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EDITED BY

Natanael Karjanto,
Sungkyunkwan University, Republic of Korea

REVIEWED BY

Eduard Babulak,
National Science Foundation (NSF),
United States
Ratna Lindawati Lubis,
Telkom University, Indonesia

*CORRESPONDENCE

Xuechen Yuan
✉ xyuan3@lakeheadu.ca

RECEIVED 13 June 2023

ACCEPTED 14 September 2023

PUBLISHED 10 October 2023

CITATION

Yuan X (2023) Confucian or confusion?
Analyses of international students' self-rated
intercultural sensitivity and its sociocultural
predictors at Canadian universities.
Front. Educ. 8:1239177.
doi: 10.3389/feduc.2023.1239177

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Confucian or confusion? Analyses of international students' self-rated intercultural sensitivity and its sociocultural predictors at Canadian universities

Xuechen Yuan*

NORDIK Institute, Algoma University, Sault Ste. Marie, ON, Canada

Introduction: In mainstream psychological research, Confucian heritage culture is often the scapegoat for subjecting Confucian heritage culture students to cultural archetypes of reticence, obedience, and unassailability, leading to the stigmatization of international students. This study examines differences in international students' self-rated intercultural sensitivity and the potential discrepancy that exists between large-scale differences in sociocultural dimensions and student perceptions of these dimensions.

Methods: A total of 120 international students enrolled at Canadian universities completed an online questionnaire which combines existing validated surveys on intercultural sensitivity and perceptions of sociocultural dimensions. Students were divided into two groups: Confucian and non-Confucian groups. The data analysis techniques include AN(C)OVAs, hierarchical linear regression, and Spearman's rho correlation.

Results: The quantitative analyses lead to the main findings as follows: 1) Confucian heritage culture has little predictive value to intercultural sensitivity; 2) Confucian student group does not uniquely identify with Confucian values; 3) Second language apprehension, as the sole predictor, accounts for more variation in intercultural sensitivity than most sociocultural predictors combined.

Discussion: This study demonstrates that deterministic views of heritage culture may not accurately reflect international students' personal identification with their heritage culture. Therefore, further research is needed to illuminate the role of studying abroad in deconstructing general culture and contextualizing students' assumed fixed identities.

KEYWORDS

Confucian heritage culture, international students, intercultural sensitivity, willingness to communicate, global citizenship, long-term orientation, power distance, vertical collectivism

Introduction

In school curricula and vocational settings, research in intercultural sensitivity and intercultural skill development have gained wide relevance globally in the era of internationalization of education (Chen and Starosta, 1996; Sercu, 2004; Chen and Portalla, 2009; Wang and Zhou, 2016; Ilie, 2019). Intercultural sensitivity has emerged as a significant theme across various professions such as education, health care, and social work, aimed at providing culturally appropriate services to intercultural communities and fostering cultural awareness among the public (Fernández-Borrero et al., 2014). Canada is one of the most popular

destinations for international students to pursue tertiary education (Volante et al., 2017). Given the diversity of student bodies and rapid influx of international students over the past decade, the need for cultural exchanges and the removal of cultural barriers becomes urgent (Government of Canada, 2020). As of 2017, approximately 40% of Canada's international students come from East Asian countries/regions such as mainland China, South Korea, Vietnam, Japan, Hong Kong, and Taiwan, all of which are predominantly influenced by Confucian heritage cultures (CHC) that deeply value family cohesion, filial obligation, respect for authority, and collectivism (Pyke, 2000; CBIE, 2018; Sun et al., 2019).

Moving overseas for the first time could be anxiety-provoking. Studies on the adjustment dynamics of international students in North America pointed to a clear trend in which Australians, Europeans, and Americans tend to report higher life satisfaction and fewer adjustment challenges than Asian and African students (Redmond and Bunyi, 1993; Sam, 2001; Ward et al., 2001; Yang et al., 2006; Chirkov et al., 2007, 2008; Fritz et al., 2008). While most Canadian universities are comprised of a multicultural student population, popular cultural discourse is often prone to essentialist understanding, suggesting that East Asians are less capable of intercultural communication because of their upbringing in Confucian culture (Shao and Gao, 2016). Yeo et al. (2019) argues that CHC students experience specific microaggression targeting their reputations for having limited communication skills (e.g., alone, silent, shy, passive), which is uncommon among other racialized international students (Zhu and Bresnahan, 2018; Padgett et al., 2020).

A plethora of studies have shown and taken for granted the extensive CHC student characteristics, basing their findings on surface expressions and general cultural framework (Cheng, 2000; Narain, 2014). For instance, previous quantitative studies on similar topics found a negative association of Confucian cultures with school belonging (Cortina et al., 2017), communication skills (Abubaker, 2008), peer support and social integration (Rienties and Tempelaar, 2013), and prosocial behaviour (Guo et al., 2018). Despite their valuable insights to predict cultural differences on a national level, the validity of studies to uncritically accept framework emanated from generalization to assume student experiences may not be warranted, since other societal products and contextualized factors may jointly lead to shared cognition other than a shared national ideology (Dennehy, 2014). Similarly, national cultural differences may not always predict differences among international students (Oyserman et al., 2002). Thus, there is an urgent need to reflect on the equivocal nature of “who” embodies that “culture” to prevent generalized findings to be disseminated in the totality.

This study responds to Cheng's (2000) call for re-examining culture-specific causes of CHC students' so-called communication incompetence. Behind the mosaic of cultural tendencies, there are only scant findings from quantitative and comparative studies, in Canada and across the globe, to examine whether actual perceptions of socialization experiences differ among students across culture, and whether culture or situational factors are more important for intercultural interaction.

Confucian virtues and Confucian heritage culture

Confucianism has a profound impact on East Asian countries because of its deep entwinement with regional politics (Sun, 2013; Sun et al., 2019). The term “Confucian” translates to “*The Way of the*

Cultivated Person,” which emphasizes the lifelong practice of humanistic virtues for self-cultivation, including *Ren* (benevolence), *li* (propriety), and *yi* (righteousness; Sun et al., 2019; Song, 2021). These virtues are also interconnected with *wulun* (five hierarchical relationships), which has been the main pillar of harmonious social order throughout East Asian history (Zhan and Wan, 2016). *Ren* is the core aspect of humanity, which denotes kindness, empathy, and altruism as the ideal ontology of personhood (Legge, 2010). All other virtues ought to act in tandem with *ren*. Additionally, both *wulun* and *li* govern the necessary condition for reverence of authority, filial piety, and welfare of subordinates. This has strongly shaped individuals' understanding of peaceful and collective relationship. The preference for maintaining the proper relationship and face concerns has often been cited as a source of East Asian students' obedience and reticence in school, when *ren* is taken out of the context (Kennedy, 2002). *Yi* involves weighing practical and moral values of one's actions, and complements *li* to ensure that one's actions are both propitious and driven by altruistic motives (Koller, 2018).

Impacted by Confucianism, social norms are important agents of control that are highly respected, deviation from norms may potentially lead to peer criticism, loss of face, and shame (Roland, 2020). Confucian virtues hold significant cultural relevance as they have long influenced ways of living among individuals in CHC societies (Nguyen et al., 2006; Sun et al., 2019). Confucian teaching methods also hold that the cultivation of peace and harmony is the objective of education and the ultimate goal for self-actualization (Ryu, 2010; Hertler, 2015). Therefore, listening skill is often regarded as a more superior linguistic skill to avoid clumsy discourses that destroy harmonious relationships, and silence is the medium for active listening (Lu and Hsu, 2008). A few studies showed that many CHC students choose a silent strategy in class when they perceive the study context as more compatible with listening and reading, and incompatible with speaking out (Jackson, 2002; Zhou et al., 2005; Tran, 2012; Shao and Gao, 2016; Liu, 2017). CHC students typically exhibit a preference for reflexive and precision-oriented learning styles, favouring structured approaches that depend less on overt expression of opinions and questioning authorities (Nguyen et al., 2006; Karjanto, 2022). This strategy is often criticized by many as promoting rote memorization and surface learning, while undermining that memorization is a key element to deep learning not limited to CHC students alone and that students employ alternative ways to stay reflexive (Chanock, 2010; Bowden et al., 2013; Li and Wegerif, 2014; Penfold and van der Veen, 2014).

The debates over cultural versus situational, such as the influence of CHC on the modern society span a spectrum ranging from the utmost deterministic view of culture to a social constructionist view of the lifeworld (Park, 2011). Hwang (2012) argues that contemporary understanding of CHC still tends to reduce culture into dichotomous pre-set which negates “commonalities in psychological functioning across different cultures” shaped by ecocultural conditions of culture and language expression (p. 10). Deterministic views of culture posit that CHC students' interactive and learning habits in-and-out of classroom are a direct result of CHC carryover, whereas a more fluid view of culture emphasizes that students construct their own strategies based on societal expectations and situation-specific factors (O'Dwyer, 2016). A qualitative study by Tran (2012) argues that passive and reticent behaviour in classroom may be relevant for both CHC and non-CHC students, reflecting their adaptive decision making within the learning context rather than culture. Penfold and van der Veen (2014) also found that university teachers' capacity to effectively implement student-centered learning in CHC classrooms is impeded

by an over-attribution of CHC characteristics. Nevertheless, [Karjanto and Simon \(2019\)](#) indicates that instructional designs cannot fully override challenges associated with student engagement in classroom due to culture, highlighting the two-sidedness of culture and context.

CHC is frequently used as a buzzword to describe the distinct cultural features of East Asian international students and for western teachers to understand the expectations and culturally appropriate ways to educate them. However, as [O'Dwyer \(2016\)](#) has argued, Confucianism has never been fully embraced by the lives of ordinary individuals in CHC societies, but serves primarily as a institutional dogma of the nation to regulate social order and political systems ([Ai, 2008](#)). Therefore, researchers must be cautious that, in CHC societies students' interactive and learning orientations tagged with 'Confucian culture' may not necessarily align with their personal identification with that culture, nor can it be a direct result of unreflexive inscription on their identities ([O'Dwyer, 2016](#)).

