Cultural Adaptation in International Students: Proposing the Goal-Opportunity Model of Acculturation (GOMA), and Developing and Exploring the Cultural Fit Questionnaire (CFQ)

by

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B.Sc., University of Bridgeport, USA, 2015
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Abstract

A goal-opportunity model of acculturation, according to which sojourner's goals align with the opportunities of the host culture (goal-opportunity cultural fit), can evaluate adaptation to a new sociocultural environment as functional, predictable, and meaningful. Although this new model of person-culture alignment builds on a previous construct of cultural fit (Ward & Chang, 1997), it aims to redefine the construct. Determining the right components of the person-culture alignment as the core of adaptation is nonetheless challenging, as there are different constructs that can be considered. Previous adaptation models have promoted person-culture alignment either as the mitigation of the sociocultural gap (cultural gap) between the native and host cultures (Church, 1982), or as the match (cultural fit) between specific personality traits (e.g., openness) and host culture norms (Ward & Chang, 1997). However, those models disregard valuable cognitive factors, such as autonomy, problem-solving ability, decision-making skills, achievement need, goal setting, motivation, participation, and effort. This thesis introduces goal-opportunity cultural fit as a contextual measurement of cultural adaptation in international students, as a group of sojourners with high achievement needs. Using exploratory analysis to refine a newly developed measurement instrument--the Cultural Fit Questionnaire--the current study attempts to show that this new person-culture alignment can be measured, predicted, and interpreted. It is expected that this proposed model of acculturation based on reinterpreting cultural fit as a goal-opportunity alignment will offer a better understanding of cultural adaptation in goal-driven sojourners with a need for achievement and autonomy, such as it is the case with international students.

Keywords: goal-opportunity model of acculturation, goal-opportunity alignment, goal-opportunity cultural fit, cultural fit, person-culture fit, cultural fit questionnaire

Table of Contents

List of Tables and Figures

Tables

Figures

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Reconsidering Cultural Adaptation in International Students

Advancement in communication and technology has allowed various groups of migrants (e.g., students, work migrants) to seek out unique opportunities, reach novel places with ease, and interconnect at unprecedented rates. For this reason, cultural adaptation research has become more intensive and progressive in the last decades, with different theories and constructs emerging and shifting perspectives from one dimension to another. For example, key constructs can be identified in the current literatures, such as acculturation attitudes and strategies (Berry, 1980, 1997), person-environment fit (French et al., 1982; Pervin, 1992), cultural distance (Church, 1982), sociocultural and psychological adaptation (Searle & Ward, 1990), cultural fit (Ward & Chang, 1997), and intercultural competence (Whaley & Davis, 2007).

The interconnection of distinct constructs builds the complex puzzle of acculturation, or culture changes triggered by the interaction between groups of individuals with diverse cultural backgrounds coming in close contact with one another (Redfield et al., 1936). Although changes can affect both groups coming in contact, the acculturating group is more impacted (Berry, 1997). As a sociocultural phenomenon, acculturation tents to captures the responsiveness of migrants, such as sojourners, immigrants, work migrants, refugees (Berry, 1997), who react (socially, culturally, psychologically) to elements of their host culture, such as values, beliefs, norms, social roles and demands, resources, and ideologies (Searle & Ward, 1990). On the other hand, adaptation is defined as a component, feature, and outcome of acculturation (Berry, 1980) that takes the form of a deliberate, conscious cognitive process (e.g., learning, goals, strategy) in response to environmental demands (Appleton et al., 2008; Berry, 1997). It evaluates changes and outcomes of individuals (and groups) in response to environmental influences (Berry, 1997) within specific dimensions, such as social (e.g., interactions, functioning, roles), psychological

(e.g., well-being, sense of identity and security), cultural (e.g., language, values, norms), economic (e.g., work, income), or academic (Berry, 1980, 1997). Several types of adaptation can be distinguished, such as cultural, psychological, social, economic, and academic (Berry, 1997).

As quintessence of acculturation, migrants' responsiveness triggers changes in their psychological attitudes and sociocultural values due to the continuous interactions between individuals of different cultural backgrounds who share the same environment (Redfield et al., 1936). Aiming to preserve well-being and striving to cope with the acculturation stress of living in an unfamiliar environment (Berry, 2006), migrants rely on developing specific competencies, such as placing value on social interactions, acquiring cultural knowledge, improving cultural abilities (Berry, 1980), and adjusting attitudes and behaviours to accommodate for the sociocultural characteristics of the host culture (Redfield et al., 1936). The patterns of adaptation responsiveness to specific dimensions of the host culture are not only contextual, but they highlight individual differences in needs, cognition, and perception (Austin & Vancouver, 1996). Psychological factors such as cognitive (e.g., goal setting, motivation, intrinsic value, self-regulation, decision-making) and behavioural (e.g., interaction, active participation) interconnect with environmental factors (e.g., opportunities, resources, means, demands for specific roles) to shape a contextual adaptation that is person-centered. Therefore, migrants are driven by their own goals and expectations, as well as their need to either preserve or enhance cultural identity (Berry, 1997), with a strong identity enforcing cultural preservation whereas a flexible identity opens the path toward cultural integration (Berry, 1997; Ward & Kennedy, 1993).

Although acculturation dimensions are numerous and complex, two dimensions–-(a) sociocultural, which highlights social interactions and functioning; and (b) psychological, which defines well-being and emotional satisfaction–-have been proposed and validated as essential

components (Searle & Ward, 1990). The sociocultural dimension defines sojourners' functionality and interactions due to acquiring social learning and intercultural competence. It can be shaped by cultural identity, impacted by cultural distance, mediated by social interactions, and enhanced by acquiring cultural knowledge and becoming culturally competent (Ward & Chang, 1997). The psychological dimension refers to migrants' well-being, and therefore, defines a stress-coping mechanism where migrants use strategies to overcome the adaptation stress and adequately respond to a challenging environment (Ward & Chang, 1997). Psychological adaptation is mediated by personality traits and individual perception, driven by goals and needs, and impacted by availability for social support (Searle & Ward, 1990).

By framing adaptation as two main dimensions that are distinct yet intercorrelated, Ward and colleagues (Searle & Ward, 1990; Ward, 1996) have managed to bring some clarification and cohesion within the broad field of acculturation research where various theories coexist. The achievement was possible by integrating previous concepts. For example, Berry's (1980) classical acculturation theory emphasising acculturation strategies has been infused with other constructs, such as cultural distance, which highlights distinct separation between origin and host cultures (Church, 1982), and intercultural competence, which explains adaptation as a cultural learning experience (Ward & Kennedy, 1993). In addition, new concepts have been highlighted. For example, stress-coping framework defines a stress-reaction to the host culture (Ward, 1996), whereas the cultural fit hypothesis emphasizes the role of personality traits to bring about an alignment between sojourner and the host culture (Ward & Chang, 1997).

The stress-coping model, based on the general framework of the stress-coping response of individuals to challenging situations (Lazarus & Folkman, 1984), has proven useful in clarifying the impact over migrants' well-being, and therefore, it explains the reliance on

acculturation strategies (e.g., integration, separation) highlighted by Berry (1997). However, stress-coping models do not emphasize enough the importance of migrants' cognitive dimensions, such as goals, needs, expectations, perception, motivation, problem-solving, decision-making, self-regulation, and intrinsic values. All those variables interweave to bring about a complex mosaic of acculturation, with subtle cultural nuances, different personal gains and values, and a continuum of outcomes (e.g., psychological, social, functional, cultural) ranging from very negative (Murphy, 1965) to very positive (Berry & Kim, 1988). The limitation of previous models of acculturation based on stress-coping strategies (Searle & Ward, 1990), might provide an incomplete, culture-centred, and non-agentic perspective of adaptation.

With this in mind, the cultural fit hypothesis (Ward & Chang, 1997) explains adaptation based on the concept of "cultural fit," or the match between the extraversion of sojourners and the norms of the host culture. Ward and Chang's cultural fit is based on previous work of various researchers, mainly Pervin (1992), who defined person-environment fit (PeF) as an alignment between goals and opportunities, and Ajzen (1988), who theorized that specific personality traits could bring about achievement-related behaviours. Integrating the concept of PeF with the role of personality traits, Ward and Chang (1997) have proposed the cultural fit hypothesis to explain adaptation in international students. The theory highlights *cultural fit*, or the alignment between characteristics of the person (e.g., extroversion, openness) and host culture norms as a facilitator of adaptation in a specific context that considers the person-situation interaction.

The possibility of a fit between the person and the environment (French et al., 1982; Pervin, 1992) has introduced the concept of a unitary system between sojourner and host culture to explain social stability and functionality during cultural transition (Magnusson & Statin, 1996). The alignment between sojourners and their host culture is a valuable concept that can

overcome the limitations of previous models using the stress-coping framework (e.g., lack of sojourners' autonomy, decision-making, and problem-solving) in addition to the fixedness of personality traits (Berry, 1997; Ward, 1996). For this reason, this thesis proposes a new model of acculturation that uses the frameworks of both PeF (French et al., 1982; Pervin, 1992) and cultural fit hypothesis (Ward & Chang, 1997) to explain cross-cultural transition and contextual functioning, and therefore, overcome some of the weaknesses of previous models.

The reinterpretation of the cultural fit proposed in this paper suggests a replacement of personality traits with goals, as cognitive factors that can account for changeable variables, such as autonomy (decision-making), learning (knowledge acquisition, experience), motivation (intrinsic value, goal-orientation), engagement (participation, identification), effort (pro-achievement behaviours), investment (goal setting), and purpose (meaningful goals). The revised model of cultural fit proposed by this study defines *goal-opportunity cultural fit* as the alignment between the goals of sojourners and the opportunities of host culture. This goal-opportunity alignment establishes the framework of the purposed *goal-opportunity model of acculturation* (GOMA), which states that adaptation is shaped by sojourner' perception of host culture as favorable to their goal-achievement, with a goal-opportunity alignment facilitating adaptation.

The reason for this new interpretation of cultural fit takes into consideration that personality traits tend to be stable and unchangeable (Hettema, 1989). Subsequently, reliance on personality traits to explain adaptation leads to disregarding the factors that sojourners can intentionally control, such as effort, goal setting, social networking, cultural learning, self-regulation, and problem-solving (Austin & Vancouver, 1996). A cognitive-driven adaptation (e.g., goal setting, problem-solving), as opposed to a personality-based one (e.g., openness, extroversion), implies active participation and persistent effort through setting meaningful goals,

solving problems, and making decisions. Sojourners take active roles in acculturation, as it is within their power to learn and develop by adjusting expectations, using adaptation strategies to overcome challenges, and increasing effort to adapt when host culture is perceived as favorable.

The lack of theoretical coherence in acculturation literature makes it difficult to establish clear guidelines for interpreting cultural research. Nonetheless, there are key concepts to help establish a clear theoretical foundation, such as the shift of acculturation investigation from a focus on the culture to a focus on the individual (Berry, 1980). As an acculturation researcher, Berry (1980) pushed for embracing a psychological acculturation (Graves, 1967) centered on migrants employing strategies to cope with acculturation changes. Therefore, migrants develop specific acculturation attitudes or orientations, such as integration, assimilation, separation, and marginalization, which fall along two distinct dimensions to either preserve or enhance cultural identity (Berry, 1997). Accordingly, psychological components (e.g., learning, goals, well-being, achievement, competencies, strategies) have become the groundwork of acculturation (Ward & Kennedy, 1993), and this is the perspective that this study embraces. Emphasizing a person-culture fit that is highly contextual and sensitive to the person-situation interaction, this study embraces theory building by proposing a new model of acculturation grounded in previous research, such as PeF (French et al., 1982; Pervin, 1992) and cultural fit (Ward & Chang, 1997). The model strives to address some of the weaknesses (e.g., lack of autonomy, decision-making, and problem-solving) of previous acculturation models.

The proceeding three chapters will review constructs that led to proposing the theoretical model (literature review), use exploratory analysis to validate an instrument developed to support the model (methods), and answer research questions using correlations and regression analyses (results). Discussions about findings and implications (theory and practice) will close the study.

Literature Review

The chapter reviews the constructs that led to developing the proposed model of acculturation. The chapter starts with data about international students in Canada, goes over relevant theories and constructs in acculturation, presents a detailed description of the proposed model, and ends with stating the research objectives and questions.

2.1. International Students in Canada

Studying in an English-speaking country is regarded by many as the ultimate academic accomplishment. For students from collectivistic Asian societies who place a greater emphasis on education and family ties, studying abroad carries even higher values – it not only opens the path toward personal development and the potential for a successful international career, but it is also the means by which students can fulfill their filial duty and make their families proud. According to the Canadian Bureau for International Education (CBIE), Canada is the third most popular destination (after the US and the UK) for international student enrolment (CBIE, 2019) due to its reputation as a welcoming society with a quality education system, a well-established academic reputation, and reasonable tuition fees (CBIE, 2018). Therefore, it makes an attractive choice for international students (defined as temporary residents, or sojourners) seeking to pursue an academic degree in an English-speaking country.

The number of international students in Canada has increased significantly (588%) in recent decades, from 84,000 in 1995, to 494,525 in 2017 (CBIE, 2018). Latest statistics show there are currently 642,480 international students in Canada (all levels), as of December 2019 (CBIE, 2020b), with a total of 498,735 post-secondary international students (CBIE, 2020a). Among all international students (all levels) reported for 2019, Asian students represents more than half, with Indian (34%) and Chinese (22%) students rounding up the top (CBIE, 2020b).

British Columbia (BC) is the second choice (after Ontario) for international students coming to Canada, with a total of 180,201 international students studying in BC at all levels, in 2018 (CBIE, 2020b; Global Affairs, 2020; Heslop, 2018). The economic benefits brought by international students is significant. For example, in 2015, international students in BC (total of 130,053) spent a total of $3.5 billion, mostly on tuition, accommodation, living expenses, arts, cultures, and recreation (CBIE, 2018; BC Government News, 2017; BC Council for International Education, 2017). For 2018, the total annual spending of international students in BC (total of 180,201) increased to $4.7 billion (Global Affairs, 2020). In 2016, international students in BC (total of 145,691) contributed with a total tax revenue of $500 million, with $252 personal income taxes and $248 million indirect taxes (Global Affairs, 2017). In addition, as the number of international students in BC kept increasing (by 92% between 2008 and 2015, as according to CBIE, 2016), almost 26,000 jobs have been generated in 2016 as a direct result of international students (BC Council on Admissions and Transfer, 2015; CBIE, 2020b). Finally, data for 2000-2017 indicates that international students are becoming the largest stream (48% - 49%) of immigrants in Canada (CBIE, 2018; Lu & Hou, 2015; The Canadian Magazine of Immigration, 2016), with 60% (between 2014-2019) of international students in BC having expressed their intention to remain in Canada after graduation (BC Council on Admissions and Transfer, 2015; CBIE, 2020b). Therefore, international students in Canada are changing its sociocultural environment, impacting both the educational and economical environments in complex ways that call for more research and a better understanding.

2.2. Well-being of International Students

International students come from diverse cultural, social, and economic backgrounds. However, they face similar challenges related to language barriers, lack of social support,

stereotypes, academic challenges, and difficulties in understanding and integrating social norms and cultural values of the host country. Research on the adaptation of students abroad has found that international students must cope, not only with the academic pressure of a competitive environment, but also with the psychological, social, and cultural pressure of being in a new sociocultural environment (Shieh, 2014). Adjusting to a new context has the potential to impact the well-being of students studying aboard, and therefore, leading to elevated levels of stress, anxiety, and depression (Choi, 1997). The support for well-being of international students being impacted during adaptation is overwhelming (Berry, 2006; Berry & Kim, 1988; Choi, 1997), which highlights the need for effective adaptation strategies. Studies indicate that the identify conflict experienced by sojourners is stressful (Leong & Ward, 2000), the perceived social exclusion is painful (Bernstein & Claypool, 2012; MacDonald & Leary, 2005), stereotype threat impacts intellectual performance (Steele & Aronson, 1995), and overall, acculturation is a challenging process (Berry, 2006). The stress-coping response (Lazarus & Folkman, 1984) of sojourners transitioning challenging cultural situations has pushed acculturation research toward stress-coping models (Ward, 1996), which highlight that cultural transition is a reaction stress that calls for copying strategies to adapt and minimize the adaptation stress.

International students are likely to experience higher levels of stress and anxiety compared with other groups of residents (e.g., work migrants, businesspeople) due to academic pressure and expectations (Mori, 2000). Moreover, previous studies highlight that Asian students are prone to experiencing even more stress and anxiety, when adapting to an English-speaking country (Lin et al., 2001; Lin & Yi, 1997). The increased impact over well-being is due to holding stronger educational values (Windle et al., 2008) and having to navigate more significant cultural differences (e.g., collectivism versus individualism) between the native and host cultures

(Church, 1982). Furthermore, research has revealed that international students begin experiencing negative feelings about studying abroad even before starting their academic life in North America. For example, Zhang and Beck (2014) found that Chinese students experienced anxiety, depression, maladjustment, and dissatisfaction throughout their IELTS preparation in Vancouver, BC, as part of the requirements to enrol in a post-secondary institution. Although language acquisition was found to be a major factor affecting the psychological well-being of the students (Zhang & Beck, 2014), the language stress was found to corroborate with other stressful adaptation factors. For example, cultural differences and students' overall inability to adapt and understand the culture of the host country tend to contribute to the dissatisfaction of students (Lin et al., 2011; Shieh, 2014; Zhang & Beck, 2014). Various other studies have confirmed that international students in North America are more likely to experience higher level of anxiety than domestic students, due to perceiving social situations as more ambiguous and threatening (Li et al., 2012; Lin et al., 2001; Wang, 2016).

As international students face various challenges impacting their well-being, such as language, academic, sociocultural, and lack of perceived support, they tend to look for support and resources at their academic institution (Martirosyan et al., 2019). Studies on international students highlight that student support programs offered by academic institutions, such as academic, language, professional development, counselling, and so on, not only attract students to a specific institution, but are essential for ensuring both well-being and academic success of internationals students (Cho & Yu, 2015).

2.3. Intercultural Competence and Acculturation

Acculturation defines a general, universal framework of migrants' responsiveness to their host culture's values and challenges. Within the acculturation framework, intercultural

competence, or the ability of an individual to function effectively across cultures (Whaley & Davis, 2007), focuses on the sociocultural dimension of adaptation (Searle & Ward, 1990), which evaluates changes in the identify of migrants due to close interactions between culturally different individuals living in the same sociocultural environment. Intercultural competence research explains sociocultural adaptation as the acquisition of cultural knowledge and intercultural skills, such as traits, attitudes, and capabilities (Sandberg, 2000). Therefore, it builds on the foundation of cross-cultural competence, or the set of variables (e.g., knowledge, skills, cognition, personal attributes) that allows people to work successfully with others from diverse cultural backgrounds, in culturally diverse situations (Johnson et al., 2006).

Intercultural competence research highlights that studying, working, and living in another country can be challenging (Zhou et al., 2008), especially when there are significant cultural differences between migrants and host culture's natives (Church, 1982). Through acquiring competencies (e.g., knowledge, skills, abilities) and enhancing personal attributes migrants can develop intercultural competence, which allows them to function in diverse cultural settings by developing the "ability to think and act in intercultural appropriate ways" (Hammer et al., 2003, p. 422). Although intercultural competence can be a controversial concept due to its superficial clarity (Rathje, 2007), some authors proposed that functioning could be the outcome of a sense of cohesion and familiarity between individuals of diverse cultures, which creates a favorable context for interaction and pursuing goals (Rathje, 2007).

Fragmentation of research regarding the distinct dimensions of acculturation, such as sociocultural and psychological (Searle & Ward, 1990), has led to popularization of different models (Table 1), with a focus either on cultural knowledge and competence (intercultural competence models) or on stress-coping and adaptation outcomes (acculturation models).

Intercultural competence models tend to mix personality traits (e.g., openness, agreeableness, extraversion) with learning and acquiring cultural skills and knowledge. On the other hand, acculturation models depict adaptation as a stress-coping process with an emphasis on outcomes.

Table 1

Models of Intercultural Competence and Acculturation

Intercultural Competence Models (focus on cultural knowledge and competence)	
Model	**Characteristics**
Ruben (1976)	Knowledge-orientation Model (seven dimensions): 1) respect; 2) attitude toward interaction; 3) getting used to the knowledge 4) empathy; 5) mission-role behaviours; 6) interaction management 7) tolerating uncertainty
Gertsen (1990)	Mixture of factors: - *cognitive - knowledge:* cultural differences, foreign culture, cultural communication, and interaction patterns in a culture - *affective:* motivation and interest in intercultural contact, freedom from prejudice, positive attitudes toward a foreign culture, and respect for customs of other cultures - *conative intercultural competencies:* knowledge and awareness of different communication styles, and strategies to avoid misunderstandings
Byram (1997)	Model of Intercultural Dimensions: 1) attitude; 2) knowledge: 3) interpreting and relating skills 4) exploring and interacting skills; 5) critical cultural awareness
Bolten (2007) cited by Zur (2019, p.11)	Synergic Process of Intercultural Competence (four dimensions): - *professional:* e.g., professional knowledge and experience - *strategic:* e.g., problem solving and decision making - *individual:* e.g., willingness to learn, ambiguity tolerance, optimism - *social intercultural competence:* e.g., communication, empathy, adaptation
Deardorff (2011)	Deardorff's Intercultural Competence Model: - cyclical process of social interactions - critical thinking of the cultural knowledge - *self-reflection* and *self-evaluation* of acquired intercultural abilities - different outcomes (*internal* versus *external*)
Acculturation Models (focus on stress-coping and cultural outcomes)	
Berry (1980, 1997)	Fourfold Model of Acculturation: - bidirectional, with two independent continua: 1) maintaining culture of origin, and 2) adopting values of host culture - stress-coping framework with four outcomes of adaptation:

	- *assimilation*: adopting norms of the host culture - *integration*: integrating norms of both host and native cultures - *separation*: rejecting norms of the host culture - *marginalization*: rejecting norms of both host and native cultures
Mendoza and Martinez (1981)	Four acculturative types of adaptation: 1) cultural resistance (equivalent to Berry's *separation*) 2) cultural shift (equivalent to Berry's *assimilation*) 3) cultural incorporation (equivalent to Berry's *integration*) 4) cultural transmutation: a unique, new subcultural dimension is created by mixing values of native and host cultures
Bennett (1993)	6 acculturation stages with a linear transition from denial to integration: - *ethnocentric* stages: denial, defense, and minimalization - *ethnorelative* stages: acceptance, adaptation, and integration
Ward (1996)	Ward's Model of Acculturation: - stress-coping model with different variables within two dimensions: societal and individual - adjustment impacted by various moderating factors (e.g., personality, language fluency, cultural distance, length of cultural contact, etc.)
Ward et al., (2001)	Ward's ABC Model of Acculturation: - ABC foundation (affective, cognitive, behavioural), different dimensions: stress and coping (A), culture learning (B), and social identification (C) - different outcomes: affective (psychological adjustment), behavioural (sociocultural adjustment), and cognitive (cultural identity and intergroup perceptions) - distinct types of adjustment: psychological versus sociocultural
Arends-Tóth and van de Vijver (2003, 2006)	Multidimensional Framework of Acculturation: 5 acculturation conditions: - characteristics of receiving society - characteristics of society of origin - characteristics of immigrant group - perceived inter-group relations - personal characteristics 5 acculturation outcomes: - adopting the "mainstream" culture - maintaining "heritage/ethnic" culture - psychological well-being - sociocultural competence in ethnic culture - sociocultural competence in mainstream culture
Zhou et al. (2008)	ABC Model of Acculturation *(based on Ward, 2001):* - intersection of two different dimensions (societal and individual) - traditional ABC (affective, cognitive, behavioural) foundation - different responses (ABC) and outcomes (sociocultural, psychological) - cultural learning occurs through acquiring culture-specific skills

Overall, acculturation research strives to consider the importance of a range of factors, related to both the individual and the environment, to explain different acculturation outcomes, such as psychological, functional, social, and cultural. These factors can be summarized as: (a) *cultural knowledge* (coming from training, others, or self-learning); (b) *personality traits* (openness, agreeableness, extraversion); (c) *cognitive* (motivation, reasoning, decision-making, goal setting); (d) emotional (positive affect, self-regulation); (e) *behavioural* (proactive, pro-social, pro-goal attainment), and (f) *environmental* (resources, opportunities, support, social roles, challenges). While psychological adaptation evaluates well-being as the main outcome, sociocultural adaptation emphasizes a flexible cultural experience in which functioning is ensured, conflict is avoided, identity is preserved, and values are integrated. For this reason, Ward and colleagues' (Searle & Ward, 1990; Ward, 1996; Ward & Kennedy, 1990; Ward et al., 2001) model of acculturation based on two distinct but interrelated dimensions (e.g., psychological, sociocultural) is regarded as an integrative approach between different theoretical constructs, such as acculturation strategies (Berry, 1980), stress-coping (Ward, 1996), and intercultural competencies (Bolten, 2007, as cited in Zu, 2019, p. 11; Gertsen, 1990). Moreover, the integrative approach highlights the relevance of cognitive factors in relation to the context, and therefore, they consider the particularities of the person-situation interactions.

2.4. Cultural Intelligence

Defining the ability of an individual to work and function effectively across cultures, cultural intelligence (CQ), as described by Earley and Ang (2003), is regarded as having components that are changeable, rather than being purely innate and stable. Redefining cross-cultural transition within the perspective of cultural intelligence places a personal learning value on the experience of cultural adaptation. The cognitive value of adaptation stems from the

natural tendency of sojourners to rely on using strategies, setting goals, making decisions, and solving problems to overcome adaptation challenges and achieve goals in an unfamiliar environment (Austin & Vancouver, 1997). For this reason, cross-cultural transition can be regarded as a learning process, which implies acquiring intercultural competence (Deardorff, 2011; Gertsen, 1990; Johnson et al., 2006; Whaley & Davis, 2007) and enhancing cultural intelligence (Earley & Ang, 2003). Although grounded in the theoretical framework of general intelligence, cultural intelligence defines cognitive abilities as context-specific, from a multidimensional perspective. The four components of CQ—motivational, behavioural, cognitive, and meta-cognitive—are deeply interconnected, which allows for context-sensitive planning, monitoring, rationalizing, and evaluating schemas of norms and values (Earley & Ang, 2003). Personality traits such as openness to experience can relate to CQ's dimensions; however, CQ is distinct from stable personality traits (Ang & Van Dyne, 2008). Although cultural intelligence tends to be perceived as a mediator between personality and adaptation, research does not indicate strong support for that assumption (Ward et al., 2009).

As a flexible form of intelligence, CQ can be further enhanced through learning, skills, and experience to allow for deep cultural understanding and increase the ability of individuals to manage cultural differences, and therefore, function effectively in complex, unfamiliar, and diverse multicultural settings (Earley & Ang, 2003). Redefining the foundation of sociocultural adaptation, cultural intelligence allows migrants to potentially distinguish the subtleties of cultural features in individuals belonging to different ethnic groups, which leads to better social interaction and cultural integration (Earley & Mosakowski, 2004). Although they share conceptual similarities, from a research perspective, cultural intelligence extends beyond other traditional concepts, such as emotional intelligence, which defines the understanding and

managing of own emotions (Goleman, 1996) and intercultural competence, which defines the acquisition of cultural knowledge and skills (Gertsen, 1990), because it redefines intercultural abilities as a measurable and changeable form of intelligence (Earley & Ang, 2003).

To facilitate cultural adaptation research and better measure the psychological and sociocultural dimensions of adaptation, Ang and colleague (Ang et al., 2004; Ang & Van Dyne, 2008) have developed a Cultural Intelligence Scale. Their instrument evaluates four dimensions of cultural intelligence: (a) *metacognitive* CQ (strategy), or the ability to use higher-order cognitive processes to understand cultural knowledge; (b) *cognitive* CQ (knowledge), or knowledge of the new culture such as norms, values practices, legal and social system; (c) *motivational* CQ, or the ability to direct attention and effort to learn and function in culturally diverse situations; and (d) *behavioral* CQ, or the ability to act appropriately when interacting with people of different cultures (Earley & Ang, 2003).

CQ allows sojourners to develop a multiethnic identity and multicultural personality through blending innate cognitive traits with ingrained cultural values and learned attitudes, behaviours, and norms (Ramirez, 1999). Intercultural competence research highlights that acquiring cultural knowledge (Deardorff, 2011) and skills (Zhou et al., 2008) are essential within the sociocultural dimension of adaptation. In particular, the motivational and metacognitive dimensions of cultural intelligence are especially important. For example, Templer et al. (2006) found that the motivational CQ predicts general adjustment. On the other hand, Brancu et al. (2016) found that metacognition and motivation to achieve can compensate for the knowledge gap, and therefore, they allow sojourners to successfully function in complex and culturally diverse environments even without a strong cultural knowledge. Brancu et al.' study (2016)

highlights that regulating own cognition and having strong motivation to achieve become even more relevant in an achievement setting, such as it is the case with international students.

When cognitive abilities corroborate with positive context beliefs and perceptions, sojourners may be able to anticipate success (Austin & Vancouver, 1996). Therefore, the expectation to validate abilities in a new environment (Vandewalle et al., 2019) builds on the basic need to achieve and do well in a particular environment (McClelland et al., 1953). For these reasons, I suspect that a perceived alignment of sojourners' achievement needs with the support, resources, and opportunities offered by the host culture can increase motivation, maintain persistent effort, and engage pro-adaptation behaviours to overcome challenges, pursue clear goals, and achieve a meaningful integration.

2.5. Multicultural Personality

As a distinct, narrower personality trait (Ponterotto, 2010), multicultural personality (MP), which is defined as "success in the fields of professional effectiveness, personal adjustment, and intercultural interactions" (Van der Zee & Van Oudenhoven, 2014, p. 263), makes a better predictor for adjustment than broad personality traits such as openness and extraversion (Ponterotto, 2010; Van der Zee & Van Oudenhoven, 2014). For this reason, MP can be used as a predictor of both psychological and sociocultural adaptation (Van der Zee & Van Oudenhoven, 2000; Yakunina et al., 2012). Specifically, the success of intercultural interactions leads to multicultural effectiveness, which can be measured to provide a realistic picture of cultural adjustment (Van der Zee & Van Oudenhoven, 2000).

To facilitate adaptation research, Van der Zee and Van Oudenhoven (2000, 2013) worked to develop an instrument to measure sojourners' multicultural personality as distinct dimensions. Among the five dimensions of the multicultural personality construct, as measured by the

Multicultural Personality Questionnaire, *emotional stability* (ability to remain calm in stressful situations) and *social initiative* (being pro-active in social situations) have been found to contribute directly to the adjustment of international students (Van der Zee & Van Oudenhoven, 2013). On the other hand, being *open-minded* (open toward other cultural values and beliefs), *flexible* (adapt behaviour to fit cultural contexts), and *culturally empathetic* (able to emphasize with individuals of other cultures) can lead to greater openness to diversity, thus indirectly facilitating adaptation (Van der Zee & Van Oudenhoven, 2013; Yakunina et al., 2012).

Multicultural personality theory infers that the increasing cultural complexity of diverse societies triggers adaptation features that are driven by specific MP traits, such as social initiative and flexibility (Van der Zee & Van Oudenhoven, 2014). These adaptive multicultural personality traits encompass the ability to function (e.g., social integration, personal adjustment) in culturally diverse environments (Yakunina et al., 2012), and they are been influenced by general dispositional traits, or the Big Five (John, 1990; Ponterotto, 2010). The MP traits are responsible for shaping different styles of cross-cultural interaction, styles that fall under the influence of the three major psychological dimensions – cognitive, affective, and behavioural (Ponterotto, 2010). MP is concerned with human functioning, and therefore, it focuses on the positive aspects of personality, such as optimism, life satisfaction, perseverance, and autonomy (Ponterotto, 2010). MP is not only a reliable measurement for sociocultural adaptation is sojourners, but also a reason to consider individual differences in adaptation.

2.6. Goal Orientation and Need for Achievement

Specific traits of individuals, such as goal setting and motivation, can act as cognitive engines pushing sojourners not only to improve their abilities by acquiring knowledge and skills, but also to validate those abilities in an achievement setting (Vandewalle et al., 2019).

Differences in motivation and goal orientation divide individuals in two distinct groups, as identified by Carol Dweck (1986), who conducted research to explain response patterns to challenging situations, and therefore, proposed a goal orientation theory. Dweck's (1986) model explains differences in effort and motivation to accomplish goals, and therefore, has led to a dichotomous model of goal orientation (learning and performance). The model establishes two distinct groups of learners: (a) performance goal-oriented individuals, who strive to demonstrate competence and avoid negative evaluation; and (b) mastery/learning goal-oriented individuals, who strive to develop competence, perfect mastery, and enhance learning (Dweck, 1986; Nicholls, 1984). Extensions of goal orientation have later incorporated approach and avoidance dimensions (Elliot et al., 2011; Elliot & Harackiewicz, 1996; Vandewalle et al., 2019). Those revisions to the initial goal orientation framework (Dweck, 1986) highlighted that the goal orientation traits in demonstrating abilities (either mastery or performance) interconnect with the need and motivation to achieve. For this reason, the inclusion of achievement needs along with motivation (Atkinson & Feather, 1966) has improved Dweck's (1986) initial goal orientation construct with two more distinct groups (Elliot, 1997). The third group consists of (c) approach-motivated individuals, who display a strong need to achieve success (Elliot, 1997), which is associated with positive affect, such as hope, pride, self-efficacy (Atkinson & Feather, 1966). Finally, a fourth group consists of (d) avoidance-motivated individuals, who display a strong need to avoid failure (Elliot, 1997), and therefore, are likely to experience negative affect, such as fear, anxiety, and resistance (Atkinson & Feather, 1966).

Conceptually, achievement goal orientation dimensions build on the need for achievement (Atkinson & Feather, 1966), or the desire of individuals to prove high standards of mastering skills and knowledge to ensure significant accomplishment (Murray, 1938). This need

to define, pursue, and achieve meaningful goals, or in other words the need for achievement (McClelland et al., 1953), becomes even more stringent in a new environment where outsiders are expected to prove excellence and high standards (McClelland et al., 1953). With the inclusion of achievement need and motivation, the revised achievement goal orientation theory has been refined as a four-factor model, with two groups for each of the two essential orientations proposed by Dweck: mastery-approach and mastery-avoidant for the mastery-orientation, and respectively, performance-approach and performance-avoidant for the performance orientation (Elliot & McGregor, 2001).

