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# Effects of Learner Variables on Chinese Bilingual Undergraduates' Intercultural Sensitivity and Effectiveness

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**Abstract:** This study investigated the effects of learner variables on Chinese bilingual undergraduates' intercultural sensitivity and effectiveness. A total of 439 students from different universities answered a battery of questionnaires. Major findings were: (a) the participants reported a moderate to high level of intercultural sensitivity and a moderate level of intercultural effectiveness; (b) no significant gender difference occurred in intercultural sensitivity and effectiveness, except for Interaction Engagement and Respect for Cultural Differences; (c) intercultural sensitivity and effectiveness were significantly positively related to and predicted each other; (d) confidence in learning English, self-efficacy in learning English and English classroom anxiety significantly predicted students' intercultural sensitivity; and (e) English classroom anxiety, English learning motivation, and self-efficacy in learning English significantly predicted students' intercultural effectiveness. Based on these findings, a path model was constructed which explains the relations among affect, intercultural communication sensitivity, effectiveness and competence.

**Keywords:** intercultural sensitivity; intercultural effectiveness; learner variable; path model



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## 1. Introduction

Because of globalization, international education has become increasingly popular around the globe. Many institutions of higher education in China and elsewhere in the world have been seeking to prepare students for life and careers in this globalized world by internationalizing campuses and curricula, increasing exchange opportunities, developing intercultural abilities, and so on. Consequently, a significant goal of higher learning currently is learning about oneself in relation to others [1], and intercultural competence is considered an important indicator of student outcome of internationalization [2,3]. By developing adequate intercultural competence, institutions of higher education are preparing students to work in a globalized and culturally diverse environment [3]. This is the same for institutions of higher education in China, which have become increasingly multicultural and multilingual as well during recent decades.

Despite increasing attention to intercultural communication competence (ICC), more research is needed to further understand different aspects of ICC (e.g., intercultural sensitivity and effectiveness), considering the vast number of learners with various cultural and linguistic backgrounds. Meanwhile, various linguistic, psychological, affective, cultural, educational, and personality factors may affect ICC and its components, including interpersonal skills, attitudes, personality, motivation, world view, self-confidence, pride, self-efficacy, anxiety, perfectionism, ethnocentrism, and narrow-mindedness [4]. Although studies on relationships between or effects of some variables on ICC and/or its components can be found, they are far from adequate. Additionally, mixed findings have been revealed for certain variables such as gender and proficiency, as reviewed below. Thus, to respond to the call in [5,6] for more research on ICC in relation to learner variables, this research sought to examine the effects of learner variables on the intercultural sensitivity and effectiveness of Chinese university students, who were primarily bilingual in Chinese and English, and mainly used English to communicate with people speaking languages other than Chinese.

## 2. Literature Review

Despite wide agreement on the importance of intercultural communication competence (ICC) in this globalized world, ICC has been interpreted differently. For example, Ref. [7] defined ICC as "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (p. 184). Ref. [8] defined ICC as "the appropriate and effective management of interaction between people who, to some degree or another, represent different or divergent affective, cognitive, and behavioral orientations to the world" (p. 7). Ref. [9] conceptualized ICC as "an individual's ability to achieve their communication goal while effectively and appropriately utilizing communication behaviors to negotiate between the different identities present within a culturally diverse environment" (p. 21). Even so, there is sufficient consensus that ICC covers three key components: intercultural awareness (cognitive aspect of ICC), intercultural sensitivity (affective aspect of ICC), and intercultural effectiveness/adroitness (behavioral aspect of ICC) [1,10–15]. Intercultural awareness refers to the ability to know about one's own and others' cultures; intercultural sensitivity represents the ability to distinguish between different behaviors, perceptions, and feelings of culturally different counterparts, as well as the ability to appreciate and respect them; intercultural effectiveness represents the ability to attain communication goals in intercultural interactions [9,12,16].

Consequently, ICC has been widely studied both as an entity encompassing a person's cognitive, affective, and behavioral capabilities, and as a product of a context [3,14,15,17–19].

### 2.1. Intercultural Sensitivity

Intercultural sensitivity is the ability "to develop emotion towards understanding and appreciating cultural differences that promotes appropriate and effective behavior in intercultural communication" [12] (p. 5). The importance of intercultural sensitivity has been realized by scholars from a variety of disciplines, who generally believe that intercultural sensitivity is a prerequisite for ICC between people from different cultures [16,20].

To measure people's understanding and appreciation of cultural differences, Ref. [21] validated the 24-item Intercultural Sensitivity Scale (ISS) which covers five dimensions: Interaction Engagement, Respect for Cultural Differences, Interaction Confidence, Interaction Enjoyment, and Interaction Attentiveness. The scale has been extensively utilized to distinguish individuals in various culturally different contexts [5,6,16,22–33]. These studies have generally revealed that intercultural sensitivity is a significant predictor of ICC, that individuals' respect for different cultures improves with the degree of their engagement in intercultural interactions, and that various factors such as education, proficiency in the target language, motivation, and study-abroad experience increase intercultural sensitivity. An interculturally sensitive individual is willing to acknowledge, recognize, respect and appreciate cultural differences during intercultural interaction [34]; people with higher intercultural sensitivity generally become more confident global citizens [16].

