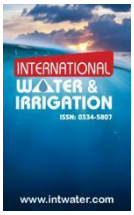

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The Relationship between Cultural Intelligence, Intercultural Sensitivity, and Intercultural Environmental Awareness: Data from Chinese Private University Students

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Abstract: This article delves into the interactions among cultural intelligence, Intercultural sensitivity, and Intercultural environmental awareness based on Howard Gardner's theory of multiple intelligences. To obtain empirical data, the study specifically selected 456 students from private universities in China as the research sample and collected relevant data through a questionnaire survey. With these data, the study constructed a predictive model aimed at revealing the intrinsic connections between these three variables. The findings indicate that the level of cultural intelligence among university students can positively predict the intensity of their Intercultural environmental awareness. In other words, students with higher cultural intelligence tend to exhibit more proactive and sensitive attitudes towards Intercultural environmental awareness. Additionally, the study discovered that Intercultural sensitivity plays a significant mediating role between cultural intelligence and Intercultural environmental awareness [1]. This suggests that cultural intelligence not only directly affects Intercultural environmental awareness but also indirectly influences it by enhancing individual Intercultural sensitivity.Based on these findings, the study concludes that an effective way to enhance university students' Intercultural environmental awareness is to strengthen their cultural intelligence through education and training, and to increase their understanding and respect for different cultural backgrounds, thereby enhancing their Intercultural sensitivity. Such educational strategies not only help cultivate students' environmental awareness but also promote cross-cultural communication and cooperation in the context of globalization.

Keywords- Cultural Intelligence, Intercultural Sensitivity, Intercultural environmental awareness, University Students, Intercultural Communication Competence

1. Introduction

With the development of globalization, the exchange and interaction between different cultures have become increasingly frequent. Cultural globalization has become an objective trend in the development of world culture today and is increasingly attracting people's attention [2]. As globalization has become the core issue of the 21st century, higher education institutions continue to adopt international development strategies, accelerating the process of internationalization as a main strategy to address global challenges. The increase in global integration, international economic, international exchanges, and cultural integration has raised the frequency of cross-cultural communication, and the demand for cross-cultural communication talents is growing [3]. Therefore, students from major universities need to possess cross-cultural communication skills to better adapt to a diverse social environment, which is particularly important in private universities. Cross-cultural communication skills have become one of the essential qualities of modern talents. Private universities, as an important part of the higher education system, bear the important task of cultivating international talents. Therefore, effectively cultivating students' cross-cultural communication skills in combination with the characteristics of private universities is an important topic in educational research [4].

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Private colleges and universities develop distinctive model advantages compared to public institutions, encompassing comparative strengths in areas such as operational mechanisms and talent cultivation models. Within private colleges, the principal is key to shaping the distinctive characteristics of the institution, with the educational philosophy and cultivation model being the core, the faculty being the prerequisite, the operational mechanisms and management level being the guarantee, and the construction of campus culture being the leading factor [5]. Therefore, private colleges can fully utilize the flexibility of their systems and mechanisms to deepen the internationalization process, aiming to cultivate more talents with an international perspective and innovative abilities, injecting new vitality into the sustainable development of the institution.

The development of the internationalization process has made cross-cultural communication increasingly frequent. Cultural intelligence and cross-cultural communication skills have become key qualities for individuals and organizations to operate successfully on a global scale. Those with higher cultural intelligence tend to treat people from different cultural backgrounds with more appreciation, which not only helps to reduce misunderstandings and conflicts caused by cultural differences but also increases the likelihood of cooperation and success [6]. Therefore, continuous research helps to understand and deal with the complex cultural interactions and communication challenges brought about by globalization.