In an unfamiliar environment, the need and motivation to achieve goals may corroborate with the desire to acquire cultural competence (knowledge, skills) to facilitate adaptation, overcome challenges, and ensure support for achievement. For this reason, goal orientation can be used to predict not only cultural behaviours, but also cultural outcomes. For example, mastery-oriented individuals tend to perceive their abilities as changeable and improvable, as they are intrinsically motivated (Dweck, 1986). When faced with challenges, mastery/learning individuals are likely to self-regulate and engage in rationalization, such as attribute their failure to insufficient effort and inefficient strategy, believe that the increase in effort leads to success, perceive feedback as opportunity for improvement, persist in their tasks, attempt different strategies, and continue to pursue challenging goals (Dweck, 1986). On the other hand, performance-oriented individuals tend to be extrinsically motivated and more concerned with demonstrating competence relative to others, and therefore, they seek to impress and avoid negative judgments from peers and negative evaluations from teachers (Dweck, 1986). When faced with challenges, performance-oriented individuals are likely to: attribute their failure to low ability; believe that an increased effort is an indicator of low ability; experience more stress,

anxiety, and depression because their self-esteem is threatened; lower their effort; and choose easier tasks (Dweck, 1986). The negative dimensions of the two essential orientation are similar, except for the switch in motivation. Therefore, mastery-avoidant orientation refers to a negative motivation to avoid failure or doing worse, whereas performance-avoidant orientation refers to a positive motivation to avoid looking incompetent or less able than peers (Elliot et al., 2011).

As the goal orientation theory has gained traction, the issue of goal orientation being either a trait or a state has divided researchers (Pintrich, 2000). A trait goal-orientation describe response patterns that are consistent across achievement situations, and therefore, it emphasises stability and consistency (Vandewalle et al., 2019). On the other hand, a state goal orientation is specific to the context or task at hand, with individuals having a strong goal-orientation for one specific domain, such as, for example, academic (Vandewalle et al., 2019).

I would argue for an integrative approach on goal orientation. It is possible that students with a strong goal orientation (trait) are more likely to choose to study abroad, and therefore, from this perspective, goal orientation would be a stable trait in international students. However, specific contextual factors, such as information, support, perceived achievement-favouring, can impact responsiveness, especially in new environments that are challenging and not easy to interpret (e.g., lack of support, ambiguous situations, stress). In an ambiguous situation such as studying abroad in a new country, international students could become goal-directed, rather than goal-oriented. For example, they may set up clear objectives to help them through with a particular task in a specific context, such as academic, even if by doing that they might disregard their stable and more predictable goal-orientation trait. Therefore, I believe that, although goal orientation is regarded as a relatively stable trait, in a real-life situation it is possible for goal orientations to change from trait to state, depending on the influence and characteristics of the

context. Previous research highlights the possibility for contextual influences to impact stability of goal orientation (Button et al., 1996), which highlights that goal-orientation can be dynamic in real-life settings, as goals are shaped by both the context and the acting person (Pintrich, 2000).

I believe that in a new cultural context, either a mastery/learning or a performance orientation can motivate and push sojourners to acquire relevant cultural knowledge and skills to understand their environment, and therefore, facilitate achievement regardless of their motivation (to acquire mastery or simply outperform peers). Research supports the idea that goal orientations, although distinct, can become blurred in a real-life situation (Eison et al., 1986). For this reason, individuals can have competing goal orientations at the same time, and therefore, they can hold distinct levels of orientations, such as, for example, high in one orientation and low in another one (Eison et al., 1986). Multiple goals orientations are possible at a given time, and therefore, it is expected to find some learners who make effort to both improve mastery and outperform peers at the same time (Eison et al., 1986). I theorize that, although a mastery orientation is desired, having a strong achievement goal-orientation (either mastery or performance) is essential in cultural adaptation. Goal orientation can be associated with positive outcomes in sojourners, such as: bringing about an increase in effort, pushing to find better strategies, nurturing motivation, seeking out social interactions to ensure feedback for progress and improvement, gathering relevant context knowledge to achieve goals in an unfamiliar environment, and favoring a perceived alignment with the immediate context.

2.7. Person-environment Fit and Adaptation

The person-environment fit (P-E fit) emphasizes an alignment between characteristics of a person (e.g., personality traits, beliefs, values, needs, goals) and environmental characteristics (e.g., sociocultural values, resources, demands, rewards, or means), and therefore, it is regarded

as essential for functioning, development, performance, achievement, and preserving well-being (French et al., 1982; Holland, 1997; Pervin, 1992). A favorable sociocultural environment shapes development, providing a context for individuals to thrive and function (Lerner & Damon, 2006). Individuals are active agents in their interactions with the environment (Bandura, 1989), having both the ability to shape environment according to their needs, as well as to adjust to its defining characteristics (Lerner & Damon, 2006). Goals are central to the concept of individual as an environmental agent, because they act as motivating factors within the context-person interactions dimension (Pervin, 1992). Therefore, goals drive behaviour in the pursuit of personal achievement (Pervin, 1992; Magnusson & Statin, 1996). The perception of a person-environment fit (P-E fit) harmonizes the goals of the individual with the demands and opportunities for goal attainment provided by environment (Pervin, 1992). Personal goals shape and drive behaviour, and therefore, individuals tend to choose environments that are consistent with their identities, motives, goals, and values (Hogan & Roberts, 2000).

When the characteristics of a person align with components of the perceived, immediate environment, which allows behaviours to manifest and psychological needs (e.g., achievement) to be fulfilled (Murray, 1951), the person-environment system achieves stability and functionality (Magnusson & Stattin, 1996). In this unitary system, individuals exercise agency (Lerner & Damon, 2006), and their operating cognitive structures (e.g., goals, needs, expectations, perceptions) corroborate with variables defining the context (e.g., opportunities, resources, possibilities) to ensure specific end-goals, such as the functioning, integration, and achievement of the individual (Magnusson & Stattin, 1996). The environmental components of this unitary system provide the means and resources, while the cognitive components drive behaviour toward fulfilment (French et al., 1982). The individual, who manages environment's

resources through exercising agency, problem-solving, decision-making, and using strategies, serves as a cognitive/mental variable (Magnusson & Stattin, 1996) that is agentic, goal-directed, and context-adaptive (Hettema, 1989). In addition, the individual-environment system requires meaningful interactions between the individual striving to integrate in the system, and those who are already part of it. Therefore, the alignment between the individual and the environment is vital to both ensuring stability of the system, as well as the functioning, achievement (Lerner & Damon, 2006) and performance of the individual in a work environment (Holland, 1997).

Adaptation to a new sociocultural environment is context-specific, as individuals adjust to their proximal, perceived environment that is most central to their functioning (Lerner & Damon, 2006). This specific sociocultural context (e.g., academic), becomes the life space (Murray, 1951) of sojourners, where behaviours manifest, personality traits exercise their influence, goals drive behaviours, and success is achieved in a deliberate and meaningful way (Magnusson & Stattin, 1996). For example, in international students, the academic environment is the most relevant and valuable, and therefore, it shapes their cultural adaptation the most. The person-environment interaction is a two-way path: individuals adjust their behaviour and cognition to the context, while the environment adjusts to the new values that the individuals bring in (French et al., 1982). As such, cultural adaptation is not just an assimilation of the sojourner into an unchangeable system (host culture), but rather an integration into a person-environment union, in which both sides undergo changes to form a new system that integrates the sojourner while accommodating the new values brought into (Magnusson & Stattin, 1996).

Most person-environment fit models (e.g., person-job fit, person-vocation fit) are related to the work environment (with a focus on job satisfaction and performance), and therefore, they are significant in the field of organizational psychology (Edwards, 2008). However, the concept

of a fit between the person and the environment (French et al., 1982; French et al., 1974; Kagan, 1971; Holland, 1997; Pervin, 1992) has gained significance in other fields as well, such as development (Kagan, 1971) and education (Thomas & Chess, 1977), mostly with a focus on achievement and preserving well-being. Specific issues related to P-E fit, such as theoretical issues of the fit, the multidimensionality of the constructs, and difficulties in measuring the fit scores (Chuang, Shen, & Judge, 2016) call for more research in deciphering the conceptualization and operationalization of the construct, as well as its role in adaptation.

2.8. Cultural Fit Hypothesis

Previous theories about cultural adaptation emphasize the idea that personality traits can mediate cross-cultural transitions. For example, Church (1982) indicates that some traits, such as rigidity and ethno-centrism, may hinder cultural adaptation, while extroversion and a non-judgemental perspective are likely to facilitate it. Berry (1997) also touches on the idea of a fit between sojourners and their cultural context, with positive acculturation strategies (integration, assimilation as a choice[1]) highlighting a fit with the host culture, and therefore, an acceptance of acculturating individuals by the dominant society, whereas the negative strategies (separation, marginalization) indicate the failure to achieve a fit. The emphasis on the role of personality traits in cross-cultural adaptation has led to Ward and Chang (1997) proposing the concept of "cultural closeness" or "cultural fit," after conducting a series of studies on the cultural transition of international students. Ward and colleagues (Ward & Kennedy, 1993) theorized that, since acculturation implies developing an ability to negotiate the interactive aspects of the host environment, then high extraversion is likely to bring about a successful cross-cultural adaptation. Initially, Ward and colleagues (Searle & Ward, 1990; Ward & Kennedy, 1993) searched for a direct correlation between extraversion and cultural adaptation; however, their

[1] See the footnotes section (p. 145).

findings were inconsistent in highlighting a direct and positive influence of personality traits over the adaptation of international students. For example, in one study, extraversion was found to be associated with higher levels of depression in native English-speakers living abroad (Armes & Ward, 1989). The findings highlighted that although the value of personality in cross-cultural adaptation cannot be dismissed entirely, the predicted validity of personality traits is difficult to measure (Ward & Chang, 1997). To address the inconsistent findings, Ward and Chang (1997) proposed the "cultural fit hypothesis," which regards the significance of the context and the value of the person-situation interactions in addition to personality traits.

As envisioned by Ward and Chang (1997), psychological adaptation is facilitated by "the cultural fit between a sojourner's personality profile and host culture norms" (Ward & Chang, 1997, p. 527). The extent to which sojourner's personality aligns with the norms and values of the host culture can, therefore, preserve well-being (Searle & Ward, 1990; Ward & Chang, 1997). For this reason, adaptation can be predicted by evaluating the cultural fit between sojourners and their host culture. In that way, Ward and Chang (1997) redefined the value of personality traits in adaptation by emphasising that, although, extraversion is not directly related to psychological and sociocultural adaptation, discrepancies between sojourners' extraversion and norms of the host culture are expected to impact well-being and increase stress levels.

In Ward and Chang's initial study (1997), a sample of 139 American students studying in Singapore was evaluated by measuring their levels of extraversion (as personality trait), depression (as indicator of psychological adjustment) and social difficulty (as indicator of sociocultural adaptation). The authors calculated absolute discrepancy scores for extraversion in relation to host culture's norms, by calculating the magnitude between extraversion scores and comparative norms. The discrepancy between the personality profile (extraversion only) of

sojourners and host culture norms was found to be significant (Ward & Chang, 1997); however, the correlation level was low to moderate ($r = .23$, $p < .001$). In addition, the authors found that psychological and sociocultural adaptation, although distinct dimensions, were significantly correlated ($r = .45$, $p < .001$). Ward and Chang's (1997) study provides validity for the cultural fit constructs by highlighting that the fit between sojourner's personality and host culture norms can be a significant predictor for cross-cultural adaptation (Ward & Chang, 1997).

Findings of the initial study (Ward & Chang, 1997) were confirmed in a later study (Ward et al., 2004) testing the cultural fit hypothesis, which incorporated all Big Five personality traits (John, 1990). In the follow-up study, Ward and colleagues (Ward et al., 2004) evaluated the adjustment of paired samples of Australian nationals and Singaporean students in Australia, and then Australian nationals and Chinese students in Australia. The 2004 study highlighted that the fit between personality traits and host culture norms can be a predictor of adaptation regardless of the specificities of the culture of origin (Australia is an individualistic culture, Singapore is relatively collectivistic, China is traditional collectivistic). The findings revealed that different personality traits corroborate with cultural norms to influence the cultural fit dimension by. For example, psychological well-being and satisfaction of sojourners were increased by internal locus of control in Chinese students, and by extroversion in both Singaporean and Australian students (Ward et al., 2004).

2.8.1. The Issue of Personality Traits in Cultural Fit

I believe the fit between sojourners and their host culture is a valid construct in evaluating and predicting cross-cultural adaptation, and therefore, it needs special consideration. A person-culture fit (or cultural fit) can be both a valuable means of adaptation for sojourners, as well as a relevant research tool. However, its components need to be re-evaluated, particularly

the dimensions related to the sojourner. For example, specific personality traits, such as openness and extraversion, can certainly encourage social interaction (Ajzen, 1988). However, the main drawback of personality traits is that they are not context-specific nor adjustable. Therefore, personality-based models of adaptation assume a universal predictive value of personality (Ward & Chang, 1997) that disregard the particularities of the context and specific factors related to individual (e.g., motivation, effort). From a research perspective, it is difficult to gather empirical data revealing direct relations between personality traits and cultural values, due to specific challenges such as: difficulties in measurement, influence of mediating variables (e.g., academic motivation, cultural background of sojourners), and significant differences in personality traits. Moreover, the specificities of the person-context interactions should be considered in cross-cultural adaptation, as well as the basic needs of sojourners, such as the need for achievement, autonomy, and belongingness.

Personality traits have been long believed to play a significant role in adaptation (Church, 1982), with extraversion in particularly being defined as a facilitator of adaptation (Ward & Chang, 1997). Nonetheless, inconsistency in highlighting the role of personality traits in adaptation is appealing, with extraversion sometimes predicting well-being (Searle & Ward, 1990), other times failing to predict it (Ward & Kennedy, 1993), or even predicting higher levels of depression (Armes & Ward, 1989). Despite inconsistency in findings, the emphasis on the role of personality traits in adaptation, either direct (Church, 1982) or indirect (Ward & Chang, 1997), have led other researchers to developing measurement tools to evaluate personality constructs relevant to adaptation. For example, Van der Zee and Van Oudenhoven, (2000) developed the multicultural personality questionnaire (MPQ), which uses personality-related dimensions (e.g., cultural empathy, flexibility, open-mindedness) to evaluate and predict

sociocultural adaptation in various categories of sojourners, from international students to businesspeople and work migrants. For this reason, correlations between MPQ and the proposed scale were predicted in this study.

Besides being difficult to evaluate and producing inconsistent findings, the biggest issue with personality traits is that they are taking the agency away from sojourners. This is because personality traits are (largely) stable, and therefore, less likely to be influenced by effort, learning, decision-making, and problem-solving (Austin & Vancouver, 1996). For this reason, I believe that other variables should be considered in assessing cross-cultural adaptation. Studies on adaptation have revealed that multiple mediating and moderating factors related to both environment and cognition are involved in adaptation of sojourners, mainly: academic efficacy, engagement, and motivation (Zhao et al., 2005); goal-setting and achievement needs (Austin & Vancouver, 1996); availability of social support; quality of interactions with locals; cultural similarities (Zhang & Goodson, 2011); cultural intelligence (Presbitero, 2016); intercultural competencies; and multicultural personality (Lee & Ciftci, 2014).

Research by Ward and colleagues highlights that evaluating adaptation in international students from a cultural fit framework can be a valid research perspective, as the alignment between specific characteristics of the sojourners and characteristics of the host culture can facilitate adaptation (Ward & Chang, 1997). For example, the perception of an alignment between sojourner and host culture can make sojourners more likely to invest greater effort in achieving positive social interactions, gathering cultural knowledge, and understanding of their host culture. However, the components of this perceived person-culture alignment need further refinement. For this reason, the current study proposes replacing personality traits with goals, and therefore, shifting the paradigm from a personality-based cultural fit, to a goal-opportunity

cultural fit. Unlike personality traits, goals can better define the cultural fit construct due to their unique characteristics: goals can not only be adjusted to match a specific context, but they instill motivation, preserve agency, and support the natural tendency of individuals in an unfamiliar environment to first set clear achievement objectives, and then rely on problem-solving, decision-making, and persistence of effort (Austin & Vancouver, 1996) to ensure achievement.

2.9. Goal-opportunity Model of Acculturation (GOMA)

Considering the idea that a goal-opportunity cultural fit can facilitate adaptation of international students, this section touches on several aspects to explain the proposed goal-opportunity model of acculturation (GOMA). For this reason, each subsection focuses on specific issues such as: explaining the reasons goals should replace personality traits in the cultural fit construct, defining the previous theoretical foundation the proposed model is grounded on, indicating how a person-culture alignment can benefit both the sojourner and the host culture, detailing the proposed model, and reasoning why this paradigm shift is needed to enhance the understanding of cross-cultural adaptation.

2.9.1. Replacing Personality Traits with Goals

Preserving well-being in a new, complex, and challenging sociocultural environment can be ensured by maintaining a stable and secure sense of self and identity, avoiding conflict, engaging in pro-adaptation behaviours to integrate, and ensuring constant motivation and persistent effort to achieve meaningful goals. Cross-cultural transition can be a threat to the sociocultural identity of the individual because it undermines the security of the self by bringing about a reshape of personal identity to incorporate new contextual values and norms. However, if sojourners hold the belief that the host culture adapting to is favorable, and therefore, provides the right opportunities for fulfilling goals and achieving success, then, a person-culture fit

between sojourner's goals and opportunities offered by the host culture (goal-opportunity cultural fit) can be achieved. In that case, cultural adaptation can turn to be a positive experience, with challenges being perceived as opportunities, differences as reasons for learning, and the re-shaping of cultural identity as personal development. The person-culture fit brought about by the goal-opportunity alignment can ensure the stability of self, and therefore, continuity of identity in a new yet favorable environment, with sojourners willing to integrate values of their host culture within their own system of values. Positive attitudes, commitment to meaningful goals, pro-active behaviours, reliance on strategies and problem-solving, cultural flexibility, and perseverance of effort can help sojourners overcome cultural setbacks.

As a reinterpretation of Ward and Chang's (1997) cultural fit, the proposed goal-opportunity model of acculturation preserves the construct of cultural fit, as the match between the person and the environment, while replacing its defining components. For this purpose, Ward and Chang's (1997) cultural fit between sojourners' personality traits and the values of the host culture is being reinterpreted as the alignment between sojourners' goals and the opportunities of the host culture. In other words, Ward and Chang's (1997) personality-values cultural fit is being reinterpreted as a goal-opportunity cultural fit. Therefore, goals (rather than personality) become the core of cultural adaptation, as setting goals that have intrinsic value, can be adjusted, and reflect the individual's own effort and participation can provide sojourners not only with an adaptation purpose, but also with a sense of autonomy and achievement. Goals not only call for the use of metacognition (e.g., strategies, self-reflection, decision-making), but they also enhance social behaviours and knowledge. Specific skills are likely to develop when goals are pursued, such as learning to cooperate with others sharing the same environment, finding relevant support and resources, and acquiring relevant knowledge of that environment to evaluate its challenges,

resources, and demands (Austin & Vancouver, 1996). GOMA places the goal-opportunity cultural fit at its core, and therefore, makes a clear statement that goals are more likely than personality traits to facilitate cultural integration, with goal-driven sojourners more willing to integrate host culture's values into their own cultural identity when living in an achievement-favorable environment.

It should be noted, however, that the refinement of personality traits has transitioned from the classical, universal Big Five, to a more positive, intercultural-favorable approach (John, 1990) with some new traits, such as Intellect (instead of openness to experience), Surgency (instead of extraversion), and Emotional Stability (instead of Neuroticism), joining the classical Conscientiousness and Agreeableness. In addition, specific personality traits, such as openness, extroversion, agreeableness, or conscientiousness, can certainly support a goal-opportunity model of acculturation by accounting for goal-orientation (Farr et al., 1993), helping maintain goal-focus (Lord & Levy, 1994), favoring social interaction, and enhancing self-confidence of sojourners in an unfamiliar environment (Ajzen, 1988). Nonetheless, the inherit fixedness of personality traits disregards not only effort and autonomy, but more significantly, the natural ability of individuals to rely on learning and problem-solving to adapt to their environment (Anderson, 1993). Although positive personality traits (e.g., openness, extroversion) can facilitate social interaction and stimulate cultural openness (Ajzen, 1988), they do not actively engage sojourners in persistent effort, decision-making, and learning, nor bring about positive affect (Austin & Vancouver, 1996). On the other hand, perception and expectation for goal attainment can lead to positive emotions even before achieving goals (Frijda, 1988). Furthermore, goals keep individuals constantly engaged, as they require action, strategy, planning, and decision-making, (Austin & Vancouver, 1996), as well as self-reflection and

progress evaluation (Gollwitzer, 1993). Finally, conscious goals (e.g., academic achievement, educational aspirations, career objectives) can be adjusted and regulated (Ford & Nichols, 1992), and they are motivational by nature (Austin & Vancouver, 1996).

2.9.2. Theoretical Framework

The proposed GOMA stems, at its core, from the general framework of the person-environment fit construct (Craik, 2000; French et al., 1982; French et al., 1974; Holland, 1997; Lent et al., 1996; Little, 2000; Pervin, 1992), which emphasizes that human behaviour in a specific environment (person-situation interaction) is influenced by the match between the characteristics of the person (e.g., psychological, cognitive) and the dimensions of the environment (e.g., values, means, resources). Individuals chose, adapt, and thrive in environments with positive characteristics (French et al., 1982). Such environments are meaningful and supportive (Little, 2000), consistent with the personality (Holland, 1997), expectations, and goals (Lent et al., 1996) of the individuals attempting to integrate, and provide them with the right opportunities for goal attainment (Pervin, 1992).

GOMA also extends on the conceptual framework of "goodness of fit" that Thomas and Chess (1977) proposed to explain students' academic motivation and achievement, and which highlights that the match (goodness of fit) between the person and the environment is achieved when the person's cognitive characteristics (motivational, temperamental, intellectual) are adequate to manage the expectations, opportunities, resources, and demands of the environment. A perceived goodness of fit can lead to individuals being successful in environments that are supporting and favorable to their need for achievement (Thomas & Chess, 1977).

GOMA makes use of some other established theories, such as goal setting (Locke & Latham, 2002), expectancy value (Vroom, 1964), and the need for achievement (McClelland et

al., 1953; Murray, 1938). The goal-setting theory highlights that sojourners who set specific and meaningful goals while in a new environment are more likely to: focus on the positive (e.g., activities aimed at increasing goal achievement) rather than on the negative (e.g., cultural challenges and differences, setbacks, adaptation obstacles), make greater effort and persist longer in their effort, are motivated to achieve, seek out for relevant knowledge, and try out strategies that can help them accomplish goals (Locke & Latham, 2002). Expectations for fulfilling goals in an unfamiliar environment can also motivate sojourners to persist in their effort to achieve, depending on the value of the outcome and the probability for outcome achievement (Vroom, 1964). Additionally, the need for achievement can trigger prolonged and repeated efforts to accomplish goals, with determinate goal-driven individuals taking calculate risks and investing consistent effort in overcoming challenges (McClelland et al., 1953; Murray, 1938). Previously constructs highlight the role of personal perceptions and beliefs in achieving goals. For example, Ajzen (1991) highlights the importance of perceived power, or the perceived presence of facilitating factors. These factors can strengthen control beliefs, or positive context beliefs individuals hold about their environment being favorable and responsive to their goal-directed behaviours (Ajzen, 1991). An expected environment's responsiveness to goal attainment instills personal agency beliefs (Ford & Nichols, 1992), a concept equivalent to Bandura' self-efficacy (1977), according to which individuals believe they can perform and achieve in a given environment. Goal-achievement perceptions and expectations bring about positive emotions, while perceived and expected threats cause negative emotions (Frijda, 1988).

2.9.3. Functionality in a Unitary system

The fit between the person and the environment (French et al., 1982) implies the construct of a new, unitary person-context system where sojourner is an active agent who is

driven by the motivation to fulfill goals and needs, while environment provides the necessary resources for achievement (Magnusson & Stattin, 1996). As such, psychological motivators (goals, needs, expectations) shape the person-context interactions, and therefore, they drive behaviour toward personal achievement. On the other hand, the environment provides all the necessary resources (possibilities, support, opportunities, means, rewards, demands for social roles) to nurture all achievement needs of the individual. The person-environment fit (French et al., 1982) ensures functioning of the individual in a new context, while also preserving the overall stability of the person-context system (Magnusson & Stattin, 1996). Sojourners adjust to their sociocultural environment by setting goals and managing its resources and opportunities, while the host culture incorporates the new values (skills, knowledge, experience, beliefs) brought in by sojourners (French et al., 1982). Functioning is moderated by social interactions, regulated by both the individual, through the cognitive-emotional system: perceptions, emotions, needs, goals (Magnusson & Stattin, 1996), and the environment (resources, demands, limitations, possibilities, roles, obstacles, rewards), and facilitated by the fit between the individual and the environment (French et al., 1982; Pervin, 1992). The adjustment of sojourners is not only group specific (each group of sojourners have specific goals and needs), but also domain (demands for specific roles) and context specific (in terms of resources and opportunities), with the perceived, closest environment, or life space (Murray, 1951), being the most relevant to adaptation. For example, international students are likely to regard academic environment as their life space where they primarily live and function, and therefore, academic adjustment defines their sociocultural adaptation. Cultural adaptation is achieved through settings goals, using strategies, adjusting behaviour, and enhancing cultural identity to ensure both stability of the new system (sojourner-host culture) and the functioning of the individual as integrated part of the new system

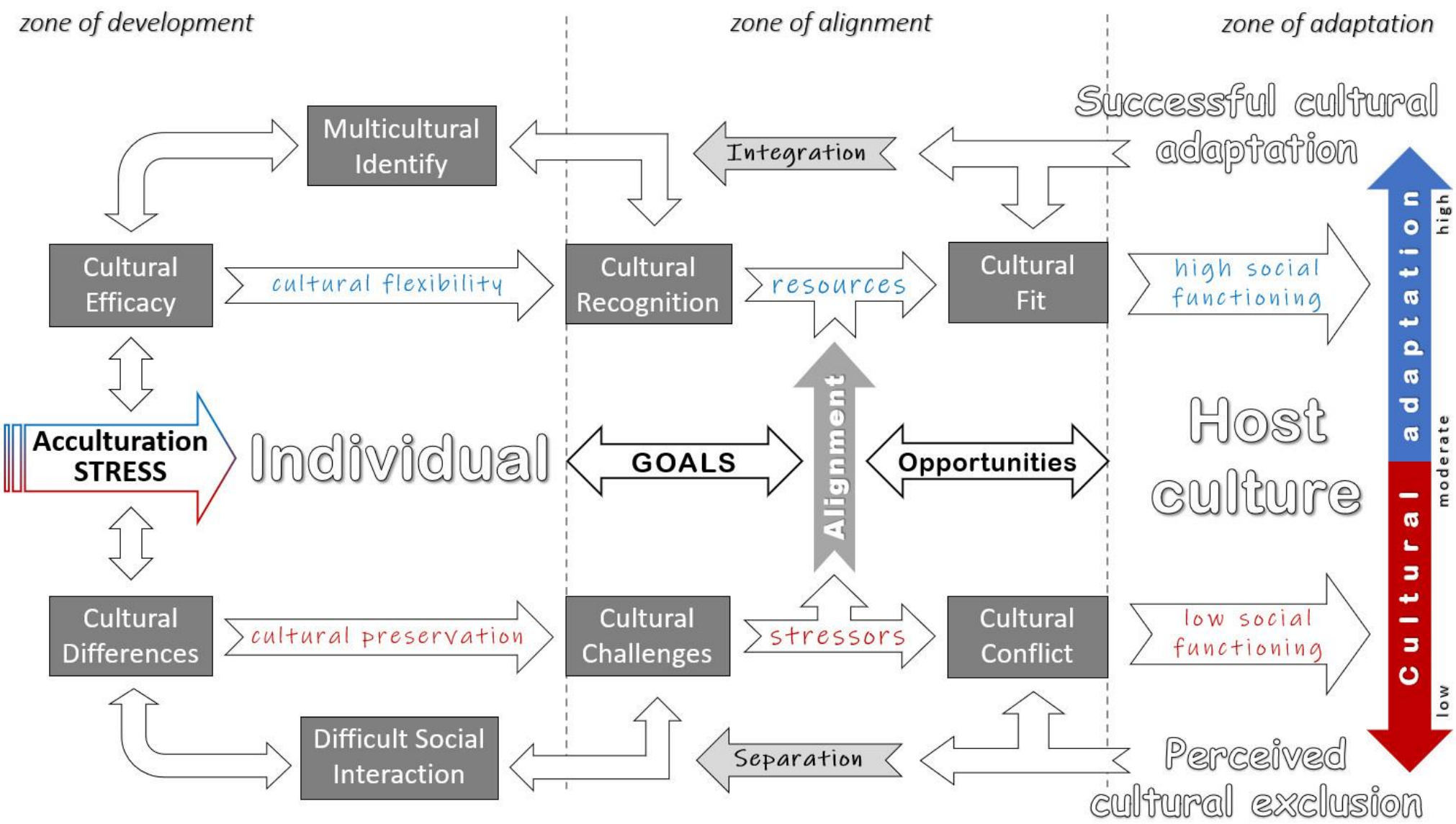
(Magnusson & Stattin, 1996). Different outcomes fall on a continuum of adaptation, varying from negative (Murphy, 1965), such as maladaptation, perceived exclusion, and anxiety, to positive (Berry & Kim, 1988), such as well-being and integration.

2.9.4. Adaptation as a Goal-opportunity Alignment

Figure 1 presents the conceptual diagram of the proposed model. According to GOMA, the social dimension of adaptation starts in a *zone of development*. Therefore, it includes a phase of acculturation stress (Berry, 2006) as a time of disorientation and helplessness (Bock, 1970), which pushes sojourners toward a close yet stressful contact with host culture values and norms.

In this initial stage (zone of development), the pressure of acculturative stress leaves its mark on the well-being of sojourners, who are likely to find themselves in an unfamiliar environment, without reliable support, and lacking a cultural compass. Sojourners react by developing acculturation strategies, attempting to achieve a fit with their context, and placing personal value and meaning on their cultural experience. Therefore, as highlighted by Berry (1997), the host culture can be perceived as either a source of stressors or a source of opportunities. Sojourners question their cultural identity, and therefore, they show a tendency toward either cultural preservation to maintain original identity, or cultural flexibility to enhance identity with host culture values. For example, some sojourners believe they can do well in their new environment (cultural efficacy), securing support, overcoming challenges, and successfully managing resources of the host culture, as they perceive the host culture as favorable. On the other hand, other sojourners can be overwhelmed by cultural differences, are unable to find support, cannot manage host culture resources, and overall, they perceived the host culture as less favorable to their needs and goals.

Figure 1. *Goal-opportunity Model of Acculturation (GOMA © Timish, 2020)*



Next, moving from the left to right in the model is the *zone of alignment*, where sojourners' perception plays a significant role in defining their own adaptation paths and outcomes, with either a state of cultural fit or cultural conflict being achieved. For example, sojourners who perceive the host culture as favorable are likely to hold the believe that the new environment can provide them with the right opportunities and resources to respond to their goals and achievement needs (goal-opportunity alignment). Therefore, sojourners recognize the values of their host culture and a cultural fit is achieved, which ensures a positive connection between sojourner and host culture on multiple levels such as: academic/professional (high engagement, intrinsic motivation, goal-opportunity perception), cognitive (clear goals, self-regulation, autonomy, goal alignment), emotional (belongingness, genuine interest, identification with host culture values), and behavioural (social participation, effort to integrate, being proactive). On the other hand, sojourners who perceived the host culture as less favorable are likely to believe that the new environment is resistant to their goals (goal-opportunity misalignment). In this case, cultural conflict can ensure, with a negative connection between sojourner and host culture on multiple levels: academic/professional (disengagement, lack of motivation, no perceived goal-opportunity alignment), cognitive (low self-regulation, no clear goals, restriction of autonomy, goal misalignment), emotional (anxiety, depression, stress), and behavioural (social isolation, perceived exclusion, identification with a minority group). In both cases (cultural fit versus cultural conflict), sojourners attempt to exercise their agency in setting goals, making decisions, participating in their host culture, and developing adaptation strategies (or coping strategies when adaptation is unlikely).

Finally, in the *zone of adaptation*, the outcomes (social, cultural, emotional) fall on a continuum of adaptation. For example, cultural flexibility and a positive connection between

sojourner and host culture (cultural fit) can preserve well-being and enhance the understanding of cultural differences and values (intercultural competency). This can ensure high social functioning of sojourners in diverse cultural situations (cultural intelligence), and therefore, a successful cultural adaptation (highest end of the continuum). In this case, sojourners are more willing to integrate values of the host culture while preserving own cultural values (multicultural ethnicity), with the belief that integrating host culture's values enhances own cultural identity. On the other hand, a strong need for cultural preservation can make sojourners experience lower social functioning, and therefore, they may experience a perceived cultural exclusion (lowest end of the continuum). Cultural conflict is driven by the belief that host culture's values are a threat to own cultural identity and goal attainment, and therefore, the negative connection between sojourner and host culture leads to sojourners rejecting cultural values of the host country while striving to preserve own cultural identity (separation), with a negative impact on well-being (e.g., anxiety, loneliness, acculturation stress, depression, feeling of exclusion).

GOMA emphasizes a continuum of adaptation, with cultural experiences being positive, negative, or anywhere in between. Setting meaningful goals drives behaviour (Pervin, 1992), with sojourners exercising autonomy over their decisions and strategies (Magnusson & Stattin, 1996). Individuals' variability comes from differences in the way the host culture is being perceived. For example, perceiving and expecting the host culture to be favorable for goal attainment can lead to positive feelings even before adapting to the host culture, while the perception of host culture as a threat to goal attainment can lead to negative feelings (Frijda, 1988). In addition, once goals have been fulfilled, sojourners are likely to strengthen their connection with the host culture, and therefore, they are more likely to experience positive affect

and be integrated. On the other hand, abandoned or failed goals are likely to make sojourners regretful toward their host culture, and therefore, culturally isolated (Austin & Vancouver, 1996).