For example, Ref. [34] collected data from 432 American university students to examine the relationship among ethnocentrism, ICC, and intercultural sensitivity. The study revealed a negative relationship between intercultural sensitivity and ethnocentrism. Ref. [18] assessed the relationship between intercultural sensitivity and ICC among 108 international postgraduate students at University Malaysia Pahang. The study showed that they mutually affected each other and were two main factors that helped the participants to conduct proper and effective intercultural communication with people from different cultures. Ref. [16] administered the ISS to 40 Iranian and 40 Chinese undergraduate Business English students. The findings showed that Iranian participants scored higher on all ISS scales than Chinese participants. The study also showed that for both cohorts, the students' scores in all ISS scales increased with the increase in age, and male participants scored higher in all ISS scales, except for Interaction Enjoyment and Interaction Attentiveness, than female students. Ref. [19] administered an Intercultural Sensitivity Scale to 95 university learners of Turkish as an FL to examine their ICC in terms of age, gender, studying at State or Private Turkish language centers, mother tongue, years of learning Turkish language,

and overseas experiences. The findings revealed that the respondents demonstrated a high degree of ICC and that no significant difference occurred in the participants' ICC in terms of all measured individual variables except for Years of Learning Turkish. To determine the level of intercultural sensitivity of physicians and nurses, Ref. [35] administered the ISS and an open-ended question to 70 physicians and 87 nurses working in a Public Hospital. The study showed that there was a significant difference between total ISS score and scores in Interaction Engagement, Respect for Cultural Differences, and Interaction Confidence of participants who had had previous interaction with individuals from different cultures. The researchers thus recommended providing opportunities for physicians and nurses to gain experience abroad and in cultural sensitivity education.

### 2.2. Intercultural Effectiveness

Intercultural effectiveness enables individuals to achieve their communication goals in intercultural interaction through an appropriate and effective performance [12,36]. Until now, intercultural effectiveness has not been adequately researched [12]. Based on the available literature, Chen and her colleagues [9,12] grouped various components of intercultural effectiveness into five categories: message skills, interaction management, behavioral flexibility, identity management, and relationship cultivation. Message skills refer to the ability to use the language of a culture other than one's own [37]; interaction management involves taking turns in discussion, initiating and ending interaction "based on an accurate assessment of the needs and desires of others" [9] (p. 22); behavioral flexibility reflects "the ability to observe an interaction, distinguish and make use of appropriate behaviors, and adapt to the specific situational context" [9] (p. 23). Identity management helps an individual to maintain his/her counterpart's identity during the interaction [9]; relationship cultivation is "the ability to establish a certain degree of relationship with one's partner in order to satisfy each other's needs and reach a positive outcome of interaction" [37] (p.106). Consequently, intercultural effectiveness represents the "ability to maintain the face of one's culturally different counterparts" while interacting [36].

To measure intercultural effectiveness, Ref. [9] validated a 20-item Intercultural Effectiveness Scale (IES) with six factors: Behavioral Flexibility, Interaction Relaxation, Interactant Respect, Message Skills, Identity Maintenance, and Interaction Management. Interaction relaxation dictates the ability to be less anxious in intercultural interactions; interactant respect means the ability to show respect to their culturally different interactant [38]. This scale has been adopted/adapted in empirical research in differing contexts [1,3,15,17,29,39,40]. Ref. [39] proved the IES to be a useful tool to measure intercultural skills and growth. These studies, as well as those employing other self-reporting measures [10,11,41], reveal that students with experience with people of other cultures exhibit higher levels of intercultural effectiveness, and that intercultural effectiveness is closely related to, and an important indicator of, intercultural competence. Moreover, an interculturally effective person displays respect for other cultures and acts appropriately, as defined by the host culture [15].

For example, Ref. [40] studied whether a five-week Thai language course favored the development of intercultural effectiveness of international postgraduate students in a Thai public university. With pre- and post-test data, the study showed that the participants exhibited a moderate to high level of intercultural effectiveness during the period. Though no statistically significant difference occurred, the course did improve students' scores on the six IES subscales. Ref. [1] administered the pre-post IES to a cohort of approximately 20 students during a nine-month period program annually over a five-year period. The findings demonstrated significant growth in students' intercultural competency during the period. Ref. [3] investigated the effects of a short-term experience of working on a project assignment in a virtual multicultural team on students' intercultural effectiveness via a single-group pre-test-post-test research design. The study collected responses to the IES from 73 students of 16 nationalities studying in Russian and Japanese universities. Results showed that the students' overall intercultural effectiveness increased by the end

of the project and that significant increase occurred in five IES dimensions: Behavioral Flexibility, Interaction Relaxation, Interactant Respect, Message Skills, and Identity Maintenance. Ref. [11] collected questionnaire data from 142 students and interview data from 44 university students from different projects. They found that skills such as intercultural effectiveness and global competencies were more easily enhanced than attitudinal values, such as social responsibility and global civic engagement. Ref. [17] administered the IES to 12,732 students in a public university in Turkey and found that international students showed a higher level of intercultural effectiveness than their domestic counterparts.

### *2.3. Learner Variables and Intercultural Sensitivity and Effectiveness*

The research reviewed above shows that learner variables such as gender, age, discipline, experiences abroad, and years of learning a second language can affect an individual's intercultural sensitivity and effectiveness [16,19,35,42]. For example, 493 university students in Sydney answered the Multicultural Personality Questionnaire in [42]. The study revealed significant differences in intercultural effectiveness across various countries, as well as gender, non-traditional students, and bicultural study. Ref. [19] found significant difference in ICC between respondents with different years of learning Turkish but not between those with varying ages, genders, or mother tongues. Ref. [43] explored how study field, grade-point average (GPA), nationality, gender, university status, and grade level affected intercultural effectiveness of Bosnian university-level students. A total of 184 students studying at three universities in Bosnia and Herzegovina participated in the study. The results indicated that study field, GAP, gender, nationality, the interaction effect of study field x GPA, and the interaction effect of nationality and gender significantly affected intercultural effectiveness. Çiloğlan and Bardakçı's [24] study of 325 Turkish university students revealed a significant difference in intercultural sensitivity among students at different proficiency levels but not between genders. Ref. [44] found that intercultural contact and language learning motivation were significantly related to each other.