Linking Confucian virtues with cultural dimensions theory

For decades, [Hofstede's \(1984\)](#) cultural dimensions theory has been widely applied as a framework to predict values and behaviours in workplace ([Wu, 2006](#)). [Hofstede \(2001\)](#) proposed the applicability of cultural dimensions theory in educational setting. This has led to a few quantitative studies using it to shed insights on school issues. As a scholar who grounds his work of cultural dimensions on the analysis of international organizational behaviour, [Hofstede \(1984\)](#) argues that each culture's worldview is distinguishable and not universal. Presuming that the nature of mind is cultural-specific, he defined five dimensions: Individuality-collectivism, power distance, uncertainty avoidance, masculinity-femininity, and long-term orientation. In an intercultural educational context, studies of cultural dimensions primarily focus on individual-collectivism and power distance while others are comparatively less studied ([Alshahrani, 2017](#)).

Of the five cultural dimensions, only individuality-collectivism, power distance, and long-term orientation seem to align consistently with CHC ([Nguyen et al., 2006](#)). Specifically, Confucianism cannot fully explain the differences in uncertainty avoidance and masculinity-femininity across East Asian cultures. For example, Japan, Korea, and Taiwan have high uncertainty avoidance, whereas mainland China, Hong Kong, and Vietnam are on the lower end of the continuum, despite their similar individuality-collectivism and power distance indices. Similarly, Japan and mainland China are remarkably more masculine than Korea and Vietnam ([Hofstede Insights](#)). According to [Hofstede Insights](#), all six CHC countries have a relatively lower level of Individualism and higher levels of power distance and long-term orientation, revealing the influence of CHC to some degree.

The dimension of individuality-collectivism pertains to the level to which individuals value individual rights and group relationships ([Hofstede, 2011](#)). Individualism encourage innovative, competitive, and risk-taking attitudes that prioritize productivity over basic survival needs ([Breuer et al., 2014](#)), whereas collectivism focuses on subordinating self-interest to more nebulous group identity ([Hofstede, 2011](#)). Each East Asian country is collectivistic, more or less ([Načinović Braje et al., 2019](#)). More specifically, [Hofstede \(2011\)](#) characterizes East Asian countries as vertically collectivist, which refers to a society with strong collectivism and hierarchical dominance; statuses of people in within a group are assigned unequally in pursuit of a collective group goal ([Shavitt et al., 2011](#)).

Power distance refers to the "extent to which the less powerful members of a society expect and accept that power is distributed unequally" ([Hofstede, 2001](#), p. 98). It measures two interconnected aspects: power and social inequality. Low power distance pertains to a more horizontal (egalitarian) orientation concerning social norms of status, capital, class, and rights, whereas high power distance societies tend to think of power as a desirable agent of control, and that a vertical (hierarchical) orientation toward all aspects of life including status hierarchy, wage disparity, and discrimination are acceptable ([Sharma, 2009](#)). Power distance has been found to correlate with collectivism ([Hofstede, 1983](#)) and high power distance societies with a collectivist culture tend to be more vertical ([Sharma, 2009](#)). In Confucian teaching, the concepts of wulun (hierarchical relationships), yi (righteousness), and li (propriety) have remarkably shaped perceptions of power in CHC countries. Power relations are manifested in various facets of interpersonal relationships, including teacher-student and parent-child dynamics ([Zhan and Wan, 2016](#)). Reverence for power within unequal relationships is evident in all CHC countries as means to maintain societal stability and roles and reinforce proper conduct ([Nguyen et al., 2006](#)).

The concept of long-term orientation was first introduced by [Hofstede \(2001\)](#) and was initially named Confucian dynamism in 1988 ([Sharma, 2009](#)). Long-term orientation is aptly named to describe the dynamic way of thinking oriented toward an unforeseeable future ([Hofstede, 2011](#)). According to [Hofstede \(2001\)](#), the most long-term oriented countries are all from CHC countries. Students with long-term orientation tend to focus on long-term rewards and hard work rather than an immediate pleasure to ensure that they have enough resources to help themselves and their families achieve freedom of choice, rather than idolized freedom of self-expression akin to features of individualistic cultures ([Hofstede, 2001](#)). Long-term oriented societies are more pragmatic in terms of planning for themselves and displaying ren (benevolence), "a little man's love of another is seen in his indulgence of him" ([Legge, 2010](#), p. 351). While Confucius highlighted the importance of compassion for others, he also stressed the importance of maintaining a sense of yi (righteousness) to prevent peoples from being overly indulgent in their desire to help others for immediate emotional gratification, without thinking the consequence of their actions on the others and future self ([Legge, 2010](#)). In general, peoples in non-CHC societies are thought to be more short-term oriented ([Guo et al., 2020](#)), they tend to be more indulgent in spending, donating, and sharing ([Hofstede, 2001](#)). [Rienties and Tempelaar \(2013\)](#) found that long-term orientation positively correlates with power distance among university students. On the national level, long-term orientation was found to negatively correlate with individualism and prosocial behaviour ([Guo et al., 2018](#)). Collectivism reduces the negative impact of long-term orientation on prosocial behaviour, hinting toward a group orientation on welfare investment. Power distance also moderates the strength of association, in which higher power distance societies may rely more on authority figures to support lower status individuals ([Luria et al., 2015](#)).

Cultural dimensions in school settings

With the socioeconomic transformation and internationalization of education, cultural traditions have become more blurred. Yet, CHC may remain as an unconscious frame of reference that continues to

shape students' subjective well-being (Steele and Lynch, 2013). For CHC international students, parent expectation and family obligation may result in a downplay of needs to socialize and learn to adapt to host culture, with greater emphasis on long-term academic attainment (Hui et al., 2011; Rienties and Tempelaar, 2013; Zhu and Bresnahan, 2018). Cortina et al. (2017) noted that East Asian students tend to exhibit a sense of restraint in the process of learning and prioritize delayed gratification, but this can also lead to increased academic anxiety.

Teacher-student interaction in classroom is often determined by the level of power distance in a culture (Wu, 2006). In high power distance cultures, classrooms are more standardized in that they are more teacher-centred, whereas classes in low power distance cultures have a flatter power structure so that dissenting opinions are tolerated. Students in high power distance classes are expected to conform to teachers to avoid public criticisms and to save face, regardless of their feelings about the teachers. Even though collaborative learning is more efficient in CHC, students choose to study alone and behave more submissively in class due to a sense of publicized shame (Alshahrani, 2017). It is not uncommon for East Asian students to avoid clarification in classes when they do not understand a concept but ask teachers in-person outside the classes. Zhang (2005) has noted that student perception of power distance in classroom associates with their communication apprehension. Transition to a low power distance environment such as western universities does not always minimize their strong perception of power distance (Alshahrani, 2017). In Rienties and Tempelaar's (2013) studies conducted at Dutch universities, power distance negatively correlates with all school adjustment factors (emotional, social, satisfaction, and attachment) except for academic adjustment and study support. However, more research is needed to examine whether such cross-cultural differences can be effectively applied to international student research.

Furthermore, Rienties and Tempelaar (2013) found that long-term orientation is associated with more socio-emotional and academic adjustment problems, and difficulties in peer support among international university students. In contrast, Figlio et al. (2016) observed that immigrant students from long-term orientation cultures studying in U.S. high schools achieved better grades, higher graduation rates, and demonstrated greater score improvement, which can be attributed to the inclination for delayed gratification and active parental involvement. Students who are more short-term oriented appear to place more emphasis on self-expression and use interaction as motivation for self enhancement (Kimmel and Kitchen, 2016). Overall, the relationship between long-term orientation in students and school adjustment remains uncertain, as it is unclear whether any potential benefits of long-term orientation stem from the teaching of hard work and perseverance or from parental involvement.

Intercultural sensitivity

Intercultural communication competence is an important ability for international students to adapt to host culture through interacting effectively with peoples from diverse cultures (He et al., 2023). Regarding intercultural school environment, much of the literature on CHC students' school reticence is based on the preconception or prejudice that they are insensitive in intercultural communication because of culture (Cheng, 2000; Shao and Gao, 2016). Studies on

individuals' capacity to successfully adjust to a foreign culture have focused on the affective dimension of intercultural communication competence, McDowell (2000) has highlighted one affective attribute known as willingness to communicate. In a second language (L2) classroom context, willingness to communicate is a concept that measures one's perception of their interest to participate in or initiate intercultural interaction (Logan et al., 2014).

Chen and Starosta's (1996) model of intercultural communication competence is comprised of three dimensions: intercultural sensitivity (affective), intercultural awareness (knowledge), and intercultural effectiveness (skill). The affective process, intercultural sensitivity, refers to the capacity to stay open-minded and develop satisfactory and positive emotional responses to intercultural encounters that is necessary for effective intercultural communication (Bennett, 1986; Chen and Starosta, 1996; Sercu, 2004; Chen and Portalla, 2009; Wang and Zhou, 2016; Ilie, 2019). Deardorff (2006) points out that attitude represents the affective state that individuals experience while interacting with people from unfamiliar cultures, including respect for cultural diversity, openness to intercultural interaction, and curiosity to tolerate ambiguity. According to Byram (1997), attitude is a necessary condition for acquiring knowledge and skills for desired outcomes of cultural competence, despite that people may possess an intuition of these knowledge and skills. Intercultural sensitivity is essential for international students as it is a key predictor to cultural adaptation, emotional status, and life satisfaction, while openness to intercultural interaction mediates how intercultural awareness may lead to emotional wellness (He et al., 2023).