2.9.5. Paradigm Shift

GOMA shifts cultural adaptation away from personality traits, which are stable and restrict autonomy, towards goals, which can be adjusted to match a dynamic environment. Goals keep international students socially involved (Austin & Vancouver, 1996), academically engaged (Appleton et al., 2008), proactive, self-regulated (Gollwitzer, 1993), and interconnected with their immediate environment (Austin & Vancouver, 1996) providing them with all necessary resources for goal attainment. In this person-context relation, context and capability beliefs can predict specific cultural outcomes (Ajzen, 1991; Bandura, 1989), with anticipated and established consequences of goal achievement being capable of regulating sojourners' emotions (Austin & Vancouver, 1996; Frijda, 1988). GOMA regards cultural adaptation as a learning experience, and therefore, it emphasizes knowledge acquisition (to understand the context), agency (sojourner as an agent), goal-setting, goal achievement, decision-making, proactive behaviours (belongingness, participation), problem solving, and perceiving the new environment as positive (or the right place to fulfill goals and achieve success), factors that can lead, not only to a successful functioning in complex and diverse cultural settings, but also to an efficient management of the host culture's resources.

To summarize, the proposed acculturation model emphasises an alignment between sojourners' goals, and the opportunities offered by the host country. A perceived alignment (cultural fit or person-culture fit) with a host culture favorable to achieving goals nurtures meaning, engagement, and motivation, as sojourners regards their host culture for its opportunities and values, and therefore, persistent in their effort, not only to achieve, but also to

integrate. As high-achievers, international students are driven by the need and motivation to accomplish meaningful goals, both short-term (academic achievement) and long-term (professional success post-graduation). For this reason, a goal-opportunity alignment drives both a positive cognition (e.g., goal- setting, self-regulation, persistent effort) and integration-favoring behaviours (e.g., openness, tolerance, recognition, social engagement).

The proposed model of acculturation strives to follow the theoretical shift from perceiving cultural transition as a shock (Oberg, 1960), a reaction to culture shock (Ward et al., 2001), and a linear, passive response to environmental changes (Bennet, 1993), to a bidimensional model of adaptation with multiple outcomes (Berry, 1997), which emphasizes a complex adaptation that is shaped by person-context perceptions and interactions (Austin & Vancouver, 1996). In this person-centred adaptation (Berry, 1980), a goal-driven sojourner is an active agent (Magnusson & Stattin, 1996), in a dynamic, multi-dimensional (affective, cognitive, behaviour, professional) process of cultural adaptation (Ward et al., 2001) that is domain-specific (academic, social, functional) and implies acquiring knowledge and skills (Zhou et al., 2008).

2.10. Research Objectives

The research aims of the current study are stated as:

1. Propose goal-opportunity cultural fit as an indicator of cultural adaptation: the new cultural fit (or person-culture fit) considers the goal-opportunity alignment between the goals and expectations of sojourners, and opportunities and resources of host culture.
2. Explore the Cultural Fit Questionnaire: use a dimensionality reduction technique to reduce the proposed CFQ scale (measuring the goal-opportunity cultural fit in international students), achieve clear structure. and robust interpretability. Test the validity of the scale through associations and predictions.

2.10.1. Goal-Opportunity Cultural Fit (Person-Culture Fit) as an Indicator of Adaptation

The perception of a person-culture fit, with positive beliefs and expectations for their context (academic, host culture) can motivate international students to engage in pro-achievement behaviours. Once the fit is perceived, sojourners are expected to actively look for support and resources, be aware of opportunities (e.g., academic, professional), and invest greater effort in adapting to their host culture in order to ensure their successful in the new environment. When sojourners' goals and needs align with the opportunities and possibilities of host culture, sojourners are more likely to hold strong motivation to achieve, along with positive context beliefs towards their new environment as being the "right place" for goal attainment.

A person-culture fit can strengthen both positive beliefs about being in the right environment (context beliefs) and about being capable (capability beliefs) to achieve. Context (Ajzen, 1991) and capability beliefs (Bandura, 1989) can help sojourners overcome cultural challenges and successfully navigate the cultural gap between native and host cultures, which can encompass various aspects, such as gender roles, religious values, economic prosperity, technological advancement, social behaviours, and food and clothing habits (Church, 1982). For this reason, the construct of sociocultural gap with traditional cultural differences (e.g., collectivism versus individualism) is less relevant, since sojourners are most likely to rely on cognitive factors (e.g., effort, agency, motivation, self-regulation, perception of fit) to adapt.

2.10.2. Cultural Fit Questionnaire (CFQ) as a Measurement Inventory

Measuring the construct of fit has been regarded as challenging, with researchers supporting either indirect measures (e.g., composite index of fit, composite index of correspondence) or direct measures, such as asking participants to report the perceived fit by evaluating their environment and then determine the level of compatibility. In their evaluation of

the cultural fit, Ward and Chang (1997) used an indirect measure, by calculating the absolute discrepancy for extraversion, as measured by the Eysenck Personality Questionnaire (Eysenck & Long, 1975). Then, the scores were derived from the absolute difference between the extraversion scores of the subjects and the comparative norms of the host culture, which were evaluated using an adjusted 23-items version of EPQ based on a previous evaluation (Ward & Chang, 1997). Ward and Chung (1997) were unable to replicate their findings on cultural fit in their follow up study (Ward, Leon, & Low, 2000), which indicated possible measurement issues.

In the current study, a direct measurement of cultural fit was used, based on the principal that the best way to determine the fit is by asking the individuals undergoing cultural transition (Hood & Johnson, 1991). Therefore, participants were asked to report their perception of fit by evaluating both the host culture and the perceived fit. For this reason, the proposed CFQ instrument (figure 4) incorporated two dimensions (one negative and one positive) of environment evaluation, in which participants compared sociocultural challenges between the native and host cultures (CFQ-cultural challenges) and evaluated their host culture (CFQ-cultural evaluation) based on what they perceived as acceptable and desired in their native culture. The items of the CFQ-cultural challenges dimension were related to specific challenges (e.g., "Religious differences between my home country and Canada are challenging"). On the other hand, items in the CFQ-cultural evaluation dimension required participants to think about their own needs (e.g., "Compared to my heritage culture, I prefer to live somewhere with more political freedom") or compare specific values between the two cultures (e.g., "Compared to my home country, there is more political freedom in Canada"). The instrument also included a CFQ-person-culture fit dimension, which asked participants to evaluate perceived fit with host culture (e.g., "I believe Canada provides me with the best opportunities to accomplish my goals").

2.11. Research Questions and Hypotheses

1. To what degree does cultural fit (based on the goal-opportunity construct) correlate with other constructs evaluating adaptation? Specifically, will there be significant correlations between cultural fit (measured by CFQ) and cultural intelligence (measured by CQS), as well as between cultural fit (measured by CFQ) and multicultural personality (measured by MPQ-SF)?

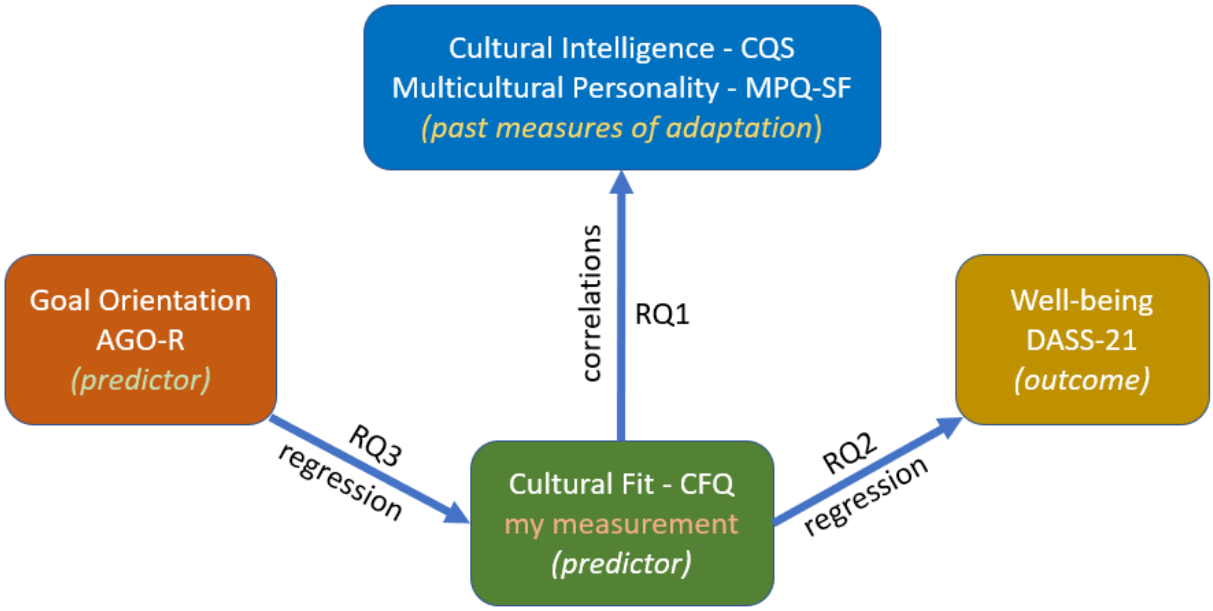
   Hypothesis 1: Cultural fit (measured by CFQ) is predicted to be significantly and positively correlated with other constructs evaluating cultural adaptation, such as cultural intelligence (measured by CQS) and multicultural personality (measured by MPQ-SF).
2. Will cultural fit predict an increase in well-being of international students? Which cultural fit dimensions are responsible for impacting sojourners' well-being the most?

   Hypothesis 2: The positive dimensions of cultural fit (person-culture fit, cultural evaluation, and interactions and support) will increase students' well-being, while the negative dimensions (stereotype threat and cultural challenges) will increase the levels of stress, anxiety, and depression.
3. Will goal-orientation predict an increase of the person-cultural fit dimension of cultural fit in international students? Specifically, is a mastery goal-orientation a stronger predictor of the person-cultural fit dimension than a performance goal-orientation?

   Hypothesis 3: Goal-orientation can predict the person-cultural fit dimension of cultural fit. A mastery-approach goal-orientation, rather than a performance-approach, is predicted to increase person-cultural fit in international students.

As seen in the diagram on the next page (figure 2), a correlation analysis was used to examine research question 1. For questions 2 and 3, regression equations were used to examine the significance of interactions between variables. The methods chapter next explains the details of the methodology as well as the interpretation of the proposed measurement instrument (CFQ).

Figure 2. *Research Questions Framework*



Notes: CFQ = Cultural Fit Questionnaire (measurement of cultural fit, proposed instrument)
MPQ-SF = Multicultural Personality Questionnaire short-form (measurement of multicultural personality)
CQS = Cultural Intelligence Scale (measurement of cultural intelligence)
DASS-21 = Depression, Anxiety, and Stress Scale short-form (measurement of well-being)
AGO-R = Achievement Goal Orientation Revised (measurement of goal orientation)

Methods

This study employed a quantitative, descriptive research design (non-experimental), as random assignment of participants was not possible. Neither variables nor participants were manipulated, and a real-world group setting was used, such as international students. Liker scales were used to capture participants' responses, and a dimensionality reduction technique (PCA) was used to explore the structure of the proposed instrument. The "analysis overview and justification" section (pg. 69) details the choice of PCA. The argument, in brief, is that the need for clear structure of the proposed questionnaire has led to PCA being the better choice for the dimensionality reduction of the current dataset, due to its simplicity and convenience as an independent analysis. Before employing PCA to reduce and interpret the proposed instrument (CFQ), the initial scale (CFQ-63) was tested for data analysis suitability. In addition to PCA, correlation (between adaptation scales) and linear regression (with independent and dependent variables) analyses were used to provide validity for the proposed instrument by answering the research questions, which are addressed in the results chapter. The following sections of the methodology chapter provide in-depth details regarding participants (recruitment, survey administration, demographics), measurement instruments, ethics, descriptive analysis, and exploratory data analysis.

3.1. Participants

314 international students studying at eight post-secondary institutions in BC (Table 3) participated in the current study. Recommendations for PCA highlight a minimum of 150 participants (Yong & Pearce, 2013), with 314 being rated as good (Comrey & Lee, 2013).

3.1.1. Recruitment

After gaining the approval of Human Research Ethics Board (HREB) from UVic and a few other institutions in BC (Appendix D), various recruitment methods (e.g., on-campus posters, recruiting-emails sent to academic departments, social media advertisement) were used to ensure a diverse and large enough sample, along with a research participation system (SONA). To use SONA, permission was requested and granted from UVic Department of Psychology, which manages UVic SONA. Permission to use SONA at the University of Northern British Columbia was also requested and granted.

As the focus of this study was international students in Canada, responses from Canadian students were not accepted. In addition, students from the US were discouraged to participate due to cultural closeness. Nonetheless, the surveys of the few American students who participated (N = 8, 2.5%) were kept to ensure diversity. Among the recruitment means mentioned, the most successful proved to be SONA, which produced 77.7% (244) of the total number of 314 participants. SONA is a research and management software that researchers can use to set up studies and recruit participants, while students use it to obtain course credit for their courses (mostly psychology courses) by signing up and participating in the posted studies. As a research participation system, the biggest advantage of SONA is that it can ensure a good sample of a specific population, such as, in this case, undergraduate students of similar age group. The main limitations of SONA relate to discrepancies between survey registration versus survey completion, reliance on incentives (students' participation is motivated by receiving course credit), and its tendency to produce homogenous samples. Nonetheless, the recruitments outside of SONA, which made up for the rest of 22.3% (70) participants ensured a good diversity of the current sample (Table 3).

3.1.2. Renumeration

SONA is designed to reward participants for their survey completion. In the current study, participants recruited on SONA have received course credit for their participation based on their completion time (0.5 credits for 15 minutes, with a maximum of 2 credits for the entire survey). To ensure fairness, participants recruited through other methods were given the opportunity to participate in a raffle. The compensation details were included in the participant consent form (Appendix C). After the survey was closed, five participants were extracted randomly, by an Education Department official, out of the total of 143 participants who expressed their interest in the raffle. The five winners were then contacted by the thesis supervisor, dr. Joan Martin, to arrange the details of receiving their prizes.

3.1.3. Survey Administration

This study relied on asking participants to complete the *Cultural Fit Survey* (Appendix C), a self-report questionnaire that included the proposed scaled, four additional instruments that are presented in the measurement section, and a serious of demographic questions (Appendix C, pp. 167–171) used to gather relevant information about participants, such as gender, age, ethnicity, English usage, perceived support, social class, friendships, and social interaction. The questionnaire was delivered as an online survey constructed with *PsycLime*, a statistical tool created and managed by the UVic Department of Psychology based on the popular and open-source survey software *LimeSurvey* (v.2.05). Permission to use *PsycLime* was requested and granted. Before starting the questionnaire, participants were informed that the online survey was anonymous. The requirements of the survey were clearly made visible on the intro page (Appendix C, p. 157). The consent form followed immediately after the intro section, with participants being informed about the study's broad aims and general requirements, and

information about incentives and privacy. Participants were given the option to withdraw from the survey at any time, without any penalty or consequences. In addition, participants had the option to finish the survey in more than one session, by saving and later reloading their session.

3.1.4. Demographic Assessment

The gender distribution of the sample revealed the following structure: 69.4% (218) female, 27.7% (87) male, and 1.0% (3) transgender & gender fluid participants. Six participants (1.91%) did not disclose gender. Most participants (N = 298, 94.9%) were undergraduate students. The age of participants ranged between 18 to 39 (M = 20.91, SD = 3.032), with most participants (N = 223, 71%) filling the 18-21 age group (Table 3).

Ethnic distribution (self-reported) of participants, as identified by the demographics survey (Appendix C, p. 167), revealed a culturally diverse sample (Table 2), dominated by Asian students, 62.3% (193). Ranked in descendent order, the first four ethnic groups were represented by Chinese (mainland China & Hong Kong) 38.2% (120), Indians 8.7% (27), Europeans 14.9% (47), and mixed ethnicity 5.7% (18). Considering the ethnic group, East Asians had the largest representation with 47.8%, or 150 participants. Table 2 presents further details of participants' ethnic classification.

Table 2

*Ethnic Classification of Participants**

Cultural Ethnicity	Ethnic Nationality	Frequency (N)	Percent (%)
East Asians	Chinese (China & Hong Kong)	120	38.22
	Chinese (Taiwan & Singapore)	6	1.91
	Chinese (Malaysia)	4	1.27
	Chinese (Brunei & India)	2	0.64
	Japanese	10	3.18
	Korean	7	2.23
	Mongolian	1	0.32
	Total	*150*	*47.77*

South Asians	Indian (East, North, and West India)	27	8.60
	Bangladeshi	2	0.64
	Pakistani	1	0.32
	Total	*30*	*9.55*
Southeast Asians	Vietnamese	5	1.59
	Filipino	4	1.27
	Thai	2	0.64
	Malaysian	1	0.32
	Indonesian	1	0.32
	Total	*13*	*4.14*
Europeans	British	12	3.82
	German	8	2.55
	French	6	1.91
	Turkish	5	1.59
	Italian	3	0.96
	Romanian	2	0.64
	Russian	2	0.64
	Swedish	2	0.64
	Czech	1	0.32
	Dutch	1	0.32
	Hungarian	1	0.32
	Greek	1	0.32
	Serbian	1	0.32
	Spanish	1	0.32
	Total	*47*	*14.97*
North Americans	United States	8	2.55
	Total	*8*	*2.55*
Hispanics	Mexican	5	1.59
	Columbian	4	1.27
	Chile	1	0.32
	Ecuador	1	0.32
	Peru	1	0.32
	Venezuela	1	0.32
	Total	*13*	*4.14*
Mixed ethnicity	African-British	2	0.64
	Australian-Canadian**	1	0.32
	Belgian-Canadian**	1	0.32
	Brazilian-Italian-Japanese	1	0.32
	British-Chinese	1	0.32
	British-Irish-Canadian**	1	0.32
	Cambodian-Chinese	1	0.32
	East Indian-British	1	0.32
	Filipino-Japanese	1	0.32
	French-German	1	0.32
	Hong-Kongese-Canadian**	1	0.32
	Hong-Kongese-Indian	1	0.32
	Indonesian-Chinese	1	0.32

	Jamaican-British	1	0.32
	Russian-French	1	0.32
	Slavic-Jewish	1	0.32
	West Indian-Trinbagonian	1	0.32
	Total	*18*	*5.73*
Africans	West African	7	2.23
	East African	4	127
	North African	1	0.32
	Total	12	*3.82*
Middle Easterners	Persian	7	2.23
	Egyptian	3	0.96
	Arab	2	0.64
	Syrian	1	0.32
	Total	*13*	*4.14*
Others	Brazilian	3	0.96
	Mauritian	1	0.32
	Australian	1	0.32
	Kazakh	1	0.32
	Total	6	1.91
Total		**310**	**98.73**
Missing		4	1.27
Total		**314**	**100.0**

Note: * = ethnic classification uses a combination of criteria, such as ethnic origin, nationality, culture, and ancestry (Morning, 2015); ** = born in Canada, raised abroad, did not identify as Canadian

Further descriptive date includes more evaluation criteria, as reported in Table 3. Notable findings refer to relational status, social class, English use and language barrier, financial situation, and ability to make Canadian friends. For example, most participants, 76.2% (237), reported to be "single," with only 16.9 % (53) reported to be in a relationship. In addition, 44.3% (139) of participants reported themselves as middle class, and 35.4% (111) as upper middle class. Language barrier was not an obstacle in adjusting to the Canadian culture for most participants, or 51.9% (163). On the other hand, financial situation was reported as "stressful" and "somewhat stressful" by most participants (58.2% or 181). 86.3% (270) of participants reported using English daily, in their social settings outside school. 77.7% (244) of participants reported making in-person Canadian friends during their studies (Appendix B, p. 153).

Table 3

Descriptive Characteristics of the Sample

Variable	Criteria	Frequency (N)	Percent (%)
Academic status	Undergraduate	298	94.9
	Graduate	12	3.8
	Missing/Other	*4*	*1.3*
Gender distribution	Female	218	69.43
	Male	87	27.71
	Transgender female	1	0.32
	Transgender male	1	0.32
	Gender fluid	1	0.32
	I would rather not say (missing)	*6*	*1.91*
Age group	18-19	109	34.71
	20-21	114	36.31
	22-23	58	18.47
	24-25	17	5.41
	26-30	10	3.18
	31-39	6	1.91
Academic Major	Psychology	122	38.9
	Economics	27	8.6
	Business	18	5.7
	Computer Science	18	5.7
	Biology	16	5.1
	Biochemistry	5	1.6
	Social Sciences	5	1.6
	Health Sciences	4	1.3
	Science	4	1.3
	Other (< 1% each)	*76*	*24.2*
	Not declaring (missing)	*4*	*1.3*
Academic institution	University of Victoria	230	73.2
	University of British Columbia	25	8.0
	Fraser International College	23	7.3
	Simon Fraser University	19	6.1
	University of Northern BC	11	3.5
	Camosun College	1	0.3
	Thompson Rivers University	1	0.3
	Trinity Western University	1	0.3
	Not declaring (missing)	*3*	*1.0*
Time in Canada	1-3 months	52	16.6
	4-6 months	12	3.8
	6 months to 1 year	27	8.6
	1-2 years	69	22.0
	3-5 years	121	38.5
	More than 5 years	32	10.2
	Missing	*1*	*0.3*

Variable	Criteria	Frequency (N)	Percent (%)
English usage *(outside school)*	Daily	270	86.0
	Weekly	39	12.4
	Missing	*1*	*0.3*
Language barrier *(in adjusting to the Canadian culture)*	Not an obstacle at all	88	28.0
	Not an obstacle	81	25.8
	An obstacle	75	23.9
	A huge obstacle	27	8.6
	Not sure	42	13.4
	Missing	*1*	*0.3*
Intentions after graduation	Not decided yet	111	35.4
	Stay in Canada	105	33.4
	Back to my native country	42	13.4
	Plan to go somewhere else	32	10.2
	I do not want to think about	19	6.1
	Missing	*5*	*1.6*
Relational status	Single	237	75.5
	In a relationship	53	16.9
	Married	7	2.2
	Dating	7	2.2
	Cohabiting	5	1.6
	Engaged	1	0.3
	Long distance relationship	1	0.3
	Missing	*3*	*1.0*
Social class	Middle class	139	44.3
	Upper middle class	111	35.4
	Working class	27	8.6
	Elite	13	4.1
	Lower class	3	1.0
	No answer	*21*	*6.7*
Hometown	Big city	166	52.9
	Small city	98	31.2
	Small town	20	6.4
	Rural are near town/city	16	5.1
	Remote rural area	6	1.9
	No answer	*8*	*2.5*
Financial situation	Stressful but no changes needed	109	34.7
	Somewhat stressful	74	23.6
	I had to make stressful changes	72	22.9
	I have no worries	31	9.9
	Occasionally stressful	25	8.0
	Missing	*3*	*1.0*
Recruitment Method	SONA UVIC	233	74.2
	SONA UNBC	11	3.5
	Other *(posters, emails, social media)*	70	22.3
	Total	*314*	*100*

The demographic section also included a brief survey with 20 items (Appendix B, Table B2), to evaluate the use of students support services, and therefore, the support they received from their academic institution. Various criteria for support evaluation were included: academic tutoring, language tutoring, international student services, financial aid, library, campus life, professional development, IT help, register's office, recreational, student health, academic advisor, co-op, counselling, residence, register's office, bookstore, food, religious, and accessibility services. Participants were also asked to evaluate the efficiency of the services (Appendix B, Table B2) they have used on a 5-point Likert scale, which included: 1 = not used, 2 = poor, 3 = somewhat helpful, 4 = good, and 5 = excellent. The Student Services Short Survey was developed during work for the current study. Internal consistency test for the scale with 20 items revealed high reliability, with Cronbach's Alpha having a value of .91, which is interpreted as "excellent," as according to Ponterotto and Ruckdeschel (2007).

3.2. Measurement Instruments

To provide support for the proposed theoretical goal-opportunity model of acculturation (GOMA), the study's research questions sought to validate association between dimensions of the proposed cultural fit (measured by the Cultural Fit Questionnaire, or CFQ) and other constructs involved in cultural adaptation, such as cultural intelligence, multicultural personality, psychological adjustment, and goal-orientation. As correlation between cultural fit dimensions and other constructs evaluating cultural adaptation were predicted, additional instruments were included in the cultural fit survey that was administered to participants (Appendix C, pp. 163–166). These additional instruments highlighted the influence of other potential variables defining the sociocultural dimension of adaptation in international students, such as: (a) *cultural intelligence* measured by the Cultural Intelligence Scale, or CQS (Ang et al., 2007; Bucker et al.,

2015); and (b) *multicultural personality* measured by the Multicultural Personality Questionnaire (short form), or MPQ-SF (Vander Zee & Van Oudenhoven, 2000). In addition, cultural fit dimensions were predictors for *well-being*, which defines the psychological adjustment dimension of adaptation, and was measured by the Depression, Anxiety, and Stress Scale, or DASS-21 (Lovibond & Lovibond, 1995). Finally, *goal-orientation*, measured by the Achievement Goal-Orientation Revised instrument, or AGOR-R (Elliot & Murayama, 2008; Rosas, 2015), was a predictor of cultural fit. The following sections presents each of the four additional instruments used to evaluate participants followed by details of the proposed scale.

3.2.1. Cultural Intelligence Scale (CQS)

CQS is a standardized instrument measuring cultural intelligence (CQ), or the ability of an individual to function in culturally diverse settings through understanding and effectively managing cultural differences and challenges (Van Dyne et al., 2009). The CQS was developed based on Ang and Van Dyne's (2008) four-factor extension of Earley and Ang's (2003) original three-factor conceptualization of cultural intelligence.

The scale measures four dimensions of cultural intelligence: (a) *cognitive* (knowledge): acquiring knowledge of cultural norms, practices, and conventions; (b) *metacognitive* (strategy): awareness of cultural differences during interactions with individuals of diverse cultural backgrounds; (c) *motivational*: directing attention and energy in cultural contexts (a form of self-efficacy); and (d) *behavioural:* exhibiting appropriate verbal and nonverbal actions when interacting with individuals of diverse cultural backgrounds. CFQ is a valid and reliable measure of a person's ability to function effectively in culturally diverse situations. CFQ has been tested in various cultural settings (Table 4), such as Singaporean (Ang et al., 2007) and Chinese (Bucker et al., 2015), and it returned good internal consistency.

Table 4

Reliability of CQS in Previous Studies

CQS	Items	Cronbach's Alpha		
Metacognition (strategy)	4	.77	.69	.82
Cognitive (knowledge)	6	.84	.81	.87
Motivation (drive)	5	.77	.69	.86
Behavior (action)	5	.84	.68	.85
total scale	*20*	*good*	*acceptable*	*excellent*
		Ang et al, 2007	Bucker et al., 2013	***current study***

3.2.2. Multicultural Personality Questionnaire Short-Form (MPQ-SF)

As a standardized instrument, the Multicultural Personality Questionnaire (MPQ) was developed by Karen van der Zee and Jan Pieter van Oudenhoven (2000) to evaluate multicultural personality – a narrow mix of dispositional traits that are influenced by general personality traits and can predict functioning and adaptation in diverse cultural settings. MPQ was constructed to evaluate behaviour when one is interacting with people from diverse cultures, and it takes the form of a personality assessment questionnaire that can be used to predict how easily people are likely to adapt to other cultures (Van der Zee & Van Oudenhoven, 2000, 2013). The short form (MPQ-SF) is a reduced scale (40 items) of the original MPQ, which had 91 items.

The 40-item short-form MPQ (Appendix C) used in this study assesses five factors: (a) *cultural empathy*: ability to empathize with the feelings, thoughts, and behaviours of individuals from different cultural backgrounds; (b) *flexibility*: adjusting behaviour to the demands of new and unknown situations, which are regarded as challenges rather than setbacks; (c) *social initiative*: taking initiative and approaching social situations in an active way; (d) *emotional stability*: ability to remain calm in stressful situations; and (e) *open-mindedness*: having an open and unprejudiced attitude toward different cultural groups, norms, and values. Van der Zee and van Oudenhoven (2013) reported a good internal consistency (Table 5) for the MPQ-SF scale.

Table 5

Reliability of MPQ-SF in International Students

MPQ-SF	**Items**	**Cronbach's alpha**	
Cultural Empathy (CE)	8	.81	**.86**
Flexibility (FX)	8	.81	**.83**
Social Initiative (SI)	8	.81	**.49***
Emotional Stability (ES)	8	.82	**.56**
Open-mindedness (OP)	8	.72	**.81**
total scale	*40*	*good*	***good***
		Van der Zee et al., (2013)	***current study***

Note: * = low reliability without any obvious reason
(composite or CFA-based reliabilities could be used as alternatives)

3.2.3. Depression, Anxiety, and Stress Scale (DASS-21)

DASS-21 was used to evaluate participants' levels of stress, anxiety, and depression. The internal consistency of the scale (Table 6) for the current sample revealed high reliability ($\alpha = 96$, $M = 2.55$, $SD = 1.33$). The instrument has been previously used to evaluate psychological adjustment in sojourners of different ethnicities (Norton, 2007), with proven cross-cultural validation (Oei et al., 2013; Wang et al., 2016) and goodness-of-fit among university students (Talwar et al., 2016).

DASS-21 is a 21 items self-report standardized instrument for measuring depression, anxiety, and stress/tension. This revised scale was developed by Lovibond and Lovibond (1995) as a shorter version of the original DASS-42, for reduced time of completion. The 21 items of DASS-21 are divided into three subscales: (a) *depression subscale*: assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, and inertia; (b) *anxiety subscale*: assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect; and (c) *stress subscale*: assesses difficulty relaxing, nervous arousal, as well as being easily upset/agitated, irritable/over-reactive, and impatient.

DASS-21 shows good reliability in evaluating the levels of stress, anxiety, and depression in undergraduate (Norton, 2007) and international students (Talwar et al., 2016), as well as in the Asian population (Lee et al., 2019; Oei et al., 2013). The scale has been validated on several different populations, such as Hispanic, American, and British (Norton, 2007). In addition, more recent studies on using DASS-21 on Asian students (Talwar et al., 2016; Wang et al., 2016) and other Asian populations (Lee et al., 2019; Oei et al., 2013) reported good reliability (Table 6).

Table 6

Reliability of DASS-21 in International Students

DASS-21	**Items**	**Cronbach's alpha**			
Depression	7	.77	.83	.81	**.92**
Anxiety	7	.70	.80	.84	**.87**
Stress	7	.74	.82	.85	**.89**
total scale	*21*	*.88*	*.92*	*.93*	***.96***
		Talwar et al., 2016	*Wang et al., 2016*	*Lee at al., 2019*	***current study***

3.2.4. Achievement Goal Questionnaire Revised (AGO-R)

International students are expected to be goal-driven and have a strong achievement orientation (Grier-Reed et al., 2012), and therefore, the revised version of AGO was included.

This standardized instrument evaluating students' achievement goals was developed by Andrew Elliot and Kou Murayama (2008) based on the achievement goal theoretical framework (Elliot, 1997). AGQ-R was developed by Elliot & Murayama in 2008, as an improved version of the original Achievement Goal Questionnaire (Elliot & McGregor, 2001). AGO-R uses four dimensions: (a) *mastery-approach goals*: acquiring competence, knowledge, and task-mastery; (b) *mastery-avoidance goals*: avoiding the lack of competence, knowledge, and task-mastery; (c) *performance-approach goals*: performing better than peers; and (d) *performance-avoidance goals*: avoiding performing worse than peers. The scale assesses wherever participants are mastery goal orientated (success is the result of own effort and use of appropriate strategies) or

performance goal oriented (success is the result of superior ability and outperforming peers). Achievement goals contribute to increasing motivation in an achievement environment, such as academic, thus regulating effort and emotional impact (Elliot & Murayama, 2008). Goals are particularly relevant to international students, who use their academic environment as a base for cultural exploration. AGO-R was validated on various groups of students (Table 7), with good internal consistency in samples of university students of different ethnicities, such as American (Elliot & Murayama, 2008), Greek (Apostolou, 2013), and Argentinian (Rosas, 2015).

Table 7

Reliability of AGO-R in International Students

AGO-R	**Items**	**Cronbach's Alpha**			
Mastery-approach goals	3	.84	.50*	.81	**.75**
Mastery-avoidance goals	3	.88	.74	.91	**.78**
Performance-approach goals	3	.92	.87	.92	**.82**
Performance-avoidance goals	3	.94	.87	.98	**.89**
total scale	*12*	*good*	*acceptable*	*good*	***good***
		Elliot & Murayama; 2008	*Apostolou, 2013*	*Rosas, 2015*	***current study***

Note: * = CFA-based reliability was acceptable

3.2.5. Cultural Fit Questionnaire (CFQ)

The proposed CFQ scale was developed for this study as an instrument to evaluate cultural adaptation by measuring the person-culture fit between sojourner and host culture. The scale is a self-report instrument consisting of 35 items to measure the alignment between sojourners and their host culture according to five distinct dimensions: *person-culture fit, stereotype threat, cultural challenges, cultural evaluation,* and *interaction and support.* The scale has found to have an internal reliability for the total scale $\alpha = .82$ (Table 26).

Necessity for CFQ. The match between individuals and their environments has long been emphasised by organizational psychology researchers (Edwards, 2008) as a requirement for

functioning, performance, and satisfaction in employment settings. The multidimensionality of the person-environment fit (Chuang et al., 2016) construct has proved to be challenging in generalizing the construct and designing reliable instruments to measure it. Instruments such as the *General Environment Fit Scale* (Beasley et al., 2012) have addressed some of the concerns regarding the applicability of the person-environment fit (P-E fit) by attempting to generalise its utility from a limited employment setting, to a more general community setting. On the other hand, the *Perceived Person-Environment Fit Scale* (Chuang et al., 2016) has tackled the multidimensional of the P-E fit by incorporating different measures within the same instrument. Finally, cross-cultural adaptation researchers such as Ward et al. (Ward & Chang, 1997; Ward et al., 2004) have provided support for P-E fit (cultural fit) not only as a facilitator, but also as a predictor of adaptation in international students. Therefore, the necessity of developing an instrument to measure the person-environment fit in an academic context is viable and stringent. By replacing personality traits with goals in Ward and Chang's (1997) cultural fit, the new goal-opportunity cultural fit can better predict an adaptation that is meaningful and contextual, and therefore, the proposed measurement can be used to evaluate adaptation in international students.