Ref. [13] collected quantitative data from 876 teachers and 266 university students in Japan and found a positive relation between self-efficacy and intercultural effectiveness. Bal's [5] mixed study of 113 Turkish university EFL learners found that no significant difference in intercultural sensitivity existed between genders or among students at different English levels, and that such learner factors as personal characteristics, family and social backgrounds, and having foreign teachers and friends at university contributed to students' intercultural sensitivity levels. Ref. [17] found that the following background characteristics were significant predictors of university students' intercultural effectiveness: grade level, parent's nationality, being and living in a foreign country, and having a close friend (s) from a different culture. Commander, Schloer, and Cushing's [45] study of 131 undergraduate and graduate students via a pre-post test design showed that virtual exchange positively impacted the development of students' intercultural effectiveness, and that no significant differences occurred in intercultural effectiveness between students of varying individual classes or disciplinary areas. Ref. [6] study of 218 international students studying in Chinese universities revealed that Chinese learning motivation and use of Chinese significantly positively predicted intercultural sensitivity but self-rated Chinese proficiency did not.

As discussed, findings about the effects of learner factors on intercultural sensitivity and effectiveness are mixed. For example, gender and grade level prove to be significant factors in some studies [42,43] but insignificant in others [5,19,24]. Moreover, considering the vast number of learners and various learner factors, research on the associations of learner factors and intercultural sensitivity and effectiveness is inadequate and more such research is needed.

## 3. Research Questions

As reviewed above, though intercultural sensitivity and effectiveness have caught increasing attention in recent decades, more research is needed to further understand them in different learners with various cultural and linguistic backgrounds. Moreover,

Hannigan's [4] review shows that a multitude of variables may affect intercultural sensitivity, effectiveness, and competence, including linguistic, psychological, affective, cultural, educational, and personality factors, such as interpersonal skills, attitudes, motivation, world view, confidence, self-efficacy, anxiety, perfectionism, ethnocentrism, and narrow-mindedness. Although some studies have examined the relationships between or effects of some variables on ICC, not much research is available and mixed findings have been revealed for certain variables, as reviewed above. Thus, as suggested in [5,6], how learner variables affect ICC should be a focus of future research. For these reasons, the present study aimed to examine the effects of learner variables on Chinese bilingual university students' intercultural sensitivity and effectiveness. The learner variables examined in this research included gender, use of English, English achievement, English classroom anxiety, confidence in learning English, self-efficacy in learning and English learning motivation, as they have been sporadically examined in the literature [6,13,44,46]. Another reason was that certain requirements such as motivation, knowledge, skills, and attitudes must be fulfilled by individuals to be interculturally competent [47]. The following research questions were of particular interest:

(1) What are the students' intercultural sensitivity and effectiveness levels?
(2) How are the students' intercultural sensitivity and effectiveness related to each other?
(3) How do learner variables affect the students' intercultural sensitivity and effectiveness?

## 4. Research Design

English has always been the primary foreign language in China, especially in institutes of higher education. Year-1 and year-2 college students are required to take at least one English language course per semester, which is conducted at least once a week. Classroom instruction is often reading-oriented, but more attention has been paid to speaking, listening, and writing in recent decades. Meanwhile, students have increasingly more access and exposure to English texts, videos, and films via internet and TV, and more chances to use English as more internationals have come to China in recent decades. Consequently, most Chinese university students are bilingual in Chinese and English. They also mainly use English to communicate with people from other cultures.

**Participants.** This research collected data from 439 students (209 male and 230 female) from universities in south China. With an age range of 17 to 26 (mean = 20.62, SD = 0.57), 86 of these participants were first-year students, 187 second-year, 104 third-year, and 62 fourth-year students; 286 majored in science and engineering, 15 in natural sciences, and 138 in humanities and social sciences. They generally spent a mean of 1.61 h (SD = 0.68) using English per day, and self-rated themselves as intermediate English learners, with a mean of 5.71 (SD = 2.07) in overall proficiency in English on the scale of 1–10.

**Instruments**. The data in the study were collected via a battery of questionnaires, as detailed below.

***English Classroom Anxiety Scale***. The eight-item English Classroom Anxiety Scale (ECAS) was adapted from that in [48] to measure general anxiety in English class. Three modifications were made to the items to better fit the present research: (a) 'English' replaced 'French'; (b) present tense replaced past tense; and (c) 'English class' replaced 'taking it'. Example items are 'I don't usually get anxious when I have to respond to a question in English class' and 'I am always afraid that the other students would laugh at me if I speak up in English class'. The higher the ECAS score, the more anxious a respondent was in English class.

***Confidence in Learning English***. The five-item Confidence in Learning English (CLE) was designed to measure students' confidence in learning English. Example items are 'I can access lots of materials to learn English' and 'I am confident in learning English well'. The higher the CLE score, the more confident a respondent was in learning English.

***Self-Efficacy in Learning English***. The three-item Self-Efficacy in Learning English (SELE) was designed to measure students' self-efficacy in learning English. Example items are 'I believe I have the ability to learn English well' and 'I believe I know how to find

an effective way to learn English'. The higher the SELE score, the higher self-efficacy a respondent had in learning English.

***English Learning Motivation Scale***. The 35-item English Learning Motivation Scale (ELMS) was adapted from that in [49]. To better suit the situation, only items concerning specific motivation were included and four modifications were made to the items: (a) 'present tense' replaced 'future tense'; (b) one item 'I study English because I want to study abroad' was added to the Extrinsic Motivation Scale, and one item 'I really want to learn more English than before' was added to the Personal Psychological Needs Scale; (c) 'China' replaced the word 'Egypt'; and (d) the phrase 'want to' was deleted because students were all registered in an English course. The resultant questionnaire had 35 items: 16-item Extrinsic Motivation (ELMS1), 9-item Expectation and Locus of Control (ELMS2), 5-item Personal Psychological Needs (ELMS3) and 5-item Intrinsic Motivation (ELMS4). Example items are 'I enjoy learning English very much', 'being able to speak English adds to my social status', and 'it is important to me to do better than the other students in my class'. The higher the ELMS score, the more motivated a respondent was to study English.