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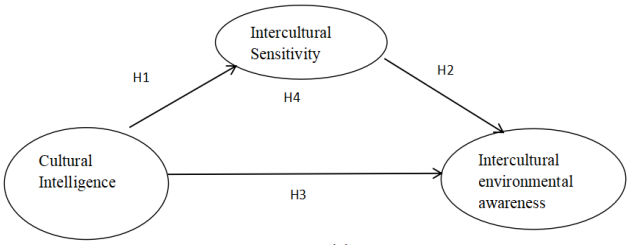

Figure 1. models.

H1: Cultural intelligence has a positive effect on intercultural sensitivity.

H2: Intercultural sensitivity has a positive effect on Intercultural environmental awareness.

H3: Cultural intelligence has a positive effect on Intercultural environmental awareness.

H4: Intercultural sensitivity mediates the effect of cultural intelligence on Intercultural environmental awareness.

2. Research Methods

2.1 Research Subjects

The research subjects mainly consisted of undergraduate students from grades 1 to 4 at private colleges in Shaanxi Province. To avoid the impact of differences in management models, educational resources, and cultural atmospheres on the comparability of research results, students from public universities were excluded, and the focus was on students from private colleges. A total of 456 data sets were collected, and samples with excessively short answering times and completely identical answers were deleted, resulting in the exclusion of 33 samples.

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Thus, 423 valid samples were retained, with a sample validity rate of 92.7%. Among them, 307 were female, accounting for 72.6%. Currently, 365 are studying in China, accounting for 86.3%. Those with elementary and intermediate levels of foreign language proficiency accounted for 75%. Those who have traveled or studied abroad for a short period account for 60%.

2.2 Research Instruments

Cultural Intelligence Scale, using the Cultural Intelligence Scale by Ang et al. (2007) [7], which includes four sub-scales: metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence, with a total of 20 items. In this study, a Likert seven-point scale was used to score the questionnaire results. Specifically, respondents rated their subjective feelings from 1 (strongly disagree) to 7 (strongly agree). Each item in the questionnaire was scored, and the final total score was the weighted average of the item scores. This method drew on the scoring approach proposed by Ang et al. (2007), and its reliability and validity have been verified in related fields.

Intercultural Sensitivity Scale, using the Intercultural Sensitivity Scale developed by Guo-Ming Chen et al. (2000) [8], which includes five dimensions: interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment, and interaction attentiveness, with a total of 24 items. A Likert five-point scale was used to score the questionnaire results. Specifically, respondents rated their subjective feelings from 1 (strongly disagree) to 5 (strongly agree). Each item in the questionnaire was scored, and the final total score was the weighted average of the item scores. This method drew on the scoring approach proposed by Guo-Ming Chen et al. (2000), and its reliability and validity have been verified in related fields.

This article measures the scale of Intercultural environmental awareness, mainly drawing on Yang Yang's (2009) [9] Intercultural Communication Competence scale, including three dimensions: awareness, skills, and knowledge, with a total of 111 questions, which can calculate the average score or total score of the questions included in each scale. A Likert six-point scale was used to score the questionnaire results. Specifically, respondents rated their subjective feelings from 1 (not important) to 6 (very important). Each item in the questionnaire was scored, and the final total score was the weighted average of the item scores. This method drew on the scoring approach proposed by Yang Yang (2009), and its reliability and validity have been verified in related fields. The reliability values are as follows for the analysis.

Table 1. Reliability Analysis.

Scale	Dimension	Items	Cronbach's alpha	
Intercultural Sensitivity	Respect for Cultural Differences	6	0.905	0.951
	Interaction Enjoyment	3	0.817	
	Interaction Engagement	7	0.922	
	Interaction Attentiveness	3	0.799	
	Interaction Confidence	5	0.847	
Cultural Intelligence	Metacognitive CQ	4	0.919	0.955
	Cognitive CQ	6	0.918	
	Motivational CQ	5	0.891	
	Behavioral CQ	5	0.903	
Intercultural Communication Competence	Emotion	35	0.963	0.988
	Behavior	38	0.985	
	Cognition	38	0.981	