Development of CFQ. To test the research framework of the Goal-Opportunity Model of Acculturation, the proposed scale was designed as a self-report instrument evaluating cultural fit as an expression of adaptation (Figure 5), based on reviewing relevant literature on cultural adaptation and intercultural competencies. In particular, constructing the dimensions of CFQ stems from literature review highlighting the importance of specific factors that facilitate adaptation in diverse cultural settings, mainly: goals (Austin & Vancouver, 1996; Hollenbeck & Klein, 1987; Locke & Latham, 2002), autonomy (Bandura, 1989), person-environment fit (French et al., 1974; Pervin, 1992), cultural fit (Ward & Chang, 1997), cultural intelligence (Ang

et al., 2007), expectancy value (Vroom, 1964), and personal perceptions and beliefs (Ajzen, 1991). In addition, elements from Ward and Rana-Deuba's (1999) Acculturation Index were used to define the acculturation evaluation criteria, such as food, clothing, friendships, cultural activities, language, beliefs, and perceptions. Previous theoretical models of cultural adaptation (Table 1) were also reviewed, not only to help define the main constructs of the CFQ scale, but also to avoid shortcomings of previous acculturation models, such as the conceptualization of acculturation along two fixed dimensions based on established attitudes, lack of clarity between acculturation attitudes and behaviours, and difficulties in achieving a true cultural integration (Ward & Kus, 2012), as envisioned by Berry's Fourfold Model (1997).

Item pool generation. The instrument (Appendix C) started with a much higher number of items (CFQ-63) than the final scale (CFQ), due to the process of psychometrical refinement (Hinkin, 1998). The answering options evaluated participants' level of agreement on a Likert scale where: 1 = not true, 2 = slightly true, 3 = moderately true, 4 = very true, 5 = exactly true. The initial items were developed based on themes and variables that the literature review has identified as common in populations of international students. The major variables for items construction were identified as: *cultural fit*, *discrimination*, *social interaction*, and *perceived support*. In addition, the Acculturation Index developed by Ward and Rana-Deuba (1999) was used to define items pretraining the evaluation of the host culture and its challenges related to specific factors, such as values, food, clothing, beliefs, customs, and personal perceptions.

After developing the items, the inventory was tested with a small panel of graduate students with proven research experience. The panel's feedback and suggestions lead to improvements in both language (e.g., wording comprehension) and scale metrics (e.g., clarity), as well as avoiding common scale construction errors (e.g., double-barrel items). A mix of active

and passive voice was also introduced, to ensure a reliable student perspective while also emphasizing the research objective of evaluating adaptation in international students from the perspective of a goal-opportunity cultural fit. To control for response acquiescence, one social desirability item was introduced in the survey (Appendix C, DASS-21). In addition, two CFQ dimensions were reversed (cultural changes and stereotype threat), such as 5 = 1, 4 = 2, 3 = 3, 2 = 4, and 1 = 5. Finally, the overall scale structure was clarified by better matching items to the proposed dimensions of the scale. After the panel test was completed, the 63-item questionnaire was ready for deployment on the intended target of international students.

Structure and analysis. Principal Component Analysis (p. 68) was employed to seek simple structure. The initial 63-item scale (CFQ-63) was reduced and refined to a final five-component model with a total of 35 items (CFQ-35). The reduction criteria, which are presented in detail in the "decision regarding items removal" section (p. 68), refer to low value loadings, high cross-loadings, and low correlations. After reduction and extraction, five dimensions were established: (a) *person-culture fit* (PCF); (b) *stereotype threat* (ST); (c) *cultural challenges* (CC); (d) *interaction and support* (IS); and (e) *cultural evaluation* (CE). The reduced 35-item scale (Figure 4) had good interpretability with 50.6 % total variance explained (Table 15). Internal consistency (Table 26) for total scale ($\alpha = 0.82$) and each of the five dimensions (CFQ-PCF = 0.85, CFQ-ST = 0.84, CFQ-CC = 0.83, CFQ-IS = 0.79, CFQ-CE = 0.74) were acceptable.

The five components of the reduced scale (Figure 4) have been interpreted as five dimensions centred around specific constructs, as highlighted by the theoretical model and the literature review, which ranged from negative (e.g., stereotype and discrimination) to positive (e.g., cultural fit, perceived support, host culture evaluation, and engagement in social interaction).

The resulting five dimensions of the reduced scale encompass a multidimensional perspective of the proposed model, and therefore, evaluate specific outcomes as detailed below. CFQ dimensions:

1. *person-culture fit (PCF)*: positive dimension highlighting the alignment between sojourners and their host culture by evaluating sojourners' beliefs that: (a) they are in the right place (e.g., "Since arriving in Canada, I feel like I belong here"); (b) they can achieve (e.g., "My success in Canada reflects my true potential"); and (c) they perceive the host country as a "good fit," or a good environment to nurture their goals (e.g., "I believe Canada provides me with the best opportunities to accomplish my goals").
2. *stereotype threat (ST)*: negative dimension evaluating potential concerns sojourners may experience during their interactions with the locals, specifically stereotypes about gender, race, status, and nationality.
3. *cultural challenges (CC)*: negative dimension evaluating whether specific differences between native and host cultures (e.g., economic, cultural, political, gender roles, and technological development) are challenging to the sojourners (negative dimension).
4. *cultural evaluation (CE)*: positive dimension assessing a comparison of sojourners' heritage culture and mainstream tradition with their perception of the host culture norms and values, to reveal sojourners' preferences for either native or host culture.
5. *interaction and support (IS)*: positive dimension evaluating sojourners' ability to engage in positive interactions (e.g., make friends) and find support when needed.

3.3. Exploratory and Descriptive Data Analyses

Statistical Package for Social Sciences (IBM SPSS, version 24) was used to analyze the data, as it was provided free by the Education Department within its computer labs. As the study and its analysis extended for a considerable time (2018–2020), the same version of SPSS (v.24)

was used consistently. The next subsections touch on analysis overview and data-set cleaning. Before scale reduction, the 63-item initial instrument was evaluated for analysis suitability with a serious of tests, such as measure of sample adequacy, test of sphericity, skewness, kurtosis, mean, and standard deviation. Once scale was deemed suitable, the reduction technique was used to reduce the scale's dimensionality in an interpretable way, with a focus on reviling the details of the principal component analysis (e.g., items removal, rotation, interpretation).

3.3.1. Data Cleaning

The advantage of using an academic research tool such as SONA to recruit participants in a school-setting relies in the production of homogenous samples of the targeted population, such as in this case international students. On the other hand, the biggest limitation of using a research tool where students participate in studies in exchange for extra course credit, is that many students can enrol in research studies without completing them. For this reason, once the cultural fit survey has been posted on UVic SONA, it has attracted many students (both international and Canadian) as potential participants. Unfortunately, a smaller percentage (56%) of the students who initially registered for the survey have completed it. Many participants have never started the survey after the initial registration, due to not meeting the requirements (e.g., not international students), whereas other participants have abandoned the survey in various stages of partial completion. To achieve data consistency and validity of the dataset, data cleaning was employed. During data cleaning, only complete surveys were kept for analysis, with incomplete surveys being disregarded, which ensured there was no missing data for the psychometric measures (e.g., proposed scale, other instruments used). As a result, only 315 complete survey responses were kept from the total collected surveys – which included all students who registered for the survey as well as survey responses abandoned in various stages of partial completion.

Checking for consistency in the response patterns of the completed surveys has led to the removal of one participant, due to careless responses. Final count for the survey was N = 314.

3.3.2. Measure of Sample Adequacy and Test of Sphericity

Sample adequacy (Table 8) was assessed by using Kaiser-Meyer-Olkin (KMO), which was corroborated with Bartlett's Test of Sphericity. KMO measures the sampling adequacy for each variable in a model, as well as for the complete model itself (Kaiser, 1970). Bartlett's test evaluates the difference between the correlation matrix for the variables and an identity matrix, providing a chi-square output that must be significant (Bartlett, 1950).

For the current dataset, the KMO and Bartlett's tests revealed that data was suitable for factor/component analysis, with KMO = .77 ("middling" value), which is above the recommended level of .6 ("acceptable"), yet below .8, which is regarded as "good" (Kaiser & Rice, 1974). An acceptable value for the KMO test (.77, $p < .05$), along with a significant value (x^2 (1953) = 8624.73, $p < .001$) for the Bartlett's Test of Sphericity indicated that factor/component analysis was appropriate for the data.

3.3.3. Mean, SD, Skewness, and Kurtosis

Skewness and kurtosis for the scale did not exceed the -2 and +2 range. Skewness, which describes the dataset's symmetry (Field, 2017), was recorded as +0.474 (< 0.5), and therefore, indicated (approximately) symmetric distribution. On the other hand, kurtosis, which measures the tail-heaviness of the distribution (Field, 2017), was recoded as +0.673 (< 3), and therefore, indicated that the dataset (M = 3.07, SD = .31) had light tails or fewer and less extreme outliners.

All individual items were found to have Skewness values ranging between -2 and +2 (Table 8). On the other hand, all items had Kurtosis values less than 3 (Table 8). As a result, it was concluded that data was (approximately) symmetric, with no significant outliners. Kurtosis

and Skewness analyses were corroborated with normality tests, which revealed that the data did not substantially violate the requirements for normal distribution.

Table 8

Mean, Standard Deviation, Skewness, and Kurtosis for Individual Items (Initial CFQ-63 Scale)

Item	Mean	SD	Skew	Kurtosis	Item	Mean	SD	Skew	Kurtosis
PCD01	3.44	1.092	-.451	-.476	IS01	2.46	1.403	.508	-1.084
PCD02	2.68	1.368	.200	-1.224	IS02	2.61	1.378	.289	-1.215
PCD03	3.05	1.239	-.111	-.994	IS03	3.16	1.161	-.215	-.836
PCD04	3.58	1.297	-.621	-.663	IS04	2.84	1.379	.055	-1.276
PCD05	3.31	1.263	-.359	-.874	IS05	2.91	1.377	.087	-1.253
PCD06	2.91	1.180	.009	-.790	IS06	1.58	1.111	1.850	2.220
PCD07	2.65	1.463	.309	-1.285	PW01	1.49	.804	1.774	2.983
PCD08	2.90	1.196	-.090	-.876	PW02	3.74	.937	-.434	-.234
PCD09	3.01	1.232	-.194	-.909	PW03	3.85	.868	-.354	-.553
PCD10	3.30	1.337	-.417	-.976	PW04	1.78	1.071	1.257	.631
PCD11	3.45	1.384	-.420	-1.090	PW05	3.27	1.385	-.240	-1.192
PCD12	2.58	1.322	.323	-1.030	PW06	3.46	1.145	-.312	-.688
PCD13	2.75	1.474	.147	-1.385	PW07	3.50	1.175	-.382	-.745
PCP01	2.39	1.112	.331	-.791	PW08	1.65	1.060	1.522	1.261
PCP02	2.96	1.294	-.038	-1.053	PW09	4.10	.981	-.929	.207
PCP03	3.35	1.235	-.344	-.798	PW10	1.68	1.232	1.672	1.423
PCP04	3.53	1.207	-.475	-.657	PW11	2.00	1.351	0.992	-.394
PCP05	2.34	1.156	.405	-.775	PW12	2.54	1.546	.368	-1.409
PCP06	3.22	1.313	-.193	-1.025	PW13	2.78	1.552	.087	-1.518
PCP07	2.54	1.167	.243	-.826	PCF01	2.98	1.250	-.009	-.968
PCP08	3.48	1.120	-.393	-.590	PCF02	2.75	1.228	.154	-.884
PCP09	2.78	1.307	.117	-1.105	PCF03	3.06	1.459	-.087	-1.345
PCP10	2.44	1.243	.426	-.858	PCF04	3.60	1.045	-.450	-.451
PCP11	3.11	1.242	-.173	-.906	PCF05	3.88	1.030	-.684	-.222
PCP12	3.27	1.277	-.265	-.959	PCF06	3.29	1.488	-.290	-1.334
CC01 (R)	3.42	1.205	-.317	-.839	PCF07	3.07	1.293	-.066	-1.052
CC02 (R)	3.85	1.194	-.661	-.694	ST01 (R)	3.46	1.304	-.340	-1.073
CC03 (R)	3.37	1.320	-.258	-1.128	ST02 (R)	3.58	1.299	-.493	-.959
CC04 (R)	3.52	1.304	-.436	-.971	ST03 (R)	3.64	1.326	-.598	-.824
CC05 (R)	3.82	1.249	-.651	-.807	ST04 (R)	3.46	1.380	-.409	-1.084
CC06 (R)	3.48	1.324	-.370	-1.071	ST05 (R)	4.39	1.012	-1.626	1.809
					ST06 (R)	4.11	1.207	-1.133	.140

3.3.4. Correlation Analysis Before Reduction

Correlation analysis for the initial scale (CFQ-63) provided a general picture of the factorability of the scale, or the likelihood that there were stable factors/components underlying measured variables (Tabachnick & Fidell, 2007). First, the analysis of observed correlations

between the questionnaire items (correlation matrix) revealed that there were no correlations that were too high (> .9); however, there were plenty of correlations that were low (< 0.3). Next, the analysis of partial correlations (anti-image correlation matrix) reveal that partial correlations were mostly average and low (≤ 0.3). Nonetheless, the analysis of residuals (between observed and reproduce correlations) highlighted acceptable factorability, with 15% non-redundant residuals with absolute values greater than 0.05.

3.3.5. Communalities

Communality measures how much variance is explained by each variable, and it can reveal common underlying dimensions within the data (Brace et al., 2016). It is useful in deciding the components to be retained based on their values – the higher the value, the more variance has been explained (Field, 2017). A communality value of 0.6 would be most adequate when deciding to retain the optimal components; however, a value of 0.5 is also acceptable for large samples (MacCallum et al., 1999). For the current dataset, the recommended value of 0.6 was used to retain most items. Table A6 (Appendix A) presents the extracted communalities values for each item, with values below 0.6 being marked for potential removal.

3.3.6. Decision Regarding Items Removal

To improve the scale's structure, the analysis of the item-total statistics was corroborated with analyses of the correlation and component matrixes. After carefully analyzing data, a decision was made to remove items based on specific criteria, until a suitable structure was achieved. The graduate process of removing and retesting consisted in re-runs of the analysis after each removal of items. Criteria for items removal were based on the following (Ladhari, 2010; Worthington & Whittaker, 2006): low value loadings (< 0.40), high cross-loadings (> 0.40), low correlations (< 0.40), and low communality (< 0.30). At the end of the scale reduction

process, a total of 26 items were removed (Table 9), and the CFQ scale was gradually reduced from 63 to 35 items, until clear and simple structure was achieved.

Table 9

Items Removal for the Initial CFQ-63 Scale

Item to remove	Question in the questionnaire	Reasons for removal
CFQ02_PCP1	2. Compared to others in my heritage culture, traditional values are less important to me.	low item-total correlation (< 0.4); multiple cross-loadings
CFQ03_PCD2	3. Compared to my home country, religious involvement is weaker in Canada.	low loading values (< 0.4); cross-loadings
CFQ04_PCP2	4. Compared to others in my heritage culture, my religious involvement is weaker.	low item-total correlation (< 0.4); low loading values (< 0.4)
CFQ05_PCD3	5. Compared to the Canadian culture, my heritage culture is more male dominated.	low loading values (< 0 .4)
CFQ06_PCP3	6. Compared to others in my heritage culture, I prefer a less male dominated culture.	low communality (< 0.3)
CFQ07_PCD4	7. Compared to my home country, there is more political freedom in Canada.	multiple cross-loadings
CFQ10_PCP5	10. Compared to others in my heritage culture, I pay less attention to social behaviour rules.	low item-total correlation (< 0.4); low loading values (< 0.4); low communality (< 0.3)
CFQ11_PCD6	11. Compared to my heritage culture, the Canadian culture is more gender-equality oriented.	high cross-loadings
CFQ12_PCP6	12. Compared to others in my heritage culture, I prefer a more gender-equality oriented culture.	low loading values (< 0 .4)
CFQ13_PCD7	13. Compared to Canada, my home country is less economically prosperous.	multiple cross-loadings
CFQ15_PCP7	15. Compared to others in my heritage culture, I think our social behaviour rules are too strictly enforced.	multiple cross-loadings; low item-total correlation (< 0.4)
CFQ16_PCD9	16. Compared to my home country, in Canada I feel free to disagree with others.	low loading values (< 0.4); multiple cross-loadings
CFQ19_PCP09	19. Compared to others in my culture, I prefer to dress less conservatively.	low loading values (< 0.4)
CFQ20_PCD11	20. Compared to my home country, in Canada food does not taste as good.	low item to total correlation (< 0.4); low loading values (< 0.3)
CFQ21_PCP10	21. Compared to my others in my heritage culture, I am not as concerned about food preparation rituals and choices.	low item to total correlation (< 0.4); low loading values (< 0.4)
CFQ22_PCD12	22. Compared to people in my home country, Canadians are more preoccupied with cleanliness.	low loading values (< 0.4)
CFQ23_PCP11	23. Compared to others in my heritage culture, I care more about cleanliness.	low loading values (< 0.4)

CFQ24_PCD13	24. Compared to my home country, Canada is more technologically developed.	low item-total correlation (< 0.4); cross loadings
CFQ25_PCP12	25. Compared to others in my heritage culture, I feel more comfortable using advanced technology.	low item-total correlation (< 0.4)
CFQ37_IS6	37. During my staying in Canada, I have used mental health services (e.g., counselling) that were not provided by my Canadian academic institution.	low item-total correlation (< 0.4); low loading values (< .4); cross loadings
CFQ44_PW7	44. I would like to have more daily interactions with Canadians.	low item-total correlation (< 0.4)
CFQ45_PW8	45. I am just here to study, not to explore Canadian culture.	low loading values (< 0.4)
CFQ46_PW9	46. I am open to the Canadian culture, and I am willing to learn more about it.	low item-total correlation (< 0.4); cross loadings
CFQ47_PW10	47. I have joined a religious group (outside of school) since coming to Canada.	high cross loadings
CFQ48_PW11	48. I have felt welcomed in the religious group I have joined since coming to Canada.	high cross loadings
CFQ49_PW12	49. I have joined a NON-religious group or community (outside of school) since coming to Canada.	low loading values (< 0.4); multiple cross loadings
CFQ50_PW13	50. I have felt welcomed in the NON-religious groups I have joined since coming to Canada.	low loading values (< 0.4); multiple cross loadings
CFQ57_PCF7	57. I have found the student support services provided by my Canadian university (e.g., counselling, academic support, health care) to be helpful with my cultural adjustment.	low item-total correlation (< 0.4); low loading values (< 0.4)

3.4. Principal Component Analysis (PCA)

PCA was employed to reduce the initial scale and find the optimal components as new variables that can summarize the information of the original data. For a sample of at least 300, which is rated as “good” (Comrey & Lee, 1992), the recommended factor/component loadings should be greater than .298 (Stevens, 2002). Guadagnoli and Velicer (1988) found that a factor/component with four or more loadings greater than 0.6 is reliable regardless of the sample size, while factors with a few low loadings can be interpreted if the sample size is 300 and more.

3.4.1. Analysis Overview and Justification

PCA was chosen as a way to produce a robust, interpretable, and descriptive solution of the proposed scale. As a dimensionality-reduction technique that can be used as an independent

analysis, the advantage of using PCA in initial stages relies on its ability to reduce observed variables with minimum information loss, which increases interpretability. The current study takes on the first step of scale exploration by using eigenvector-based multivariate analysis (PCA with component extraction, rotation, and interpretation) to reduce the scale, achieve a simple structure, and assesses the information of the collected dataset.

As a statistical procedure, PCA uses orthogonal or oblique transformation to convert a set of possible correlated variables into a set of linearly uncorrelated variables called principal components (Jackson, 1991; Jolliffe, 2002). PCA is a flexible research tool that forms the basis of multivariate data analysis, and therefore, allows researchers to deal with imperfections in their data sets, such as noise, missing value, categorical data, multicollinearity, and imprecise measurements (Eriksson et al., 2013). As a data-reduction technique, PCA maximizes variance by finding new variables (components) that are linear functions of the original dataset, thus, increasing interpretability while minimizing information loss by retaining most of variance in the original set of variables (Jolliffe & Cadima, 2016). Finally, PCA is useful in the initial stages of scale exploration to evaluate the dataset, reduce observable variables into a fewer number of components, and prepare the scale for further explorations (Matsunaga, 2010).

Exploratory data analysis requirements refer to: (a) *multivariate analysis of ordinal variables:* all scales used Likert-scale items, which are considered ordinal; (b) *normal distribution and linearity*: dataset passed at least one test of normality, with no significant outliners, and with linear relations between variables; (c) *suitable dataset*: sample adequacy (KMO = .772; Bartlett's Test of Sphericity: Chi-Square = 8624.831, df = 1953, Sig. = .001) revealed that the dataset was suitable for data reduction; (d) *measurement error:* observed variables were evaluated without measurement errors; and (e) *sample size:* sample was large

enough for exploratory analysis, with N = 314. Using extraction, decision-making, rotation, and interpretation, the observed correlated variables of the proposed CFQ scale were reduced to a manageable set that can construct its main dimensions. For the purpose of this investigation, components were considered real factors (Kline, 1994).

3.4.2. Eigenvalues Computation

After items were removed and the scale was reduced to 35 items, a much cleaner structure of the scale was achieved, with eight components explaining 61% of the total variance.

Table 10

Total Variance Explained for the 8 Components Solution (normal extraction, 35 items)

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	6.202	17.720	17.720	6.202	17.720	17.720
2	4.892	13.977	31.697	4.892	13.977	31.697
3	2.726	7.788	39.458	2.726	7.788	39.458
4	2.125	6.071	45.556	2.125	6.071	45.556
5	1.753	5.009	50.566	1.753	5.009	50.566
6	1.329	3.798	54.364	1.329	3.798	54.364
7	1.174	3.354	57.718	1.174	3.354	57.718
8	1.159	3.311	61.029	1.159	3.311	61.029

Extraction Method: Principal Component Analysis

The 8 components extracted after the scale reduction (from 63 to 35 items) explained a good percentage of the variance. However, lower eigenvalues usually tend to lead to over-extraction of components (Worthington & Whittaker, 2006). In addition, the component matrix table (Appendix A, Table A7) highlighted that the structure of extracted components was not entirely clearly defined, with some components loading only two items. Although components with only two items can be acceptable if they have loading values greater than 0.3 (Worthington & Whittaker, 2006), they lack in clarity and therefore, may indicate component under extraction.

3.4.3. Parallel Analysis (PA)

To overcome the subjective interpretation of retaining interpretable components (avoiding under- or over-extraction) and determine the optimal number of components needed to be retained, a decision was made to use Parallel Analysis (PA). PA has consistently proven a desirable level of accuracy in determining variable loadings and the optimal threshold for significant components (Franklin et al., 1995).

PA was developed by Horn (1965) as a research tool aimed to establish the significance of components through assessing variable loadings. PA is a useful technique for determining the optimal number of retained components when using PCA on a correlation matrix (Franklin et al., 1995), as it was the case with the current dataset. The usefulness of PA is that it can evaluate the variable loadings that are significant for each component (Buja & Eyuboglu, 1992), and therefore, achieve a simplified structure without the need to rely on establishing common thresholds and subjectively interpreting the correlation significance between variables and components (Franklin et al., 1995). PA works by comparing eigenvalues from data prior to rotation with those from a random generated correlation matrix of identical dimensionality to the data set, particularly same number of *p* variables and *n* samples (Franklin et al., 1995). Then, a decision is made to retain only the PCA components from the original dataset (using the correlation matrix) that have greater eigenvalues than their respective PA components from the randomly generated dataset.

Based on the Parallel Analysis model developed by Horn (1965), Vivek et al. (2017) have created an online parallel analysis engine that calculates eigenvalues from randomly generated correlation matrices. Using the app (https://analytics.gonzaga.edu/parallelengine/) developed by

Vivek et al. (2017), a random set was generated (Table 11). Then, the real-data eigenvalues were compared with the randomly generated eigenvalues to indicate the optimal threshold.

Table 11

Comparing Real Data Eigenvalues (before rotation) With Randomly Generated Data

Real-data Eigenvalues		**Random-data Eigenvalues**		
Component	**Total**	**Component**	**Percentile Eigenvalues**	**Mean Eigenvalues**
1	6.202	**1**	1.787	1.687
2	4.892	**2**	1.667	1.560
3	2.726	**3**	1.586	1.534
4	2.125	**4**	1.525	1.478
5	**1.753**	**5**	**1.466**	**1.424**
6	1.329	**6**	1.450	1.405
7	1.174	**7**	1.401	1.360
8	1.159	**8**	1.362	1.320

Comparing the two PA datasets (Table 11), original and randomly generated, indicated the optimal number of components to be retained as five, since component #5 was the last component from the real dataset that had a greater eigenvalue than the equivalent component of the randomly generated sample (1.753 > 1.466).

3.4.4. Scree Plot

The results of PA were corroborated with the analysis of the scree plot (Figure 4) for the reduced CFQ-35 scale, which highlighted the viable solutions. The scree plot shows that the last big drop in eigenvalues is between components 5 *(1.753)* and 6 *(1.329)*. The main point of inflection is at component 7 *(1.174)*. Both the 5- and 6-component models were potentially viable solutions, as they were above the point of inflection after which each additional component leads to a marginal reduction of eigenvalue, thus, they fail to explain more variance.

The two models were refined with component names, and then tested for loading values and dimensionality. The six-component model (1. person-culture fit, 2. stereotype threat, 3. cultural challenges, 4. interaction and support, 5. cultural differences, and 6. perceived obstacles) had a better total variance explained (54.4%), but with some drawbacks: the last component explained less than 5% of variance, component #6 had only two items, and overall, the solution had a less clear structure of components. On the other hand, the five-component model (Table 12) had a better component structure, with each component explaining more than 5% of variance, but with a lower value of the total variance explained (50.6%). The five-component solution was found to be most acceptable, as it was able to better explain the dataset, with a better clarity of the components extracted, and an accepted value of total variance. At the end of this step, the reduced dataset with 35-items and a 5-component solution was ready for rotation.

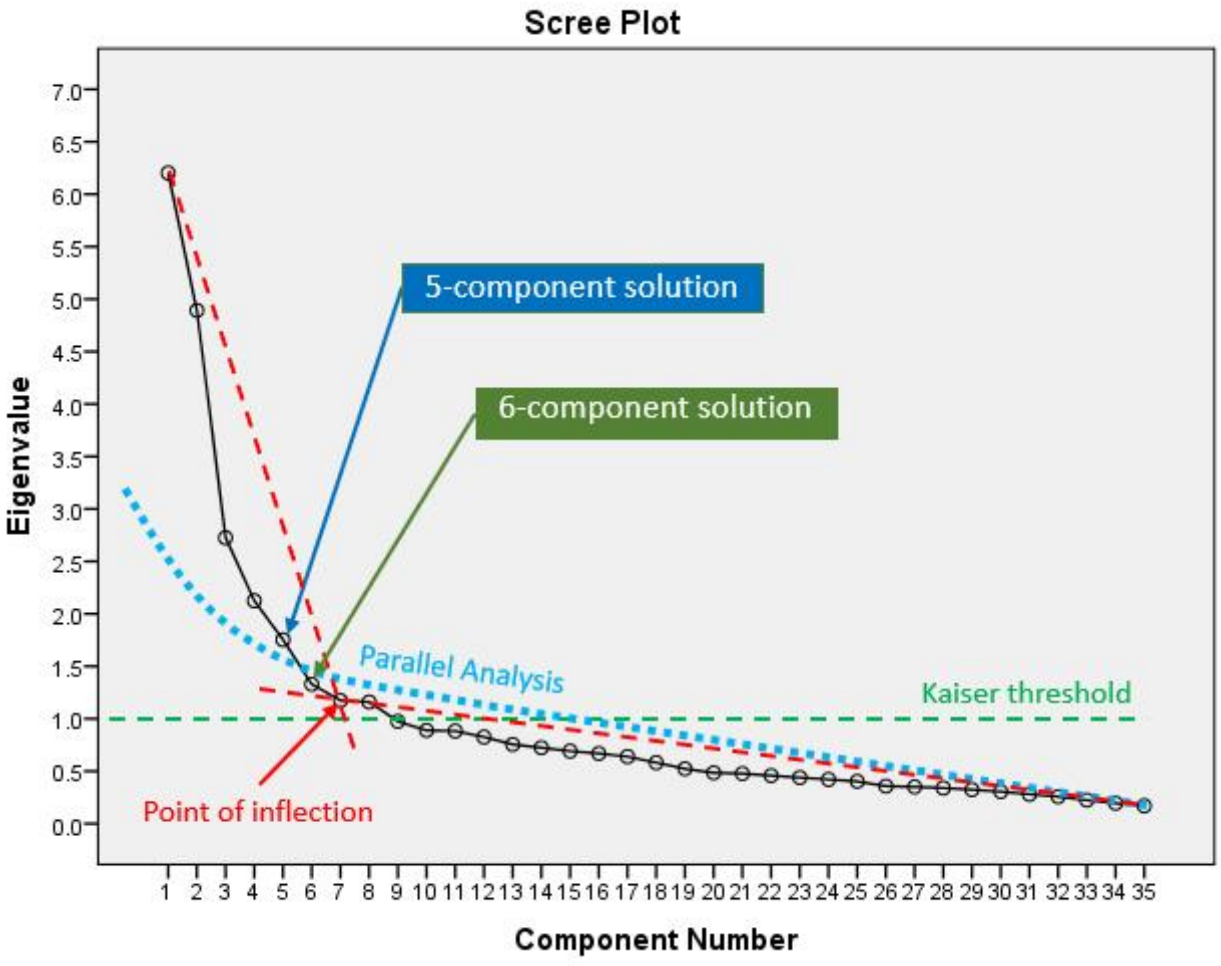


Figure 3. *Scree Plot of the Reduced CFQ-35 Scale*

3.4.5. Rotation (PROMAX)

After the analysis has highlighted the optimal number of items to keep (35) and the five-component solution was deemed as acceptable based on corroborating PA with the scree plot, the next step was to improve the interpretation of component loadings using rotation. An oblique rotation was chosen because it was a more representative evaluation of reality, as psychological constructs are expected to correlate (Kline, 1994).

Assuming correlations between variables, an oblique rotation (components are rotated 90^{o} from each other) was used (Promax), which produced a forced five-component solution. Additionally, an increased (100) value of maximum iterations for convergence was set, to maximize the number of times the SPSS software should search for an optimal solution.

The Promax-rotated PCA revealed that the threshold eigenvalue for component retention was 1.75, and the five-component model explained 50.57% of the total variance (Table 12).

Table 12

Total Variance Explained for 5-component Model (forced extraction, Promax rotation)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.202	**17.720**	**17.720**	6.202	17.720	17.720	5.020
2	4.892	**13.977**	**31.697**	4.892	13.977	31.697	4.860
3	2.726	**7.788**	**39.458**	2.726	7.788	39.458	4.377
4	2.125	**6.071**	**45.556**	2.125	6.071	45.556	3.491
5	1.753	**5.009**	**50.566**	1.753	5.009	50.566	3.112

Note: Extraction Method: Principal Component Analysis.
[a.] = when components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Analyzing the component correlation matrix for the five components (Table 13) revealed two correlations above the .32 threshold, which indicated an overlap of variance among components. Therefore, the choice for an oblique over an orthogonal rotation was justified

(Tabachnick & Fiddell, 2007). In addition, the analysis of the structure matrix indicated the presence of relevant multiple cross-loadings above .3, and therefore, it also highlighted the need for an oblique rotation assuming correlations between variables (Tabachnick & Fiddell, 2007).

Table 13

Component Correlation Matrix for the Five Components (Promax rotation)

Component	1	2	3	4	5
1	1.000	-.205	-.061	.011	.209
2	-.205	1.000	**.392**	.198	.097
3	-.061	.392	1.000	**.325**	.081
4	.011	.198	.325	1.000	.026
5	.209	.097	.081	.026	1.000

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization

Choosing Promax over direct oblimin, the second type of oblique rotation, was motivated by the size of the current sample – direct oblimin is recommended in most of the cases, while Promax is recommended for large data sets (Field, 2017). As the current sample consisted of more than 300 participants, a Promax rotated PCA proved to be the most interpretable and adequate, due to having the advantage of being not only quicker, but also conceptually simpler. The default value (= 4) of Kappa (controlling the number of correlations or obliqueness) was retained for the Promax rotation, as it provided the optimal value for producing the simplest structure with the lowest correlations among components (Hendrickson & White, 1964).

As seen in the pattern matrix (Table 14), all loadings below 0.4 were suppressed, as according to Stevens (2002), who indicates at least a minimum loading value of 0.3 for retention, while recommending that only loadings greater than 0.4 should be interpreted.