***The Intercultural Sensitivity Scale***. The 24-item Intercultural Sensitivity Scale (ISS) validated by [21] was adopted in this research. It covered five subscales: seven-item Interaction Engagement, six-item Respect for Cultural Differences, five-item Interaction Confidence, three-item Interaction Enjoyment, and three-item Interaction Attentiveness, as reviewed in the literature. The higher an ISS score, the more interculturally sensitive a respondent was. Example items are 'I get upset easily when interacting with people from different cultures', and 'I am very observant when interacting with people from different cultures'.

***The Intercultural Effectiveness Scale***. The 20-item Intercultural Effectiveness Scale (IES) validated by [9] was used in the present study, which included six dimensions: five-item Interaction Relaxation, four-item Behavioral Flexibility, three-item Interactant Respect, three-item Message Skills, three-item Identity Maintenance, and two-item Interaction Management. The higher an IES score, the more interculturally effective a respondent was. Example items are 'I use appropriate eye contact when interacting with people from different cultures' and 'I am able to express my ideas clearly when interacting with people from different cultures'.

All the questionnaire items were placed on a five-point Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree', with values 1–5 assigned to each alternative, respectively. Their reliability scores are presented in Table 1, which shows that all the scales were reliable, with reliability scores ranging from 0.671 to 0.963.

**Table 1.** Characteristics of Instruments ($n$ = 439).

| Measures | No. of Items | Reliability | Mean Item-Total Correlation ($p$ = 0.01) |
|---|---|---|---|
| English Classroom Anxiety Scale | 8 | 0.796 | 0.507 |
| Confidence in Learning English | 5 | 0.787 | 0.565 |
| Self-Efficacy in learning English | 3 | 0.761 | 0.592 |
| English Learning Motivation Scale | 35 | 0.824 | 0.320 |
| Intercultural Sensitivity Scale | 24 | 0.864 | 0.409 |
| Intercultural Effectiveness Scale | 20 | 0.834 | 0.403 |

***English achievement***. All participants were required to self-rate their overall English proficiency on a scale of 1 (very poor) to 10 (nativelike) as a measure of their English achievement.

***Background Information Questionnaire***. The Background Information Questionnaire covered participants' age, gender, major area of study, year of study, and use of English per day.

**Procedure**. The questionnaires were translated into Chinese and double-checked by a PhD student of English Literature proficient in both Chinese and English. They were then

distributed online together with a consent form in Chinese to university students during weeks 14–15 of an 18-week semester. All participation was voluntary. A total of 439 valid questionnaires was finally collected.

**Data analyses**. All the survey data was analyzed using SPSS 22. Means and standard deviations were computed to determine intercultural sensitivity and effectiveness levels; independent samples *t*-tests were run to examine gender differences in intercultural sensitivity and effectiveness; correlation analyses were conducted to examine the associations between intercultural sensitivity and effectiveness; and multiple regression analyses were performed to explore the predicting effects of learner variables on intercultural sensitivity and effectiveness. Finally, Mplus 8 was used to construct the path model for ICC.

## 5. Results

### *5.1. Intercultural Sensitivity and Effectiveness Levels and Gender Difference*

As reported in Table 2, the whole sample scored 3.24 to 3.84 on ISS scales, well above the scale midpoint 3, indicating that more than half participants were generally engaged (ISS1, mean = 3.77), confident (ISS3, mean = 3.24), and attentive (ISS5, mean = 3.78) in intercultural communication, respected cultural differences (ISS2, mean = 3.84), and enjoyed intercultural communication (ISS4, mean = 3.68). They thus displayed a moderate to high intercultural sensitivity level (ISS, mean = 3.67).

**Table 2.** Independent samples *t*-test results: gender difference.

| | **Whole Sample ($n$ = 439)** | | **Male ($n$ = 209)** | | **Female ($n$ = 230)** | | ***t*-Test Results** | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | ***t*** | ***p*** | **Cohen's d** |
| ISS1 | 3.77 | 0.55 | 3.70 | 0.55 | 3.84 | 0.54 | −2.67 ** | 0.008 | 0.26 |
| ISS2 | 3.84 | 0.57 | 3.75 | 0.59 | 3.93 | 0.54 | −3.38 ** | 0.001 | 0.32 |
| ISS3 | 3.24 | 0.74 | 3.296 | 0.72 | 3.19 | 0.76 | 1.54 | 0.124 | / |
| ISS4 | 3.68 | 0.88 | 3.66 | 0.89 | 3.697 | 0.86 | −0.48 | 0.633 | / |
| ISS5 | 3.78 | 0.63 | 3.77 | 0.65 | 3.79 | 0.61 | −0.33 | 0.743 | / |
| ISS | 3.67 | 0.48 | 3.63 | 0.48 | 3.70 | 0.47 | −1.54 | 0.123 | / |
| IES1 | 3.16 | 0.83 | 3.20 | 0.798 | 3.12 | 0.87 | 1.095 | 0.274 | / |
| IES2 | 2.77 | 0.65 | 2.79 | 0.66 | 2.76 | 0.65 | 0.470 | 0.638 | / |
| IES3 | 4.00 | 0.64 | 3.92 | 0.68 | 4.07 | 0.61 | −2.44 * | 0.015 | |
| IES4 | 2.74 | 0.88 | 2.799 | 0.87 | 2.69 | 0.89 | 1.28 | 0.202 | / |
| IES5 | 2.96 | 0.73 | 2.96 | 0.72 | 2.96 | 0.75 | −0.097 | 0.923 | / |
| IES6 | 3.18 | 0.93 | 3.23 | 0.897 | 3.13 | 0.96 | 1.09 | 0.277 | / |
| IES | 3.11 | 0.52 | 3.13 | 0.51 | 3.10 | 0.53 | 0.535 | 0.593 | / |