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Table 1 is the reliability analysis table of the scale. For the Intercultural sensitivity scale, the Cronbach's alpha coefficient is 0.951, which is greater than 0.9, indicating that the reliability of this scale is very good. The Cronbach's alpha coefficients for the dimensions of interaction enjoyment, interaction attention, and interaction confidence are 0.817, 0.799, and 0.847 respectively, all greater than 0.7, indicating that the reliability of these dimensions is quite good. The Cronbach's alpha coefficients for the dimensions of respecting cultural differences and interaction engagement are 0.905 and 0.922 respectively, both greater than 0.9, indicating that the reliability of these dimensions is very good.

For the cultural intelligence scale, the Cronbach's alpha coefficient is 0.955, which is greater than 0.9, indicating that the reliability of this scale is very good. The Cronbach's alpha coefficients for the dimensions of metacognitive cultural intelligence, cognitive cultural intelligence, and behavioral cultural intelligence are 0.919, 0.918, and 0.903 respectively, all greater than 0.9, indicating that the reliability of these dimensions is very good. The Cronbach's alpha coefficient for the dimension of motivational cultural intelligence is 0.891, which is greater than 0.7, indicating that the reliability of this dimension is quite good.

For the Intercultural Communication Competence scale, the Cronbach's alpha coefficient is 0.988, which is greater than 0.9, indicating that the reliability of this scale is very good. The Cronbach's alpha coefficients for the dimensions of affect, behavior, and cognition are 0.963, 0.985, and 0.981 respectively, all greater than 0.9, indicating that the reliability of these dimensions is very good.

2.3 Data Analysis

Use SPSS statistical software and Amos structural equation modeling software to process and analyze data.

3. Results

3.1 Common Method Bias Test

The test for common method bias was conducted using the Harman single-factor test method, performing an unrotated exploratory factor analysis on all measurement items. The results indicated that 23 common factors with eigenvalues greater than 1 were extracted, and the first common factor accounted for 38.116% of the total variance, which is less than the 40% threshold. Therefore, there is no serious common method bias in this study.

3.2 Descriptive Analysis

Table 2. Descriptive Analysis（*N*=423）.

	Minimum value	Maximum value	Average	Standard Deviation	Skewness	Kurtosis
Intercultural Sensitivity	1.00	5.00	3.597	0.700	-0.900	1.229
Respect for Cultural Differences	1.00	5.00	3.717	0.864	-0.936	0.473
Interaction Enjoyment	1.00	5.00	3.627	0.872	-0.577	-0.218
Interaction Engagement	1.00	5.00	3.633	0.837	-0.906	0.746
Interaction Attentiveness	1.00	5.00	3.686	0.830	-0.721	0.500
Interaction Confidence	1.00	5.00	3.333	0.802	-0.073	0.136
Cultural Intelligence	1.45	7.00	3.924	1.000	0.331	1.155
Metacognitive CQ	1.00	7.00	3.890	1.212	0.401	0.380
Cognitive CQ	1.00	7.00	3.779	1.113	0.580	1.276
Motivational CQ	1.60	7.00	4.030	1.142	0.392	0.349

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Behavioral CQ	1.00	7.00	4.019	1.193	0.119	0.469
Intercultural Communication Competence	1.00	5.66	3.900	0.882	-0.741	1.526
Emotion	1.00	5.97	3.821	0.895	-0.871	1.197
Behavior	1.00	6.00	3.958	1.079	-0.328	0.129
Cognition	1.00	6.00	3.913	1.013	-0.326	0.564

Table 2 is a descriptive analysis table, with the mean values for Intercultural sensitivity, cultural intelligence, and Intercultural environmental awareness being 3.597, 3.924, and 3.900, respectively. The absolute values of skewness for all variables and their dimensions are less than 3, and the absolute values of kurtosis are less than 10, indicating that these variables are approximately normally distributed.

