms and expectations might make it harder for female students to interact (Caligiuri & Lazarova, 2002), and less friends can make them feel isolated and lonely. In countries like Japan, single female expatriates have reported limited dating opportunities, which can also negatively affect their social adjustment (Caligiuri & Lazarova, 2002).

Furthermore, female international students in China appear to struggle more in academic adjustments such as "attending lessons regularly", "expressing ideas in class", "concentrating when studying", "joining extracurricular activities", "establishing rapport with Chinese teachers", and "relating to Chinese students" (Appendix 1). Research has found that women, in general, tend to have lower self-confidence compared to men (McCarty, 1986). This lack of confidence can make it harder for female international students to participate actively in class. Furthermore, it might be partly lie on the fact that, in China, there are much fewer female international students in a class (Wen et al., 2014), they might feel isolated or underrepresented, and potentially result in difficulties in academic activities.

Gender Significantly Moderates the Influence of ES on Both SA and AA
The findings confirmed the moderation role of gender on the influence of educational services (ES) on social adjustment (SA) and academic adjustment (AA) among international students in China. As discussed earlier, male, and female students have different expectations and experiences regarding educational services (Ong, 2013), which can impact their adjustment process differently. Based on the result of ES questionnaire, female students gave lower ratings to perceived educational services such as "The excellence of instruction in my major field", "The clarity and reasonableness of major requirements", and "The helpfulness and

approachability of library staff" (Appendix 1). Additionally, they also rated their "Sense of integration and belonging amongst most students" and the "Comfort of living conditions" less favorably.

Theoretical Significance
The findings contribute to the Cross-Cultural Adjustment (CCA) theory by demonstrating that Educational Services (ES) significantly impact not only the personal-emotional adjustment (PEA) of international students, but also their social (SA) and academic adjustments (AA). Moreover, the research uncovers the moderating role of gender in the relationship between ES and both SA and AA. This adds a layer of complexity to the CCA theory, offering a novel perspective on how demographic elements such as gender can alter their experiences with ES, subsequently impacting their cross-cultural adjustment.

Implications for Educational Practice
The study findings highlight that Educational Services (ES) can influence all three dimensions of Cross-Cultural Adjustment (CCA) – personal-emotional, social, and academic adjustment – to varying degrees. This underscores the importance of a comprehensive understanding of international students' needs and the enhancement of service quality to foster a supportive environment for these adjustments. Moreover, the data suggests that universities shouldn't merely focus on cultural diversity, but also consider gender dynamics in their strategies. For example, female students exhibit noticeable challenges in interacting with peers and teachers. To address this, universities could create gender-sensitive programs that specifically cater to the unique challenges faced by female students.

Research Limitations and Future Directions
This research employed quantitative analysis to explore the correlation between CCA and ES among international students, demonstrating the moderating impact of gender. However, a comprehensive qualitative study wasn't executed to understand the mechanism behind gender's moderating role. Furthermore, it's unclear if these findings are exclusively applicable to China or if they have broader implications. Future research should delve deeper into these mechanisms through qualitative methods, and consider cross-cultural studies to validate these findings in varied contexts.

References
Alasmari, A. A. (2023). Challenges and social adaptation of international students in Saudi Arabia. *Heliyon*, *9*(5), e16283. https://doi.org/10.1016/j.heliyon.2023.e16283

Arslan, K., & Polat, M. (2023). How well do international students adapt to the Turkish higher education system? *Kastamonu Eğitim Dergisi*, *31*(3), 218–232. https://doi.org/10.24106/kefdergi.1271482

Berry, J. W. (1997). Immigration, acculturation and adaptation. *Immigration: Policies, Challenges and Impact*, *46*(1), 195–211.