Notes. * = $p \leq 0.05$; ** = $p \leq 0.01$; ISS1 = Interaction Engagement; ISS2 = Respect for Cultural Differences; ISS3 = Interaction Confidence; ISS4 = Interaction Enjoyment; ISS5 = Interaction Attentiveness; ISS = Intercultural Sensitivity Scale. IES1 = Interaction Relaxation; IES2 = Behavioral Flexibility; IES3 = Interactant Respect; IES4 = Message Skills; IES5 = Identity Maintenance; IES = Interaction Management; IES = Intercultural Effectiveness Scale. Effect size of Cohen's d: small = d $\leq$ 0.2; medium = d = 0.5; large = d $\geq$ 0.8 [50].

Table 2 also shows that the whole sample scored 2.74 on IES4, 2.77 on IES2, 2.96 on IES5, 3.16 on IES1, 3.18 on IES6, 4.00 on IES3. and 3.11 on IES, all close to or above the scale midpoint 3. This means that in intercultural communication, more than half of participants were generally relaxed (IES1), were able to manage interaction (IES6), and respected their interactants (IES3). They were also generally able to use English (IES4) and maintain identity (IES5), and demonstrated behavioral flexibility (IES2) in intercultural communication. Hence, the whole sample demonstrated a moderate intercultural effectiveness level (IES).

As seen from Table 2, male and female students had similar scores on both ISS and IES scales as the whole sample did. Meanwhile, female students scored higher on all ISS scales except for ISS3, and lower on all IES scales except for IES3, than their male peers. Independent samples t-test results revealed significant difference only in ISS1 and ISS2, demonstrating that female students were significantly more engaged in intercultural

communication (ISS1, $t = -2.67$, $p = 0.008$) and respected cultural difference significantly more (ISS2, $t = -3.38$, $p = 0.001$), with a medium effect size (d = 0.26~0.32).

### 5.2. Correlations between ISS and IES Scales

Table 3 reports the correlations between ISS and IES scales, which shows that they were generally significantly positively related to one another ($r = 0.12$~$0.696$, $p \leq 0.05$), with a medium to large effect size, except for IES1 and ISS2, IES2 and ISS1, IES2 and ISS5, IES4 and ISS5, and IES6 and ISS2. This suggested that a more intercultural sensitive student tended to be more interculturally effective, or vice versa.

**Table 3.** Correlations between ISS and IES scales ($n = 439$).

| | ISS1 | ISS2 | ISS3 | ISS4 | ISS5 | ISS |
|---|---|---|---|---|---|---|
| IES1 | 0.482 ** | 0.052 | 0.745 ** | 0.282 ** | 0.369 ** | 0.543 ** |
| IES2 | 0.072 | 0.217 ** | 0.210 ** | 0.343 ** | −0.074 | 0.222 ** |
| IES3 | 0.619 ** | 0.515 ** | 0.395 ** | 0.368 ** | 0.509 ** | 0.655 ** |
| IES4 | 0.120 * | 0.141 ** | 0.438 ** | 0.376 ** | 0.084 | 0.323 ** |
| IES5 | 0.310 ** | 0.238 ** | 0.486 ** | 0.354 ** | 0.202 ** | 0.446 ** |
| IES6 | 0.408 ** | 0.035 | 0.696 ** | 0.238 ** | 0.348 ** | 0.484 ** |
| IES | 0.500 ** | 0.268 ** | 0.774 ** | 0.481 ** | 0.348 ** | 0.665 ** |

Notes. ** = $p \leq 0.01$, * = $p \leq 0.05$. Coefficient of determination: small = $r \leq 0.1$; medium = $r = 0.3$; large = $r \geq 0.5$ [50].

### 5.3. Profiles of Measured Learner Variables

Table 4 presents the means and standard deviations of measured learner variables, which shows that the participants used English for around 1.61 h per day, rated themselves as intermediate learners of English (Mean = 5.71), were moderately anxious (mean = 2.91) in English class, were (fairly) confident (mean = 3.52), and had good self-efficacy (mean = 3.699) in learning English. Meanwhile, they were generally motivated to learn English. With mean scores ranging from 3.01 to 3.21 on ELMS scales, they reported a moderate level of all kinds of motivation.

**Table 4.** Means and SDs of measured learner variables ($n = 439$).

| | UOE | EA | ECAS | CLE | SELE | ELMS1 | ELMS2 | ELMS3 | ELMS4 | ELMS |
|---|---|---|---|---|---|---|---|---|---|---|
| M | 1.61 | 5.71 | 2.91 | 3.52 | 3.699 | 3.21 | 3.01 | 3.49 | 3.09 | 3.18 |
| SD | 0.68 | 2.07 | 0.79 | 0.77 | 0.83 | 0.52 | 0.47 | 0.69 | 0.92 | 0.45 |

Notes. M = mean; SD = standard deviation; UOE and use of English per day; EA = English achievement; ECAS = English Classroom Anxiety Scale; CLE = Confidence in Learning English; SELE = Self-Efficacy in Learning English; ELMS1 = Extrinsic Motivation; ELMS2 = Expectation and Locus of Control; ELMS3 = Personal Psychological Needs; ELMS4 = Intrinsic Motivation; ELMS = English Learning Motivation Scale.