3.3 Related Analysis

Table 3. Related analysis results.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Intercultural Sensitivity	1														
2.Respect for Cultural Differences	.856**	1													
3.Interaction Enjoyment	.769**	.612**	1												
4.Interaction Engagement	.900**	.673**	.624**	1											
5.Interaction Attentiveness	.824**	.653**	.599**	.722**	1										
6.Interaction Confidence	.755**	.506**	.494**	.583**	.540**	1									
7.Cultural Intelligence	.591**	.515**	.423**	.561**	.591**	.349**	1								
8.Metacognitive CQ	.483**	.403**	.358**	.456**	.503**	.289**	.831**	1							
9.Cognitive CQ	.554**	.477**	.383**	.536**	.524**	.348**	.866**	.625**	1						
10.Motivational CQ	.493**	.443**	.358**	.472**	.502**	.257**	.884**	.694**	.660**	1					
11.Behavioral CQ	.498**	.440**	.356**	.458**	.506**	.302**	.863**	.609**	.646**	.705**	1				
12.Intercultural Communication Competence	.550**	.508**	.375**	.512**	.513**	.337**	.557**	.444**	.458**	.502**	.514**	1			
13.Emotion	.512**	.450**	.313**	.497**	.485**	.334**	.480**	.358**	.422**	.405**	.459**	.854**	1		
14.Behavior	.473**	.440**	.341**	.442**	.454**	.263**	.523**	.426**	.410**	.489**	.480**	.896**	.649**	1	
15.Cognition	.478**	.456**	.337**	.427**	.427**	.305**	.468**	.383**	.384**	.426**	.422**	.894**	.668**	.686**	1

Note: ** indicates P<0.01

Table 3 shows the results of the correlation analysis, indicating a significant positive correlation between Intercultural sensitivity and cultural intelligence (r=0.591, p<0.01), a significant positive correlation between Intercultural sensitivity and Intercultural environmental awareness (r=0.550, p<0.01), and a significant positive correlation between cultural intelligence and Intercultural environmental awareness (r=0.557, p<0.01). There is a significant positive correlation among all dimensions of Intercultural sensitivity, cultural intelligence, and Intercultural environmental awareness. For specific details, please refer to Table 1.

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3.4 Structural Equation Modeling

In this study, cultural intelligence is the independent variable, cross-cultural sensitivity is the mediating variable, and intercultural communication competence (cross-cultural environmental awareness) is the dependent variable. The research model is shown in Figure2.

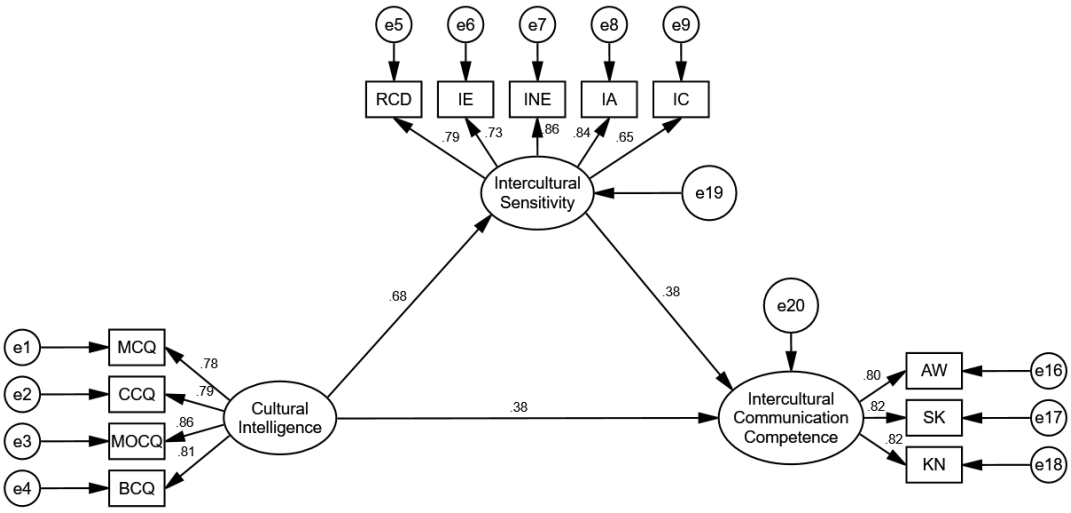

Figure 2. Structural Equation Model.