Bennett (1986) also pinpoints that when individuals experience a change from a comfortable monocultural environment to an ambiguous multicultural situation, their affective state toward perceived differences will determine their attitudes toward respecting/accepting differences and coping with difficulties in intercultural situations. A major affective difficulty is ethnocentrism (Hammer et al., 2003). Although a person may possess culturally relevant knowledge and skills, having an ethno-relative attitude to cultural differences is a prerequisite for communicative and intercultural competence (Deardorff, 2006). When individuals reduce their defensiveness about maintaining their own identity and become more receptive to other people's worldviews, they may progress from ethnocentric perspectives to an ethno-relative appreciation of cultural differences. This shift weakens their sense of incongruity toward cultural distance and reflects an adaptive shift in individuals' affective states in response to perceived differences (Bennett, 1986). Such tendency toward ethno-relativism may be used interchangeably with other concepts such as global awareness or global citizenship, which refers to the ability of perceiving oneself as member of the global community, while actively participating in the local contexts with an understanding that people share a collective future (Bennett and Salonen, 2007; Douglas and Rosvold, 2018).

Intercultural sensitivity research in school settings

As CHC students tend to come from a more homogeneous background than non-CHC students, it is of utmost importance to acknowledge that their attitudes toward different cultures may be shaped by living among people who share the same values, norms,

and traditions, often without many opportunities for in-depth conversations with foreigners. However, there has only been scant finding to directly evaluate [Chen and Starosta's \(1996\)](#) intercultural sensitivity in relation to cultural differences. In one study by [Morales \(2017\)](#), Korean high school students reported significantly lower intercultural sensitivity than non-Korean counterparts.

In foreign classroom contexts, willingness to communicate is a complex and dynamic phenomenon that involves international students' heritage cultural context and their social experiences in the host country ([Cheng, 2000](#); [Wen and Clément, 2003](#); [Zhou et al., 2005](#); [Lu and Hsu, 2008](#); [Ruble and Zhang, 2013](#); [Shao and Gao, 2016](#)). Low willingness to communicate in intercultural interaction has been demonstrated by numerous studies to be associated with a high level of ethnocentrism and strong identification with one's own culture ([Neuliep and McCroskey, 1997](#); [Lin and Rancer, 2003](#); [Logan et al., 2014](#)). Using between-groups designs, [Lu and Hsu \(2008\)](#) found that willingness to communicate of Americans to Chinese students was higher than that of Chinese to American students in both Chinese and American universities, but this study did not specifically examine willingness to communicate in classroom.

[Shao and Gao \(2016\)](#) suggests that students' willingness to communicate in L1 is more strongly linked with their predisposition to participate in speech than contextual factors that affect their free choice. Conversely, the willingness to communicate in L2 seems to be tied to the perceived readiness to engage in discourse. Further on perceived readiness, [Cao \(2011\)](#) theorized that willingness to communicate in L2 classroom associates with the degree of L2 apprehension, which affects students' perceived communication competence and their sense of security toward teachers and instructional methods. Given this study measures willingness to communicate as the general perception to speaking in an L2 classroom, it may shed insights into the link between students' in-class willingness to communicate and sociocultural factors like L2 apprehension and perceived readiness toward unforeseeable communicative consequences (long-term orientation).

[Adler and Gundersen \(2007\)](#) contends that willingness to give up ethnocentrism is the prerequisite for developing global citizenship. However, little is known to date about CHC students' account of how their experiences of school adjustment and worldview affect their construction of identity, understanding, and global citizenship attitude. [Lin and Rancer \(2003\)](#) and [Neuliep and McCroskey \(1997\)](#) suggest that while ethnocentrism secures harmony and cohesion within a cultural group, it is also a vehicle to out-group bias, prejudice, and intercultural insensitivity. In Confucian glossary, the concept *tianxia* ("all under heaven") refers to a Sinocentric global system that treats China as the indispensable central state of the world and the core culture of Confucianism, which is commonly used among Chinese, Japanese, and Korean ([Berger, 2015](#)). In a study on intercultural sensitivity of Chinese international students in Canadian universities, [Weber \(2011\)](#) discovered that Chinese students chose not to identify themselves as global citizens and asserted that they belong to the collectivist culture into which they were born, rather than to the whole world. The finding illustrates the hierarchical nature of collectivism, potentially complicated by the feeling of nationalism ([Zhicheng, 2020](#)). More surprisingly, this study also found that Chinese students' intercultural sensitivity decreased after a year of academic study. [Oberg \(1960\)](#) associates this reduced willingness to interact with culture shock, where intensive emotion and expectation

mismatch are experienced. Thus, this study may observe a connection between global citizenship attitude and sociocultural factors.

Culture shock, L2 apprehension, and links to intercultural sensitivity

Most, if not all international students, will experience an identity crisis to some extent as they walk in two worlds and may have already identified with a particular culture ([Jibreel, 2015](#)). The context of where identity crisis is experienced has been widely recognized as that of the CHC students, whose heritage culture does not educate social norms of the host culture that are dissimilar to theirs ([Dalglish and Evans, 2010](#)). Multiculturalism in Canada posits a blurring of cultural identity, making invisible the boundaries between individual and collective obligations while leading people into a fallacy that students are endowed with greater cultural diversity than institutions actually allow ([Lee, 2013](#)). However, many students reported experiences of rejection due to their phenotypical features being associated with a specific proto-culture ([O'Dwyer, 2016](#)).

CHC students are likely to be sojourners, who usually stays in a host country to pursue a life goal before returning to their home countries. For many international students, the process of school adjustment during the first 2 years of the transition is a significant remark of their academic adjustment and intercultural sensitivity development, it is also when they may be most prone to culture shock ([Andrade, 2006](#); [Volante et al., 2017](#)). Culture shock is defined as "pronounced reactions to the psychological disorientation most people experience when they move for an extended period of time into a culture markedly different from their own" ([Kohls, 1984](#), p. 63). [Furnham and Bochner \(1986\)](#) and [Oberg \(1960\)](#) defined four phases of culture shock: honeymoon, rejection/regression, recovery, and adjustment. During the honeymoon phase, there is a strong willingness to interact and immerse in the language and customs of the host culture without any awareness of stressors, cultural fatigue, and boredom. The rejection phase is the period where individuals encounter situational stressors and experiences a strong dislike of the reality and a regression toward their heritage identity. The next phase, recovery, entails a sense of identity reconciliation and coping for their psychosomatic struggles. Finally, individuals may adjust to the host culture and embrace it as "just another way of living" ([Oberg, 1960](#), p. 143).

From the perspective of the social network, [Frey and Roysircar \(2006\)](#) found that East Asian international students are less likely than South Asian international students to seek help during hardship due to lack of exposure to different cultures, L2 fluency, and friendship with domestic students, all of which exacerbate the feeling of culture shock. [Mori \(2000\)](#) pointed out that it is uncommon for East Asian students to seek professional help from unfamiliar groups of people, which results in a limited range of help options. Furthermore, East Asian students may prioritize interacting with people with similar culture because they perceive western circles of friends as superficial ([Mori, 2000](#); [Frey and Roysircar, 2006](#)).

[Furnham and Bochner \(1986\)](#) describe the feeling of rejection as one of the core elements of culture shock that intensifies interpersonal stress and psychological maladaptation. In particular, the sense of rejection arises when the ability to suppress negative emotional reactions is reduced when people are not accepted by the local culture.

Greene et al. (2006) argues that international students report peer stereotypes and discrimination as the biggest situational stresses engendering culture shock. Similarly, Thompson et al. (2016) point out that most East Asian students report negative feelings about the experience of being stereotyped, which evokes a weaker sense of belonging with domestic students. Both studies have pointed out that East Asian American college students resort to reticence as a copying strategy to differential treatment from their peers and teachers and to conform to the model minority stereotype. In a similar vein, Shao and Gao (2016) suggest that East Asian students' reticence in class roots in the anxiety of being negatively evaluated. In some circumstances where student culture promotes competition, the model minority stereotype may lead more academically privileged East Asian students to internalize and use it to devalue similar-culture peers (Moosavi, 2021), a pattern observed across cultures (Cortina et al., 2017). Winning the competition signifies distancing from the shock linked with the minority shame and defending the legitimacy of model minority myth. These group-related threats may amplify defensive ethnic self-identification and subsequently weakening intercultural friendship ties.

Language acts as a "symbolic tool to express and understand a certain culture" (Ma, 2020, p. 85). Lack of L2 proficiency may result in international students maintaining connections primarily within their own cultural groups while only engaging in superficial exchange with domestic students (Zhou et al., 2005; Zhang and Zhou, 2010). L2 apprehension has also been observed in numerous studies in North America to link with decreased student interaction (Jackson, 2002; Chen, 2010; Tran, 2012), psychological well-being (Kim, 2012; Li et al., 2014), psychosocial adjustment (Kang, 2006; Kim, 2012), peer relationships (Kang, 2006), and ability to seek social resources (Li et al., 2014). Several studies have also found that willingness of L2 learners to communicate is related to both their actual language proficiency and their self-perception of language competence (Freiermuth and Jarrel, 2006; Cao, 2011). Furthermore, communication apprehension may evoke negative emotions about the distressful learning experience at universities (Tallon, 2009). Despite the challenges, Montgomery and McDowell (2009) argues that East Asian students may support each other in adjusting to the foreign university learning environment, but to do so does little to improve their L2 and intercultural communication skills. However, Armfield (2004) and Munawar (2015) oppose this view, arguing that social interaction with domestic students has little impact on, and is not associated with, changes in international students' intercultural sensitivity. Instead, a supportive cultural niche may be the cornerstone of the need for social and cultural exchanges with domestic students.