Table 14

Pattern Matrix of the Promax Rotated PCA for the CFQ-35 Five-component Solution

Item code	Component					M	SD	Skew	Communality Extraction
	1	2	3	4	5				
CFQ51_PCF1	.782					2.98	1.25	-0.01	.60
CFQ43_PW6	.757					3.46	1.14	-0.31	.56
CFQ54_PCF4	.733					3.60	1.04	-0.45	.59
CFQ42_PW5	.726					3.27	1.38	-0.24	.54
CFQ56_PCF6	.640					3.29	1.49	-0.29	.41
CFQ55_PCF5	.631					3.88	1.03	-0.68	.46
CFQ39_PW2	.627					3.74	0.94	-0.43	.52
CFQ53_PCF3	.612					3.06	1.46	-0.09	.36
CFQ40_PW3	.586					3.85	0.87	-0.35	.45
CFQ52_PCF2	.431					2.75	1.23	0.15	.31
CFQ62_ST5		.827				2.36	1.33	0.60	.63
CFQ63_ST6		.762				1.89	1.21	1.13	.60
CFQ58_ST1		.688				2.54	1.30	0.34	.58
CFQ59_ST2		.649				2.42	1.30	0.49	.58
CFQ61_ST4		.644				2.54	1.38	0.41	.53
CFQ60_ST3		.629				1.61	1.01	1.63	.47
CFQ38_PW1		.600				1.49	0.80	1.77	.42
CFQ41_PW4		.505				1.78	1.07	1.26	.42
CFQ27_CC2			.780			2.15	1.19	0.66	.58
CFQ30_CC5			.755			2.18	2.25	0.65	.56
CFQ29_CC4			.746			2.48	1.30	0.44	.63
CFQ31_CC6			.698			2.52	1.32	0.37	.52
CFQ28_CC3			.684			2.63	1.32	0.26	.55
CFQ26_CC1			.577			2.58	1.20	0.32	.45
CFQ07_PCD4				.680		3.58	1.30	-0.62	.49
CFQ14_PCD8				.617		2.90	1.20	-0.09	.37
CFQ08_PCP4				.607		3.53	1.21	-0.48	.40
CFQ09_PCD5				.590		3.31	1.26	-0.36	.43
CFQ17_PCP8				.581		3.48	1.12	-0.39	.39
CFQ18_PCD10				.578		3.30	1.34	-0.42	.43
CFQ36_IS5					.841	2.91	1.38	0.09	.67
CFQ33_IS2					.802	2.61	1.38	0.29	.63
CFQ35_IS4					.716	2.84	1.38	0.06	.57
CFQ32_IS1					.624	2.46	1.40	0.51	.52
CFQ34_IS3					.601	3.13	1.16	-0.22	.50

Note: Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization. Rotation converged in 6 iterations. Values below 0.4 were suppressed

The correlation matrix evaluation revealed that multicollinearity was not an issue, as there were no variables that correlated very high (< 0.75). However, most correlations were not high enough, with values < 0.3 (Kaiser & Rice, 1974, deems values below 0.5 as unacceptable), which indicated that the sample might not have been large enough. Nonetheless, since the sample had more than 300 participants, significant small correlations are acceptable (Field, 2017).

3.4.6. Interpretation

The five-component solution Promax rotated PCA was found to be most robust and interpretable, explaining 50.57 % of the total variance, with the first two components explaining most of the variance: 17.72 % for component 1 (eigenvalue 6.20), and 13.98 % for component 2 (eigenvalue 4.89), while the rest of the components explained less than 10 % each, with 7.79% (eigenvalue 2.73) for component 3, 6.07% (eigenvalue 2.21) for component 4, and 5.01% (eigenvalue 1.75) for component 5. Simple structure was achieved, as according to the criteria established by Thurstone (1947) regarding zero loadings, significant loadings, and complex variables.

Based on the clustering of items for each component (Table 15), the evaluation of principal component analysis suggested the following interpretation: (a) component 1 = *person-culture fit* (items 39, 40, 42, 43, 51, 52, 53, 54, 55, 56); (b) component 2 = *stereotype threat* (items 38, 41, 58, 59, 60, 61, 62, 63); (c) component 3 = *cultural challenges* (items 26, 27, 28, 29, 30, 31); (d) component 4 = *cultural evaluation* (items 7, 8, 9, 14, 17, 18); and (e) component 5 = *interaction and support* (items 32, 33, 34, 35, 36).

The highlighted summary of the component interpretation for the reduced instrument closes the methods chapter. The results chapter following next details the characteristics of the new scale and addresses the research questions.

Table 15

Components Interpretation Summary for the Final CFQ-35 Scale

Component	Items		Loadings		Dimension Interpretation
	Code *(new code)*	**Questions**	**Pattern Matrix Loadings**	**Structure Matrix Loadings**	
1	CFQ51_PCF1 *(CFQ1_PCF1)*	Since living in Canada, I feel like I belong here.	.782	.768	**Person-culture Fit**
	CFQ43_PW6 *(CFQ2_PCF2)*	I really enjoy socializing with Canadians.	.757	.744	
	CFQ03_PCF3 *(CFQ54_PCF4)*	Overall, I am satisfied with my life in Canada.	.733	.757	
10 items **α = .850**	CFQ42_PW5 *(CFQ4_PCF4)*	I have plenty of interactions with Canadians every day.	.726	.696	
	CFQ56_PCF6 *(CFQ5_PCF5)*	The language barrier is not an obstacle to doing better at school.	.640	.609	
variance **17.72%**	CFQ55_PCF5 *(CFQ6_PCF6)*	I am happy with my decision to study in Canada.	.631	.641	
	CFQ39_PW2 *(CFQ7_PCF7)*	Overall, I feel Canadians have treated me well.	.627	.673	
	CFQ53_PCF3 *(CFQ8_PCF8)*	I believe Canada provides me with the best opportunities to accomplish my goals.	.612	.584	
	CFQ40_PW3 *(CFQ9_PCF9)*	Overall, I feel Canadians have been helpful to me.	.586	.673	
	CFQ52_PCF2 *(CFQ10_PCF10)*	My success in Canada reflects my true potential.	.431	.482	
2	CFQ62_ST5 *(CFQ11_ST1)*	At school, I am concerned that teachers might perceive international students as less capable.	.827	.786	**Stereotype Threat**
	CFQ63_ST6 *(CFQ12_ST2)*	During tests, I worry that teachers might have unreasonable expectations from students of my ethnicity.	.762	.765	
	CFQ58_ST1 *(CFQ13_ST3)*	I am concerned that Canadians might judge me because of my nationality.	.688	.705	
8 items **α = .841**	CFQ59_ST2 *(CFQ14_ST4)*	I am concerned that Canadians might judge me because of my race.	.649	.692	
	CFQ61_ST4 *(CFQ15_ST5)*	I am anxious while interacting with classmates, because I am concerned of how they perceive me.	.644	.685	
variance **13.98%**	CFQ60_ST3 *(CFQ16_ST6)*	At school, I worry that teachers might perceive female students as less capable.	.629	.596	
	CFQ38_PW1 *(CFQ17_ST7)*	Overall, I feel Canadians have rejected me.	.600	.635	
	CFQ41_PW4 *(CFQ18_ST8)*	I find it difficult to ask Canadians for help.	.505	.578	

3 6 items **α = .832** variance **7.79%**	CFQ27_CC2 *(CFQ19_CC1)*	Religious differences between my home community and Canada are challenging.	.780	.760	**Cultural Challenges**
	CFQ30_CC5 *(CFQ20_CC2)*	Differences in technological development between my native country and Canada are challenging.	.755	.748	
	CFQ29_CC4 *(CFQ21_CC3)*	Differences in how men and women behave in society between my native country and Canada are challenging.	.746	.774	
	CFQ31_CC6 *(CFQ22_CC4)*	The difference in economic prosperity between my native country and Canada is challenging.	.698	.712	
	CFQ28_CC3 *(CFQ23_CC5)*	Political differences (e.g. freedom of expression, openness, political beliefs) between my native country and Canada are challenging.	.684	.730	
	CFQ26_CC1 *(CFQ24_CC6)*	Cultural differences (e.g. traditions, beliefs, norms, values) between my native country and Canada are challenging.	.577	.648	
4 6 items **α = .737** variance **6.07%**	CFQ07_PCD4 *(CFQ25_CE1)*	Compared to my home country, there is more political freedom in Canada.	.680	.678	**Cultural Evaluation**
	CFQ14_PCD82 *(CFQ26_CE)*	Compared to my heritage culture, social behaviour rules are less strictly enforced in the Canadian culture.	.617	.599	
	CFQ08_PCP4 *(CFQ27_CE3)*	Compared to others in my heritage culture, I prefer to live somewhere with more political freedom.	.607	.625	
	CFQ09_PCD5 *(CFQ28_CE4)*	Compared to the Canadian culture, my heritage culture has more complicated social behaviour rules.	.590	.626	
	CFQ17_PCP8 *(CFQ29_CE5)*	Compared to others in my heritage culture, freedom of expression is more important to me.	.581	.611	
	CFQ18_PCD10 *(CFQ30_CE6)*	Compared to people in my heritage culture, Canadians dress less conservatively.	.578	.628	
5 5 items **α = .788** variance **5.01%**	CFQ36_IS5 *(CFQ31_IS1)*	During my stay in Canada, I have made in-school friends who ARE from my country.	.841	.787	**Interaction & Support**
	CFQ33_IS2 *(CFQ32_IS2)*	During my stay in Canada, I have made friends outside of school who ARE from my country.	.802	.761	
	CFQ35_IS4 *(CFQ33_IS3)*	During my stay in Canada, I have made in-school friends who are NOT from my country.	.716	.736	
	CFQ32_IS1 *(*CFQ34_IS4*)*	During my stay in Canada, I have made friends outside of school who are NOT from my own country.	.624	.684	
	CFQ34_IS3 *(CFQ35_IS5)*	Even though I am in a foreign country, there is always someone I can rely on.	.601	.651	
Total variance explained: 50.57%					

Results

The chapter is divided in four sections. The first section presents the descriptive analyses (scoring, means, standard deviations) for the additional scales (CQS, MPQ-SF, DASS-21, AGO-R) used along with the CFQ scale. The second section details the finding of the exploratory (PCA) and descriptive analyses (correlation analysis, internal consistency, and scoring and interpretation) for the developed instrument (CFQ). The third section details the support for each research question by employing correlation analysis and a series of linear regressions. The last section summarizes the findings for each hypothesis.

4.1. Additional Measurement Instruments – Descriptive Analyses

SPSS was used to calculate scoring, means (M), standard deviations (SD), and Cronbach's alphas (α) for each of the four constructs (cultural intelligence, multicultural personality, well-being, and goal orientation), as measured by their respective instruments (CQS, MPQ-SF, DASS-21, and AGO-R), tested along with the proposed construct of cultural fit.

4.1.1. Cultural Intelligence Scoring

The average scoring for the CQS scale indicated that most participants (N = 155, 49%) scored "average" on cultural intelligence (Table 16).

Table 16

Cultural Intelligence Scale (CQS) – Total Scale Scoring

	Score	Frequency (N)	Percent (%)
Cultural Intelligence Scale (CQS)	high	81	25.8
	average	155	49.4
M = 4.78, SD = 0.88, α = *.91*	low	78	24.8

Average scores were calculated for each of the four dimensions of the CFQ scale: strategy/metacognition (items 1-5), knowledge/cognitive (items 6-10), motivation/drive (items

11-15), and behavior/action (items 16-20). Then, the scale range was interpreted as following: low CQ (first 25 percentile), average CQ (26-74 percentile), and high CQ (last 25 percentile). Table 17 details the scoring for CQS' dimensions.

Table 17

Cultural Intelligence Scale (CQS) – Subscales Scoring

CQ dimension	Level	Frequency (N)	Percent (%)
CQ-Behavior (action)	high	84	26.8
M = 4.86, SD = 1.19	average	152	48.4
α = .85	low	78	24.8
CQ-Knowledge (cognition)	high	86	27.4
M = 4.18, SD = 1.26	average	147	46.8
α = .87	low	81	25.8
CQ-Motivation (drive)	high	86	27.4
M = 5.09, SD = 1.15	average	142	45.2
α = .86	low	86	27.4
CQ-Strategy (metacognition)	high	90	28.7
M = 5.21, SD =1.17	average	122	38.9
α = .82	low	102	32.5

4.1.2. Multicultural Personality Scoring

The average scoring for the MPQ-SF scale indicated that most participants (N = 159, 51%) scored "moderate" on multicultural personality (Table 18).

Table 18

Multicultural Personality Questionnaire Short-form (MPQ-SF) – Total Scale Scoring

Instrument	Score	Frequency (N)	Percent (%)
Multicultural Personality Questionnaire (MPQ-SF)	high	79	25.2
	moderate	159	50.6
M = 3.42, SD = 0.62, *α = .83*	low	76	24.2

Average scores were calculated for each of the five dimensions of the MPQ scale: cultural empathy (items 1-8), flexibility (items 9-16), social initiative (items 17-24), emotional stability (items 25-32), and open-mindedness (items 33-40). Then, the scale range for each

dimension was interpreted as following: low (first 25 percentile), moderate (26-74 percentile), and high (75 and up percentile). Table 19 details the scoring for each MPQ-SF dimension.

Table 19

Multicultural Personality Questionnaire Short-form (MPQ SF) – Subscales Scoring

MPQ-SF dimension	Level	Frequency (N)	Percent (%)
Cultural Empathy (CE)	high	85	27.1
M = 3.99, SD = 0.60	moderate	162	51.6
α = .86	low	67	21.3
Flexibility (FX)	high	79	25.2
M = 3.35, SD = 0.71	moderate	162	51.6
α = .83	low	73	23.2
Emotional Stability (ES)	high	112	35.7
M = 3.20, SD = 0.54	moderate	129	41.1
α = .56	low	73	23.2
Open-mindedness (OP)	high	97	30.9
M = 3.48, SD = 0.63	moderate	128	40.8
α = .81	low	89	28.3
Social Initiative (SI)	high	89	28.3
M = 3.08, SD = 0.48	moderate	134	42.7
α = .49	low	91	29.0

4.1.3. Stress, Anxiety, and Depression Levels (DASS-21)

DASS-21 scores were calculated separately for each subscale (depression, anxiety, stress) by adding the scores of all questions belonging to that dimension (Appendix C, p.162), and then multiplying the result with 2 (Lovibond & Lovibond, 1995). Table 20 details DASS-21 scoring.

Table 20

Levels of Stress, Anxiety, and Depression (DASS-21) – Subscales Scoring

Dimension	Level	Frequency (N)	Percent (%)
DEPRESSION	normal	139	44.3
M = 2.42	mild	33	10.5
SD = 1.50	moderate	60	19.1
α = .92	severe	36	11.5
	extremely severe	46	14.6
	Total above normal rating	*175*	*55.7*

ANXIETY	normal	88	28.0
	mild	30	9.6
M = 3.09	moderate	57	18.2
SD = 1.60	severe	44	14.0
α = .87	extremely severe	95	30.3
	Total above normal rating	*226*	*72.1*
STRESS	normal	152	48.4
	mild	51	16.2
M = 2.14	moderate	49	15.6
SD = 1.34	severe	39	12.4
α = .89	extremely severe	23	7.3
	Total above normal rating	*162*	*51.5*

4.1.4. Achievement Goal Scoring

Items were averaged separately for each of the two dimensions, mastery and performance, as following: (a) *mastery dimension*: mastery-approach (items 1-3), and mastery-avoidance (items 4-6); and (b) *performance dimension*: performance-approach (items 7-9), and performance-avoidance (items 10-12). Each dimension was interpreted as following: scores between 0-2.9 indicated no mastery/performance approach/avoidance, scores between 3.0-3.9 indicated indecision, scores between 4.0-5.0 indicated mastery/performance approach/avoidance. Fear of failure was assessed separately for each of the two dimensions, and therefore, avoidance items were not reversed (Elliot & Murayama, 2008). Table 21 details the AGQ-R scoring.

Table 21

Achievement Goal Questionnaire - Revised (AGQ-R) – Subscales Scoring

Achievement Goal	Dimension	Frequency (N)	Percent (%)
Mastery Approach	mastery oriented	118	58.6
M = 3.96 SD = 0.74	undecided	114	36.3
α = .75	not mastery oriented	16	5.1
Mastery Avoidance	mastery avoidant	133	42.4
M = 3.54 SD = 0.96	undecided	115	36.6
α = .78	not mastery avoidant	66	21.0
Performance Approach	performance oriented	159	50.6
M = 3.74 SD = 0.90	undecided	115	36.3
α = .82	not performance oriented	40	12.7

Performance Avoidance	performance avoidant	168	53.5
M = 3.68 SD = 1.06	undecided	91	29.0
α = .89	not performance avoidant	55	17.5

4.2. Cultural Fit Questionnaire – Exploratory and Descriptive Analyses

4.2.1. Principal Component Analysis (PCA)

PCA was used to clarify the proposed scale by reducing observed variable into an optimal number of components. The initial scale of 63 items was reduced (Table 10) to a final scale of 35 items. With a sample of 314 participants, the minimum requirement (five participants per item) for a reliable component structure (Field, 2017) was achieved. Assuming correlations between variables, a Promax rotation (oblique) was performed, with a forced extraction of five components, which all had eigenvalues well over Kaiser's criterion of 1. The five-component solution (Table 15) explained 50.57%, of the total variance, and therefore, was seen as a reasonable representation of the true measurement that the questionnaire proposed. In social science research, extracted factor/components typically explain between 50% to 60% of total variance with a minimum recommended value of 50% (Field, 2017).

As seen in Table 22 below, each of the five components loaded at least five items, with good loading values ranging between .43 and .83. Therefore, Stevens' recommendation (2002) was satisfied, with only loadings greater than 0.4 being interpreted.

Table 22

Summary of Promax Rotated PCA Loadings for the CFQ-35 (Pattern Matrix)

		Rotated Component Loadings				
No	**Item**	**PCF**	**ST**	**CC**	**CE**	**IS**
51	Since living in Canada, I feel like I belong here.	**.782**	.092	.000	-.001	.025
43	I really enjoy socializing with Canadians.	**.757**	.020	.008	-.053	-.037
03	Overall, I am satisfied with my life in Canada.	**.733**	-.049	-.051	.121	.049
42	I have plenty of interactions with Canadians every day.	**.726**	.108	.094	-.214	.003

56	The language barrier is not an obstacle to doing better at school.	**.640**	-.041	.016	-.074	-.179
55	I am happy with my decision to study in Canada.	**.631**	-.011	-.097	.236	-.004
39	Overall, I feel Canadians have treated me well.	**.627**	-.254	-.019	.099	-.042
53	I believe Canada provides me with the best opportunities to accomplish my goals.	**.612**	.041	.099	-.072	-.061
40	Overall, I feel Canadians have been helpful to me.	**.586**	-.178	-.035	.144	.057
52	My success in Canada reflects my true potential.	**.431**	.000	.087	-.008	.268
62	At school, I am concerned that teachers might perceive international students as less capable.	.035	**.827**	-.078	-.029	.022
63	During tests, I worry that teachers might have unreasonable expectations from students of my ethnicity.	-.010	**.762**	.003	-.048	.103
58	I am concerned that Canadians might judge me because of my nationality.	.019	**.688**	-.059	.276	-.112
59	I am concerned that Canadians might judge me because of my race.	-.030	**.649**	-.061	.333	-.058
61	I am anxious while interacting with classmates, because I am concerned of how they perceive me.	-.148	**.644**	-.079	.214	-.017
60	At school, I worry that teachers might perceive female students as less capable.	.157	**.629**	.103	-.269	.131
38	Overall, I feel Canadians have rejected me.	-.099	**.600**	.073	-.072	-.002
41	I find it difficult to ask Canadians for help.	-.090	**.505**	.256	-.194	-.065
27	Religious differences between my home community and Canada are challenging.	-.029	-.037	**.780**	-.032	.030
30	Differences in technological development between my native country and Canada are challenging.	-.025	-.007	**.755**	-.025	.022
29	Differences in how men and women behave in society between my native country and Canada are challenging.	.095	-.021	**.746**	.137	-.028
31	The difference in economic prosperity between my native country and Canada is challenging.	.113	.019	**.698**	.056	-.053
28	Political differences (e.g. freedom of expression, openness, political beliefs) between my native country and Canada are challenging.	.002	-.001	**.684**	.127	.057
26	Cultural differences (e.g. traditions, beliefs, norms, values) between my native country and Canada are challenging.	-.063	.127	**.577**	.062	-.024
07	Compared to my home country, there is more political freedom in Canada.	-.115	-.160	.086	**.680**	.100
14	Compared to my heritage culture, social behavior rules are less strictly enforced in the Canadian culture.	.040	.045	-.089	**.617**	.046
08	Compared to others in my heritage culture, I prefer to live somewhere with more political freedom.	.049	-.030	.069	**.607**	.043
09	Compared to the Canadian culture, my heritage culture has more complicated social behavior rules.	.049	.137	.020	**.590**	.098
17	Compared to others in my heritage culture, freedom of expression is more important to me.	.027	-.058	.135	**.581**	-.079
18	Compared to people in my heritage culture, Canadians dress less conservatively.	.038	.121	.087	**.578**	-.127
36	During my stay in Canada, I have made in-school friends who ARE from my country.	-.235	-.101	.035	.066	**.841**

33	During my stay in Canada, I have made friends outside of school who ARE from my country.	-.195	-.087	.085	.078	**.802**
35	During my stay in Canada, I have made in-school friends who are NOT from my country.	.067	.148	-.078	-.070	**.716**
32	During my stay in Canada, I have made friends outside of school who are NOT from my own country.	.217	.163	-.020	-.001	**.624**
34	Even though I am in a foreign country, there is always someone I can rely on.	.266	-.005	-.059	.006	**.601**
	Eigenvalues	**6.20**	**4.90**	**2.73**	**2.12**	**1.75**
	% of Variance	**17.72**	**13.98**	**7.79**	**6.07**	**5.01**
	Cronbach's Alpha	.850	.841	.832	.737	.788

Note: PCF = Person-culture fit, ST = Stereotype Threat, CC = Cultural Challenges, CE = Cultural Evaluation, IS = Interaction & Support
Extraction: PCA. Rotation: Promax with Kaiser Normalization. Loadings > 0.4 are bolded

4.2.2. Sampling Adequacy

The Kaiser-Meyer-Olkin measure indicated a good sampling adequacy for the reduced CFQ-35 scale (Table 23), with KMO for the total scale = .81 ("meritorious," according to Kaiser & Rice, 1974). All KMO values for the five components/subscales were greater than .7, which is above the acceptable limit of .5 (Kaiser & Rice, 1974). Bartlett's test of sphericity for the scale was significant, $\chi^2(595) = 4507.32$, $p < .0001$. Communalities were all above .4.

Table 23

KMO and Bartlett's Test of the CFQ-35 Scale

		PCF	ST	CC	CE	IS	Total
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		.838	.830	.826	.750	.714	.810
Bartlett's Test of Sphericity	*Approx. Chi-Square*	1244.72	958.71	649.11	362.72	477.09	4507.32
	df	45	28	15	15	10	595
	Sig.	.000	.000	.000	.000	.000	.000

4.2.3. Correlation Analysis of the Reduced CFQ-35 Scale

Correlations between the five proposed subscales of the final scale were evaluated (Table 24), as well as between the items of each dimension (Appendix A, Tables A1–A5). Pearson correlations were used, as a linear relationship between variables was assumed (Field, 2017).

Table 24

Correlational Matrix of CFQ-35 Dimensions (internal validity)

Dimension	*M*	*SD*	PCF	ST	CC	CE	IS
Person-culture Fit (PCF)	3.39	0.78	–	-.243**	-.032	.034	.228**
Stereotype Threat (ST)	3.92	0.82		–	.429**	.259**	.110
Cultural Challenges (CC)	3.58	0.93			–	.430**	.098
Cultural Evaluation (CE)	3.35	0.81				–	.056
Interaction & Support (IS)	2.80	0.99					–

Note: ** correlation is significant at .01 (2-tailed); * correlation is significant at .05 (2-tailed)
Pearson correlations; N = 314

As seen in Table 24, statistically significant correlations between the five CFQ-dimensions were found. CFQ-stereotype threat was significantly and positively correlated with CFQ-person-culture fit ($r = -.24$, $p < .01$), which suggested that the perception of person-culture fit also leads to more awareness of stereotype threat.

A corrected correlation analysis (Table 25) was performed for each scale dimension. The item-total values are measures of reliability for a scale made of multiple dimensions. An item total correlation analysis serves as a criterion for evaluating and improving reliability of a multi-item scale.

Table 25

Corrected Item-total Correlation Analysis of Each of the CFQ-35 Dimensions

PCF		ST		CC		CE		IS	
items	r	items	r	items	r	items	r	items	r
54	.680**	62	.659**	29	.675**	9	.518**	36	.609**
51	.677**	63	.650**	27	.633**	7	.513**	35	.605**
43	.645**	58	.630**	30	.606**	8	.468**	33	.575**
39	.575**	59	.619**	28	.593**	18	.464**	32	.552**
42	.570**	61	.599**	31	.573**	14	.446**	34	.486**
55	.543**	38	.527**	26	.543**	17	.426**		
40	.533**	41	.468**						
56	.513**	60	.447**						
53	.499**								
52	.402**								
IICM	.380		.398		.452		.318		.425

Note: ** = $p < 0.01$; * = $p < 0.05$; IICM = Inter-item correlations means

As seen in Table 25, the corrected correlation coefficients were all above 0.4, which is the minimum acceptable (Ladhari, 2010). On the other hand, there were no item values above 0.70, and therefore, there was a reduced risk for redundancy of items content (Field, 2017). In addition, the inter-item correlation means (IICM) were all positive, which indicated that items measured the same underlying characteristics. The IICM values ranged from 0.32 to .45. The recommended values for inter-item correlations means are typically desired between 0.2-0.4 (Piedmont, 2014), with no values greater than 0.5 (Field, 2017). As there were no values below 0.3, it was concluded that the items for each component were representative for the dominant content of the dimension (Piedmont, 2014).

4.2.4. Internal Consistency

The reliability of the reduced CFQ-35 scale was found to be "good" (Table 26), with each subscale having an internal consistency above the recommended 0.7 value (Field, 2017; Cicchetti, 1994; Ponterotto & Ruckdeschel, 2007). The alpha values for the five subscales were: CE, $\alpha = .74$; IS, $\alpha = .79$; CC, $\alpha = .83$; ST, $\alpha = .84$; and PCF, $\alpha = .85$. The internal reliability for the total scale was: $\alpha = .82$.

Table 26

Cronbach's Alpha for CFQ-35 (reliability)

Dimensions	**Items**	**α**	**α Interpretation**
Person-culture Fit (PCF)	10	.85	Good
Stereotype Threat (ST)	8	.84	Good
Cultural Challenges (CC)	6	.83	Good
Cultural Evaluation (CE)	6	.74	Acceptable
Interaction and Support (IS)	5	.79	Acceptable
CFQ-35 scale	**35**	**.82**	**Good**

Note: α subscale Interpretation based on *Ponterotto and Ruckdeschel, 2007 (table 3, p. 1003)*
α scale Interpretation based on *Cicchetti, 1994*

4.2.5. Scoring and Interpreting CFQ

As CFQ is a new psychometric measure, the average scores for each dimension as well as for the total scale were calculated. Two subscales, stereotype threat (items 30, 31, 32, 33, 34, 35, 36, 37) and cultural challenges (items 24, 25, 26, 27, 28, 29), were reversed, such as 1 = 5, 2 = 4, 3 = 3, 4 = 2, 5 =1. The level of interpretation for each subscale was established based on the formula showed below (Field, 2017).

$$(5\text{-}1)/5 = 0.80$$

(number of Likert levels minus one, divided with the total of Likert levels)

Based on the above formula, five levels of ratings were established, from "very low" to "very high" (Table 27). The level range values presented in Table 27 were used to establish the breaking points when interpreting the five levels of each of the subscales, such as 1.81 was the first value for the "low," 2.61 was the first value for "moderate," 3.41 was the first value for "high," and 4.21 was the first value for "very high."

Table 27

CFQ-35 Score Interpretation

Level	Level Range	Interpretation
level 1	1.00 – 1.80	very low
level 2	1.81 – 2.60	low
level 3	2.61 – 3.40	moderate
level 4	3.41 – 4.20	high
level 5	4.21 – 5.00	very high

Response frequency for each item if the scale is presented in Appendix A (Figure A1). Histograms with mean scores for each CFQ subscales are presented in Appendix A (Figure A2).

The rating levels lead to five levels of interpretation for each subscale (Table 28).

Table 28

Cultural Fit Questionnaire (CFQ-35) – Subscales Scoring

CFQ dimension	Level	Frequency (N)	Percent (%)
Stereotype Threat (ST)	very high	137	43.6
M = 3.92	high	90	28.7
SD = 0.82	moderate	65	20.7
α = .84	low	20	6.4
	very low	2	0.6
	Total above moderate	*227*	*72.3*
Cultural Challenges (CC)	very high	93	29.6
M = 3.58	high	84	26.8
SD = 0.93	moderate	85	27.1
α = .83	low	44	14.0
	very low	8	2.5
	Total above moderate	*177*	*56.4*
Cultural Evaluation (CE)	very high	40	12.7
M = 3.35	high	124	39.5
SD = 0.81	moderate	91	29.0
α = .74	low	50	15.9
	very low	9	2.9
	Total above moderate	*164*	*52.2*
Person-culture Fit (PCF)	very high	47	15.0
M = 3.39	high	104	33.1
SD = 0.78	moderate	100	31.8
α = .85	low	58	18.5
	very low	5	1.6
	Total above moderate	*151*	*48.1*
Interaction and support (IS)	very high	25	8.0
M = 2.80	high	53	16.9
SD = 0.99	moderate	85	27.1
α = .79	low	80	25.5
	very low	71	22.6
	Total above moderate	*78*	*24.9*

To evaluate the students' level of functioning, the total mean composite score for the CFQ-35 scale was calculated. The level of cultural fit for the total scale was interpreted based on converting raw scores to percentile ranks (Field, 2017). Then, quartiles were used to establish three levels of interpretation: (a) *low*, first 25 percentiles; (b) *moderate*, 26th to 74th percentile; and (c) *high*, 75th and higher percentiles. The mean score (M = 2.83, SD = .46, Median = 3.43,

IQR = .63), revealed that 78% of participants reported a "moderate" and above level of cultural fit (Table 29), which I would interpret to correspond to an acceptable level of social functioning (moderate and high). On the other hand, 22% of participants scored below the moderate level, which would correspond to a low level of social functioning. The scale interpretation highlighted that most international students were adapted to studying, functioning, and living in Canada.

Table 29

Cultural Fit Questionnaire (CFQ-35) – Total Scale Scoring

				INTERPRETATION	
Cultural Fit Questionnaire (CFQ-35)	**Level of cultural fit**	**Frequency (N)**	**Percent (%)**	**Adaptation Outcome***	**Social functioning**
	high	72	22.9	*Cultural integration*	*HIGH*
	moderate	173	55.1	*Cultural functioning*	*Moderate*
	low	69	22.0	*Cultural separation*	*LOW*

Note: * cultural integration and separation are based on the concepts stated by Berry, 1997

4.2.6. Summary of the Reduced CFQ Scale

Table 30 presents the summary of the descriptive statistics for the reduced CFQ scale. Levels of skew and kurtosis were low (<|1.00|) for each dimension, as well for the entire scale.

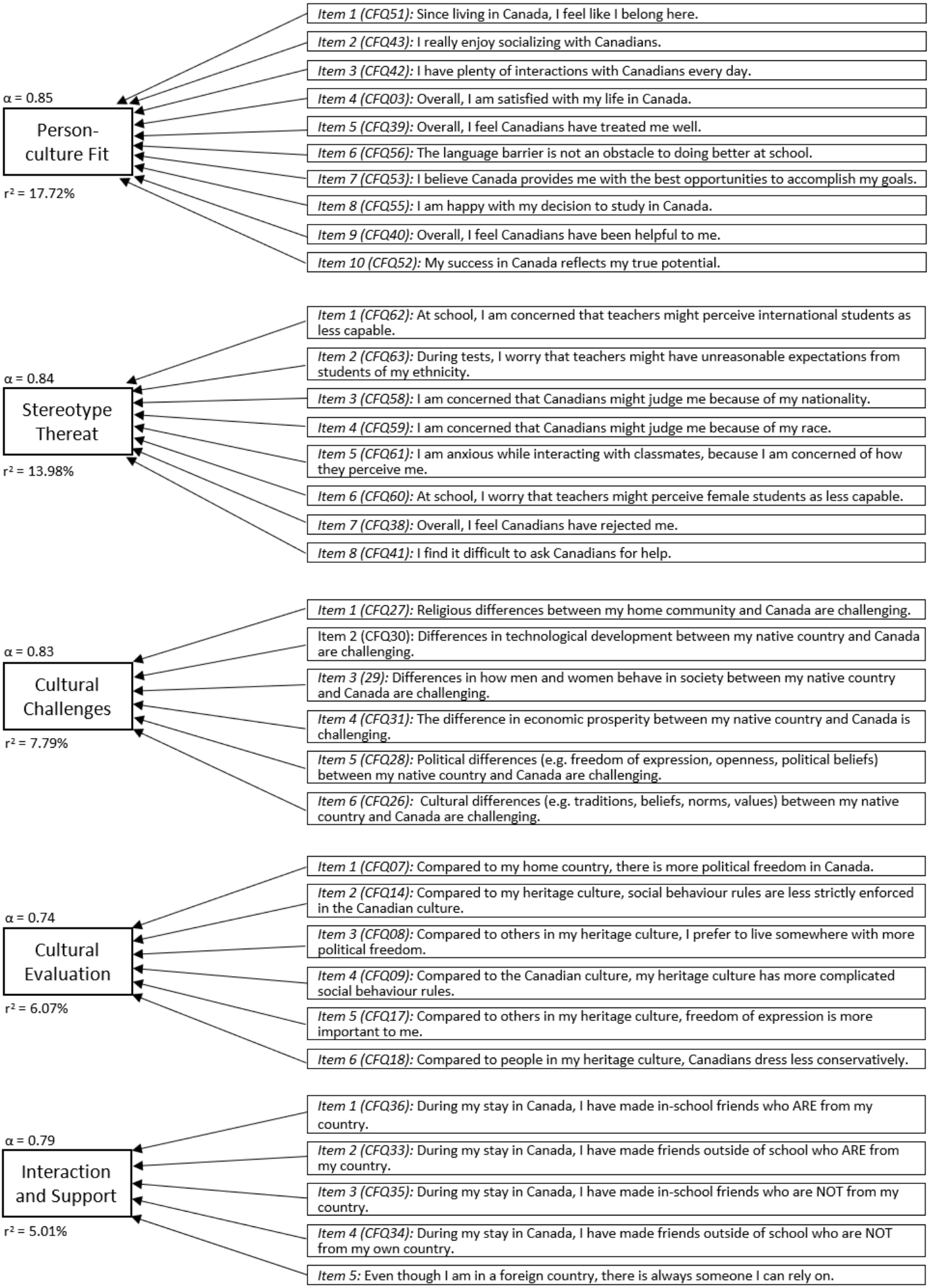
Table 30

Summary of Descriptive Statistics for the CFQ-35 Subscales (N = 314)

Dimensions	**Items**	**M**	**SD**	**Skewness**	**Kurtosis**	**Median**	**Range**	**IQR**
Person-culture Fit (PCF)	10	3.39	.78	.03	-.65	3.40	3.70	1.20
Stereotype Threat (ST)	8	3.92	.82	.60	-.37	4.00	3.50	1.25
Cultural Challenges (CC)	6	3.58	.93	-.27	-.80	3.67	3.83	1.50
Cultural Evaluation	6	3.35	.81	-.36	-.22	3.50	3.83	1.00
Interaction and Support	5	2.80	.99	.24	-.75	2.80	4.00	1.45
CFQ-35 subscale	**35**	**3.45**	**.41**	**.12**	**-.27**	**3.43**	**2.37**	**.63**

Figure 5 on the next page presents the conceptual model of the reduced scale, with details for each subscale indicating internal consistency (α), variance (r^2), and composition of items.