Table 4. Model Fitting Index Results.

Indicator	X^2/df	RMSEA	GFI	AGFI	IFI	TLI	CFI
Criteria for judgment	<3	<0.08	>0.5	>0.5	>0.9	>0.9	>0.9
Fit results	1.857	0.045	0.962	0.943	0.985	0.981	0.985

Table 4 is the model fitness table. As can be seen from the table, the $\chi 2$/df value is 1.857, which is less than 3. The RMSEA value is 0.045, which is less than 0.08. The values of GFI, AGFI, IFI, TLI, and CFI are 0.962, 0.943, 0.985, 0.981, and 0.985, respectively, all of which are greater than 0.9. Overall, the model's indicators are ideally fitted.

Table 5. Path Analysis.

Path			Estimate	S.E.	C.R.	P
Intercultural Sensitivity	<---	Cultural Intelligence	0.679	0.041	12.066	***
Intercultural Communication Competence	<---	Intercultural Sensitivity	0.385	0.071	5.726	***
Intercultural Communication Competence	<---	Cultural Intelligence	0.377	0.051	5.584	***

Table 5 is the path analysis table. The path coefficient from cultural intelligence to intercultural sensitivity is significantly positive (β=0.679, P<0.001), proving that Hypothesis H1 holds. The path coefficient from intercultural sensitivity to Intercultural environmental awareness is significantly positive (β=0.385, P<0.001), proving that Hypothesis H2 holds. The path coefficient from cultural intelligence to Intercultural environmental awareness is significantly positive (β=0.377, P<0.001), further proving that Hypothesis H3 holds.

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Table 6. Mediation Effect Test.

	Estimate	SE	Lower	Upper
Total effect	0.638	0.041	0.553	0.715
Direct effect	0.377	0.063	0.249	0.500
Indirect effect	0.261	0.047	0.170	0.357

Table 6 is a test of the mediating effect of Intercultural sensitivity in the relationship between cultural intelligence and Intercultural environmental awareness. To more accurately verify the mediating effect, the Bootstrap method was used with 5000 bootstrap resampling iterations, and the confidence interval level was set at 95%, using the bias-corrected and accelerated percentile method for sampling. As can be seen from the table, the total effect of cultural intelligence on Intercultural environmental awareness is 0.638, with a confidence interval of [0.553, 0.715], which does not include 0, indicating that the total effect exists. The direct effect is 0.377, with a confidence interval of [0.249, 0.500], which does not include 0, indicating that the direct effect exists. The indirect effect is 0.261, with a confidence interval of [0.170, 0.357], which does not include 0, indicating that the indirect effect exists. This proves Hypothesis H4: The mediating effect of Intercultural sensitivity in the relationship between cultural intelligence and Intercultural environmental awareness is established.

4. Discussion

H1: Cultural intelligence has a positive impact on Intercultural sensitivity.

Cultural intelligence (CQ) has a positive impact on Intercultural sensitivity. Numerous studies and reports suggest that cultural intelligence not only helps individuals adapt and understand different cultural backgrounds better but also significantly enhances their Intercultural sensitivity. Şenel, M. (2020) mentioned that individuals are considered to have "high levels of cultural intelligence to provide effective and successful cross-cultural interactions."[10] Yazıcı, S. (2021) in his study stated that cultural intelligence can be improved through understanding, perceiving, and interpreting cultural awareness. It is crucial to have sufficient cultural intelligence to interact and communicate with people from different cultures [11]. Mercan, N. (2016) explored the correlation between the cultural intelligence levels of 617 employees in the hotel industry and their Intercultural sensitivity. The author found significant differences between participants' Intercultural sensitivity and cultural intelligence. The findings suggest that cultural intelligence enhances individual Intercultural sensitivity [12].