### 5.4. Effects of Learner Variables for Intercultural Sensitivity and Effectiveness

To examine the effects of learner variables on intercultural sensitivity and effectiveness, step-wise multiple regression analysis was run, with learner variables as dependent variables, and IES and ISS as the respective independent variable. Gender was excluded because t-test results proved it to be insignificant in affecting ISS and IES (see Table 2). The results are reported in Table 5, which shows that CLE (Confidence in Learning English), SELE (Self-Efficacy in Learning English), and ECAS (English Classroom Anxiety Scale) were good predictors for students' intercultural sensitivity, accounting for 31.1%, 2.8%, and 1.3% of the total variance, respectively. ECAS ($\beta = -0.141$, $t = -2.958$, $f^2 = 0.54$) was a negative, while CLE ($\beta = 0.330$, $t = 5.659$, $f^2 = 0.45$) and SELE ($\beta = 0.206$, $t = 3.682$, $f^2 = 0.51$) were positive predictors.

**Table 5.** Multiple regression coefficients and significance of predictors for ISS and IES ($n$ = 439).

| | **1. ISS** | | | | |
|---|---|---|---|---|---|
| | **β** | ***t*** | ***p*** | **VIF** | **Cohen's $f^2$** |
| CLE | 0.330 | 5.659 ** | 0.000 | 2.288 | 0.45 |
| SELE | 0.206 | 3.682 ** | 0.000 | 2.102 | 0.51 |
| ECAS | −0.141 | −2.958 ** | 0.003 | 1.533 | 0.54 |
| | **2. IES** | | | | |
| | **β** | ***t*** | ***p*** | **VIF** | **Cohen's $f^2$** |
| ECAS | −0.293 | −6.046 ** | 0.000 | 1.60 | 0.37 |
| ELMS | 0.169 | 3.399 ** | 0.001 | 1.688 | 0.49 |
| SELE | 0.164 | 3.202 ** | 0.001 | 1.786 | 0.56 |
| ELMS4 | 0.116 | 2.041 * | 0.042 | 2.201 | 0.57 |

Notes. ** = $p \leq 0.01$; * = $p \leq 0.05$. Effect size of Cohen's $f^2$: small = $f^2 \leq 0.02$; medium = $f^2 = 0.15$; large = $f^2 \geq 0.35$ [50].

As seen from Table 5, ECAS, ELMS (English Learning Motivation Scale), SELE, and ELMS4 (Intrinsic Motivation) were good predictors for students' intercultural effectiveness, accounting for 26.9%, 6.2%, 2.5%, and 0.3% of the total variance, respectively. ECAS (β = −0.293, $t$ = −6.046, $f^2$ = 0.37) was a negative, while ELMS (β = 0.169, $t$ = 3.399, $f^2$ = 0.49), SELE (β = 0.164, $t$ = 3.202, $f^2$ = 0.56) and ELMS4 (β = 0.116, $t$ = 2.041, $f^2$ = 0.57) were positive predictors.

To further examine the effects of intercultural sensitivity and effectiveness on each other, step-wise multiple regression analysis was run, with IES and ISS as the respective independent variable, and ISS/IES scales as dependent variables, correspondingly. The results are reported in Table 6, which shows that IES (Intercultural Effectiveness Scale) and IES3 (Interactant Respect) were good predictors for students' intercultural sensitivity, accounting for 44.2% and 16.9% of the total variance, respectively. Both IES (β = 0.470, $t$ = 14.23, $f^2$ = 0.79) and CLE (β = 0.454, $t$ = 13.74, $f^2$ = 0.64) were positive predictors.

**Table 6.** Effects of ISS and IES on each other ($n$ = 439).

| | **1. ISS** | | | | |
|---|---|---|---|---|---|
| | **β** | ***t*** | ***p*** | **VIF** | **Cohen's $f^2$** |
| IES | 0.470 | 14.23 ** | 0.000 | 1.223 | 0.79 |
| IES3 | 0.454 | 13.74 ** | 0.000 | 1.223 | 0.64 |
| | **2. IES** | | | | |
| | **β** | ***t*** | ***p*** | **VIF** | **Cohen's $f^2$** |
| ISS3 | 0.609 | 14.60 ** | 0.000 | 2.025 | 1.49 |
| ISS | 0.231 | 5.53 ** | 0.000 | 2.025 | 0.6 |

Notes. ** = $p \leq 0.01$.

Table 6 also shows that that ISS3 (Interaction Confidence) and ISS (Intercultural Sensitivity Scale) were good predictors for students' intercultural effectiveness, accounting for 59.9% and 2.6% of the total variance, respectively. Additionally, both ISS3 (β = 0.609, $t$ = 14.60, $f^2$ = 1.49) and ISS (β = 0.231, $t$ = 5.53, $f^2$ = 0.6) were positive predictors.

### *5.5. A Path Model for ICC*

The findings presented above showed that learner variables significantly predicted both IES and ISS, and that IES and ISS were significantly correlated with and predicted each other. Moreover, the literature shows that intercultural sensitivity and effectiveness are important indicators of ICC [4,11,15,51]. Meanwhile, affect covers various feelings and attitudes, including anxiety, confidence, self-efficacy, and motivation. Therefore, a path model was run to examine the path relation between the measured variables and ICC,

with affect and ICC as latent variables, and IES and ISS as observed variables: Affect was indicated by ECAS, CLE, SELE, and ELMS; and ICC was indicated by ISS and IES. The result is presented in Figure 1, with the goodness-of-fit indices being: $\chi^2 = 53.876$, $p < 0.01$, GFI = 0.921, RMSEA = 0.076, CFI = 0.901, SRMR = 0.05.