Figure 4. *PCA Conceptual Overview of Cultural Fit Questionnaire (CFQ-35) (35 items, 5-component solution)*



4.3. Research Questions Support

To answer the stated research questions, correlation and regression analyses were employed. Research question 1 was answered using correlation analysis between the proposed CFQ scale and the two other scale measuring cultural adaptation included in the survey, MPQ-SF and CQS. Research questions 2 and 3 were answered using regression analyses, which allowed the variables to be specified as predictors (independent) and criterion variables (dependent). The following sections detail the findings for each analysis.

4.3.1. Correlation Analysis Between Scales Measuring Cultural Adaptation

RQ1: To what degree does cultural fit (based on the goal-opportunity construct) correlate with other constructs evaluating adaptation? Specifically, will there be significant correlations between cultural fit (measured by CFQ) and cultural intelligence (measured by CQS), as well as between cultural fit (measured by CFQ) and multicultural personality (measured by MPQ-SF)?

To examine relationships between scales, a non-parametric test – Spearman rank correlation (Spearman, 1904) analysis was employed. The reasons for using Spearman correlation were based on the characteristics of the data set, such as: data was ordinal, assumptions between the distributions of data were not stated, and linear relationships between variables could not be established (Field, 2017). Table 31 presents the effect size of the correlation analysis, with significant associations found between the three scales (standardized scores), which demonstrates the CFQ's reliability and concurrent validity.

Table 31

Spearman Rank-order Correlations Between CFQ and MPQ-SF, CQS

	CFQ	MPQ-SF	CQS
CFQ	–	.127*	.342**
MPQ		–	.503**
CQS			–

Note: ** correlation is significant at 0.01 (2-tailed); * correlation is significant at 0.05 (2-tailed)
MPQ-SF = multicultural personality questionnaire short-form; CFQ = cultural fit questionnaire

As seen in Table 31, there were significant positive correlations between CFQ and CQS (r_s = .34, p < .001), CFQ and MPQ-SF (r_s = .13, p = .031), and MPQ-SF and CQS (r_s = .50, p < .001).

Statistically significant correlations between CFQ and CQS dimensions were found (Table 32).

Table 32

Spearman Rank-Order Correlations Between CFQ-35 and CQS Dimensions

	CFQ					**CQS**			
	PCF	ST	CC	CE	IS	ST	KN	MO	BH
CFQ						**.302****	**.133****	**.434****	**.233****
PCF	–	.274**	.059	.090	.215**	.309**	.112*	.505**	.237**
ST		–	.442**	-.215**	-.113*	.066	-.012	.173**	-.010
CC			–	-.395**	-.111	-.016	.006	.059	.038
CE				–	.048	.261**	.076	.116*	.205**
IS					–	.090	.165**	.085	.094
CQS									
ST						–	.338**	.612**	.543**
KN							–	.311**	.337**
MO								–	.519**
BH									–

Note: ** correlation is significant at 0.01 (2-tailed); * correlation is significant at 0.05 (2-tailed); N = 314
CFQ = cultural fit questionnaire, CFQ-PCF = person-culture fit, CFQ-ST = stereotype threat, CFQ-CC = cultural challenges, CFQ-CE = cultural evaluation, CFQ-IS = interaction and support
CQS = cultural intelligence scale, CQS-ST = strategy, CFQ-KN = knowledge, CFQ-MO = motivation, CFQ-BH = behaviour. Standardized scores.

Statistically significant correlations between CFQ and MPQ-SF dimensions were also found.

Table 33

Spearman Rank-order Correlations Between CFQ-35 and MPQ-SF Dimensions

	CFQ					**MPQ-SF**				
	PCF	ST	CC	CE	IS	CE	FX	SI	ES	OP
CFQ						**.234****	**.019**	**.067**	**-.250****	**.246****
PCF	–	.274**	.059	.090	.215**	.290**	.085	.188**	-.099	.323**
ST		–	.442**	-.215**	-.113	.066	-.083	-.112*	-.389**	.024
CC			–	-.395**	-.111*	-.081	-.147**	-.171**	-.245**	-.053
CE				–	.048	.149*	.065	.029	.219**	.147**
IS					–	.102	.167**	.191**	.014	.134*

MPQ-SF					
CE	–	.235**	.303**	.113*	.401**
FX		–	.303**	.119*	.076
SI			–	.215**	.436**
ES				–	.116*
OP					–

Note: ** correlation is significant at 0.01 (2-tailed); * correlation is significant at 0.05 (2-tailed); N = 314
CFQ = cultural fit questionnaire, CFQ-PCF = person-culture fit, CFQ-ST = stereotype threat, CFQ-CC = cultural challenges, CFQ-CE = cultural evaluation, CFQ-IS = interaction and support
MPQ-SF = multicultural personality questionnaire short-form, MPQ-CE = cultural empathy, MPQ-FX = flexibility, MPQ-SI = social initiative, MPQ-ES = emotional stability, MPQ-OP = open-mindedness. Standardized scores.

As seen in Tables 32 and 33, CFQ's convergent validity was demonstrated with significant correlations of CFQ (mean score) with dimensions of CQS and MPQ. CFQ positively correlated with other dimensions: 1) CQS-strategy (r_s = .30, p < .001); 2) CQS-knowledge (r_s = .13, p = .009); 3) CQS-motivation (r_s = .43, p < .001); 4) CQS-behaviour (r_s = .23, p < .001); 5) MPQ-cultural empathy (r_s = .23, p < .001); and 6) MPQ-open-mindedness (r_s = .25, p < .001). On the other hand, CFQ negatively correlated with MPQ-emotional stability (r_s = -.254, p < .001).

Correlations between CQS and MPQ-SF were significant and positive (r_s = .50, p < .001).

Table 34

Spearman Rank-order Correlations Between CQS and MPQ-SF Dimensions

	CQS				**MPQ-SF**				
	ST	KN	MO	BH	CE	FX	SI	ES	OP
CQS									
ST	–	.338**	.612**	.543**	.393**	.096	.238**	.143**	.522**
KN		–	.311**	.337**	.153**	.094	.208**	.058	.282**
MO			–	.519**	.337**	.089	.341**	.015	.612**
BH				–	.287**	.122*	.242**	.126*	.437**
MPQ									
CE					–		.303**	.113*	.401**
FX						–	.303**	.119*	.076
SI							–	.215**	.436**
ES								–	.116*
OP									–

Note: ** correlation is significant at 0.01 (2-tailed). * correlation is significant at 0.05 (2-tailed). N = 314
CQS = cultural intelligence scale, CQS-ST = strategy, CFQ-KN = knowledge, CFQ-MO = motivation, CFQ-BH = behaviour, MPQ-SF = multicultural personality questionnaire short-form, MPQ-CE = cultural empathy, MPQ-FX = flexibility, MPQ-SI = social initiative, MPQ-ES = emotional stability, MPQ-OP = open-mindedness. Standardized scores.

As seen in Table 34, which details the correlation strength between CQS and MPQ-SF dimensions, the strongest correlations were found between CQS dimensions and the open-mindedness dimension of multicultural personality, such as: CQS-motivation and MPQ-open-mindedness ($r_s = .61$, $p < .001$), CQ-metacognition and MPQ-open-mindedness ($r_s = .52$, $p < .001$), and CQS-behaviour and MPQ-open-mindedness ($r_s = .44$, $p < .001$).

4.3.2. Regression Analyses for Cultural Fit as a Predictor

RQ2: Will cultural fit predict an increase in well-being of international students? Which cultural fit dimensions are responsible for impacting sojourners' well-being the most?

Standard multiple regressions were used to answer research questions 2 and 3. Data met regression assumptions in terms of linearity, normality, independence, multicollinearity, and homoscedasticity. Two different sets of regression are presented, with each research question being modeled by a set of regression equations.

To examine the relationship between dimensions of CFQ (person-culture fit, cultural evaluation, interaction and support, stereotype threat, and cultural challenges) and students' well-being, simultaneous linear regressions were performed for each outcome variable of well-being, such as anxiety, depression, and stress (measured by DASS-21).

Model 1: CFQ Dimensions onto Students' Anxiety. A simultaneous linear regression was performed, with person-culture fit, interaction and support, cultural evaluation, stereotype threat, and cultural challenges being the predictors (independent variables), and anxiety being the outcome (dependent variable). Table 35 details model 1 statistics, with the zero order correlations being displayed in Table B6 (Appendix B).

The regression model was statistically significant: $F(5, 308) = 10.350$, $\rho < .001$, with the model explaining 13% of the variance in students' anxiety (adjusted $R^2 = .130$). However, only

two independent variables were significant predictors ($p < .05$), stereotype threat and cultural challenges, with positive relationships to anxiety (Table 35). For stereotype threat, the standardized regression coefficient was $\beta = .296$ (t [5] = 4.833, $p < .001$), which means that the increase of each standard deviation (SD) unit of stereotype threat can predict an increase by .30 SD in anxiety. For cultural challenges, the standardized regression coefficient was $\beta = .144$ (t [2] = .2.307, $p = .022$), which means that the increase of each standard deviation unit in cultural challenges can predict an increase by .14 SD in anxiety.

Table 35

Model 1: Multiple Regression of PCF, CE, IS, ST, and CC onto Students' Anxiety

Standardized				**Std.**	**95 % Confidence Interval**	
Predictors	**β**	**t**	**Sig.**	**Error**	**Lower Bound**	**Upper Bound**
(constant)		3.107	.002	.561	.639	2.846
Person-culture fit	-.039	-.689	.491	.115	-.306	.147
Cultural evaluation	-.045	-.769	.442	.115	-.316	.138
Interaction and support	.024	.439	.661	.089	-.136	.214
Stereotype threat	.296	4.833	<.001	.120	.344	.816
Cultural challenges	.144	2.307	.022	.107	.036	.458
DV: anxiety	adjusted $R^2 = .130$		$R^2 = .144$		R = .379	$S_{est} = 1.490$
	F = 10.350		df(5, 308)		p < .001	

Model 2: CFQ Dimensions onto Students' Depression. A simultaneous linear regression was performed, with person-culture fit, cultural evaluation, interaction and support, stereotype threat, and cultural challenges being predictors (independent variables), and depression being the outcome (dependent variable). Table 36 details model 2 statistics, with the zero order correlations being displayed in Table B7 (Appendix B).

The regression model was statistically significant: $F(5, 308) = 11.320$, $\rho < .001$, with the model explaining 14.2% of the variance in students' depression (adjusted $R^2 = .142$). Only

stereotype threat was a significant predictor ($p < .05$), with a positive relationship to depression. The standardized regression coefficient was $\beta = .304$ (t [5] = 5.003, $p < .001$), which means that the increase of each SD unit in stereotype threat can predict an increase by .30 SD in depression.

Table 36

Model 2: Multiple Regression of PCF, CE, IS, ST, and CC onto Students' Depression

Standardized Predictors	**β**	**t**	**Sig.**	**Std. Error**	**95 % Confidence Interval**	
					Lower Bound	**Upper Bound**
(constant)		3.136	.002	.521	.608	2.658
Person-culture fit	-.091	-1.627	.105	.107	-.385	.036
Cultural evaluation	.005	.080	.937	.107	-.202	.220
Interaction and support	-.055	-1.002	.317	.083	-.246	.080
Stereotype threat	.304	5.003	<.001	.111	.338	.773
Cultural challenges	.108	1.737	.083	.100	-.023	.369
DV: depression	adjusted R^2 = .142		R^2 = .155		R = .394	S_{est} = 1.388
	F = 11.320		df(5, 308)		p < .001	

Model 3: CFQ Dimensions onto Students' Stress. A simultaneous linear regression was performed, with person-culture fit, cultural evaluation, interaction and support, stereotype threat, and cultural challenges being the predictors (independent variables), and stress being the outcome (dependent variable). Table 37 details model 3 statistics, with the zero order correlations being displayed in Table B8 (Appendix B).

The regression model was statistically significant: $F(5, 308) = 9.716$, $\rho < .001$, with the model explaining 12.2% of the variance in students' stress (adjusted $R^2 = .122$). Two independent variables, stereotype threat and cultural challenges, were significant predictors ($p < .05$), with positive relationships to stress (Table 37). The standardized regression coefficient for stereotype threat was $\beta = .286$ (t [5] = 4.659, $p < .001$), which means that for each unit increase in stereotype threat level there was an increase by .29 units in students' stress. For cultural challenges, the standardized regression coefficient was $\beta = .131$ (t [2] = .2.090, $p = .037$), which

means that the increase of each SD units in cultural challenges level can predict an increase by .13 SD in students' stress.

Table 37

Model 3: Multiple Regression of PCF, CE, IS, ST, and CC onto Students' Stress

Standardized Predictors	**β**	**t**	**Sig.**	**Std. Error**	**95 % Confidence Interval**	
					Lower Bound	**Upper Bound**
(constant)		1.080	.281	.469	-.417	1.431
Person-culture fit	.008	.142	.887	.096	-.176	.203
Cultural evaluation	.003	.043	.966	.097	-.186	.194
Interaction and support	.039	.704	.482	.075	-.094	.199
Stereotype threat	.286	4.659	<.001	.100	.270	.665
Cultural challenges	.131	2.090	.037	.090	.011	.364
DV: stress	adjusted R^2 = .122		R^2 = .136		R = .369	S_{est} = 1.251
	F = 9.716		df(5, 308)		p < .001	

4.3.3. Regression Analyses for Goal-orientation as a Predictor

RQ3: Will goal-orientation predict an increase of the person-culture fit dimension of cultural fit in international students? Specifically, is a mastery goal-orientation a stronger predictor of the person-culture fit dimension than a performance goal-orientation?

To examine the relationship between the students' goal orientation and cultural fit dimensions, multiple linear regressions were performed. Only the linear regressions of mastery-goal orientations (measured by AGO-R) onto the person-culture fit dimension (measured by CFQ) are being presented, as they are the ones that were statistically significant, and therefore, relevant. Data met regression assumptions in terms of linearity, normality, multicollinearity, and homoscedasticity.

Model 4: Students' goal-orientation onto CFQ-person-culture fit. A simultaneous linear regression was performed, with goal orientations (mastery-approach, performance-approach, mastery-avoidant, performance-avoidant) being the predictors (independent variables), and person-culture fit being the outcome (dependent variable). Table 38 details model 4 statistics.

The regression model was statistically significant: $F(4, 309) = 5.408$, $\rho < .001$, with the model explaining 5.3% of the variance in students' person-culture fit level (adjusted $R^2 = .053$). From all four goal-orientations, only the mastery-approach goal-orientation was a significant predictor to person-culture fit $p < .05$ (Table 38). The standardized regression coefficient for person-culture fit was $\beta = .160$ (t [5] = 2.591, $p = .010$), which means that the increase of each SD unit in mastery goal-orientation can predict an increase by .16 SD in person-culture fit.

Table 38

Model 4: Multiple Regression of Students' Goal-orientation onto Person-culture fit (PCF)

Standardized				**Std.**	**95 % Confidence Interval**	
Predictors	**β**	**t**	**Sig.**	**Error**	**Lower Bound**	**Upper Bound**
(constant)		8.796	<.001	.270	1.847	2.911
Mastery approach	.160	2.591	.010	.066	.041	.300
Mastery avoidant	.098	1.621	.106	.049	-.017	.178
Performance approach	.122	1.694	.091	.062	-.017	.228
Performance avoidant	-.127	-1.842	.067	.051	-.195	.006
DV: person-culture fit	adjusted $R^2 = .053$		$R^2 = .065$		R = .256	$S_{est} = .76225$
	F = 5.408		df(4, 309)		p < .001	

4.4. Research Instrument and Questions Support – Summary of Findings

A summary of the findings is presented regarding the developed instrument and the three tested hypotheses that were tested to support its validity.

4.4.1. CFQ as a Measurement Inventory

Using PCA, the developed instrument was successfully reduced to a clear 35-item structure, with five components explaining most of the variance (Table 12). Items were removed due to low loading values, low correlations, or high cross-loadings (Table 9). Parallel analysis (Table 11) and scree plot (Figure 3) corroborated to indicate a robust five-component solution. Component loadings for the five components were high, with most values exceeding 0.50 (Table 14). There was no risk of common method bias, with Harman's test indicated the variance extracted by one component to be 17.7%, and therefore, below the recommended value of 50% (Field, 2017). The corrected item-correlations of the reduced scale were within acceptable margins (Table 25). Statistical analysis highlighted that each corrected-correlation coefficient was significant (> 0.3, $p < .01$). The correlation coefficients of the scale's items and dimensions revealed an acceptable construct validity, with items of each dimension converging (Tables A1-A5) and minimal risk of multicollinearity between the five dimensions (Table 24). The scale was found to have good reliability ($\alpha = .82$). The internal consistency levels for each dimension were all good and acceptable (Table 26), with alpha values ranging between 0.74 and 0.85.

4.4.2. Hypothesis 1 – Summary of Findings

The first hypothesis predicted significant associations between the proposed CFQ scale and other instruments measuring cultural adaptation, such as CQS and MPQ-SF. The correlation analysis for the three instruments (CFQ, CQS, MPQ-SF) indicated statistically significant associations (Table 31), with weak associations observed between CFQ and CQS scales, very week between CFQ and MPQ-SF, and moderate between CQS and MPQ-SF.

Correlations between CFQ and CQS dimensions were statistically significant (Table 32). The CFQ-person-culture fit dimension correlated with all dimensions of CQ (motivation –

moderate, metacognition – weak, behaviour and cognition – weak). CFQ-cultural evaluation correlated weakly and positively with CQS-metacognition and CQS-behaviour, whereas CFQ-interaction & support correlated weakly with CQS-cognition. Finally, a weak, positive correlation was found between CFQ-stereotype threat and CQS-motivation.

Correlations between CFQ and MPQ-SF dimensions were also found to be statistically significant (Table 33), although the effect size was smaller. CFQ-person-culture fit correlated weakly with MPQ-open-mindedness, and very weakly with MPQ-cultural empathy and MPQ-social initiative. CFQ-cultural evaluation was only very weakly associated with MPQ-emotional stability, MPQ-open-mindedness, and MPQ-cultural empathy. The negative dimensions of the CFQ scale, stereotype threat and cultural challenges, were found to have negative associations with MPQ-SF dimensions, such as emotional stability and social initiative.

Correlations between CQS and MPQ-SF dimensions were significant (Table 34), with moderate between CQS-motivation and MPQ-open-mindedness, moderate between CQ-metacognition and MPQ-open-mindedness, and weak between CQS-behaviour and MPQ-open-mindedness.

4.4.3. Hypothesis 2 – Summary of Findings

The second hypothesis predicted that the positive dimensions (person-culture fit, cultural evaluation, and interactions and support) of the cultural fit will increase well-being, while the negative dimensions (stereotype threat and cultural challenges) will increase students' levels of stress, anxiety, and depression. The analysis revealed that the positive dimensions of CFQ failed to predict well-being at a significant level. On the other hand, the study found that the negative aspects of the cultural fit scale, such as stereotype threat and cultural challenges, were significant predictors ($p < .05$) of students' negative well-being, just as it was expected. Nonetheless,

differences were noticed regarding the impact over the well-being's dimensions, such as anxiety, stress, and depression. For example, CFQ-stereotype threat was a predictor for increasing the students' depression, anxiety, and stress whereas the CFQ-cultural challenges dimension was a predictor for increasing anxiety and stress.

4.4.4. Hypothesis 3 – Summary of Findings

The third hypothesis stated that a mastery goal-orientation is a better predictor for sojourners person-culture fit dimension of the cultural fit construct. Regression analysis supported the hypothesis and indicated that the students' mastery goal-orientation predicted the person-culture fit dimension whereas performance goal-orientation failed to predict any of the cultural fit dimensions. Most participants were found to have a mastery-approach goal-orientation, and overall, the mastery orientation was a better predictor of cultural fit in international students than a performance goal-orientation.

The summary of findings sections closes the results chapter, which was divided into four major sections. The first section presented the descriptive analyses for the additional scales. The second section presented the exploratory analysis of the CFQ instrument, with an emphasis on PCA, sample adequacy, correlation analysis, internal consistency, and scoring and interpretation. The third section presented the correlations and regression analyses used to examine the research questions and provide validity for the proposed scale. The last section presented a summary of the findings for the CFQ instrument and each of the three hypotheses.

Discussion

This study aimed to: (a) propose goal-opportunity cultural fit as an essential component and predictor of cultural adaptation, and (b) explore the structure of the newly developed Cultural Fit Questionnaire (CFQ) to interpret and validate it as a measurement of adaptation.

The study proposed a re-interpretation of cultural fit as an alignment between the goals and expectations of sojourners, and the opportunities and resources of the host culture. The proposed construct of cultural fit aimed to provide support for a goal-opportunity model of acculturation in international students. The construct is grounded in previous research related to the person-environment fit dimension (French at al., 1982; Pervin, 1992). More specifically, the proposed cultural fit is based on reinterpreting Ward and Chung's (1997) cultural fit.

Exploratory data analysis was used to reduce the newly developed CFQ scale, achieve clear structure and interpretability, and test for validity through associations and predictions. The proposed instrument was developed to measure adaptation in international students based on a perceived goal-opportunity alignment between sojourners and their host culture. Five distinct dimensions are highlighted as components of the new goal-opportunity cultural fit, such as person-culture fit, stereotype threat, cultural evaluation, cultural challenges, and interaction and support. Three research questions were tested using correlations and regression analyses, which indicated partial support for the stated predictions. Overall, the central contribution of the study stems from its stated aims to re-interpret, re-evaluate, predict, and measure cultural adaptation in international students in new ways that can enhance disciplinary understanding.

5.1. Major Findings and Their Integration with Previous Research

The findings for each of the three hypotheses are highlighted, interpreted, and compared, in terms of similarities and differences, with previous research theories and findings.

5.1.1. Hypothesis 1 – Interpretation of Findings

H1: Cultural fit (measured by CFQ) is predicted to be significantly and positively correlated with other constructs evaluating cultural adaptation, such as cultural intelligence (measured by CQS) and multicultural personality (measured by MPQ-SF).

The first hypothesis was fully supported in at least two ways, with statistically significant correlations found between CFQ and CQS, a well as between CFQ and MPQ-SF.

Significant associations between dimensions of CFQ (person-culture fit, cultural evaluation) and those of CQS (motivational, metacognitive, behavioral, and cognitive) suggest that positive host evaluation and the perception of an alignment with the host culture, like the GOMA model proposes, can facilitate adaptation by helping sojourners stay motivated and confident (self-efficacy and context belief), engaging them in pro-adaptation behaviours, and encouraging them to use strategies to overcome challenges and fill the cultural knowledge gap.

The significant positive correlations of CFQ-person-culture fit with all dimensions of CQ are particularly important, as they highlight person-culture fit as the most important dimension of the cultural fit construct. This outcome was expected, as the scale was specifically developed to measure cultural adaptation based on a goal-opportunity cultural fit. In addition, correlations with CQ-motivation and CQ-metacognition are supporting the reliance on motivation and strategies to adapt. The findings are consistent with previous studies. For example, Brancu et al. (2016) revealed that motivation and metacognition play the most important roles in adjustment of international students as they engage sojourners in behaviours aimed at overcoming adjustment difficulties, and therefore, compensate for the lack of cultural knowledge.

Positive correlations of CFQ-cultural evaluation with CQS-metacognition, -behaviour, and -strategy indicate that a favorable evaluation of host culture can lead to perceiving the

immediate environment as supportive, which motivate sojourners to employ pro-integration strategies and engaging in pro-integration behaviours. Previous studies have emphasized the relevance of perceived support while studying abroad, with sojourners seeking support in the immediate environment, such as their academic institution (Martirosyan et al., 2019).

The moderate association of the CFQ scale with CQ-motivation is relevant, as previous studies have found that motivational CQ predicts general adjustment (Templer et al., 2009). The finding indicates that goals and achievement expectations establish themselves as major psychological constructs underlying the adaptation of high achievers such as international students. Previous studies found that nurturing and accomplishing goals in a specific context can facilitate adaptation by activating pro-integration strategies and behaviours and strengthening context beliefs and perception (Austin & Vancouver, 1996).

Surprisingly, a weak, positive correlation was found between CFQ-stereotype threat and CQS-motivation, despite regression analyses indicated stereotype threat to have the biggest impact on well-being. The finding highlights that the fear of being stereotyped can increase motivation to adapt, and therefore, reduce the perceived threat. Previous studies, such as the one by Wang (2016), indicate that ambiguous and threatening social situations can increases motivation to gather more contextual knowledge. In addition, as the sample was dominated by female students (69%), this finding corroborates with previous studies highlighting that a stereotype threating context can increase achievement motivation more significantly in women (Forbes & Schmader, 2010). In addition, recent research highlights that migrants with a desire to integrate are more likely to learn and incorporate, rather than reject, information about stereotypes into their own beliefs, to fit in with their host culture (Stanciu & Vauclair, 2018).

Associations between dimensions of CFQ and those of MPQ-SF provided additional support for the proposed scale as a measurement of adaptation. For example, CFQ-person-culture fit correlated weakly with MPQ-open-mindedness, and very weakly with MPQ-cultural empathy and MPQ-social initiative, with the findings suggesting an intrinsic value of the perceived sojourner-host culture alignment. On the other hand, CFQ-cultural evaluation was only very weakly associated with MPQ-emotional stability, MPQ-open-mindedness, and MPQ-cultural empathy, which suggest the although the positive evaluation of the host culture is favorable to achievement, it is only secondary to the goal achievement need of sojourners. As expected, the negative dimensions of the CFQ scale, such as stereotype threat and cultural challenges, were found to have negative associations with MPQ-SF dimensions, such as emotional stability and social initiative. The findings indicate that when sojourners are confronted with stereotype threat and a challenging host culture, they tend to lower their engagement in social interactions to preserve emotional stability. Previous studies, such as the one by Ward et al. (2009) found MPQ-emotional stability to be one of the strongest indicators of adaptation in international students. On the other hand, Van der Zee and Van Oudenhoven (2013) found MP-social initiative and MP-emotional stability to have a direct contribution to the adjustment of international students.

Overall, the significant associations of the person-culture fit dimension with dimensions of cultural intelligence and multicultural personality emphasize the of role person-culture fit in social interaction, functioning, and productivity. Previous studies highlight that a person-environment fit is related to productivity, well-being, and job satisfaction (Holland, 1997). On the other hand, a meaningful person-environment interaction drives achievement behaviours by connecting personal goals that are highly motivating with the demands and opportunities for goal achievement provided by the environment (Pervin, 1992). Finally, the multiple associations of

CFQ with CQS and MPQ-SF emphasize a multifactorial foundation of cultural adaptation. Previous studies (Matsumoto & Hwang, 2020), revealed a combination of several factors (e.g., cultural knowledge, motivation, confidence, social initiative) can shape adaptation.

Finally, correlations between total CQS and MPQ-SF scores were found to be significant (although weak), which was expected and consistent with previous studies (Ward et al., 2009). The findings support previous studies that indicate similar associations between those dimensions, such as the one by Ward et al. (2009) highlights moderate correlations between CQS-motivation and MPQ-open-mindedness, as well as between CQ-metacognition and MPQ-open-mindedness, and weak associations between CQS-behaviour and MPQ-open-mindedness. Therefore, the findings align with previous findings that cultural intelligence (Ang et al., 2004) and multicultural personality (Van der Zee et al., 2013) can predict adaptation in specific contexts (e.g., academic, sociocultural, psychological). On the other hand, unlike Ward et al.'s (2009) study that found significant associations between MPQ-emotional stability and CQS dimensions, such as motivation (moderate), cognitive (weak), and metacognitive (weak), as well as between MPQ-open-mindedness and CQ-cognition (weak), this study did not reveal any significant association between those dimensions. This could indicate that cultural intelligence is more relevant as a measurement of the sociocultural dimension of adaptation (Templer et al., 2006), and less as a mediator between personality and adaptation (Ward et al., 2009).

5.1.2. Hypothesis 2 – Interpretation of Findings

H2: The positive dimensions of cultural fit (person-culture fit, cultural evaluation, and interactions and support) will increase students' well-being, while the negative dimensions (stereotype threat and cultural challenges) will increase the levels of stress, anxiety, and depression.

The second hypothesis was only partial supported. Negative dimensions of the cultural fit (stereotype threat and cultural challenges) were predictors for some dimensions of well-being. On the other hand, none of the positive dimensions of cultural fit (person-culture fit, cultural evaluation, and interaction and support) predicted well-being.

CFQ-stereotype threat was found to be the strongest predictor. It predicted an increase in students' anxiety, depression, and stress, and therefore, had a significant impact over well-being. These findings are consistent with previous studies indicating that stereotype threat significantly impacts well-being of various group of migrants (Appel et al., 2015), and particularly, the perceived and expected threats can impact adaptation in international students (Frijda, 1988). Previous research has found that stereotypes have a stronger impact in academic contexts, regardless of stereotypes being positive (Shih et al., 1999) or negative (Nadler & Clark, 2011). In competitive environments, international students were found to worry that their chances for success may be hindered by stereotypical beliefs (Steele & Aronson, 1995; Weiner, 1992).

The CFQ-cultural challenges dimension was also a predictor for increasing students' anxiety; however, it failed to significantly predict an increase in depression. This finding is consistent with previous findings highlighting that the perception of host country as culturally difficult and challenging can have a relevant impact on sojourners' well-being (Ward et al., 2001). Nonetheless, the negative effect over well-being was smaller than expected. It is possible that sojourners are better at minimizing the effects of cultural challenges through engaging in more social interactions and acquiring relevant cultural knowledge. However, more engagement in social interactions can also increase sojourners' awareness of stereotypes, which can have a significant impact over well-being. Therefore, it should be noted that social interactions can have both positive and negative effects on sojourners. Sojourners strive to engage in meaningful social

interactions with the locals as an integration strategy (Berry, 1997). As a result, they are more aware and concerned with factors that can impact the quality of social interactions, such as stereotype threat. This explains why stereotype threat had such a significant impact on well-being, whereas the positive dimensions of cultural fit failed to impact well-being.

5.1.3. Hypothesis 3 – Interpretation of Findings

H3: Goal-orientation can predict the person-culture fit dimension of cultural fit. A mastery-approach goal-orientation, rather than a performance-approach, is predicted to increase person-culture fit in international students.

The third hypothesis was fully supported, with a mastery goal-orientation being a predictor for the person-culture fit dimension of cultural fit. The finding supports previous studies highlighting that individuals have a higher need to prove mastery and validate abilities in a new environment, particularly in an achievement setting such as it is the case with international students (Vandewalle et al., 2019). This also supports previous theories highlighting the mastery goal-orientation as more useful when facing challenges in unfamiliar environments, as individuals are more likely to persist in their effort to adapt, use strategies, and look of opportunities to overcome challenges (Dweck, 1986). Previous research analyses indicate that, although both performance and mastery goals can stimulate effort and motivation, mastery goals are more valuable in a Western, equalitarian society (Dekker & Fischer, 2008). Nonetheless, it is worth mentioning that previous studies have indicated that goal orientations, although distinct, tend to become blurred in ambiguous contexts that are not easy to interpret (Eison et al., 1986). Although this study did not evaluate goal orientation for each ethnic group, this is something to consider for follow up studies, as research indicates the possibility that goal orientation may correlate with ethnicity due to differences in conceptualization of the self (Kitayam et al., 1997).

5.2. Highlights of Adaptation Constructs

This section includes a brief validation summary of the proposed scale. In addition, it includes discussions around each of the five constructs used to evaluate the participants, such as cultural fit (measured by the proposed CFQ scale), cultural intelligence (measured by CQS), multicultural intelligence (measured by MPQ-SF), well-being (measured by DASS-21), and goal orientation (measure by AGO-R).

5.2.1. Cultural Fit Questionnaire

The analysis of the newly developed instrument revealed stable structure and robust interpretability. The five-component model was well defined, with good loading values for each component (Table 22), which indicated that the scale's five dimensions were consistent in measuring the various aspects of cultural adaptation. The reliability coefficients (Table 26) indicated that there was minimal risk of redundancy among the scales' items (Field, 2017), and the scale has the potential to make reliable measurements (Gorsuch, 1983). The corrected item-total correlation analysis of the scale's dimensions (Table 25) revealed that the items of the scale were representative and truly measured the objective of scale dimensions significantly (Pallant, 2007). Correlation analysis showed statistically significant associations with validated scales for measuring adaptation, such as CQS (Table 32) and MPQ (Table 33), which demonstrated the scale's criterion and convergent validity. The scale incorporated both negative (e.g., cultural challenges, stereotype threat) and positive (e.g., person-culture fit, interaction and support, cultural evaluation) dimensions of cultural adaptation, which highlights its practical capability in measuring real-life situations. However, the cultural evaluation dimension could be more direct and concise in assessing cultural knowledge. Additionally, the interaction and support dimension could include more items evaluating the perception of support. Overall, the novelty of the

proposed instrument comes from its capability to predict and measure goal-opportunity cultural fit as an expression of adaptation. Future research might find the scale useful in evaluating social functioning and measuring cultural adaptation in high achievers, once the instrument will be validated with factor analyses (exploratory and confirmatory).

5.2.2. Cultural Fit

Scoring each dimension of the CFQ scale (Table 28) revealed reports of "high" and "very high" for four of the scales' dimension, such as stereotype threat (72.3%), cultural challenges (56.4%), cultural evaluation (52.2%), and person-culture (48.1%). The most notable was the high scores for *stereotype threat*, which indicated that sojourners were not only aware, but also significantly impacted by the stereotype threat while studying in a foreign country. The stereotype threat concern is a significant finding, and it correlates with previous studies highlighting that students worry about stereotypes impacting their performance in a competitive environment (Steele & Arson, 1995). It is possible that elevated levels of stereotype threat can motivate sojourners to develop specific adaptation strategies, such as setting clear achievement goals, engaging in social interactions, seeking available support, and gathering relevant cultural knowledge about the host culture. The high stereotype threat scores for the CFQ instrument corroborated with students' self-reports on stereotype awareness (Appendix B, Table B3 and B4). The stereotype awareness self-report indicated that sojourners were aware of stereotypes (both negative and positive) before arriving in Canada. Previous studies, such as the one by Zhang and Beck (2014), highlighted that international students in Canada worry about stereotypes even before starting their courses in a post-secondary institution.