Bethel, A., Ward, C., & Fetvadjiev, V. H. (2020). Cross-Cultural Transition and Psychological Adaptation of International Students: The Mediating Role of Host National Connectedness. *Frontiers in Education*, *5*(September). https://doi.org/10.3389/feduc.2020.539950

Caligiuri, P., & Lazarova, M. (2002). A model for the influence of social interaction and social support on female expatriates' cross-cultural adjustment. *International Journal of*

Human Resource Management, *13*(5), 761–772. https://doi.org/10.1080/09585190210125903

Cao, C., & Meng, Q. (2021). A systematic review of predictors of international students' cross-cultural adjustment in China: current knowledge and agenda for future research. *Asia Pacific Education Review*, *0123456789*. https://doi.org/10.1007/s12564-021-09700-1

Cao, C., Meng, Q., & Zhang, H. (2023). A longitudinal examination of WeChat usage intensity, behavioral engagement, and cross-cultural adjustment among international students in China. *Higher Education*, *0123456789*. https://doi.org/10.1007/s10734-023-01029-5

Cecilia, H., & Aguirre, C. (2019). International Student Adjustment Theory : Improvement through Educational Leadership. *Leadership in Action*, *January*.

Chan, H. L., Yaakob, A. R., & Pinjaman, S. (2021). Effect of support from lecturers and host country nationals on cross-cultural adjustment among international students: Evidence from a Malaysian university. *Pertanika Journal of Social Sciences and Humanities*, *29*(2), 1213–1229. https://doi.org/10.47836/pjssh.29.2.25

Cong, C., & Glass, C. R. (2019). Stronger Together : Educational Service Augmenters and Traditional Predictors of Adjustment for International Students in the US. *JOURNAL OF COMPARATIVE AND INTERNATIONAL HIGHER EDUCATION*, *11*. https://doi.org/https://doi.org/10.32674/jcihe.v11iWinter.1223

Ding, X. (2016). Exploring the Experiences of International Students in China. *Journal of Studies in International Education*, *20*(4), 319–338. https://doi.org/10.1177/1028315316647164

Gebregergis, W. T., Tekie, D., Yikealo, D., & Habte, A. (2019). Antecedents of Psychological Adjustment of International Students Studying in China: The Roles of Self-Efficacy and Self-Esteem. *Open Journal of Social Sciences*, *07*(02), 233–254. https://doi.org/10.4236/jss.2019.72019

Guohui, Z. (2013). A study on cross-cultural adaptation of international students in higher education. In *Research in Higher Education,China* (p. 313). Research in Higher Education,China.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). https://doi.org/10.1108/EBR-11-2018-0203

Horgan, A., Sweeney, J., Behan, L., & McCarthy, G. (2016). Depressive symptoms, college adjustment and peer support among undergraduate nursing and midwifery students. *Journal of Advanced Nursing*, *72*(12), 3081–3092. https://doi.org/10.1111/jan.13074

Hu, R. P. and H. (1995). Satisfaction with social and educational experiences among international graduate students. *Research in Higher Education*, *36*(4), 491–508. https://doi.org/10.1007/BF02207908

Jin, R., Le, T.-T., Vuong, T.-T., Nguyen, T.-P., Hoang, G., Nguyen, M.-H., & Vuong, Q.-H. (2023). A Gender Study of Food Stress and Implications for International Students Acculturation. *World*, *4*(1), 80–94. https://doi.org/10.3390/world4010006

Koveshnikov, A., Wechtler, H., & Dejoux, C. (2014). Cross-cultural adjustment of expatriates: The role of emotional intelligence and gender. *Journal of World Business*, *49*(3), 362–371. https://doi.org/10.1016/j.jwb.2013.07.001

Lai, H., Wang, D., & Ou, X. (2023). Cross-cultural adaptation of Chinese students in the United States: Acculturation strategies, sociocultural, psychological, and academic adaptation. *Frontiers in Psychology*, *13*(January). https://doi.org/10.3389/fpsyg.2022.924561