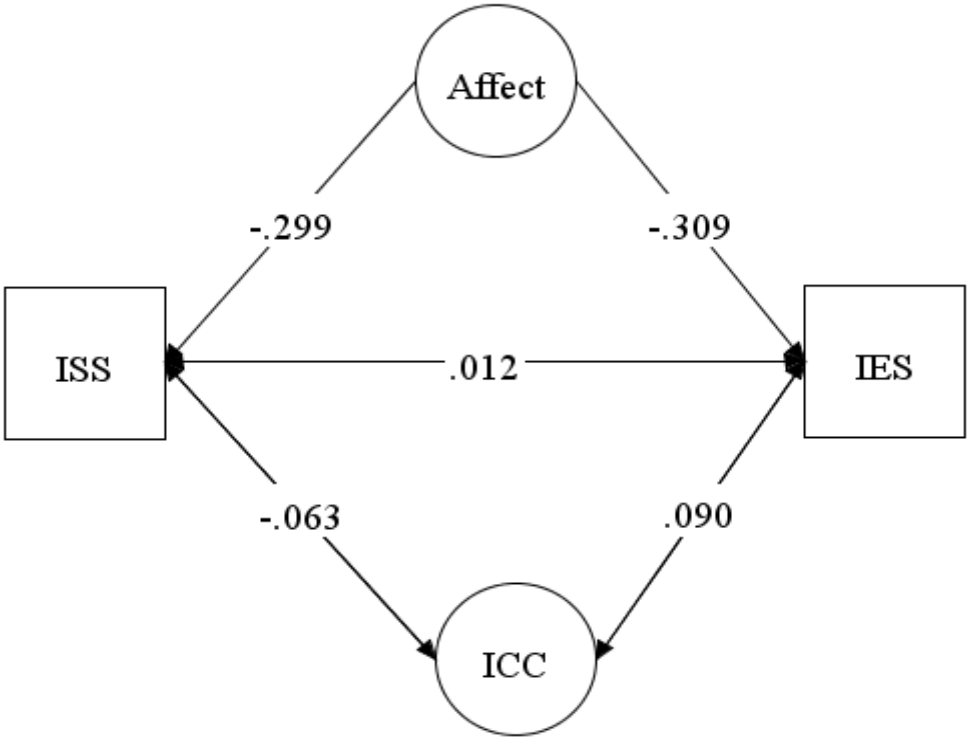


**Figure 1.** The path model for ICC.

As shown in Figure 1, affect significantly inversely predicted both ISS (β = −0.299, $p < 0.01$) and IES (β = −0.309, $p < 0.01$); ISS and IES mutually significantly positively predicted each other (β = 0.012, $p < 0.05$); and ISS significantly negatively (β = −0.063, $p < 0.05$), while IES significantly positively (β = 0.090, $p < 0.05$), predicted ICC.

## 6. Discussion

This research examined intercultural sensitivity and effectiveness in relation to learner variables in China. Results showed that both ISS and IES were reliable, and generally significantly highly positively related to and significantly predicted each other, further supporting the finding in [28].

### *6.1. Students' Intercultural Sensitivity and Effectiveness Levels*

This study revealed that the participants displayed a moderate to high level of intercultural sensitivity, as well as Interaction Engagement, Respect for Cultural Differences, Interaction Confidence, Interaction Enjoyment, and Interaction Attentiveness, respectively, which is generally consistent with the findings in the reviewed literature [22,23,25]. The respondents were generally (much) delighted and satisfied in interacting with people from different cultures, and able to respond positively to their interactants' messages and adapt to specific situations, as discussed in [34]. This is probably because Chinese university students have had increasingly more contact with English and English-speaking people as China is becoming more international and multicultural in recent decades.

The study also showed that the participants had a moderate level of intercultural effectiveness, as well as Interaction Relaxation, Interaction Management, Interactant Respect, Message Skills, Identity Maintenance, and Behavioral Flexibility, respectively, as found in [1,3]. As found in [9], the participants in this research were generally behaviorally

flexible, relaxed, and able to differentiate appropriate behaviors, maintain identity, and manage interaction during intercultural communication. They demonstrated the ability to deliver, take, and respond to messages, and respected their interactants during intercultural communication as well.

Meanwhile, though female students generally scored higher on ISS scales than their male peers, significant difference occurred only in ISS1 and ISS2, different from the finding in [5,19] but partially similar to that in [24]. Though female students were significantly more engaged in intercultural communication and respected cultural difference significantly more, they were like their male peers in other aspects of intercultural sensitivity. This might be because female students tended to be more patient, careful, and caring in interactions. Furthermore, female students generally scored lower on IES scales than their male peers, yet no significant difference occurred in any IES scale, different from the finding in [42,43]. All these findings attest to the necessity of further research to better understand the complex relation between gender and intercultural sensitivity and effectiveness.

### *6.2. Effects of Learner Variables on Students' Intercultural Sensitivity and Effectiveness*

As found in [6], the respondents in the present study rated themselves as intermediate learners of English and reported having some use of English per day. This was highly probably because the participants had little or even less chance of using English, especially by speaking it, during the COVID-19 pandemic when strict rules were executed to prevent foreigners entering China.

Meanwhile, the study revealed that the participants were moderately to highly motivated to study English, as learners were in similar FL contexts [52–55]. As higher education in China has always emphasized the importance of English, Chinese university students have generally reported to be moderately or even highly motivated to study the language [54,56].

Regression analyses showed that confidence in learning English, self-efficacy in learning English, and English classroom anxiety were good predictors for students' intercultural sensitivity, and that English classroom anxiety, English learning motivation, and self-efficacy in learning English significantly predicted students' intercultural effectiveness. Alternatively, higher confidence, greater self-efficacy, and lower English classroom anxiety led to a higher level of intercultural sensitivity; greater motivation, lower English classroom anxiety and higher self-efficacy led to a higher level of intercultural effectiveness. These findings generally conformed with or further supported those in the available literature [6,13,25,44,46,52,57]. For example, in [44,46], language learning motivation was positively related to ICC. Ref. [13] found that self-efficacy played an important role in fostering language learning and intercultural communication.