The data analysis in this study indicates that all dimensions of cultural intelligence significantly affect intercultural sensitivity, suggesting that cultural intelligence is a key factor in enhancing intercultural sensitivity. The results show that each of the four dimensions of cultural intelligence contributes positively to intercultural sensitivity. By enhancing understanding of cultural differences, improving cultural adaptation strategies, stimulating motivation for intercultural communication, and promoting effective intercultural behavior, each dimension of cultural intelligence can more specifically influence intercultural sensitivity. The research in this paper finds that it is basically consistent with previous studies, and the novelty of this paper lies in fully revealing the specific effects of each dimension of cultural intelligence on intercultural sensitivity. In the process of education and teaching, this reminds us that we should comprehensively cultivate students' cultural intelligence to enhance their intercultural sensitivity and strengthen their intercultural communication skills.

H2: Intercultural sensitivity has a positive impact on Intercultural environmental awareness.

In discussing the reliability of the intercultural sensitivity scale, this study found that the Cronbach's alpha coefficient of the scale was as high as 0.951, far exceeding the threshold of 0.9, which fully indicates that the scale has extremely high reliability. Furthermore, the intercultural sensitivity scale proposed by Guo-Ming Chen (2000) also showed satisfactory internal consistency, with a reliability coefficient of 0.86. Through regression analysis of the relationship between intercultural sensitivity and

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Intercultural Communication Competence, this study revealed that intercultural sensitivity has a significant positive impact on Intercultural Communication Competence. Specifically, this study analyzed intercultural sensitivity and its various dimensions as independent variables, while Intercultural Communication Competence was treated as the dependent variable. The results showed that intercultural sensitivity has a significant positive impact on Intercultural Communication Competence overall (β=0.385, P<0.001), thus verifying the validity of hypothesis H2.

However, this study shows some differences compared to the early research by Guo-Ming Chen (2000). The current study found that among the five dimensions of intercultural sensitivity, the dimensions of respecting cultural differences and interactive engagement have a significant positive impact on Intercultural Communication Competence. This finding suggests that in the composition of Intercultural Communication Competence, respecting cultural differences and interactive engagement may be more critical influencing factors, while interactive enjoyment and interactive confidence may not be core elements that universally affect Intercultural Communication Competence.

Specifically, the success of cross-cultural communication often depends on the ability to accurately convey information, understand the other's perspective, and properly manage cultural differences. These aspects may be more important than the mere enjoyment of interaction. Similarly, the impact of interaction confidence on Intercultural Communication Competence skills is not as significant as respect for cultural differences and engagement in interaction. This may be because, despite having confidence, it is still difficult to effectively engage in Intercultural Communication Competence without the necessary language skills or cultural knowledge.

The significance of this study lies in revealing the differences in the impact of specific dimensions within Intercultural Communication Competence, providing a new perspective for intercultural training and education. The findings emphasize that in practice, more focus should be placed on enhancing the ability to respect differences and engagement. Educational teaching should be more focused on fostering students' abilities to respect cultural differences and engage interactively, as these factors have a significant impact on improving intercultural communication skills. In this way, we can more effectively cultivate students' intercultural communication skills, laying a solid foundation for their communication and cooperation in a globalized context.

H3: Cultural intelligence has a positive impact on Intercultural environmental awareness.