The present study

The present study builds upon evidence from prior qualitative and large-scale studies to explore sociocultural factors underlying CHC students' intercultural interactions. It takes an exploratory approach and thus formulates no specific hypothesis being among the first comparative studies using CHC as a factor. Despite ample qualitative evidence indicating reticent behaviour and attitudes in CHC students. While previous large-scale studies have correlated Confucian cultural dimensions with school interaction factors, there has been no quantitative investigation of students' personal accounts of their

interaction and culture. To address this gap, the current study does not seek to fix students' ethnic origins with Confucian cultural dimensions. Instead, it asks their own identification with their culture.

The study was composed of five predictors and three criteria. The predictors were summarized into social (confusion) factors and cultural (Confucian) factors. Confusion factors included two variables: culture shock and L2 apprehension. Confucian factors consisted of three variables: vertical collectivism, power distance, and long-term orientation. The criterion, intercultural sensitivity, is measured on three dimensions: In-classroom willingness to communicate, general intercultural sensitivity, and global citizenship attitude. Based on the literature review, these dimensions represent the affective processes of intercultural competence. In this study, both confusion and Confucian factors and measures of intercultural sensitivity were compared between CHC and non-CHC students. Thus, I examined the following questions in the present study:

1. What differences in self-reported intercultural sensitivity can be observed between CHC and non-CHC students at Canadian universities?
2. How can the phases of culture shock be visualized and is the progression of phases linear among international students?
3. Among all international students, what are the sociocultural influences (confusion and Confucian factors) on three measures of intercultural sensitivity and how do sociocultural influences correlate with each other?

Materials and methods

Participants

The present study used both convenient and snowball sampling to target international students across Canadian universities. The initial convenient sampling took place at Lakehead University, Thunder Bay, Canada. The university office facilitated this study by sending multiple rounds of emails to international students. Next, the snowball sampling was used to identify more international students at Canadian universities based on respondents sharing this study on their social networks. Any currently enrolled international students at any Canadian universities who were holding a valid study permit were eligible to participate. This study recruited a total of 120 participants ($M = 4.21$ years in Canada, $SD = 4.43$ years). Among participants who disclosed their nationalities ($N = 117$), Students from mainland China, South Korea, Vietnam, Japan, Hong Kong, and Taiwan were grouped as CHC students ($N = 30$). The second group non-CHC ($N = 87$) included all other international students who were not from CHC. This includes 67 students from U.S. and Britain. In regard to gender, 55 participants chose to identify as male and 65 participants identified as female.

The quantitative data of this study were collected by the questionnaire via SurveyMonkey. The questionnaire collects demographic data including gender, country of origin, and years in Canada. It also combines different existing questionnaires relevant to cultural dimensions, culture shock, L2 apprehension, and measures of intercultural sensitivity (see Appendix). Specifically, the cultural dimensions questionnaires were designed and validated by previous

studies to apply Hofstede's general cultural framework at an individual level and non-work-related contexts (Sharma, 2009). This study is among the first educational research to utilize these questionnaires to understand the personal and contextual nature of cultural dimensions, which marks a departure from the generalized and stereotypical approach of correlating Hofstede's framework with large-scale educational issues. The reliability of the combined questionnaire is expounded below.

Measures

Sociocultural predictors and intercultural sensitivity measures

In-classroom willingness to communicate

The assessment of in-classroom willingness to communicate used four items adapted from Lee and Lee (2020), with some minor word modifications to suit the classroom context (e.g., "I enjoy participating in a conversation when I have a chance to talk in front of the other students during the lecture"). Responses to these questions were recorded on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree," which applied to all other variables used in this study. For the present study, Cronbach's alpha for this measure was tested to be acceptable, $\alpha=0.74$.

General intercultural sensitivity

This measure adopted the 15-item Intercultural Sensitivity Scale (ISS-15) developed by Wang and Zhou (2016). Examples of items from ISS-15 include "I enjoy interacting with people from different cultures" and "I get upset easily when interacting with people from different cultures" (Wang and Zhou, 2016, p. 6). Cronbach's alpha for ISS-15 in this study was 0.71. Which was above-satisfactory.

Attitudes toward global citizenship

I used Morais and Ogden's (2010) Global Citizenship Scale (GCS) to measure students' attitudes toward becoming global citizens, but only the items related to the dimension of social responsibility were selected (e.g., "The needs of the worlds' most fragile people are more pressing than my own"). This was due to the fact that some of the dimensions of GCS overlapped with our assessments of intercultural sensitivity, while others (e.g., global civic engagement) focused more on actions rather than attitudes. Additionally, two items were dropped as they did not fit in the context of the current study (e.g., "Americans should emulate the more sustainable and equitable behaviours of other developed countries," "Developed nations have the obligation to make incomes around the world as equitable as possible"; Morais and Ogden, 2010, p. 454). Cronbach's alpha for GCS in this study was acceptable, $\alpha=0.72$.

Culture shock

Culture shock was assessed by using Mumford's (1998) "core" cultural shock items. I made minor changes to the wording of items to align them with the overall tone of the questionnaire (e.g., "I feel strained from the effort to adapt to a new culture"). The core cultural shock items measured the following dimensions elucidated in the literature: Strain to adapt, homesickness, feeling accepted, wish to escape, confused about identity, shocked or disgusted, and feeling

helpless. They were combined in the data analysis due to limited sample size. Cronbach's alpha for this measure was acceptable, $\alpha=0.76$.

Second language apprehension

L2 apprehension was measured by the short version of the Foreign Language Communication Anxiety (FLCA) scale validated by Guntzviller et al. (2016). The scale contains 7 items (e.g., "I start to panic when I have to speak in the language without preparation") and is suitable for numerous contexts where L2 difficulties may be experienced (Guntzviller et al., 2016, p. 623). In this study, Cronbach's alpha for the short version of FLCA was acceptable, $\alpha=0.73$.

Vertical collectivism

This study used six items from Chirkov et al. (2003) to measure vertical collectivism with a slight adjustment of words (e.g., "I would do what would please my family, even if I detest the activity"). The reason vertical collectivism was chosen only to evaluate collectivism is that the individual rating of vertical collectivism was the most appropriate measure of understanding the degree of internalizing traditional Confucian values. The instrument was tested to be good and reliable for the present study, $\alpha=0.81$.

Power distance

In the current study, power distance was defined as social inequality and power distance between teachers and students, so it measures attitudes toward authority in a general sense as well as in the classroom setting. For social inequality, I adopted Sharma's (2010) Personal Cultural Orientations (PCO) scale. Within the PCO scale, social inequality is conceptualized as one of the personal orientation dimensions with items such as "unequal treatment for different people is an acceptable way of life for me" (Sharma, 2010, p. 794). Teacher-student power distance dimension items were adapted from Lagas et al.'s (2007) 15-item "social status teacher" subscale, which evaluates students' perception of teachers' power and affinity (e.g., "I address the teacher in the same way as I address my classmates"). In the original study, Cronbach's α of the "social status teacher" subscale was 0.71, which is considered borderline acceptable. But for our study, I chose only seven out of 15 items from this scale that reflected the themes in our literature. After combining two scales, Cronbach's alpha was tested to be acceptable for the present study, $\alpha=0.76$.

Long-term orientation

Long-term orientation was measured using the 8-term two-factor LTO scale developed by Bearden et al. (2006), emphasizing values of tradition and planning. Tradition reflects the ethical behaviour seen as virtuous by a culture, and people with strong planning habits are more likely to engage in ethical behaviours that lead to long-term positive feedback and acclaim. An example of the "tradition" items is "respect for tradition is important to me" and for planning, "I do not mind giving up today's fun for success in the future" (Bearden et al., 2006, p. 458). Several studies implementing this scale reported a weaker Cronbach's α of the planning subscale (ranging from 0.60 to 0.76) compared to that of the "tradition" subscale (ranging from 0.77 to 0.88; Bearden et al., 2006). After combining both subscales, Cronbach's alpha was acceptable for this study, $\alpha=0.79$.

Overall internal consistency

The internal consistency test yielded a pooled Cronbach's α of 0.78. This indicates a high internal consistency between eight measures which are all theoretically distinct. Also, α indices of scales used for this study were all beyond the acceptable level. In general, the reliability of test scales in this study was found to be adequate.

Covariates used in group comparisons

In this study, covariates were selected as confounders (rather than mediators) and will be held constant in cultural group comparisons (CHC vs. non-CHC) on some of intercultural sensitivity measures and sociocultural influences. This includes demographic variables like gender and years in Canada, which were more preferred for this study as they are not as malleable as mediators (MacKinnon et al., 2000). To prevent overfitting, only two confounders were selected, although there would likely be more.

The discussion on gender effect of intercultural sensitivity is necessary. Previous studies on gender and intercultural sensitivity among European secondary students and American undergraduates have found that girls tend to score higher than boys on intercultural attitudes (Holm et al., 2009; Tompkins et al., 2017; Solhaug and Kristensen, 2020). In addition, Solhaug and Kristensen (2020) conclude that "females seem more emotional and empathetic in relationships than males," based on the findings of a large body of research (p. 131). Male and female also differs in their experiences of intercultural encounters, which are guided by perceptions derived from gender socialization. Similarly, perceptions of cultural attributes may also be constructed by 'gendered' expectations of individual traits, roles, duties, and behaviour (Solhaug and Kristensen, 2020). The above evidence shall remind researchers that gender may influence the intercultural sensitivity in addition to sociocultural influences.

Years in Canada was chosen as a confounder as view of social and cultural identity may vary depending on time spent in the host country (Furnham and Bochner, 1986). However, since there were not enough samples in the study to afford group comparisons in different periods of acculturation, the only option was to account for the variance, rather than examining length of acculturation directly.