Surprisingly, differently from [24,43], the present study found that language achievement did not significantly predict intercultural sensitivity or effectiveness, as found in [5]) and [6]. This might be due to two reasons: (a) students' self-rated overall English proficiency might not truly reflect their real language achievement; (b) students might have underestimated their English proficiency when they had limited or less exposure to and use of English during the pandemic, as discussed in [6].

Differently from [6,57], use of English significantly predicted neither intercultural sensitivity nor effectiveness in this research. This might be because, unlike the SL context in [6,25,57], where contact with native speakers increased participants' intercultural sensitivity and effectiveness, the FL context did not provide learners with much interaction and experience with English-speaking people and culture. This was especially so during the pandemic, when gatherings were not encouraged or even forbidden to prevent spread of COVID-19. The participants might thus have had limited access to speech communications, which resulted in an insignificant effect of use of English on intercultural sensitivity and effectiveness.

Based on these findings, a path model was constructed to further explain the relations among affect, intercultural sensitivity, effectiveness, and competence, pinpointing the

important role of affect in intercultural communication. Nevertheless, the model needs to be confirmed in future research.

## 7. Conclusions

The present study explored the effects of learner variables on Chinese university students' intercultural sensitivity and effectiveness. Major findings were:

(1) The participants displayed a moderate to high level of intercultural sensitivity and a moderate level of intercultural effectiveness;
(2) Female students were significantly more engaged in intercultural communication and respected cultural difference significantly more;
(3) Intercultural sensitivity and effectiveness were significantly positively related to and predicted each other;
(4) Confidence in learning English, self-efficacy in learning English, and English classroom anxiety were good predictors for students' intercultural sensitivity;
(5) English classroom anxiety, English learning motivation, and self-efficacy in learning English significantly predicted students' intercultural effectiveness.

Based on these findings, a path model among affect, intercultural sensitivity, intercultural effectiveness, and ICC was built. As campuses of higher education become increasingly multicultural and multiethnic, it is increasingly important to foster intercultural awareness, sensitivity, and effectiveness in communication among culturally diverse students [40].

To enhance students' intercultural sensitivity and effectiveness levels, study abroad is a good, but not the only, means [58]. Ref. [43] indicated that the university milieu could help develop and increase students' intercultural effectiveness and suggested that ICC should be integrated into curricula and teaching content, as did [5,59]. For most schools and students who do not have chances to study abroad, it is recommended to offer various courses and activities that enrich students' awareness of and respect for different cultures, leading to enhanced sensitivity to and effectiveness in intercultural communication and higher ICC [3,5,11,13,35,40,43,45,58,60,61]. Such courses and activities can be in various forms such as culture-enriched language courses, general and discipline-specific ICC courses, (virtual) multicultural team assignments, (virtual) exchange programs, and workshops. Ref. [40] showed that language courses were effective in improving students' intercultural effectiveness. Ref. [3] study indicated that virtual multicultural team assignments contributed to the development of intercultural competence as a meaningful internationalization outcome, and therefore may be an appropriate and cost-effective tool for enhancing internationalization at home. Ref. [11] found that immersion in a cross-cultural context helped students learn to appreciate diverse values and cultures. Adili and Petrovska's [22] study showed that teachers working in multicultural settings exhibited higher intercultural competence. It is hoped that these courses and activities can help sharpen students' interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment, and interaction attentiveness to enhance their intercultural sensitivity, as well as interaction management, behavioral flexibility, message skills, identity management, and relationship cultivation to foster their intercultural effectiveness in intercultural interactions. Meanwhile, it is important to understand how university teachers understand intercultural sensitivity, intercultural effectiveness, and intercultural competence, and to what extent they are interculturally sensitive and effective, so that appropriate training and activities can be organized [40,62].

Concurrently, students must be aware of their own intercultural competence levels, which is a crucial first step that triggers appropriate behavioral adjustments to cultural differences [63]. As suggested by [51], they should often self-reflect on their own progression and development to make appropriate adjustments accordingly. Moreover, though use of English and English achievement proved not to be good predictors for students' intercultural sensitivity and effectiveness, it is still important for students to improve proficiency in and increase the use of the target language [3,13,29,30]. Hence, they may become more

interested in and motivated to study the language and its culture, and more willing to participate and more confident in intercultural interactions [13,45,51,61,64].

The present research contributed to the current literature by examining intercultural sensitivity and effectiveness in relation to affective factors in a Chinese culture-specific context. Based on the results, an ICC path model was proposed in the research. Even so, some limitations existed in the study. One limitation was the use of self-rated proficiency as the measure of English achievement, while a standardized test might have better demonstrated students' proficiency in English. Future research should be cautious about the use of self-ratings. Another limitation was that the results were solely based on quantitative data, while qualitative data could have helped explore more specific details about the participants' intercultural sensitivity and effectiveness, and how the affective variables affected their intercultural sensitivity and effectiveness. Moreover, as discussed in [51,65], intercultural competence is a developmental process, as are intercultural sensitivity and effectiveness. Hence, longitudinal studies are called for to better understand the developmental trajectories in intercultural sensitivity, effectiveness, and communication, which also enable researchers to explore which factors affect development during the process [6]. Since each context is specific, future research should also compare intercultural sensitivity and effectiveness between students in different learning contexts and examine what reasons and motivations cause the differences in intercultural sensitivity and effectiveness, as advised in [17]. Such studies will also help to understand how intercultural sensitivity and effectiveness are related to global citizenship and internationalization. It is equally important to explore intercultural sensitivity and effectiveness in students learning different foreign languages, as increasingly more foreign languages are being taught and learned in Chinese institutes of higher education, and more internationals speaking differing native languages come to China. Furthermore, the effects of more learner variables on ICC and its components need to be examined to confirm, better, or expand the path model constructed in this research.

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