Law, W., & Liu, S. (2023). Basic Need Satisfaction Intervention for Mainland Chinese International Students' Adjustment to College. *Journal of Studies in International Education*, *27*(1), 100–118. https://doi.org/10.1177/10283153211052772

Mao, Y., Wang, R., & Ji, H. (2023). Acculturation and Academic Adjustment of Student Sojourners in the Chinese Higher Education Context. *Journal of Studies in International Education*. https://doi.org/10.1177/10283153221150114

Martirosyan, N. (2015). An examination of factors contributing to student satisfaction in Armenian higher education. *International Journal of Educational Management*, *29*(2), 177–191. https://doi.org/10.1108/IJEM-09-2013-0143

McCarty, P. A. (1986). Effects of Feedback on the Self-Confidence of Men and Women. *Academy of Management Journal*, *29*(4), 840–847. https://doi.org/10.2307/255950

Mustaffa, C. S., & Ilias, M. (2013). Relationship between Students Adjustment Factors and Cross Cultural Adjustment: A Survey at the Northern University of Malaysia. *Intercultural Communication Studies*, *22*(1), 279–300. https://www-s3-live.kent.edu/s3fs-root/s3fs-public/file/19-Che-Su-Mustaffa-Munirah-Ilias.pdf

Ng, T. K., Wang, K. W. C., & Chan, W. (2017). Acculturation and cross-cultural adaptation: The moderating role of social support. *International Journal of Intercultural Relations*, *59*(July 2017), 19–30. https://doi.org/10.1016/j.ijintrel.2017.04.012

Ong, W. M. (2013). *Students' expectations and perceptions of service quality performance: university student advisors in Australia, Malaysia and Singapore. January*, 288. http://researchbank.rmit.edu.au/view/rmit:160441

Raižiene, S., Gabrialaviciute, I., & Garckija, R. (2017). Links between basic psychological need satisfaction and school adjustment: A person-oriented approach. *Journal of Psychological and Educational Research*, *25*(1), 82–92.

Rudmin, F. W. (2003). Field Notes from the Quest for the first Use of Acculturation.pdf. In *Cross-Cultural Psychology Bulletin* (Vol. 37, Issue 4).

Searle, W. (1990). THE PREDICTION OF PSYCHOLOGICAL AND SOCIOCULTURAL ADJUSTMENT DURING CROSS-CULTURAL TRANSITIONS University of Canterbury , Christchurch , New Zealand. *North*, *14*, 449–464. https://pdf.sciencedirectassets.com/272065/1-s2.0-S0147176700X0079X/1-s2.0-014717679090030Z/main.pdf?x-amz-security-token=AgoJb3JpZ2luX2VjEGEaCXVzLWVhc3QtMSJIMEYCIQCzeQcAx1vBI9D%2F5lzmCns6H9n11zjo0sVSdS4U5cP%2BvgIhALmR8bRGYuuHhpzAbtOMippWnhFwRwjPu6YaMex4y

Shan, C., Hussain, M., & Sargani, G. R. (2020). A mix-method investigation on acculturative stress among Pakistani students in China. *PLoS ONE*, *15*(10 October), 1–17. https://doi.org/10.1371/journal.pone.0240103

Tian, M., Lu, G., & Yin, H. (2020). *Student Engagement for Sustainability of Chinese International Education : The Case of International Undergraduate Students in China*.

Ward, C., Bochner, S., & Furnham, A. (2020). The Psychology of Culture Shock. In *The Psychology of Culture Shock*. https://doi.org/10.4324/9781003070696

Wen, W., & Hu, D. (2023). International Student Education in China and its Connections with Local and Global Society. *Centre for Global Higher Education Working Paper Series*, *92*.