Data analysis methods

For research question 1, I used two-way ANOVAs for group comparisons on international sensitivity measures with gender as a covariate. The independence assumption was met as each respondent's answer was separate from others and each group (CHC culture, gender) was unrelated. Next, tests of heteroskedasticity and kurtosis were insignificant. However, there appeared to be a moderate violation of normality assumption for the residuals of in-class willingness to communicate ($p=0.049$), general intercultural sensitivity ($p=0.03$), and global citizenship attitude ($p=0.04$), based on skewness test. Nevertheless, general linear models are relatively robust to normality violation.

For question 2, a scatterplot was created to visualize the relationship between fitted value of culture shock and years in Canada. Additionally, I examined the linearity of association between culture

shock and years of Canada to ensure that the linear function of years in Canada as a covariate were warranted.

For question 3, I first conducted one-way ANCOVAs to examine if sociocultural influences differ between CHC and non-CHC group. For cultural group comparisons, gender and years in Canada were held constant. All assumptions were met for sociocultural factors except for L2 apprehension, in which normality was slightly violated ($p=0.047$). Additionally, hierarchical regressions were conducted with intercultural sensitivity measures as criteria. Both CHC and non-CHC groups were aggregated in the regression analyses to prevent overfitting. In Block 1, only L2 apprehension was entered as a composite to investigate if L2 anxiety is a primary source of intercultural barriers among international students. Next, all other predictors were added in Block 2. To examine multicollinearity, I calculated the variance inflation factor (VIF) among all predictors. The VIF values were acceptable, which implies only minimal linear dependence among predictors. All assumptions were met for regression analyses.

Next, I conducted a Spearman's rho correlation among sociocultural factors, given that Spearman's rho is better suited for data collected with ordinal (i.e., Likert) measures than Pearson's r (Gravetter and Wallnau, 2017). The test of polynomial contrast of data revealed that each bivariate relationship exhibited an appropriately linear pattern, except for the relationship between vertical collectivism and power distance which appeared to be quadratic ($p<0.05$), suggesting the presence of non-monotony. This further justifies the use of Spearman's rho, which measures the rank order consistency of paired bivariate relationships rather than data fitting. Such a non-parametric test helps alleviating the problem of non-monotony to some level (Gravetter and Wallnau, 2017).

The statistical analyses were performed using version 17 of StataCorp Stata Statistical Software. Before the data analyses, a single imputation was implemented to restore the missing data. The non-response rate ranged from 6.7 to 20.0%, but the data was missing randomly, $\chi^2=76.63$, $p=0.07$. After imputation, the observation counts of all predictors and outcomes were increased to $N=120$. Babyak's (2004) sample size criteria for linear regression models (a minimum of 10–15 cases per predictor) is met.

Results

The results of two-way ANOVA (see Table 1) show an insignificant gender and CHC culture interaction on the estimate of in-classroom willingness to communicate ($p=0.12$, $\eta_p^2=0.02$). The gender and CHC culture interaction appeared to exist for the estimate of general intercultural sensitivity, but was not quite up to reach statistical significance ($p=0.053$, $\eta_p^2=0.03$). Table 2 shows the post-hoc simple effects analyses. Within the non-CHC group, female students reported significantly higher general intercultural sensitivity than male students. There seemed to be no cultural difference (CHC vs. non-CHC) in students' general intercultural sensitivity for both male ($p=0.26$) and female groups ($p=0.11$). The analysis performed on global citizenship attitude shows that the gender and CHC culture interaction was statistically significant, with a small effect size ($\eta_p^2=0.05$). The simple effects analyses suggest that global citizenship attitude in male CHC students was significantly higher than male non-CHC students. Meanwhile, the between-group analysis on gender shows that female non-CHC students had significantly higher global

TABLE 1 Fixed-effects ANOVA results using three intercultural sensitivity measures as criteria.

Source	Predictor	Sum of squares	df	Mean square	F	p	η_p^2
In-class willingness to communicate	(Intercept)	1.85	3	0.62	1.28	0.28	0.03
	Gender	0.02	1	0.02	0.04	0.83	0.00
	Culture	0.09	1	0.09	0.019	0.67	0.00
	Gender × Culture	1.15	1	1.15	2.39	0.12	0.02
	Error	54.47	113	0.48			
General intercultural sensitivity	(Intercept)	0.14	3	0.05	2.72	0.048	0.07
	Gender	0.01	1	0.01	0.58	0.45	0.01
	Culture	0.00	1	0.004	0.21	0.65	0.00
	Gender × Culture	0.06	1	0.06	3.82	0.053	0.03
	Error	1.90	113	0.02			
Global citizenship attitude	(Intercept)	1.14	3	0.38	2.45	0.07	0.06
	Gender	0.003	1	0.003	0.02	0.90	0.00
	Culture	0.01	1	0.01	0.05	0.82	0.00
	Gender × Culture	0.89	1	0.89	5.74	0.02	0.05
	Error	17.48	113	0.15			

N=117. df= degree of freedom denominator. η_p^2 = partial eta-squared.

TABLE 2 Post-hoc simple effects analyses.

Source	Student groups	Measures	Condition comparisons	Mean diff.	Contrast	SE	t	p
In-class willingness to communicate	Female	Culture	CHC vs. Non-CHC	-0.20	-0.17	0.23	-0.74	0.46
	Male		CHC vs. Non-CHC	0.30	0.30	0.20	1.51	0.13
	CHC	Gender	Female vs. Male	-0.20	-0.20	0.26	-0.77	0.44
	Non-CHC		Female vs. Male	0.30	0.27	0.15	1.75	0.08
General intercultural sensitivity	Female	Culture	CHC vs. Non-CHC	-0.30	-0.07	0.04	-1.59	0.11
	Male		CHC vs. Non-CHC	0.10	0.04	0.04	1.14	0.26
	CHC	Gender	Female vs. Male	-0.10	-0.03	0.05	-0.69	0.49
	Non-CHC		Female vs. Male	0.30	0.08	0.03	2.71	0.01
Global citizenship attitude	Female	Culture	CHC vs. Non-CHC	-0.20	-0.19	0.13	-1.43	0.15
	Male		CHC vs. Non-CHC	0.20	0.23	0.11	2.00	0.047
	CHC	Gender	Female vs. Male	-0.20	-0.22	0.15	-1.46	0.15
	Non-CHC		Female vs. Male	0.20	0.20	0.09	2.26	0.03

N=117. CHC= Confucian heritage culture. Mean diff.= difference in mean scores between conditions.

citizenship attitude than male non-CHC counterpart. The results of group comparisons show that measures of intercultural sensitivity did not appear to differ by the unique effect of CHC culture and gender, but more by their combined effects, and the gender differences were more pronounced among the non-CHC student group.

Figure 1 displayed the scatterplot describing the locally weighted regression of culture shock on years acculturating in Canada. The fluctuations of reported degree of shock were generally confirmed by Oberg’s (1960) phases of culture shock. First, the honeymoon phase was not evident as the rejection/regression phase quickly peaked in about 1.5 years in Canada. From the second year to about the fifth year, there appeared to be a near linear decrease in the reported shock feeling, reflecting that international students developed coping strategies and skills to adapt to the Canadian environment. From the sixth year to the tenth year, students’ sense of shock exhibited a

concave down and decreasing trend, indicating that students were slowly acculturated. Note that the number of sojourners dropped sharply after the fifth year, possibly because they completed their university degree or obtained permanent resident status. This resulted in insufficient sample size after year 5, making the model useful only for predictive purposes. Oberg’s (1960) phases were generally supported in this study except for the honeymoon stage, but this was probably due to the lack of new students recruited in the face of travel barriers related to the COVID-19 pandemic. In terms of the linearity of the relationship, the test of polynomial contrast indicated that none of the nonlinear trends was statistically significant—Quadratic, $p=0.53$; Cubic, $p=0.30$; Quartic, $p=0.40$; and Quintic, $p=0.87$. This suggested that the linear function of years of acculturation were warranted to be added as a confounder in the cultural group comparison in self-reported culture shock.

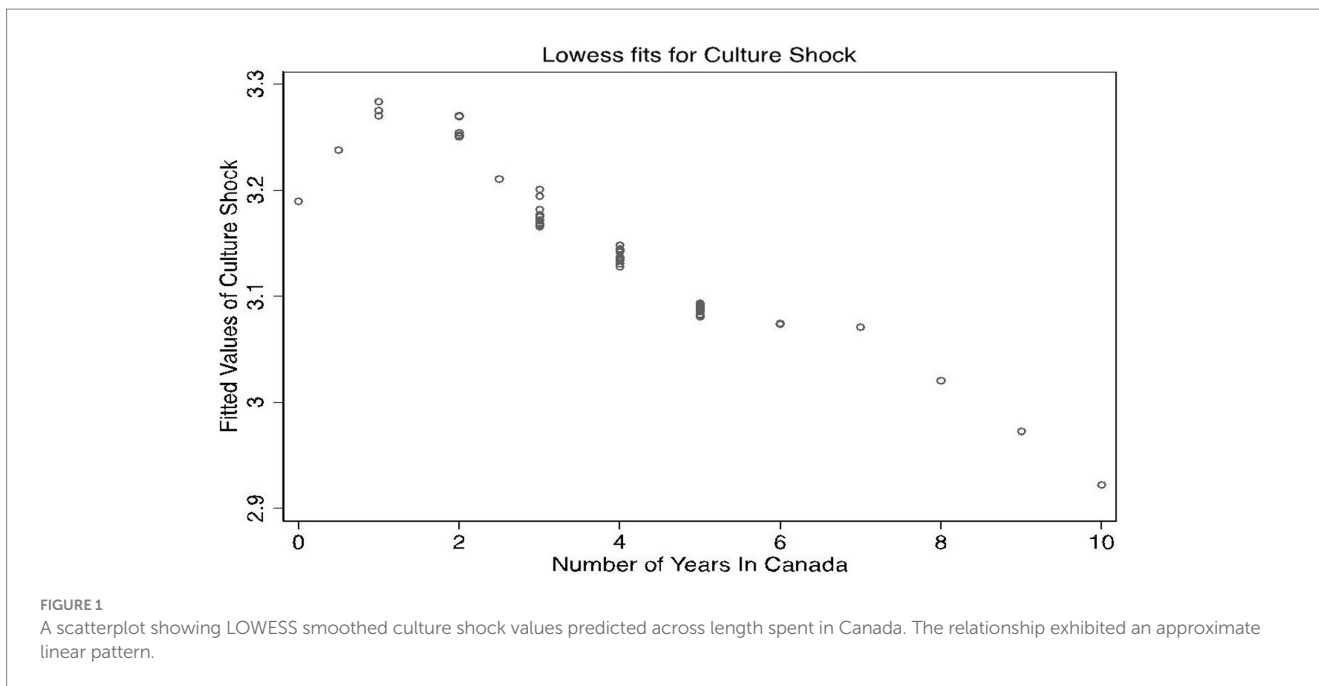


FIGURE 1 A scatterplot showing LOWESS smoothed culture shock values predicted across length spent in Canada. The relationship exhibited an approximate linear pattern.