Unexpected lower scores (24.9% high and above) for the fifth dimension of the instrument, *interaction and support* (Table 28), highlighted a major concern of international

students regarding the availability for support. It is possible that participants do not feel socially connected with their host culture, or they are having difficulties finding support and meaningful social interactions. This finding is significant and highlights the importance of positive social interactions and feeling of belongingness, which might only be achieved after a certain length of residence. The finding is consistent with previous studies highlighting social interaction and connectedness as the most important components of both psychological and sociocultural adaptation (Zhang & Goodson, 2011). Finally, the total score of the CFQ-35 scale (Table 29) revealed that most participants (55%) reported their level of cultural fit as "moderate," which translates as cultural and social functioning, rather than integration. This finding is important in highlighting functioning as an outcome, with sojourners striving to ensure functioning and achievement in their immediate context, rather than achieve a full-scale cultural integration.

5.2.3. Cultural Intelligence

Higher scores (total of "average" and "high") were reported for CQ-behaviour and CQ-cognition (Table 17). These findings highlight the belief that the value of learning and development is relevant in cultural adaptation, with international students taking an active role during adjustment. This implies that these students strive to improve their knowledge about the host culture and adjust their behavior. Lower scores on and CQ-motivation indicate the struggle to find motivation. In addition, the lowest scores were reported on metacognition, which may indicate that, despite international students' willingness to rely on adaptation strategies, they may experience difficulties identifying and employing the best adaptation strategies. Overall, the findings align with previous findings (Earley & Ang, 2003; Templer et al., 2006) that CQ is a relevant measurement and predictor of adaptation.

5.2.4. Multicultural Personality

The MPQ scoring revealed higher scores (total of "moderate" and "high") for MP-cultural empathy, MP-flexibility, and MP-emotional stability (Table 19). The findings emphasize that international students understand cultural differences, and they are willing to adopt values from their host culture. Lower scores for "social initiative" may be attributed to language barriers, with participants lacking the confidence to engage in conversations with the natives. On the other hand, lower scores for the "open-mindedness" dimension may suggest that participants may be conflicting between embracing values of their host culture and retaining values of their own culture. Overall, the findings align with previous research highlighting that MPQ is a reliable measurement of psychological, sociocultural, and academic adaptation (Ward et al., 2009; Van der Zee and Van Oudenhoven, 2014).

5.2.5. Well-being – Depression, Anxiety, and Stress

Levels of anxiety, depression, and stress were reported to be above the normal levels, with significant levels of anxiety beyond normal being the most prevalent (Table 20). This finding is consistent with previous studies highlighting that international students are more likely to express their distress as anxiety or depression (Mori, 2000). Participants in the current study were concerned and anxious about their study abroad experiencing, with stereotype threat reported as a major impactor of psychological outcomes. Overall, the findings confirm previous research that living and studying in a foreign country increases anxiety (Wang, 2016). However, it should be noted that the sample was dominated by female students (69%). Previous studies indicated that acculturating women tend to fall more into Berry' (1997) separated group of adaptation outcomes (Fox et al., 2013). Therefore, women are more likely to report higher anxiety, as they experience more exclusion and prejudice, and less support (Fox et al., 2013).

5.2.6. Achievement Goal

Participants were found to be goal-oriented, which supports the proposed theoretical model of acculturation emphasizing a goal-oriented adaptation in international students. Scores for the achievement-goal scale (Table 21) highlighted that most participants (58.6%) had a "mastery approach goal-orientation." However, the mastery approach was balanced by a substantial proportion (50.6%) of performance-oriented participants. In addition, performance-approach students experienced higher level of fear of failure, 50.6% versus 42.4%, than mastery-oriented students. The goal-orientation findings corroborated with the participants self-report on factors encouraging the pursuit of education in Canada (Appendix B, Table B5), which revealed "own goals" (62.1%) as the main motivator. Therefore, the findings provided support for the proposed GOMA model emphasizing that international students are more likely to hold high achievement needs and meaningful goals (e.g., academic achievement, professional success) that are intrinsic rather than enforced by parents. The findings corroborated with previous findings highlighting that international students are goal-driven with a strong achievement orientation (Grier-Reed et al., 2012), and that setting clear and achievable goals helps international students adjust better (Lee & Ciftci, 2014), as it stimulates social interactions and instills a feeling of belongingness (Glass & Westmont, 2014).

5.3. Contribution and Implications

The proposed model of acculturation builds on the general framework of person-environment fit (French et al., 1982; Pervin, 1992) and more specifically, it reinterprets Wang and Chang's (1997) cultural fit construct as a predictor and facilitator of adaptation. Other constructs have been also integrated, mainly: (a) goal orientations, which can ensure adequate responses to challenging situations (Dweck, 1986); (b) achievement needs and expectations,

which can drive individuals in academic contexts (Frijda, 1988); (c) psychological and sociocultural adjustment, which can define district yet interconnected dimensions of adaptation (Ward & Kennedy, 1993), and (d) acculturation orientations, which can influence individual perception and cultural outcomes and strategies (Berry, 1997). The study continues and refines the research trends established by Berry (1997) and Ward et al (Ward & Kennedy, 1993; Ward & Chang, 1997; Searle & Ward, 1990) toward pushing acculturation research from a focus on the culture to a focus on the individual, and therefore, it strives to identify and measure the most valuable psychological components of adaptation.

5.3.1. Implications for Theory

The study confirms cultural fit as a predictor of adaptation, which aligns with previous theories emphasizing the role of cultural fit in adaptation (Ward & Chang, 1997). In addition, the study highlights that an alignment between characteristics of the person and the context can facilitate adaptation and functioning in academic settings. Therefore, the study extends the construct of person-environment fit (French et al., 1982; Pervin, 1992), which is often used to predict and evaluate functioning in a work environment (Edwards, 2008), to other culturally complex, diverse, and challenging contexts, such as academic.

The biggest contribution the study makes stems from the effort to reinterpret the components of the person-culture fit from fix and stable personality traits to goals that can be adjusted and regulated. In a person-centered adaptation, it is vital to consider all the factors sojourners can exert and control, such as autonomy, effort, ability to make decision, need for achievement, goal orientation, and capability to solve problems in challenging and competitive environments (Austin & Vancouver, 1996). From a theoretical perspective, replacing personality traits with goals within the cultural fit construct offers a more comprehensive understanding of

adaptation, because it places adaptation within the framework of the basic psychological needs driving individuals in new environments (e.g., the need to achieve, be autonomous, be able to manage environmental resources, and gain belongingness in a group). Goals, as ingredients underlying cultural adaptation, can shift acculturation research toward the person-centred approach that Berry (1980) and others (Ward & Kennedy, 1993) have previously emphasised and supported. Incorporating goal orientation within the proposed model aligns with research by Carol Dweck (1986) on predicting behaviours and achievements in challenging situations.

5.3.2. Implications for Research

Educational research could benefit from evaluating goal-opportunity cultural fit in international students, which can better explain and predict their likelihood to stay motivated, maintain constant effort, persist in challenging situations, and achieve in competitive environments. The construct of goal-opportunity cultural fit aligns with previous educational research explaining achievement of students in challenging situations (Dweck, 1986) and the influence of the student-environment compatibility on achievement (Thomas & Chess, 1977). From a research perspective, goals can be measured and evaluated, and therefore, a goal-opportunity alignment can be used to predict not only integration efforts (e.g., social initiative, strategies, pro-active behaviours) and adaptation outcomes, but also the likelihood of academic effort, engagement, and achievement. This study aligns with previous measurement research and development striving to address the main issues of person-environment fit, particularly regarding the conceptualization and measurement of the fit (Ward & Chang, 1997), as well as its multidimensionality (Chuang et al, 2016) and practical applicability from a limited employment setting to more general community (Beasley et al., 2012) and educational settings.

5.3.3. Implications for Practice

The practical applicability of a goal-opportunity cultural fit stems from the advantages brought in by setting, maintaining, and pursuing clear and meaningful goals in a favorable environment. Ensuring that international students have enough opportunities to fulfill their goals can facilitate cultural integration because goals are motivational, and they naturally call for self-reflection, planning, effort, and problem-solving (Austin & Vancouver, 1996). Perceiving and searching for opportunities in a new context can strengthen context believes that achievement is possible. Once goals are fulfilled, a long-lasting connection between sojourners and their context (e.g., host culture, academic institution) is likely to occur. Therefore, academic institutions can facilitate adaptation of international students not only by encouraging social interactions, stimulating acquisition of cultural knowledge, and cultivating a feeling of belongingness and welcoming in the new environment, but more important, by nurturing the perception of alignment between sojourners' goals and the opportunities offered. Rather than focusing on the sojourners' integration and their ability to cope with cultural challenges, academic institutions could present themselves as achievement-favorable environments nurturing adaptation as a personalized learning experience that is specifically centred around sojourners' achievement goals, needs, and expectations.

5.4. Limitations

The current study highlights the proposed CFQ scale as useful in evaluating an adaptation dimension (cultural fit) that is not typically captured by adaptation measurements. However, the limitations of the study need to be considered.

One limitation refers to the homogeneity of the sample (Table 3), with most participants being undergraduate students (94.9%) with a particular major (psychology) and residing in a

specific area of Canada (British Columbia). In addition, most of participants (71.02%) fall within the 18-21 age group, and the sample is dominated by female students (69.4%). University students already tend to experience elevated levels of distress due to adjusting to academic life, dealing with financial problems and romance and being away from families and friends (Watson, 2012). Therefore, examining this group may not produce results that can be generalized to other populations. Moreover, the gender imbalance of the sample may skew the findings, as previous research highlight that women are less likely to fully acculturate, and therefore, they are more prone to experiencing acculturation distress more than men (Berry, 1997).

Another limitation refers to the way the sample was obtained. Using a school-research tool with known limitations can rise data collection problems and lead to homogenous samples. In addition, encouraging participation with incentives (e.g., course credit) can lead to response bias. In the current study, a self-reported survey was used to collect data, which implies certain weaknesses, such as participants misunderstanding the questions (lower reliability), lack of flexibility due to fixed-choice questions, social desirability response bias (e.g., participants present themselves as good), and the issue whatever self-reports can truly capture the dimensions that cultural adaptation instruments were designed to measure, mainly traits (MPQ-SF), abilities (CQS), and perceived alignment (CFQ), which are all conceptually distinct and complex. In addition, the choice for exploratory analysis can lead to measurement problems. Choosing principal component analysis may lead to less sensible results, since PCA evaluates total variance, as the strength of each scale dimension, and is best for revealing the structure of the observed variables. A follow-up study should employ exploratory factor analysis to reveal the underlying structure of the variables, and then corroborated it with a confirmatory factor analysis to test the fit of the data with the theory-driven measurement model.

There are limitations regarding the use of goals as evaluators and facilitators of adaptation. Although the study measured participants' goal-orientation, it did not measure goals. Therefore, it was not assessed whether participants had any clear goals at the beginning of their adaptation process and whatever those goals have changed during the adaptation. The goal-setting abilities of the participants were also not evaluated. Measuring goals can be challenging and problematic, as there are no specific instruments that can be used. Most research on goals tends to focus on goal orientation as well as goal setting and tracking. In addition, goal orientation research is divided in regard to goal orientation being a stable trait or a contextual state. Contextual settings are expected to impact the stability of goal orientation (Button et al, 1996), which can become blurred in real-life settings, with sojourners relying on multiple goal orientations for different tasks and domains (Eison et al, 1986).

In addition, relying on goals to drive achievement behaviours in a challenging context can create specific issues. For example, goals are temporary, and therefore, there is a constant pressure to set new goals once they are fulfilled. However, setting optimal goals that are attainable, realistic, and contextual can be challenging, as there is always the risk of setting goals that are either too easy or too difficult to achieve. In addition, the possibility of failing goals can further increase stress and anxiety. Goals can also turn sojourns to become performance focused with an emphasis on achieving quick and significant results, rather than on long-term improvement and development. This can lead to sojourns setting irrelevant goals as quick ways to highlight their performance and boast their confidence.

Finally, there is the issue of stereotype threat in relation to gender and its role in increasing adaptation motivation while having the potential to impact academic achievement. For example, this study revealed that although CF-stereotype threat corelated negatively with MP-

emotional stability, it also correlated positively with CQ-motivation. Previous studies reveal that stereotype threat can increase achievement motivation more significantly in women (Forbes & Schmader, 2010). In addition, ambiguous and threatening situations can increase motivation to socialize more as a strategy to gather more contextual knowledge and skills (Wang, 2016). Recent studies highlight that migrants with a strong desire to integrate and connect with their host culture are more likely to incorporate stereotypes into their own belief system, as a way to fit in (Stanciu & Vauclair, 2018). Therefore, it would be expected for stereotype threat to associate positively with person-culture fit, at least in the female population.

5.5. Directions for Future Research

Follow up studies based on the goal-opportunity model should evaluate the goals of sojourns at the beginning, during, and at the end of their study period in terms of strength, relevance, domain, value, and time (short- versus long-term). Tracking goals throughout the adaptation process could highlight how they chance in terms of goal adjustment, improvement, and evaluation. A specific measurement of evaluating goals in an adaptation context should be developed. The goal-setting ability of the sojourners should also be assessed. In addition, the relationship between goals and context should be evaluated. The use of longitudinal studies is recommended to evaluate how goals change over time in relation to the adaption process. The newly established dimension of CF-stereotype threat can establish new directions for adaptation research. Therefore, it should be investigated thoroughly because it highlights that the role of stereotype threat in adaptation might be different than its role in academic achievement. In addition, it should be investigated whether stereotype threat can increase the motivation to adapt. Finally, it should be investigated wheatear there a significant positive association between CF-stereotype threat and CF-person-culture fit.

5.6. Conclusion

The findings provided support for a Goal-Opportunity Model of Acculturation, which aimed to revaluate the classical person-environment fit in an academic environment and reinterpret the previous cultural fit construct to account for goals instead of personality traits. This model shifts the perception of cultural adaptation from a helpless, stress-coping process with fixed outcomes, to a personal, flexible, and positive learning experiences that is highly contextual, goal-driven, and defined by autonomy and decision-making. The proposed goal-opportunity cultural fit has been found to predict well-being in international students. On the other hand, goal-orientations has been found to predict cultural fit, which highlights the value of goals and goal orientations in cultural adaptation. In an achievement context, a goal-opportunity cultural fit can lead to sojourners holding a positive perception of the host culture as a favorable environment that can nurture personal achievement. This perceived alignment centered on personal achievement can drive engagement and interaction, boost motivation and persistence of effort, and lead to pro-active behaviours to adapt and connect with the host culture in a meaningful, personal, and long-lasting way.

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Footnotes

[1] assimilation as a choice (renouncing the original culture and traditions to become fully part of their new society) is expected and regarded as positive, largely by the host culture (majority group members, policy makers, authorities) and some members of the minority group, because it avoids cultural conflicts and preserves social stability. Sometimes, assimilation and acculturation are regarded as synonymous. Assimilation has one positive component – maintain relations with the larger society, whereas integration has two positive characteristics – maintain identity and relations with the larger society (Berry, 1997). Integration is ideal because it allows the minority group to preserve cultural identity while integrating host culture norms. Integration is desired by most minority group members and often promoted by human-rights advocates. However, integration is only possible when the dominant society is open and inclusive (Berry, 1997). Research indicates that both integration and assimilation can lead to positive outcomes. For example, Ward and Rana-Deuba (1999) found that integration better predicted psychological adaptation, while assimilation better predicted sociocultural adaptation.

Appendices

Appendix A – Additional Analyses for CFQ

Table A1

Internal Validity of the CFQ-Person-Culture Fit Dimension (correlations range: .163 to .621)

PCF item	*M*	*SD*	CFQ1_PCF	CFQ2_PCF	CFQ3_PCF	CFQ4_PCF	CFQ5_PCF	CFQ6_PCF	CFQ7_PCF	CFQ8_PCF	CFQ9_PCF	CFQ10_PCF
CFQ1_PCF1	2.98	1.25	–	.543**	.597**	.477**	.393**	.495**	.430**	.362**	.366**	.366**
CFQ2_PCF2	3.46	1.14		–	.460**	.604**	.365**	.353**	.460**	.329**	.414**	.304**
CFQ3_PCF3	3.60	1.04			–	.383**	.390**	.621**	.448**	.354**	.447**	.383**
CFQ4_PCF4	3.27	1.38				–	.326**	.322**	.365**	.334**	.350**	.372**
CFQ5_PCF5	3.29	1.49					–	.309**	.303**	.568**	.199**	.163**
CFQ6_PCF6	3.88	1.03						–	.379**	.235**	.401**	.246**
CFQ7_PCF7	3.74	0.94							–	.234**	.736**	.257**
CFQ8_PCF8	3.06	1.46								–	.232**	.269**
CFQ9_PCF9	3.85	0.87									–	.235**
CFQ10_PCF10	2.75	1.23										–

Note: ** correlation is significant at .01 (2-tailed); Pearson correlations
Please refer to Table 15 for item codes

Table A2

Internal Validity of the CFQ-Stereotype Threat Dimension (correlations range: .176 to .750)

ST item	*M*	*SD*	CFQ11_ST1	CFQ12_ST2	CFQ13_ST3	CFQ14_ST4	CFQ15_ST5	CFQ16_ST6	CFQ17_ST7	CFQ18_ST8
CFQ11_ST1	2.36	1.33	–	.607**	.474**	.458**	.479**	.428**	.387**	.311**
CFQ12_ST2	1.89	1.21		–	.360**	.404**	.423**	.570**	.394**	.398**
CFQ13_ST3	2.54	1.30			–	.750**	.520**	.176**	.358**	.313**
CFQ14_ST4	2.42	1.30				–	.484**	.181**	.340**	.286**
CFQ15_ST5	2.54	1.38					–	.283**	.365**	.315**
CFQ16_ST6	1.61	1.01						–	.307**	.313**
CFQ17_ST7	1.49	0.80							–	.461**
CFQ18_ST8	1.78	1.07								–

Note: ** correlation is significant at .01 (2-tailed); Pearson correlations
Please refer to Table 15 for item codes

Table A3

Internal Validity of the CFQ-Cultural Challenges Dimension (correlations range: .314 to .582)

CC item	*M*	*SD*	CFQ19 _CC1	CFQ20 _CC2	CFQ21 _CC3	CFQ22 _CC4	CFQ23 _CC5	CFQ24 _CC6
CFQ19_CC1	2.15	1.19	–	.440**	.506**	.343**	.508**	.570**
CFQ20_CC2	2.18	2.25		–	.494**	.582**	.427**	.314**
CFQ21_CC3	2.48	1.30			–	.515**	.523**	.449**
CFQ22_CC4	2.52	1.32				–	.374**	.343**
CFQ23_CC5	2.63	1.32					–	.398**
CFQ24_CC6	2.58	1.20						–

Note: ** correlation is significant at .01 (2-tailed); Pearson correlations
Please refer to Table 15 for item codes

Table A4

Internal Validity of the CFQ-Cultural Evaluation Dimension (correlations range: .180 to .420)

CE item	*M*	*SD*	CFQ25 _CE1	CFQ26 _CE2	CFQ27 _CE3	CFQ28 _CE4	CFQ29 _CE5	CFQ29 _CE5
CFQ25_CE1	3.58	1.30	–	.305**	.499**	.358**	.245**	.302**
CFQ26_CE2	2.90	1.20		–	.180**	.420**	.212**	.380**
CFQ27_CE3	3.53	1.21			–	.275**	.402**	.229**
CFQ28_CE4	3.31	1.26				–	.305**	.364**
CFQ29_CE5	3.48	1.12					–	.292**
CFQ29_CE5	3.30	1.34						–

Note: ** correlation is significant at .01 (2-tailed); Pearson correlations
Please refer to Table 15 for item codes

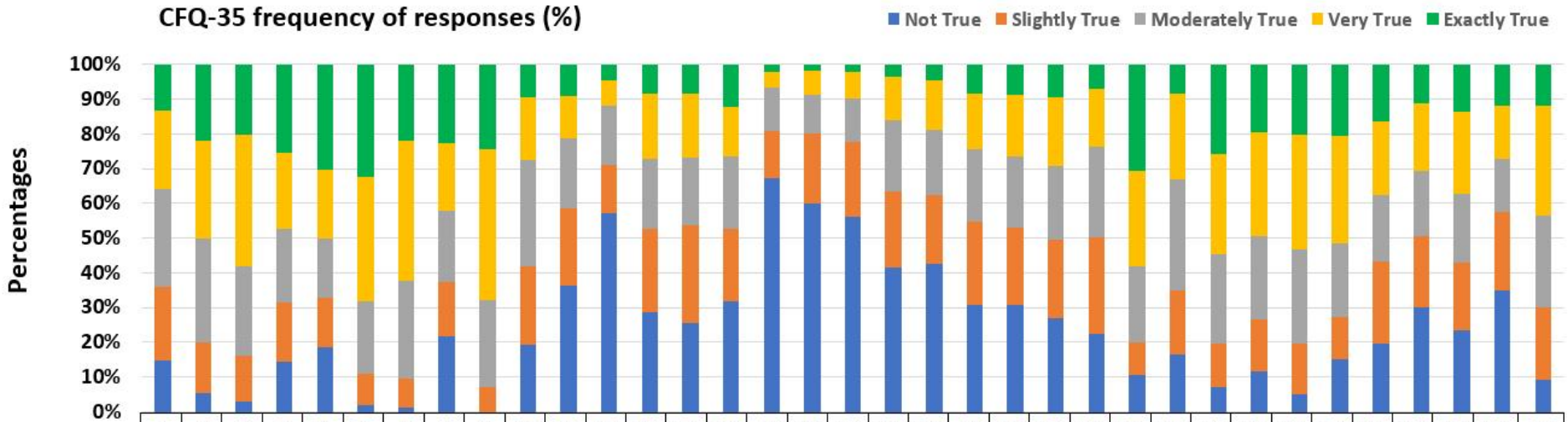
Table A5

Internal Validity of the CFQ-Interaction & Support Dimension (correlations range: .324 to .650)

IS item	*M*	*SD*	CFQ31 _IS1	CFQ32 _IS2	CFQ33 _IS3	CFQ34 _IS4	CFQ35 _IS5
CFQ31_IS1	2.91	1.38	–	.650**	.455**	.332**	.371**
CFQ32_IS2	2.61	1.38		–	.346**	.399**	.324**
CFQ33_IS3	2.84	1.38			–	.569**	.435**
CFQ34_IS4	2.46	1.40				–	.369**
CFQ35_IS5	3.13	1.16					–

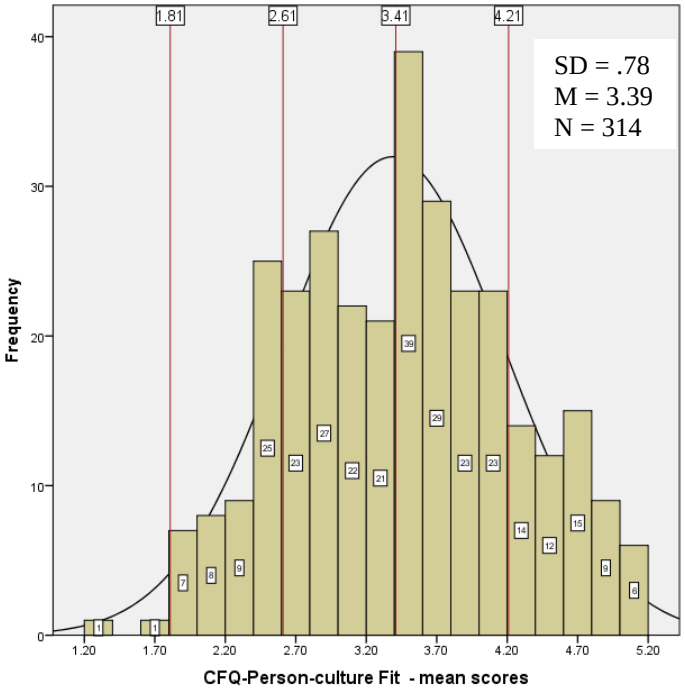
Note: ** correlation is significant at .01 (2-tailed); Pearson correlations
Please refer to Table 15 for item codes

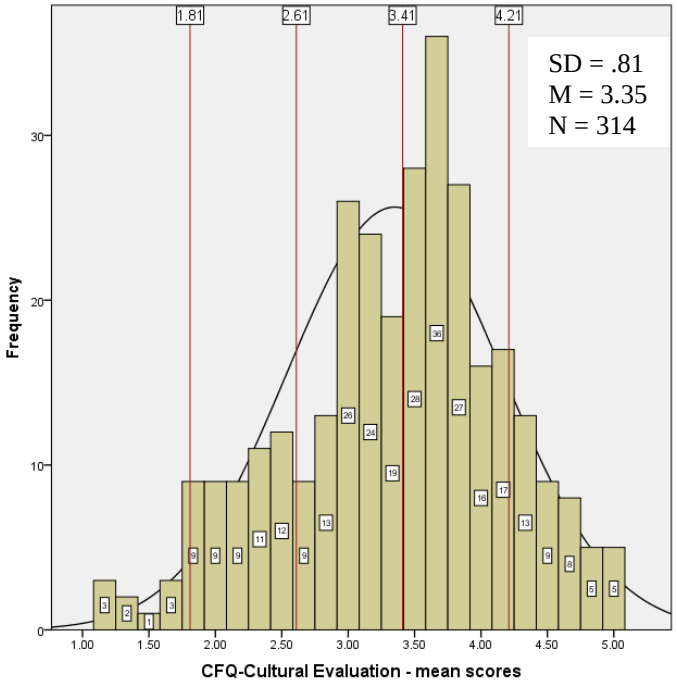
Figure A1. *Cultural Fit Questionnaire (CFQ-35): Frequency of Responses for Each Item*

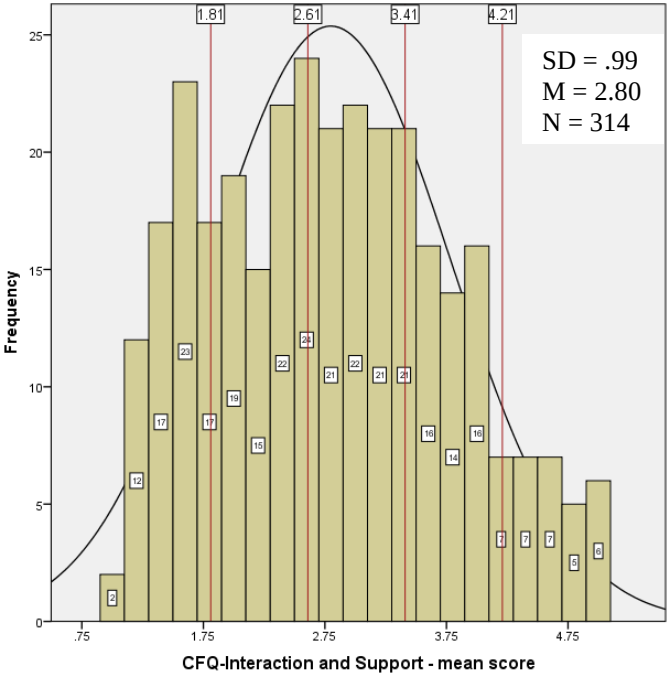


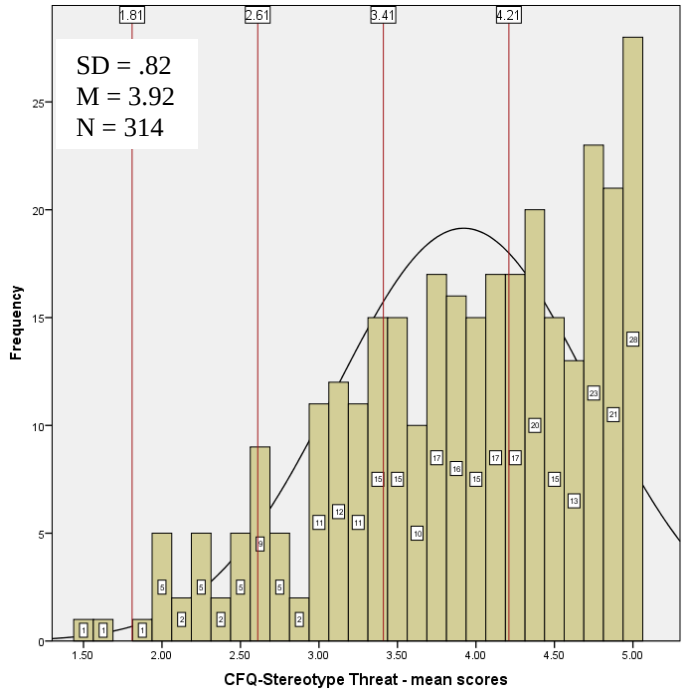
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Exactly True	13.4	22.0	20.4	25.5	30.3	32.5	22.0	22.6	24.3	9.6	9.2	4.8	8.3	7.6	12.1	2.2	2.2	2.2	3.5	4.5	8.6	8.9	9.6	7.0	30.6	8.6	25.8	19.4	20.1	20.7	16.6	11.1	13.7	11.8	11.8
Very True	22.3	28.0	37.9	22.0	19.7	35.7	40.4	19.7	43.6	17.8	12.1	7.3	18.8	16.9	14.3	4.5	7.6	7.6	12.7	14.3	15.9	17.5	19.7	16.9	27.7	24.5	28.7	29.9	33.1	30.9	21.0	19.4	23.6	15.3	31.8
Moderately True	28.3	29.9	25.5	21.0	17.2	20.7	28.0	20.4	25.2	30.6	20.1	16.9	20.4	17.5	21.0	12.4	12.4	12.4	20.4	18.8	20.7	20.7	21.3	25.8	21.7	31.8	25.8	24.2	27.1	21.0	19.1	18.8	19.7	15.3	26.1
Slightly True	21.3	14.6	13.4	17.2	14.3	9.2	8.3	15.6	7.0	22.6	22.3	13.7	23.9	25.8	20.7	13.7	22.3	21.7	22.0	19.7	24.2	22.3	22.6	28.0	9.6	18.5	12.4	15.0	14.6	12.1	23.6	20.7	19.4	22.6	21.0
Not True	14.6	5.4	2.9	14.3	18.5	1.9	1.3	21.7	0.0	19.4	36.3	57.3	28.7	23.2	31.8	67.2	66.2	56.1	41.4	42.7	30.6	30.6	26.8	22.3	10.5	16.6	7.3	11.5	5.1	15.3	19.7	29.9	23.6	35.0	9.2

Figure A2. *CFQ Subscales – Histograms of Mean Scores*









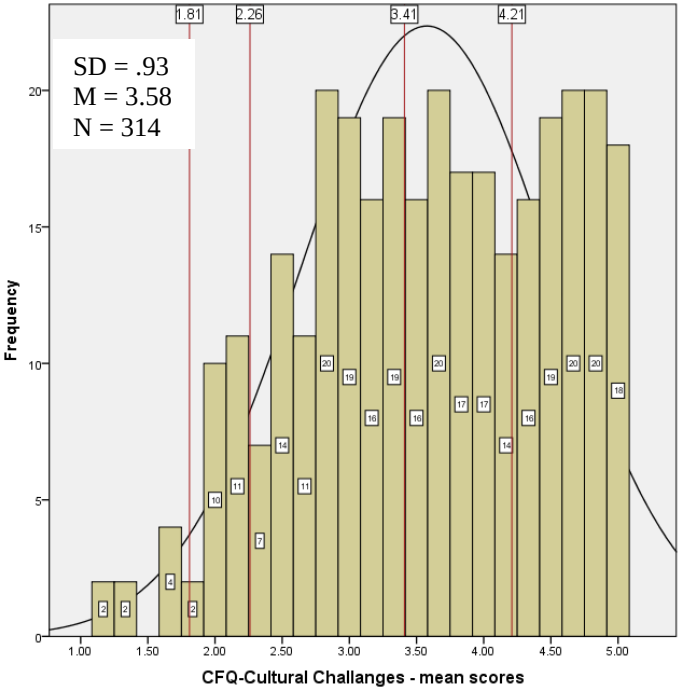


Table A6

Communalities (Initial CFQ-63 Scale)

Item	Initial	Extraction	Item	Initial	Extraction
CFQ01_PCD1	1.000	.705	CFQ32_IS1	1.000	.642
CFQ03_PCD2	1.000	.647	CFQ33_IS2	1.000	.654
CFQ05_PCD3	1.000	**.585**	CFQ34_IS3	1.000	**.572**
CFQ07_PCD4	1.000	.689	CFQ35_IS4	1.000	.651
CFQ09_PCD5	1.000	.610	CFQ36_IS5	1.000	.718
CFQ11_PCD6	1.000	.670	CFQ37_IS6	1.000	**.592**
CFQ13_PCD7	1.000	.736	CFQ38_PW1	1.000	**.597**
CFQ14_PCD8	1.000	.661	CFQ39_PW2	1.000	.672
CFQ16_PCD9	1.000	.694	CFQ40_PW3	1.000	.687
CFQ18_PCD10	1.000	**.583**	CFQ41_PW4	1.000	.609
CFQ20_PCD11	1.000	.611	CFQ42_PW5	1.000	.677
CFQ22_PCD12	1.000	.652	CFQ43_PW6	1.000	.677
CFQ24_PCD13	1.000	.759	CFQ44_PW7	1.000	.605
CFQ02_PCP1	1.000	.661	CFQ45_PW8	1.000	.612
CFQ04_PCP2	1.000	.648	CFQ46_PW9	1.000	.616
CFQ06_PCP3	1.000	.682	CFQ47_PW10	1.000	.822
CFQ08_PCP4	1.000	.728	CFQ48_PW11	1.000	.817
CFQ10_PCP5	1.000	**.586**	CFQ49_PW12	1.000	.882
CFQ12_PCP6	1.000	.716	CFQ50_PW13	1.000	.868
CFQ15_PCP7	1.000	.665	CFQ51_PCF1	1.000	.670
CFQ17_PCP8	1.000	**.584**	CFQ52_PCF2	1.000	**.580**
CFQ19_PCP9	1.000	.623	CFQ53_PCF3	1.000	.638
CFQ21_PCP10	1.000	**.575**	CFQ54_PCF4	1.000	.723
CFQ23_PCP11	1.000	.676	CFQ55_PCF5	1.000	.632
CFQ25_PCP12	1.000	.610	CFQ56_PCF6	1.000	.730
CFQ26_CC1	1.000	.670	CFQ57_PCF7	1.000	.610
CFQ27_CC2	1.000	.706	CFQ58_ST1	1.000	.738
CFQ28_CC3	1.000	.675	CFQ59_ST2	1.000	.684
CFQ29_CC4	1.000	.679	CFQ60_ST3	1.000	.696
CFQ30_CC5	1.000	.613	CFQ61_ST4	1.000	**.578**
CFQ31_CC6	1.000	.712	CFQ62_ST5	1.000	.664
			CFQ63_ST6	1.000	.716

Note: Extraction Method: Principal Component Analysis.
Items in bold are marked for potential removal.