Bücker et al. (2014) mentioned in their study that cultural intelligence and Intercultural Communication Competence are interrelated concepts. There is a close connection between these two concepts. Cultural intelligence is about acquiring information about the behavior and thought patterns of individuals from unfamiliar cultures. Acquiring this information helps individuals communicate with each other both verbally and non-verbally [12]. Cultural intelligence encourages individuals to communicate with people from unfamiliar cultures. Furthermore, it aids in preferring more appropriate styles of behavior. The study by Ang and Van Dyne (2008) mainly focused on the relationship between personality traits, cultural intelligence, and Intercultural Communication Competence [13]. The findings suggest that cultural intelligence has a positive impact on Intercultural Communication Competence, and personality traits also have a positive impact on cultural intelligence and Intercultural Communication Competence. Cultural intelligence means that individuals are capable of effectively managing cultural diversity. Individuals who manage cultural diversity possess cultural intelligence capabilities.

In this study, we adopted the method of correlation analysis and found that cultural intelligence has a significant positive impact on Intercultural Communication Competence. This finding is consistent with our theoretical expectations beforehand and is strongly supported by empirical data.

The study by Ang et al. (2007) conducted an in-depth analysis on two samples from Singapore and the United States. The American sample consisted of 235 students from the Midwest of the United States, while the Singaporean sample included 358 students. In the Singaporean sample, the internal consistency coefficients for

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the four scales of metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence were 0.70, 0.88, 0.75, and 0.87, respectively. In the American sample, these four scales had internal consistency coefficients of 0.76, 0.80, 0.79, and 0.82, respectively.

In this study, we examined a sample of Chinese private undergraduate students. The Cronbach's alpha coefficients for metacognitive cultural intelligence, cognitive cultural intelligence, behavioral cultural intelligence, and motivational cultural intelligence were 0.919, 0.918, 0.903, and 0.891, respectively. By comparing these data, we can see that among the Singaporean student sample, the coefficient for metacognitive cultural quality was the lowest at 0.70, while the coefficient for cognitive cultural intelligence was the highest at 0.88. In the American student sample, the coefficient for metacognitive cultural quality was the lowest at 0.76, while the coefficient for motivational cultural intelligence was the highest at 0.82. Among the Chinese student sample in this study, the coefficient for motivational cultural intelligence was the lowest at 0.89, while the coefficients for both metacognitive and cognitive cultural intelligence were the highest at 0.91.

By comparing the performance of students from Singapore, the United States, and China on the four dimensions of cultural intelligence (CQ) - metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence - we have revealed the similarities and differences in the development of CQ among students from different cultural backgrounds. In these results, both Singaporean and American students had the lowest coefficients for metacognitive cultural intelligence, whereas Chinese students had the highest coefficients for both metacognitive and cognitive cultural intelligence among the four dimensions of cultural intelligence. In simple terms, metacognitive cultural intelligence refers to an individual's level of awareness and reflective ability regarding their own cultural cognitive processes in cross-cultural communication. A high level of this indicates that an individual is able to clearly recognize their own cultural cognitive framework when interacting with people from different cultural backgrounds, consciously adjusting and optimizing their cognitive strategies, thereby more effectively understanding and adapting to different cultural environments. At the same time, a high level of metacognitive cultural intelligence also signifies that an individual possesses stronger strategic thinking skills and flexibility in cross-cultural adaptation.

In the Asian region, both Singaporean and Chinese students perform exceptionally well in terms of cognitive cultural intelligence. This indicates that students from Asian countries have a high ability to understand norms, customs, and values in different cultural contexts. They are capable of deeply understanding and analyzing the inherent logic and deeper meanings of various cultures, demonstrating strong cultural sensitivity and insight. This ability helps them adapt and integrate better into multicultural environments, promoting effective communication and cooperation across cultures.

However, despite the excellent performance of Singaporean and Chinese students in cognitive cultural intelligence, there are also some differences in their performance across different dimensions. Specifically, Singaporean students excel in cognitive cultural intelligence, achieving a high value of 0.88. This may be related to Singapore's diverse social background and the emphasis on intercultural communication skills in its education system. As a multicultural country, Singapore's education system may place more emphasis on developing students' intercultural cognitive abilities to help them adapt to work and life in different cultural contexts.