TABLE 3 ANCOVA results using confusion factors as criteria.

Source: confusion factors	Predictors	Sum of squares	df	Mean square	F	p	η_p^2
L2 apprehension	(Intercept)	3.58	3	1.19	2.54	0.06	0.06
	Gender	0.24	1	0.24	0.51	0.48	0.00
	Culture	1.32	1	1.32	2.82	0.10	0.03
	Years in Canada	2.03	1	2.03	4.33	0.04	0.04
	Error	51.64	110	0.47			
Culture shock	(Intercept)	2.22	3	0.74	4.18	0.01	0.10
	Gender	0.02	1	0.02	0.09	0.77	0.00
	Culture	1.07	1	1.07	6.03	0.02	0.05
	Years in Canada	0.91	1	0.91	5.15	0.03	0.04
	Error	19.48	110	0.18			

N=114. df= degree of freedom denominator. η_p^2 = partial eta-squared.

The cultural group comparison analyses on L2 apprehension via one-way ANCOVAs (see Table 3) shows no significant CHC cultural difference ($p = 0.10$, $\eta_p^2 = 0.03$). A two-sample Wilcoxon Rank-Sum test was also conducted to analyze whether this insignificant difference might be attributed to students' self-report interaction, literacy, and overall language skill in English. Despite non-CHC students reporting significantly higher literacy ($Z = 3.17$) and overall English skill ($Z = 2.87$) than CHC students, the cultural difference diminished for interaction skill ($Z = 1.18$, $p = 0.25$). This illustrates possible L2 apprehension across all international student bodies in this study. In terms of self-reported culture shock, there appeared to be a significant cultural group difference ($\eta_p^2 = 0.05$). The post-estimation analyses revealed that non-CHC students reported higher level of shock than CHC students. Overall, it appeared that confusion factors seemed to vary between two groups, but not in the same direction inferred by the previous literature. Years in Canada shows a significant but negative confounding effect on the relationship between confusion factors and CHC culture, which

means that such relationship is strengthened when years in Canada is involved.

The cultural group comparison analyses (see Table 4) on the Confucian factors (power distance, vertical collectivism, and long-term orientation) shows negligible CHC cultural differences on power distance ($p = 0.90$), vertical collectivism ($p = 0.64$), and long-term orientation ($p = 0.66$). This implies that individual perceptions of Hofstede's cultural dimensions did not vary between two international student groups. Year in Canada shows an insignificant confounding effect on the association between Confucian factors and CHC culture.

Table 5 illustrates the results from hierarchical and multiple regression. First, L2 apprehension as a sole predictor explained 29.05% of the variance in willingness to communicate, which outperforms other sociocultural factors as a linear composite ($\Delta R^2 = 0.07$). This observation implies that semi-partial correlation between sociocultural factors and willingness to communicate, with L2 apprehension partialled out, might not be possibly sufficient enough to be necessary in practice. In predicting willingness to communicate, L2 apprehension

($p < 0.001$) and power distance were the only significant predictors. The remaining 63.57% of the total variance in willingness to communicate was yet to be explained by this model.

Compared to in-class willingness to communicate, the regression models of general intercultural sensitivity and global citizenship attitude were loaded more with cultural dimensions. In particular, the variance in general intercultural sensitivity was explained jointly by L2 apprehension ($\Delta R^2 = 0.28$) and other sociocultural factors ($\Delta R^2 = 0.39$). Among the cultural dimensions, vertical collectivism ($p < 0.001$), and long-term orientation ($p < 0.001$) were significant predictors. For global citizenship attitude, all predictors except for culture shock ($p = 0.85$) accounted for a significant portion in the total variance. In all three models, the values of standard errors were low so that no evidence was pointed to multicollinearity. Unexpectedly, culture shock had almost non-existent contribution to all models when other predictors were adjusted.

The result of Spearman's rho correlation coefficient testing the relationships among all sociocultural factors was summarized in Table 6. Most factors were correlated expectedly, but the direction of correlation among cultural dimensions was not consistent. Specifically, power distance had no significant relationship with vertical collectivism, possibly due to its non-linear association. A significant negative relationship was observed between power distance and long-term orientation. Vertical collectivism positively and significantly correlated with confusion factors—culture shock and L2 apprehension as expected. However, long-term orientation was found to have no significant correlation with two confusion factors. The VIF scores are also displayed here to examine multicollinearity.

Discussion

This study is among the first to explore the association between intercultural sensitivity measures and Confucian heritage of university

international students. Using self-report, the stereotypical assumption that CHC international students have lower intercultural sensitivity was not found in the study. Meanwhile, despite a fair number of previous findings on barriers to intercultural sensitivity among CHC students, they are mostly discovered by either impression of raters from other cultural groups, within-subjects designs, or correlational studies (Cheng, 2000; Zhu and Bresnahan, 2018). No between-subjects studies on direct comparisons between/among international students was conducted in the Canadian context even though it is more than necessary to examine if culture is a major factor of intercultural interaction (Tran, 2012). The result of group comparison shows that there was neither a significant cultural group difference nor gender difference in measuring in-classroom willingness to communicate, which implies that it may reflect how international students or language learners generally behave in the classroom. Willingness to communicate may be related to the ability to disrupting action control, according to Shao and Gao (2016), the failure to act on intent to speak in classroom was also found in anglophones learning French in Canada.

In the study sample, students from the U.S. and Britain made up a large proportion of all non-CHC students who might be monolingualistic. On the other hand, CHC students are types of multilingualists who are immersed in the intercultural linguistic context to some extent when they study abroad, which may facilitate their general intercultural sensitivity. Living in a multicultural society does not necessary equate to effort to engage intercultural. When students study abroad in a similar cultural, behavioural, and linguistic context, it is possible for them to be less enthusiastic about learning the culture and the language compared to students from non-English speaking countries, who need to acquire more intercultural learning experience to achieve pragmatic goals (Munawar, 2015). For example, McMurray (2007) found that there was no significant difference in intercultural sensitivity between American students with or without overseas study experiences. Interestingly, international students studying in

TABLE 4 ANCOVA results using Confucian factors as criteria.

Source: Confucian factors	Predictors	Sum of squares	df	Mean square	F	p	η_p^2
Power distance	(Intercept)	0.06	3	0.02	0.27	0.85	0.01
	Gender	0.06	1	0.06	0.76	0.39	0.01
	Culture	0.001	1	0.001	0.01	0.90	0.00
	Year in Canada	0.004	1	0.004	0.05	0.82	0.00
	Error	8.34	110	0.08			
Vertical collectivism	(Intercept)	0.64	3	0.21	1.00	0.40	0.03
	Gender	0.31	1	0.31	1.48	0.23	0.01
	Culture	0.05	1	0.05	0.21	0.64	0.00
	Year in Canada	0.31	1	0.31	1.46	0.23	0.01
	Error	23.46	110	0.21			
Long-term orientation	(Intercept)	0.19	3	0.06	0.29	0.83	0.01
	Gender	0.04	1	0.04	0.19	0.67	0.00
	Culture	0.04	1	0.04	0.19	0.66	0.00
	Year in Canada	0.09	1	0.09	0.42	0.52	0.00
	Error	23.5	110	0.21			

N = 114. df = degree of freedom denominator. η_p^2 = partial eta-squared.

TABLE 5 Regression results using intercultural sensitivity measures as criteria.

Predictors	Criteria											
	In-class willingness to communicate				General intercultural sensitivity				Global citizenship attitude			
	B ^a	t	SE	ΔR ²	B ^a	t	SE	ΔR ²	B ^a	t	SE	ΔR ²
L2 apprehension	-0.41**	-4.53	0.09	0.29**	-0.20**	-4.43	0.04	0.28**	-0.06**	-4.02	0.01	0.30**
Culture shock	-0.14	-0.95	0.14	0.07*	-0.09	-1.25	0.07	0.39**	-0.00	-0.19	0.02	0.23**
Power distance	-0.60*	-2.82	0.21		-0.17	-1.65	0.10		-0.07*	-2.22	0.03	
Vertical collectivism	-0.14	-0.99	0.15		-0.29**	-4.09	0.07		-0.10**	-4.62	0.02	
Long-term orientation	0.05	0.31	0.15		0.73**	10.25	0.07		0.13**	5.72	0.02	
Total R ²	0.36				0.68				0.52			

ΔR² = change in R². ^aUnstandardized regression coefficient. **p < 0.001; *p < 0.05.