Wen, W., Liu, J., Die, H., & Qiang, C. (2014). An Empirical Study of Cross-cultural Adaptation of International Students in China and Its Determinants. *Fudan Education Forum*, *135*(4), 8. https://doi.org/10.13397/j.cnki.fef.2014.05.009

Xu, W., Stahl, G., & Cheng, H. (2023). The promise of Chinese: African international students and linguistic capital in Chinese higher education. *Language and Education*, *37*(4), 516–528. https://doi.org/10.1080/09500782.2022.2074797

APPENDIX 1

Scale	Items	@1.Mygender		Mean	P Value
		Male	Female		
	@1.Ifeeldownheartedandblue	1.841	1.71	1.774	
	@2.Morningiswhenifeelthebest	2.055	2.119	2.088	
	@3.Ihavecryingspellsorfeellikeit	1.512	1.533	1.523	
	@4.Ihavetroublesleepingatnight	1.751	1.729	1.74	
	@5.Ieatasmuchasiusedto	2.687	2.467	2.574	-0.101*
	@6.Istillenjoysex	2.751	3.186	2.973	0.182**
	@7.Inoticethatiamlosingweight	1.746	1.633	1.689	
	@8.Ihavetroublewithconstipation	1.338	1.571	1.457	0.158**
	@9.Myheartbeatsfasterthanusual	1.403	1.481	1.443	
	@10.Igettiredfornoreason	1.468	1.933	1.706	0.267**
	@11.Mymindisasclearasitusedtobe	2.199	2.09	2.144	
	@12.Ifinditeasytodothethingsiusedto	2.269	2.162	2.214	
	@13.Ifeelrestlessandcantkeepstill	1.642	1.648	1.645	
	@14.Ifeelhopefulaboutthefuture	1.856	1.948	1.903	
	@15.Iammoreirritablethanusual	1.597	1.562	1.579	
	@16.Ifinditeasytomakedecisions	2.179	2.338	2.26	
	@17.Ifeelthatiamusefulandneeded	2.005	2.11	2.058	
	@18.Mylifeisfull	2.199	2.071	2.134	
	@19.Ifeelthatotherswouldbebetteroffifiweredead	1.468	1.319	1.392	-0.102*
PEA	@20.Istillenjoythethingsiusedtodo	2.244	2	2.119	-0.114*
	@1.Makingfriends	1.91	2.157	2.036	0.112*
	@2.Findingfoodthatyouenjoy	2.114	2.324	2.221	
	@3.Followingrulesandregulations.	1.786	1.648	1.715	
	@4.Dealingwithpeopleinauthority	1.876	2.138	2.01	0.110*
	@5.TakingaChineseperspectiveontheculture	1.826	1.943	1.886	
	@6.Usingthetransportsystem	1.493	1.443	1.467	
	@7.Dealingwithbureaucracy	1.965	2.019	1.993	
	@8.UnderstandingtheChinesevaluesystem	1.821	1.976	1.9	
SA	@9.Makingyourselfunderstood	1.856	1.957	1.908	