Compared to other students, American students stand out in terms of motivational cultural intelligence, achieving a high score of 0.82. Motivational cultural intelligence refers to an individual's drive and interest in adapting to different cultures. A high level indicates a strong desire and motivation to understand and adapt to various cultural environments, and a passion and interest in cross-cultural learning and communication. This strong motivation helps individuals to learn new cultural knowledge more proactively and adapt more effectively to different cultural contexts. This may be closely related to the American culture's emphasis on personal achievement, goal setting, and self-driven learning attitudes.

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Chinese students excel in metacognitive and cognitive cultural intelligence, but they are relatively low in motivational cultural intelligence. This situation demonstrates that Chinese students have strong self-regulation abilities and a profound foundation of cultural knowledge in the process of cultural learning. This outcome may be related to the traditional Chinese education system, which emphasizes knowledge accumulation, learning discipline, and self-discipline.

By analyzing these results, we can draw some important insights. First, students from different countries have different emphases on the four dimensions of cultural intelligence, which reflects the differences in educational culture and social environment among countries. The outstanding performance of Chinese students in metacognitive and cognitive cultural intelligence is remarkable, which reflects the advantages of the Chinese education system in fostering students' deep thinking abilities, self-reflection abilities, and cultural knowledge accumulation.

This result has important implications for teaching and education. Firstly, given the generally low levels of metacognitive cultural intelligence among students from various countries, educators should pay more attention to fostering students' self-reflection, strategy adjustment, and systematic learning abilities, laying a solid foundation for basic knowledge learning, and helping students better adapt to different cultural environments. Secondly, education can also be inspired by the characteristics of CQ among students from different countries, allowing educators to design more targeted teaching plans to promote balanced development in all dimensions of CQ. For example, for students with lower motivational cultural intelligence, setting clear learning goals, providing timely feedback, and rewards can stimulate their motivation to learn.

H4: Intercultural sensitivity mediates the impact of cultural intelligence on Intercultural environmental awareness.

Intercultural sensitivity plays a mediating role between cultural intelligence and Intercultural Communication Competence. Specifically, cultural intelligence enhances individual cognition and adaptation to cultural differences, thereby promoting the improvement of Intercultural Communication Competence. This process involves the positive influence of cultural intelligence on intercultural sensitivity, which in turn directly affects Intercultural Communication Competence.

This study verified the relationship between cultural intelligence as the independent variable, intercultural sensitivity as the mediating variable, and Intercultural Communication Competence as the dependent variable through mediation effect analysis. The results revealed that cultural intelligence can enhance individual sensitivity in intercultural communication, which is reflected in the identification, respect, and adaptation to cultural differences. Therefore, cultural intelligence indirectly promotes the enhancement of individual Intercultural Communication Competence through the mediating effect of intercultural sensitivity.

The related literature also supports the findings of this study. For example, Ang et al. (2007) explored the relationship between the four dimensions of cultural intelligence (Cultural Intelligence, CQ) — metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence — and Intercultural Communication Competence. The study found that there is a significant positive correlation between each dimension of cultural intelligence and Intercultural Communication Competence. Additionally, the study indicated that students from different countries perform differently on each dimension of cultural intelligence, reflecting the differences in educational culture and social environments among nations.

In terms of intercultural sensitivity, Guo-Ming Chen's (2000) Intercultural Sensitivity Scale has a high reliability, with a Cronbach's alpha of 0.951, well above the threshold of 0.9. Further analysis showed that intercultural sensitivity has a significant positive impact on Intercultural environmental awareness, especially in the dimensions of respect for cultural differences and interaction engagement.

In summary, intercultural sensitivity plays a key mediating role between cultural intelligence and Intercultural Communication Competence, and the impact of each dimension of cultural intelligence on Intercultural

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Communication Competence is supported by related research. Educators should consider how to enhance students' intercultural sensitivity when designing teaching programs to improve their intercultural communication skills.

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