TABLE 6 Spearman’s correlation table.

	Predictors	1	2	3	4	5	VIF
1	Culture shock	1.00	--	--	--	--	1.43
2	L2 apprehension	0.51**	1.00	--	--	--	1.47
3	Vertical collectivism	0.33**	0.36**	1.00	--	--	1.67
4	Power distance	0.22*	0.23*	-0.03	1.00	--	1.24
5	Long-term orientation	0.02	-0.07	0.55**	-0.23*	1.00	1.67

VIF = variance inflation factor. **p < 0.001; *p < 0.05.

U.S. reported higher intercultural sensitivity than their domestic counterparts.

In addition to the lack of support for the CHC effect, there is partial support for the gender effect on intercultural sensitivity. The results show that female students reported significantly higher general intercultural sensitivity and global citizenship attitude than male students for the non-CHC group. However, the gender difference in the CHC student group was not significant. The findings of higher self-reported intercultural sensitivity for female non-CHC students partially support the argument that female tend to have higher empathetic capacity and sensitivity to implicit communicative nuances, according to studies conducted in western countries (Holm et al., 2009; Tompkins et al., 2017; Solhaug and Kristensen, 2020). However, it is unclear why this difference did not exist among CHC students. One possible explanation by Tompkins et al. (2017) suggests that in an overseas learning context characterized by a relatively large cultural distinction, such intercultural experience might have a stronger remedial effect on male students in terms of intercultural competence, global perspective, and ethnorelativism. Another study by Morales (2017) offers a partially backing for such a lack in gender difference among CHC students, finding that there was no notable variation in self-rated intercultural sensitivity among male and female third-culture-kid students (those brought up outside of their parents’ culture). This might be pertinent considering that CHC international students, unlike their non-CHC counterpart (mainly composed of English speakers), were acculturated outside CHC, while the latter are immersed in the same western culture.

The results of cultural group comparisons on confusion factors were unexpected and novel, with non-CHC students reporting higher level of culture shock and L2 apprehension. First, the confounding effect of years of acculturation in Canada revealed that the length of time spent in Canada has an impact on the cultural group comparison of perceived social stress. Specifically, more years spent in Canada tend to associate with CHC students’ advantage in social adjustment. Moreover, cultural distance has been elucidated as one reason for one to feel culture shock (Mumford, 1998). By that, non-CHC students were expected to perceive Canadian culture as less distant than CHC students. The results suggests that there might be various unexplained reasons that potentially lead to the unexpected finding, including parental financial support, co-national peer support, and diaspora communities among East Asian students (Montgomery and McDowell, 2009; Wei, 2011). In one study, CHC students reported culture shock experiences but were able to cope with the stress of shock (Fox, 2020). On the other hand, cultural difficulties experienced by CHC students may not be as pressing and persistent as the literature suggests (Wu and Hammond, 2011). The individual feeling of culture shock varies widely based on their coping style, preference for self-disclosure, and orientation for studying abroad (Fox, 2020). For example, CHC students may prioritize academic achievement over the needs for sociocultural adjustment and school belonging to cope with the feeling of shock (Hui et al., 2011). Moreover, it is important to note that the tool used in this study to examine culture shock, by evaluating identity crisis, helplessness, and rejection, may potentially lead to an exaggeration of emotional aspects of adjustment and inadvertently downplay the pragmatic aspects.

L2 proficiency is important for self-disclosure and communicating and seeking help out of cultural niches (Zhou et al., 2005; Lin, 2006; Zhang and Zhou, 2010). In this study, L2 apprehension reflects the interference of communicative ability due to lack of perceived L2 proficiency and state anxiety that impedes the input, processing, and output of information (Heng et al., 2012). Interestingly, the findings show little difference between CHC and non-CHC students in terms of their perceived interaction skill, although most non-CHC students reported a higher overall English proficiency. This pattern hints at a possible lack of social competence among all students. One reason for CHC students' lower self-rated L2 apprehension may be that while their overall English skills are not perfect, they may have worked hard to improve their agentic interaction skills by interacting with local people and other international students through networking and employment. Thus, their communication skills have been enhanced and used appropriately in situations where intercultural contact is required. Therefore, lack of L2 proficiency does not always indicate communication apprehension, as evidenced by Karjanto (2022) who found that academic-prepared students, despite limited English proficiency, interact actively in English-instructed math classrooms due to their competence in academic discussions.

These insignificant findings in group comparisons on Confucian factors contrast with previous literature using Hofstede's cultural dimension theory to distinguish Confucian cultural-specific tendencies from non-Confucian ones (Hofstede, 2001, 2011; Abubaker, 2008; Sharma, 2009; Alshahrani, 2017). Nonetheless, the findings echo Hwang's (2012) view that, in the era of globalization, many cultures are interlaced with values from other cultures, making cultural traditions across the globe increasingly blurred. Thus, a better explanation is to use Bronfenbrenner's (1979) ecological systems theory in which the cultural attitudes were more directly influenced by the microsystem (proximal school and social environments) compared to the macrosystem (national ideologies), but there may be limitations in the extent to which proximal factors can override cultural influences (Karjanto and Simon, 2019). Similarly, Cortina et al. (2017) demonstrate that school adaptation is more likely to reflect the settings and constraints of school infrastructure than the general cross-cultural differences. In terms of teacher-student power distance, the result contrasts with Abubaker (2008) and Rienties and Tempelaar (2013) that CHC students maintain strong power distance and favour a teacher-centred approach in the UK and Dutch universities. In terms of power distance as an inequality issue, the reason for the insignificant finding may be that CHC students from high power distance countries were not aware of their personal beliefs on power distance as a factor in the problem of social status inequality (Lagas et al., 2007). High power distance may not be perceived as a healthy lifestyle for individuals but may fit into societies characterized by power distance as a cultural dimension that individuals must therefore adhere to. By that, CHC students in Canada could be considered voluntary migrants from high power distance societies who seek a more liberal way of living, which partially explains the non-significance of the finding and echoes the importance of microsystem on human cognition and behaviour (Bronfenbrenner, 1979).

In terms of long-term orientation, the results do not show evidence that CHC students were more long-term oriented than non-CHC students as evaluated by tradition and planning. It is worth

noting that international students tend to be long-term oriented for making decisions and plans to study abroad, regardless of the cultural influences. In order to overcome the hardship of adapting to a new and uncertain context, international students may prefer to adopt the traditional ethics of hardwork, patience, restraint, and relationships to short-term oriented beliefs like self-indulgence and immediate gratification (Hofstede, 2001). Nevertheless, it is reasonable to infer that more unfashionably toned aspects of long-term orientation such as face concerns and stability may have different psychological effects on students across the cultures (Hofstede, 2001). Consequently, CHC students may identify with some traditional Confucian values but not all, even though they are generally more long-term oriented. Similarly, students from short-term oriented cultures may also share intersectional beliefs with CHC students when it come to merits such as tradition and planning.

Overall, since all Confucian factors remain irrelevant for group comparison, there is good reason to believe that students' individual beliefs cannot be generalized through a cultural-specific framework. Meanwhile, in a higher education context where students are at least partially immersed in equity, diversity, and inclusion, students with ethnocentric beliefs may appear to be less 'insensitive' than they actually are (Abubaker, 2008). Hofstede (2001) also self-admitted that in the era of globalization, rapid cultural integrations have weakened the impact of certain cultural dimensions in some countries. This study confirms that this is indeed the case in Canadian universities with a large influx of international students. It is also noteworthy that the duration students have spent in Canada does not seem to be a significant confounder in this study when comparing perception of cultural dimensions. This implies that the acculturation process may not modify the perception of one's own culture as significantly as early socialization does. However, the findings of this study do not attempt to justify that Hofstede's theory is outdated. A larger dataset may help validate Hofstede's framework. This study also suggests studies such as Rienties and Tempelaar (2013), which take Hofstede's cultural indices for granted to predict school adjustment of international students by cultures, shift away from presumed cultural heterogeneity and attempt to re-examine actual differences in students' cultural dimensions in small-scale studies.

Based on the result of multiple and hierarchical regression, L2 apprehension itself accounted for a large and significant proportion of the variation in all three intercultural sensitivity measures—in-class willingness to communicate, general intercultural sensitivity, and global citizenship attitude. In particular, in-class willingness to communicate was mostly explained by L2 apprehension compared to other sociocultural factors, as expected by Cao (2011) and Freiermuth and Jarrel (2006). They found that in-class willingness to communicate was associated with a sense of communicative security and perceived communication competence. Such relationship is also supported by Tran (2012) who found that passive learning style is more dependent on language proficiency than cultural factors. The relationship between in-class willingness to communicate and power distance suggests that, the more likely international students were to rate themselves based on perceived teacher-student distance and social hierarchy, the less willing they were to communicate in the classroom. This is partially consistent with Rienties and Tempelaar (2013) who found that international students from high power distance countries tend to favour a

teacher-centred approach at Dutch universities. The data do not suggest the predictive power of long-term orientation on in-class willingness to communicate, but this is probably due to the omission of stability and face concerns in the measurement of long-term orientation.