@10.SeeingthingsfromaChinesepointof view	1.975	2.186	2.083	0.097 *
@11.Goingshopping	1.473	1.51	1.491	
@12.Dealingwithsomeonewhoisunplea sant	2.129	2.367	2.251	0.105 *
@13.Understandingjokesandhumor	1.627	1.757	1.693	
@14.Accommodation	1.736	1.733	1.735	
@15.Goingtosocialeventsgatheringsfun ctions	1.692	1.886	1.791	
@16.Dealingwithpeoplestaringatyou	1.746	2.419	2.09	0.287 **
@17.Communicatingwithpeopleofadiff erentethnicgroup	1.637	1.876	1.759	0.122 *
@18.Understandingethnicorculturaldiff erences	1.667	1.743	1.706	
@19.Dealingwithunsatisfactoryservice	2.149	2.224	2.187	
@20.Worshipinginyourusualway	1.771	1.638	1.703	
@21.Relatingtomembersoftheopposite sex	1.721	1.781	1.752	
@1.Attendinglessonsregularly	1.423	1.667	1.547	0.119 *
@2.Selectingdesirablecourses	1.552	1.657	1.606	
@3.Understandingwhatistaughtbythet eacher	1.811	1.9	1.856	
@4.Completingassignmentsontime	1.502	1.457	1.479	
@5.Takingnotesinclass	1.458	1.552	1.506	
@6.Expressingmyideasinclass	1.507	1.738	1.625	0.120 *
@7.Concentratingwhenstudying	1.532	1.781	1.659	0.138 **
@8.AdaptingtoChineseteachingstyle	1.801	1.948	1.876	
@9.Functioningwellinexams	1.557	1.61	1.584	
@10.Gettingusedtotheformsofassessm ent	1.562	1.586	1.574	
@11.Usingthelibrary	1.522	1.7	1.613	
@12.Joiningextracurricularactivities	1.507	1.81	1.662	0.161 **
@13.Understandingwhatiscommunicat edinorientation	1.622	1.738	1.681	
@14.Followingtheuniversitysrulesandr egulations	1.517	1.543	1.53	
@15.Dealingwiththeuniversitysadminis trativestaff	1.637	1.824	1.732	
@16.EstablishingrapportwithChinesete achers	1.458	1.705	1.584	0.138 **

(AA row label appears at left, aligned with @16 row)

	@17.RelatingtoChinesestudents	1.607	2.019	1.818	0.194 **
	@18.Relatingtootherforeignstudents	1.443	1.505	1.474	
	@1.Facultycareaboutmeasanindividual	3.512	3.567	3.54	
	@2.Facultyarefairandunbiasedintheirtreatmentofindividualstudents	3.478	3.433	3.455	
	@3.Facultyprovidetimelyfeedbackaboutstudentprogressinacourse	3.672	3.543	3.606	
	@4.Facultytakeintoconsiderationstudentdifferencesastheyteachacou	3.488	3.467	3.477	
	@5.ThequalityofinstructionIreceiveinmostofmyclassesisexcellent	3.687	3.59	3.637	
	@6.Facultyareusuallyavailableafterclassandduringofficehours	3.711	3.614	3.662	
	@7.Nearlyallthefacultyareknowledgeableinthefield	3.711	3.748	3.73	
	@8.Graduateteachingassistantsarecomponentasclassroominstructors	3.493	3.467	3.479	
	@9.Thecontentofcourseswithinmymajorisvaluable	3.94	3.805	3.871	
	@10.Theinstructioninmymajorfieldisexcellent	3.856	3.657	3.754	-0.105 *
	@11.Icanexperienceintellectualgrowthhere	3.876	3.776	3.825	
	@12.Thereisacommitmenttoacademicexcellenceonthiscampus	3.766	3.638	3.701	
	@13.Majorrequirementsareclearandreasonable	3.791	3.557	3.672	-0.127 **
	@14.Librarystaffarehelpfulandapproachable	3.851	3.657	3.752	-0.099 *
	@15.Libraryresourcesandservicesareadequate	3.706	3.629	3.667	
	@16.Computerlabsareadequateandaccessible	3.602	3.49	3.545	
	@17.Moststudentsfeelasenseofintegrationbelonginghere	3.592	3.381	3.484	-0.119 *
	@18.Thecampusstaffarecaringandhelpfulefficientvisaprocessalwaysg	3.851	3.886	3.869	
	@19.Thecampusissafeandsecureforallstudents	4.234	4.114	4.173	
ES	@20.Avarietyofintramuralactivitiesareoffered	3.721	3.633	3.676	

@21.Livingconditionsintheresidencehallsarecomfortableadequatespa	3.945	3.714	3.827	-0.114*
@22.Thereareenoughweekendactivitiesforstudents	3.607	3.5	3.552	
@23.Studentsaremadetofeelwelcomeonthiscampus	3.791	3.757	3.774	
@24.Icaneasilygetinvolvedincampusorganizations	3.711	3.605	3.657	