The second regression analyses were conducted on general intercultural sensitivity as a criterion. First, L2 apprehension as an important predictor was supported by [Chen \(2010\)](#), [Jackson \(2002\)](#), and [Moore \(2007\)](#). Next, vertical collectivism and long-term orientation were also significant predictors. This result is consistent with the hypothesis that students with a strong sense of family obligation and family role hierarchy tend to have a weaker attitude to socialize with students from intercultural backgrounds ([Hui et al., 2011](#); [Zhu and Bresnahan, 2018](#)); it also underlines the importance of cultural identity to appropriate nonverbal expression of people in the intracultural interactive network ([Hofstede, 2001](#)). The most unexpected finding of this section of analyses was that long-term orientation positively predicted general intercultural sensitivity, as [Kimmel and Kitchen \(2016\)](#) and [Hofstede \(2001\)](#) do underscore that short-term oriented individuals appear to be more expressive, indulgent, and interactive, and are less likely to avoid situations that induce longlasting shame. However, based on the results, low expressive behaviour cannot easily be deduced as low sensitivity to cultural counterparts, as it may represent showing respect, active listening, self-monitoring, and emotional regulation ([Lu and Hsu, 2008](#))—attributes that ensure harmonious intercultural relationships. These qualities may explain the finding that long-term orientation alone as measured by respect for tradition and planning positively predicts general intercultural sensitivity. More research is needed to expand this finding. Finally, power distance plays a less important role in influencing general intercultural sensitivity than other two cultural dimensions. This might be attributed to the fact that perceived power distance did not predict sensitivity toward cultures as much as it did toward social capital ([Sharma, 2009](#)).

The results of regression analyses on global citizenship attitude indicate that its variance was accounted for by all sociocultural factors except for culture shock. It is expected that all three cultural dimensions associate with propensity to be aware of social responsibility. Furthermore, change in long-term orientation was once again positively associated with the change in global citizenship attitude. This is in stark contrast to [Guo et al. \(2020\)](#), [Hofstede \(2001\)](#), and [Hofstede and Hofstede \(2005\)](#), who problematize long-term orientation as a barrier to reciprocity, charitableness, and prosociality. The results revealed that respect for tradition and planning may actually promote a positive attitude toward global citizenship among international students, as students identify with their peers through collaborative interpersonal and emotional bonding ([Luria et al., 2015](#); [Smith, 2015](#)). Therefore, the construct of long-term orientation at the individual level may be more malleable than that at the national level, especially in explaining how well migrants adjust to the mentality of the host culture during acculturation.

The effect of culture shock was nearly non-existent in all three regression analyses while holding other predictors constant. This does not mean that culture shock did not affect intercultural sensitivity, but other influencing factors of intercultural sensitivity might be more important. This result may stimulate further research to re-examine the association, by utilizing different scales, contexts, age groups, and praxes of conceptualizing culture shock.

Based on regression analyses, the results indicate that Confucian cultural factors do play a role in three intercultural sensitivity measures, together with the insignificant group comparisons on cultural dimensions identification, this suggests that CHC culture does influence intercultural attitudes but is not exclusive to CHC students. This finding contrasts with similar quantitative studies by [Abubaker \(2008\)](#), [Cortina et al. \(2017\)](#), [Rienties and Tempelaar \(2013\)](#), and [Guo et al. \(2018\)](#) that assumed the fixed association between students' culture and ethnic origin.

Spearman's rho correlation among all predictors demonstrate that most sociocultural factors were correlated in a direction that was confirmed by literature. The positive monotonic relationship of culture shock with vertical collectivism and power distance was relatively new, but made sense in the context of relevant literature. This means that students with stronger perceived shock also tended to show higher in-group favouritism and perceived distance in power and hierarchy. The positive relationship between vertical collectivism and long-term orientation also confirms the findings of [Guo et al. \(2018\)](#) and [Hofstede \(2001\)](#) that long-term orientation decreases with the level of individualism in individualistic countries.

Some correlations were aberrant from those expected in the previous literature. For example, power distance was not significantly correlated with vertical collectivism, but significantly negatively correlated with long-term orientation. This is unexpected because these three cultural dimensions were theorized to partly explain the influence of Confucianism on East Asian cultures, so they were expected to increase or decrease in the same direction to a certain level ([Hofstede, 2001](#)). However, such discrepancy supports my previous conclusion that the impact of heritage culture on international students may not be accurately predicted by a putative general cultural framework. When international students rated themselves according to their relevant scheme, it reflected differences in individual beliefs and value systems rather than the cultural heterogeneity. Finally, the study found that long-term orientation was unrelated to culture shock and L2 apprehension, which suggests that prioritizing on tradition and future planning does not necessary associate with increased anxiety in intercultural communication and adjustment difficulties among international students. This finding is not supported by [Rienties and Tempelaar \(2013\)](#) who found long-term orientation to be positively associated with school adjustment and peer support problems among Dutch university students. There could be several interpretations of these insignificant correlations, and further research is much needed in the Canadian context.

In summary, this study suggests that there are more ways to interpret students' so-called reticence rather than using cultural norms as camouflage to justify stereotypes, which shall motivate educators and researchers to critically render deterministic views of cultures problematic. University resources, including ESL programs and general university education courses, should continue integrating the idea of intercultural agency to transform attitudes into actions ([Deardorff, 2006](#)). Furthermore, educators need to acknowledge that reticent behaviour is relevant to the fear of miscommunication in intercultural contacts, such as that students misinterpret each other's intentions and pragmatic meanings since they use different communication strategies ([Douglas and Rosvold, 2018](#)). Students may also remain reticent in order not to be subjected to language-based discrimination ([Abe and Shapiro, 2021](#)). Because discourse is a two-way street, miscommunication should not be treated as a problem

of inadequate communicative skills for some individuals with certain personal, cultural, and linguistic attributes. The results implies that educators need to accept that it is fairly normal for everyone to experience difficulties socializing with their cultural-linguistic counterparts (Gao, 2010). Educators should therefore listen to students' socialization experiences, and prepare and encourage students to step out of their comfort zones to interact with other students who may be phenotypically different and have different experiences.

This study is not exempt from limitations. First, the sample size in this study was limited, causing some themes to be amalgamated rather than interpreted separately in-depth. Methodologically, the self-report nature of questionnaire may not accurately describe respondents' true behaviours and values due to a lack of access to thoughtful reasoning and memory. Also, online questionnaires may suffer from uncertainty of the distribution of the population where the sample was selected, potentially leading to sampling bias (Andrade, 2020). Since this study originates from an Ontario university, the student sample may not represent the broader Canadian context. In the cohort of non-CHC students, there was an overrepresentation of native English speakers. Another hidden covariate as a result of sampling bias was social media usage, since online respondents' social media presence may positively affect their intercultural adjustment (Sawyer, 2011). Next, intercultural sensitivity may not accurately reflect frequency of intercultural contact, as attitude could be more malleable than knowledge and skills. Therefore, true feeling tends to be entangled with rationality and moral correctness. It is imperative to highlight that if Hofstede's framework was found to be less than ideal for international student research, it may also invalid the grouping of international students based on pre-determined cultural indices. The next limitation has to do with methodological flaw in measuring willingness to communicate and language apprehension. The diverse range of language proficiency among the respondents from English learners to native speakers may mean these two constructs could be measuring different cognitive attributes among respondents (Heng et al., 2012). Finally, the instruments used in this study might suffer from a partial understanding of theories used to construct certain scales (e.g., long-term orientation) that rendered their use in higher education less effective. As a result, these limitations may jointly affect the interpretation of findings, potentially restricting their relevance to serve primarily as a guidance to understanding rational thoughts on intercultural communication among social-media-using students, and to refining psychometric tools for individual-level cultural identification and social adjustment.

Overall, the recommendations for future research can be summarized in a several points. First, further studies can measure the difference in knowledge and skills of intercultural communication among international students besides their attitude. It is also recommended that further studies incorporate the frequency of students' intercultural interaction into the assessment to accurately gauge their actual behaviour of interacting with culturally different counterparts. This can be used to establish a transition model from the attitude, knowledge, and skill toward engagement in intercultural interaction. Moreover, educational research should be cautious when using Hofstede's cultural dimensions to predict students' behaviours and values cross-culturally. This is because cultural differences may be pronounced at one point but may be effaced by adjacent and situational factors over time (Bronfenbrenner, 1979). This opens the

possibility of repeated measures design to assess the change in cultural values and behaviours over time. If feasible, researchers should first evaluate and confirm actual cultural differences rather than leaning on differences in cultural dimensions derived from a large-scale study. But again, questionnaires developed upon cultural dimensions should continuously be refined to meet the needs. Further research may also deploy a mixed-method design to elicit more thoughtful responses and identify potential factors influencing change in intercultural sensitivity among international students. Finally, this study underscores the need for more studies on international students' intercultural sensitivity and sociocultural adjustments in the Canadian educational context, given Canada's appeal as a popular destination for study and immigration that sows the seeds for intercultural interactions.

Conclusion

Cultivating intercultural sensitivity of international students bears significant implications for their school adjustment, intercultural interaction, and individual accountability. Contrary to prior literature, the results of the present study do not support the notion that CHC international students tended to face more social adjustment problems or were more culturally insensitive in the intercultural context. Also, there is no clear evidence of cultural differences between CHC and non-CHC students in Canada as assessed by Hofstede's cultural dimensions. Furthermore, the study revealed that language apprehension played a major role in the self-perception of overall intercultural sensitivity, while culture shock did not. Cultural dimensions moderately contributed to overall intercultural sensitivity, in line with previous studies; however, this effect may not be interpreted as indicative of individuals from any specific cultures. The correlation analyses show that most sociocultural factors are interrelated expectedly. However, one without evidence of students' 'actual' identification with cultural dimensions, as opposed to presumed tendency based on large-scale studies, often invalidates themselves in predicting social adjustment by cultural differences. The study underlines the need for further research on international students' experiences to shift the focus from static, stereotypical, and deterministic perceptions of cultural differences to more fluid, micro, and contextualized examinations of social influences and learner agency. To address the 'Confucian or Confusion' dilemma, this study suggests that it was neither Confucian nor confusion that shapes the necessary condition of intercultural sensitivity in intercultural encounters.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Lakehead University Research Ethics Board. The studies were conducted in accordance with the local legislation and institutional requirements.

The participants provided their written informed consent to participate in this study.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2023.1239177/full#supplementary-material>

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