Table A7

Component Matrix of CFQ - After Scale Reduction (8 components, 35 items)

	1	2	3	4	5	6	7	8
CFQ59_ST2	**.650**	.132	.015	.164	**.340**	-.095	.090	**-.425**
CFQ58_ST1	**.640**	.004	.114	.157	.287	-.152	-.006	-.122
CFQ61_ST4	**.628**	.129	.017	.244	**.325**	-.130	.150	**-.418**
CFQ63_ST6	**.602**	.121	**.344**	.286	.143	-.027	-.095	.269
CFQ62_ST5	**.582**	.102	**.315**	**.360**	.219	-.103	-.157	.058
CFQ26_CC1	**.561**	.194	-.140	.017	-.272	**-.352**	-.088	.057
CFQ38_PW1	**.551**	-.006	.218	.255	.057	-.017	.253	.232
CFQ28_CC3	**.536**	-.020	.161	.295	-.123	.206	**.311**	.106
CFQ29_CC4	**.533**	**.337**	-.187	-.088	**-.332**	-.005	.092	-.012
CFQ41_PW4	**.518**	.265	-.151	-.021	**-.446**	.071	-.036	-.045
CFQ30_CC5	**.512**	**.394**	-.278	-.034	**-.360**	.025	-.022	-.152
CFQ27_CC2	**.510**	.269	-.158	-.036	**-.470**	-.179	-.202	.097
CFQ31_CC6	**-.494**	**.487**	-.192	.046	.027	**-.382**	-.067	-.101
CFQ18_PCD10	**.464**	.352	-.231	.034	**-.360**	.121	.099	-.206
CFQ9_PCD5	**.404**	.237	**-.368**	-.104	.257	.082	-.250	-.050
CFQ51_PCF1	**.378**	**.339**	-.194	-.212	.294	.179	-.293	.272
CFQ54_PCF4	**-.326**	**.658**	.006	.239	.050	.022	.027	.054
CFQ43_PW6	**-.391**	**.641**	-.071	.107	.101	-.062	.155	.194
CFQ42_PW5	**-.392**	**.582**	-.035	.254	.007	-.020	-.081	.082
CFQ55_PCF5	-.289	**.563**	-.138	.077	.189	-.174	.292	.055
CFQ40_PW3	**-.319**	**.558**	.085	**.324**	-.101	-.033	-.137	-.025
CFQ52_PCF2	**-.399**	**.524**	-.114	-.001	.067	**-.459**	-.033	-.114
CFQ34_IS3	-.155	**.513**	.149	-.016	-.049	.008	-.001	.297
CFQ39_PW2	.029	**.499**	**.486**	-.186	.027	.174	-.063	-.156
CFQ32_IS1	-.157	**.494**	**.418**	-.234	.017	-.077	.017	-.029
CFQ53_PCF3	-.248	**.482**	-.049	.242	-.054	**.445**	.109	-.191
CFQ35_IS4	.024	**.373**	**.602**	-.251	.014	.064	.104	-.162
CFQ36_IS5	**.300**	.249	**-.404**	-.209	.187	-.145	.203	.172
CFQ33_IS2	**.376**	.207	**.401**	**.347**	-.042	.106	-.204	**.307**
CFQ17_PCP8	.125	.253	**.530**	**-.556**	-.061	-.039	.020	-.098
CFQ62_ST5	.155	.292	**.487**	**-.525**	-.077	-.024	.015	-.008
CFQ14_PCD8	.310	.230	**-.342**	**-.419**	.225	.243	.142	.088
CFQ6_PCP3	**-.390**	**.403**	-.141	.276	-.020	**.503**	-.078	-.198
CFQ12_PCP6	.244	.264	-.248	-.236	.350	.144	**-.529**	-.047
CFQ1_PCP1	.283	**.316**	**-.308**	-.261	.239	.118	**.419**	.242
CFQ8_PCP4	**.650**	.132	.015	.164	**.340**	-.095	.090	**-.425**
CFQ56_PCF5	**.640**	.004	.114	.157	.287	-.152	-.006	-.122

Note: Extraction Method: Principal Component Analysis.
9 components extracted. Loadings ≥ .30 are bolded

Appendix B – Demographic and Survey Evaluation

Table B1

Made Canadian Friends (N = 314

Made Canadian friends *(Crosstabulation)*		**answer**		**Total (N)**
		YES	**NO**	
type	friends in person	244 (77.7%)	70 (22.3%)	314
	friends at school	236 (75.8%)	76 (24.2%)	314
	friends outside school	193 (61.5%)	121 (38.5%)	314
	friends on social media	185 (58.9%)	129 (41.1%)	314

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.217[a]	3	.001
Likelihood Ratio	40.586	3	.001
N of Valid Cases	1254		

Note:
a. 0 cells (0.0%) have expected count less than 5 The minimum expected count is 98.53

Table B2

Most Used Academic Support Services

Student Services N = 314	**Using the service (N)**	**Using the service (%)**	**Rating service as useful (N)**	**Rating service as useful (%)**
Library	290	92.4	279	88.9
Book Store	302	96.2	277	88.2
Academic Advising	245	78.0	230	73.2
International Student Services	243	77.4	230	73.2
Food Services	289	92.0	212	67.5
Register's Office	220	70.1	211	67.2
Athletics & Recreational	212	67.5	206	65.6
Campus Life	218	69.4	202	64.3
Residential Services	201	64.0	177	56.4
Student Health & Wellness	198	63.1	179	57.0
IT Help	191	60.8	172	54.8
Academic Tutoring	174	55.4	164	52.2
Financial Aid & Awards	183	58.3	160	51.0
Counselling	165	52.5	153	48.7
Study Abroad & International Experience	157	50.0	145	46.2
Career & Professional Development	152	48.4	136	43.3
Co-op Services	142	45.2	122	38.9
Accessibility Services	128	40.8	120	38.2
Language Tutoring	129	41.1	119	37.9
Religious Services	112	35.7	99	31.5

Table B3

*Cultural Fit Study - Stereotype Awareness **Before** Arrival to Canada*

Dimension	Factors	Frequency (N)	Percent (%)
Negative stereotypes about my ethnic group's …	*(nation's)* system of government	158	50.3
	sexual restrictiveness	138	43.9
	narrow-mindedness	133	42.4
	attitudes about gender roles	131	41.7
	athletic abilities	111	35.4
	family structure and parenting	106	33.8
	focus on identity and individualism	105	33.4
	morality (e.g., theft, dishonesty)	96	30.6
	sexual morality	94	29.9
	sexual drive	93	29.6
	religion	92	29.3
	academic ability and/or intelligence	90	28.7
	level of cleanliness	89	28.3
	tendency towards violence	83	26.4
	work ethic (ability to work hard)	71	22.6
	focus on community and getting along	71	22.6
	food habits and preferences	68	21.7
	technological sophistication	65	20.7
	business sense (ability to make/save money)	62	19.7
	artistic abilities (e.g., music, fine arts, drama)	58	18.5
Positive stereotypes about my ethnic group's …	academic ability and intelligence	188	59.9
	work ethic (ability to work hard)	174	55.4
	food habits and preferences	164	52.2
	business sense (ability to make/save money)	146	46.5
	artistic abilities (e.g., music, fine arts, drama)	106	33.8
	focus on community and getting along	106	33.8
	technological sophistication	99	31.5
	athletic abilities	96	30.6
	family structure and parenting	96	30.6
	tendency towards peacefulness	91	29.0
	level of cleanliness	91	29.0
	religion	78	24.8
	sexual morality	76	24.2
	morality (e.g., theft, dishonesty)	75	23.9
	focus on identity and individualism	75	23.9
	open-mindedness	65	20.7
	attitudes about gender roles	64	20.4
	sexual drive	61	19.4
	(nation's) system of government	55	17.5
	sexual openness	49	15.6

Table B4

*Cultural Fit Study - Stereotype Awareness **After** Spending Time in Canada*

Dimension	Factors	N	%	%
Negative stereotypes about my ethnic group's …	*(nation's)* system of government	125	39.8	↓ 10.5
	sexual restrictiveness	107	34.1	↓ 9.8
	narrow-mindedness	96	30.6	↓ 11.8
	attitudes about gender roles	105	33.4	↓ 8.3
	athletic abilities	74	23.6	↓ 11.8
	family structure and parenting	74	23.6	↓ 10.2
	focus on identity and individualism	66	21.0	↓ 12.4
	morality (e.g., theft, dishonesty)	65	20.7	↓ 9.9
	sexual morality	64	20.4	↓ 9.5
	sexual drive	78	24.8	↓ 4.8
	religion	61	19.4	↓ 9.9
	academic ability and/or intelligence	47	15.0	↓ 13.7
	level of cleanliness	71	22.6	↓ 5.7
	tendency towards violence	65	20.7	↓ 5.7
	work ethic (ability to work hard)	45	14.3	↓ 8.3
	focus on community and getting along	66	21.0	↓ 1.6
	food habits and preferences	52	16.6	↓ 5.1
	technological sophistication	53	16.9	↓ 3.8
	business sense (ability to make/save money)	38	12.1	↓ 7.6
	artistic abilities (e.g., music, fine arts, drama)	51	16.2	↓ 2.3
Positive stereotypes about my ethnic group's …	academic ability and intelligence	167	53.2	↓ 6.7
	work ethic (ability to work hard)	145	46.2	↓ 9.2
	food habits and preferences	140	44.6	↓ 7.6
	business sense (ability to make/save money)	136	43.3	↓ 3.2
	artistic abilities (e.g., music, fine arts, drama)	104	33.1	↓ 0.7
	focus on community and getting along	101	32.3	↓ 1.5
	technological sophistication	107	34.1	↑ 2.6
	athletic abilities	104	33.1	↑ 2.5
	family structure and parenting	93	29.6	↓ 1.0
	tendency towards peacefulness	96	30.6	↑ 1.6
	level of cleanliness	93	29.6	↑ 0.6
	religion	79	25.2	↑ 0.4
	sexual morality	79	25.2	↑ 1.0
	morality (e.g., theft, dishonesty)	84	26.8	↑ 2.9
	focus on identity and individualism	86	27.4	↑ 3.5
	open-mindedness	71	22.6	↑ 1.9
	attitudes about gender roles	69	22.0	↑ 1.6
	sexual drive	59	18.8	↓ 0.6
	(nation's) system of government	61	19.4	↑ 1.9
	sexual openness	54	17.2	↑ 1.6

Table B5

Factors That Encouraged and Discouraged Pursuing Education in Canada

	Factors	Frequency	Percent (%)
Encouraged me for pursuing education in Canada	my own goals	195	62.1
	my desire to improve myself	165	52.5
	my mother	158	50.3
	my father	138	43.9
	my relatives	61	19.4
	my friends	43	13.7
	my favorite teacher	20	6.4
	other factors	18	5.6
Discouraged me for pursuing education in Canada	my fears	120	38.2
	alternatives goals	51	16.2
	my friends	47	15.0
	my relatives	37	11.8
	my mother	33	10.5
	my father	27	8.6
	a teacher (s)	16	5.2
	other factors	7	2.1

Table B6

Measurement Instruments Benchmarks for the Cultural Fit Survey

Scale	Dimension	Mean	SD	Internal Consistency (α)
DASS21		**2.55**	**1.33**	**0.96**
	Depression	2.42	1.50	0.92
	Anxiety	3.09	1.60	0.87
	Stress	2.14	1.34	0.89
CQS		**4.78**	**0.88**	**0.91**
	Behavioral CQ	4.86	1.19	0.85
	Cognitive CQ	4.18	1.26	0.87
	Motivational CQ	5.09	1.15	0.86
	Metacognitive CQ	5.21	1.17	0.82
MPQ		**3.42**	**0.62**	**0.83**
	Cultural Empathy	3.99	0.60	0.86
	Flexibility	3.35	0.71	0.83
	Emotional Stability	3.20	0.54	0.56
	Open-mindedness	3.48	0.63	0.81
	Social Initiative	3.08	0.48	0.49
AGO-R		**3.73**	**0.66**	**0.85**
	Mastery Approach	3.96	0.74	0.75
	Mastery Avoidance	3.54	0.96	0.78
	Performance Approach	3.74	0.90	0.82
	Performance Avoidance	3.68	1.06	0.89
CFQ		**3.45**	**0.41**	**0.82**
	Person-culture Fit	3.39	0.78	0.85
	Cultural Evaluation	3.35	0.81	0.74
	Interaction and Support	2.80	0.99	0.79
	Stereotype Threat	3.92	0.82	0.84
	Cultural Challenges	3.58	0.93	0.83

Table B7

Model 1: Zero-order, part, and partial correlations

Model 1	Correlations		
DV: anxiety	Zero-order	Partial	Part
CFQ-Person-culture Fit	-.108	-.039	-.036
CFQ-Cultural Evaluation	.095	-.044	-.041
CFQ-Interaction & Support	.061	.025	.023
CFQ-Stereotype Threat	.357	.266	.255
CFQ-Cultural Challenges	.255	.130	.122

Table B8

Model 2: Zero-order, part, and partial correlations

Model 1	Correlations		
DV: depression	Zero-order	Partial	Part
CFQ-Person-culture Fit	-.176	-.092	-.085
CFQ-Cultural Evaluation	.125	.005	.004
CFQ-Interaction & Support	-.029	-.057	-.052
CFQ-Stereotype Threat	.367	.274	.262
CFQ-Cultural Challenges	.237	.098	.091

Table B9

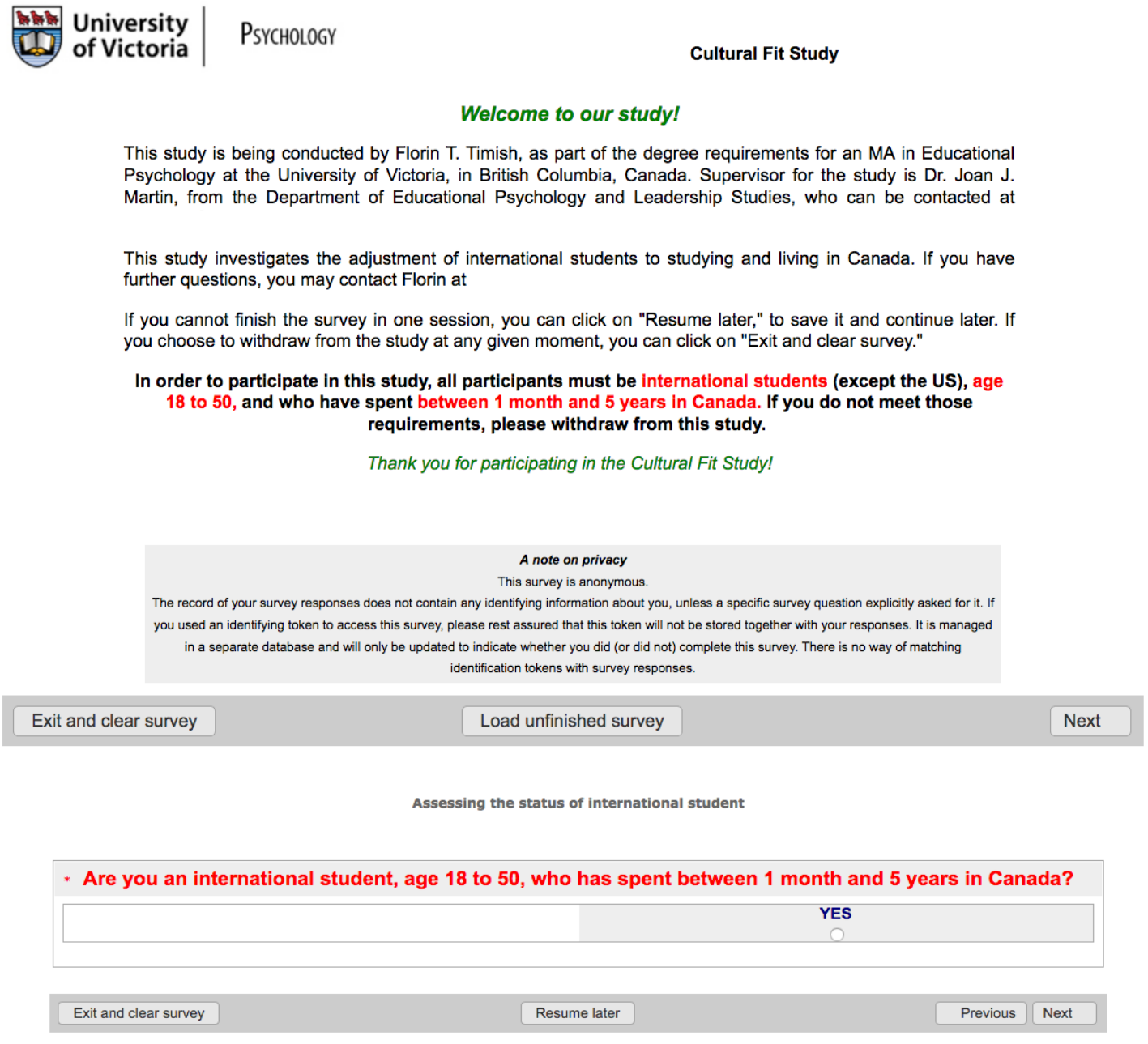
Model 3: Zero-order, part, and partial correlations

Model 1	Correlations		
DV: stress	Zero-order	Partial	Part
CFQ-Person-culture Fit	-.053	.008	.008
CFQ-Cultural Evaluation	.137	.002	.002
CFQ-Interaction & Support	.087	.040	.037
CFQ-Stereotype Threat	.346	.257	.247
CFQ-Cultural Challenges	.259	.118	.111

Appendix C – Cultural Fit Survey (as it was administered to participants)

http://web.uvic.ca/~psyclime/index.php/877749/lang-en

Cultural Fit Study - intro



University of Victoria | PSYCHOLOGY

Cultural Fit Study

Welcome to our study!

This study is being conducted by Florin T. Timish, as part of the degree requirements for an MA in Educational Psychology at the University of Victoria, in British Columbia, Canada. Supervisor for the study is Dr. Joan J. Martin, from the Department of Educational Psychology and Leadership Studies, who can be contacted at

This study investigates the adjustment of international students to studying and living in Canada. If you have further questions, you may contact Florin at

If you cannot finish the survey in one session, you can click on "Resume later," to save it and continue later. If you choose to withdraw from the study at any given moment, you can click on "Exit and clear survey."

In order to participate in this study, all participants must be international students (except the US), age 18 to 50, and who have spent between 1 month and 5 years in Canada. If you do not meet those requirements, please withdraw from this study.

Thank you for participating in the Cultural Fit Study!

A note on privacy

This survey is anonymous.

The record of your survey responses does not contain any identifying information about you, unless a specific survey question explicitly asked for it. If you used an identifying token to access this survey, please rest assured that this token will not be stored together with your responses. It is managed in a separate database and will only be updated to indicate whether you did (or did not) complete this survey. There is no way of matching identification tokens with survey responses.

Exit and clear survey | Load unfinished survey | Next

Assessing the status of international student

* **Are you an international student, age 18 to 50, who has spent between 1 month and 5 years in Canada?**

YES ○

Exit and clear survey | Resume later | Previous | Next

University of Victoria

Department of Educational Psychology and Leadership Studies

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Participant Consent Form

A Model of Cultural Fit for International Students: The Influence of Multicultural Personality, Academic Motivation and Self-Efficacy, Cultural Intelligence, and Cultural Contrast on Students' Academic Engagement and Psychological Well-Being while studying in Canada

You are invited to participate in research investigating the adjustment of international students to studying and living in Canada.

Researchers: This study is being conducted by Florin T. Timish, a MA student in the Department of Educational Psychology and Leadership Studies at the University of Victoria, in British Columbia, Canada. This research is part of the requirements for an MA in Educational Psychology. If you have further questions, you may contact Florin at

Supervisor: The study is supervised by Dr. Joan J. Martin, from the department of Educational Psychology and Leadership Studies, Faculty of Education. Dr. Martin can be contacted at or .

Purpose and Objectives: The purpose of this research is to identify the dynamics of cultural fit in the academic success and psychological well-being of international students. The major research questions of this study are:

1. How important are motivational strategies to the adjustment of international students?
2. Does having a multicultural personality, optimism, support, and high cultural intelligence ease the stress of living and studying in a different culture?
3. Does the cultural fit between host and native cultures contribute to adjustment for international students studying in Canada?
4. Does support (university based, informal friendships, religious communities) in Canada contribute to adjustment for international students?

Importance of this Research: This research is important because it can enhance our understanding of what leads to a successful international study experience. We propose that adjustment to studying in a foreign country is being mediated by a complex web of personal and social factors, as well as the cultural similarity between the native and host countries. We hope our findings will help universities design programs tailored to students' diverse cultural needs.

Participants Selection: We are looking for international students living and studying in Canada. Participation in this project is entirely voluntary. Whether you choose to participate or not, will have no effect on your position as a student or how you will be treated.

What is involved: As a participant, you will answer an online survey. The survey strives to identify your experience as an international student, and therefore, it assesses your adjustment in Canada, personal feelings and beliefs towards the Canadian culture, and perceptions of cultural differences between native and host culture.

The online survey takes place through a secure connection. It will take you between 45 to 60 minutes to answer.

The survey used (*PsychLime*) is a modified version of LimeSurvey. The survey does not include any identifiable information, and all data is stored in Canada, on the servers of Department of Psychology at the University of Victoria. No data will be stored in the US, and therefore, no data will be subject to the US Freedom Act.

Risks and Inconveniences: There are no known or anticipated risks to you by participating in this research. However, there is the possibility that some questions might cause discomfort to some participants, due to the personal nature of the questions. If you feel any discomfort during your participation, you may skip the personal questions that are causing you discomfort.

Benefits: This study strives to gain a better understanding of what makes a successful cultural experience for international students studying in Canada. Therefore, the results of this study attempt to clarify the complex interconnections between cultural similarities, as well as between cultural traits and personal goals displayed by international students during their transition to living in a different cultural environment. The assessment of cultural challenges and academic motivation could lead to improving the support services needed to ease the cultural transition of international students.

Compensation: At the end of the survey, you will be asked if you are willing to provide your information (name, email, phone number) and be included in a raffle prize. There will be five prizes of $100 each, for five lucky participants. If you are a winner, you will be contacted using the information you have provided (call or email). Your personal information will only be used for the raffle prize, not for the study itself.

If you are an UVic student enrolled in a Psychology course, and you are filling the survey through SONA, you may receive extra credit for your participation, as agreed by the manager of the SONA system and the lecturer of your Psychology course. The SONA system requires all participating students to adhere to its regulations regarding enrolment in Psychology courses, signing up for studies, as well as tracking the participation time.

Voluntary Participation: Your participation in this research is completely voluntary and much appreciated. If you do decide to participate, you may withdraw at any time without any consequences or explanation. If you do withdraw during the survey, your data will be assessed as "incomplete," and it will not be included in any analysis.

Anonymity and Confidentiality: Your participation in this study is entirely anonymous. All data collected through this study will remain confidential, without any possibility to relate collected answers with personal information. The collected data is being used to answer the research questions of the study, and confidentiality of information will remain secure, even in the possibility of publicizing partial or integral results from this study.

Dissemination of Results: It is anticipated that the results of this study will be shared with others through possible future publications such as thesis, articles, or presentations at academic conferences. It is also expected that different researchers will conduct future analyses of data from the current study (fully anonymous).

Disposal of Data: Data from this study will be kept indefinitely (anonymously, secured, and password-protected), in case further research related to the previously mentioned objectives is needed.

Contacts: If you have any questions regarding this study, you can contact the main investigator, Florin T. Timish, at . You can also contact the thesis supervisor, dr. Joan J. Martin at .

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria

Consent for Use of Data: Your completion and submission of the survey indicate that you understand the above conditions of participating in this study, that you have had the opportunity to have your questions answered by the researchers, and that you consent to participate in this research project, thus implicitly giving **your free and informed consent**.

I have read the consent form, and I agree to participate in this study!

☐ **YES**

Cultural Fit Survey

I. CULTURAL FIT QUESTIONNAIRE (CFQ)

		*Many of these questions will refer to your **heritage culture**, meaning the culture of your origin (i.e., the culture in which you have been raised, the culture of your family, or the culture you belong to). If there are several, pick the one that has influenced you most. **Home/native country** refers to your country of origin, were you were born, raised, and spent most of your life*	***Not True***	***Slightly Ture***	***Moderately True***	***Very True***	***Exactly True***	
PCD01	1.	Compared to Canada, my home country is more traditional.	1	2	3	4	5	Perceived Cultural Differences (PCD)
PCD02	3.	Compared to my home country, religious involvement is weaker in Canada.	1	2	3	4	5	
PCD03	5.	Compared to the Canadian culture, my *heritage culture* is more male dominated.	1	2	3	4	5	
PCD04	7.	Compared to my home country, there is more political freedom in Canada.	1	2	3	4	5	
PCD05	9.	Compared to the Canadian culture, my *heritage culture* has more complicated social behaviour rules.	1	2	3	4	5	
PCD06	11.	Compared to my *heritage culture*, the Canadian culture is more gender-equality oriented.	1	2	3	4	5	
PCD07	13.	Compared to Canada, my home country is less economically prosperous.	1	2	3	4	5	
PCD08	14.	Compared to my *heritage culture*, social behaviour rules are less strictly enforced in the Canadian culture.	1	2	3	4	5	
PCD09	16.	Compared to my home country, in Canada I feel free to disagree with others.	1	2	3	4	5	
PCD10	18.	Compared to people in my *heritage culture*, Canadians dress less conservatively.	1	2	3	4	5	
PCD11	20.	Compared to my home country, in Canada food does not taste as good.	1	2	3	4	5	
PCD12	22.	Compared to people in my home country, Canadians are more preoccupied with cleanliness.	1	2	3	4	5	
PCD13	24.	Compared to my home country, Canada is more technologically developed.	1	2	3	4	5	
PCP01	2.	Compared to others in my *heritage culture*, traditional values are less important to me.	1	2	3	4	5	Personal Cultural Preferences (PCP)
PCP02	4.	Compared to others in my *heritage culture*, my religious involvement is weaker.	1	2	3	4	5	
PCP03	6.	Compared to others in my *heritage culture*, I prefer a less male dominated culture.	1	2	3	4	5	
PCP04	8.	Compared to others in my *heritage culture*, I prefer to live somewhere with more political freedom.	1	2	3	4	5	
PCP05	10.	Compared to others in my *heritage culture*, I pay less attention to social behaviour rules.	1	2	3	4	5	
PCP06	12.	Compared to others in my *heritage culture*, I prefer a more gender-equality oriented culture.	1	2	3	4	5	
PCP07	15.	Compared to others in my *heritage culture*, I think our social behaviour rules are too strictly enforced.	1	2	3	4	5	
PCP08	17.	Compared to others in my *heritage culture*, freedom of expression is more important to me.	1	2	3	4	5	
PCP09	19.	Compared to others in my *heritage culture,* I prefer to dress less conservatively.	1	2	3	4	5	
PCP10	21.	Compared to my others in my *heritage culture*, I am not as concerned about food preparation rituals and choices.	1	2	3	4	5	
PCP11	23.	Compared to others in my heritage culture, I care more about cleanliness.	1	2	3	4	5	
PCP12	25.	Compared to others in my *heritage culture*, I feel more comfortable using advanced technology.	1	2	3	4	5	

CC01	26.	Cultural differences *(e.g. traditions, beliefs, norms, values)* between my native country and Canada are challenging.	1	2	3	4	5	Cultural Challenges (CC)
CC02	27.	Religious differences between my home community and Canada are challenging.	1	2	3	4	5	
CC03	28.	Political differences *(e.g. freedom of expression, openness, political beliefs)* between my native country and Canada are challenging.	1	2	3	4	5	
CC04	29.	Differences in how men and women behave in society between my native country and Canada are challenging.	1	2	3	4	5	
CC05	30.	Differences in technological development between my native country and Canada are challenging.	1	2	3	4	5	
CC06	31.	The difference in economic prosperity between my native country and Canada is challenging.	1	2	3	4	5	
IS01	32.	During my stay in Canada, I have made friends **outside of school** who <u>are NOT</u> from my own country.	1	2	3	4	5	Interaction and Support (IS)
IS02	33.	During my stay in Canada, I have made friends **outside of school** who ARE from my country.	1	2	3	4	5	
IS03	34.	Even though I am in a foreign country, there is always someone I can rely on.	1	2	3	4	5	
IS04	35.	During my stay in Canada, I have made **in-school** friends who <u>are NOT</u> from my country.	1	2	3	4	5	
IS05	36.	During my stay in Canada, I have made **in-school** friends who ARE from my country.	1	2	3	4	5	
IS06	37.	During my staying in Canada, I have used mental health services (e.g., counselling) that were not provided by my Canadian academic institution.	1	2	3	4	5	
PW01	38.	Overall, I feel Canadians have rejected me.	1	2	3	4	5	Perceived Welcoming (PW)
PW02	39.	Overall, I feel Canadians have treated me well.	1	2	3	4	5	
PW03	40.	Overall, I feel Canadians have been helpful to me.	1	2	3	4	5	
PW04	41.	I find it difficult to ask Canadians for help.	1	2	3	4	5	
PW05	42.	I have plenty of interactions with Canadians every day.	1	2	3	4	5	
PW06	43.	I really enjoy socializing with Canadians.	1	2	3	4	5	
PW07	44.	I would like to have more daily interactions with Canadians.	1	2	3	4	5	
PW08	45.	I am just here to study, not to explore Canadian culture.	1	2	3	4	5	
PW09	46.	I am open to the Canadian culture, and I am willing to learn more about it.	1	2	3	4	5	
PW10	47.	I have joined a religious group (outside of school) since coming to Canada.	1	2	3	4	5	
PW11	48.	I have felt welcomed in the religious group I have joined since coming to Canada.	1	2	3	4	5	
PW12	49.	I have joined a NON-religious group or community (outside of school) since coming to Canada.	1	2	3	4	5	
PW13	50.	I have felt welcomed in the NON-religious groups I have joined since coming to Canada.	1	2	3	4	5	
PCF01	51.	Since living in Canada, I feel like I belong here.	1	2	3	4	5	Person-Culture Fit (PCF)
PCF02	52.	My success in Canada reflects my true potential.	1	2	3	4	5	
PCF03	53.	I believe Canada provides me with the best opportunities to accomplish my goals.	1	2	3	4	5	
PCF04	54.	Overall, I am satisfied with my life in Canada.	1	2	3	4	5	
PCF05	55.	I am happy with my decision to study in Canada.	1	2	3	4	5	
PCF06	56.	The language barrier is not an obstacle to doing better at school.	1	2	3	4	5	
PCF07	57.	I have found the student support services provided by my Canadian university (*e.g., counselling, academic support, health care*) to be helpful with my cultural adjustment.	1	2	3	4	5	

ST01	58.	I am concerned that Canadians might judge me because of my nationality.	1	2	3	4	5	Stereotype Threat (ST)
ST02	59.	I am concerned that Canadians might judge me because of my race.	1	2	3	4	5	
ST03	60.	At school, I am concerned that teachers might perceive international students as less capable.	1	2	3	4	5	
ST04	61.	I am anxious while interacting with classmates, because I am concerned of how they perceive me.	1	2	3	4	5	
ST05	62.	At school, I worry that teachers might perceive female students as less capable.	1	2	3	4	5	
ST06	63.	During tests, I worry that teachers might have unreasonable expectations from students of my ethnicity.	1	2	3	4	5	

Note: colored in red are the reversed items (15 total) of the survey. **© Timish (2019)**

II. ACHIEVEMENT GOAL QUESTIONNAIRE – REVISED (AGQ-R)

DIRECTIONS: Please select the number corresponding to your level of agreement (1 = strongly disagree, 5 = strongly agree). If the statement is more or less true of you, pick a number between 1 and 5 that best describes you.

		Strongly Disagree	**→ → →**			***Strongly Agree***
1.	My aim is to completely master the material presented in the class.	1	2	3	4	5
2.	I am striving to understand the content of the course as thoroughly as possible.	1	2	3	4	5
3.	My goal is to learn as much as possible.	1	2	3	4	5
4.	My aim is to avoid learning less than I possibly could.	1	2	3	4	5
5.	I am striving to avoid an incomplete understanding of the course material.	1	2	3	4	5
6.	My goal is to avoid learning less than it is possible to learn.	1	2	3	4	5
7.	My aim is to perform well relative to other students.	1	2	3	4	5
8.	I am striving to do well compared to other students.	1	2	3	4	5
9.	My goal is to perform better than the other students.	1	2	3	4	5
10.	My aim is to avoid doing worse than other students.	1	2	3	4	5
11.	I am striving to avoid performing worse than others.	1	2	3	4	5
12.	My goal is to avoid performing poorly compared to others.	1	2	3	4	5

Citation:

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology*, *100* (3), 613–628.

Legend: Red = mastery-approach, Green = mastery-avoidance, Orange = performance-approach Blue = performance-avoidance

III. MULTICULTURAL PERSONALITY QUESTIONNAIRE (MPQ-SF)

DIRECTIONS: Please select the answer that is most applicable to you, as according to the evaluation scale. There are no "correct" or "incorrect" answers. It is important that you answer according to your own feelings, rather than how "most people" would answer.		***Totally not applicable***	***Not applicable***	***Moderately applicable***	***Applicable***	***Totally applicable***	
1.	I am a good listener.	1	2	3	4	5	Cultural Empathy (CE)
2.	I notice when someone is in trouble.	1	2	3	4	5	
3.	I pay attention to the emotions of others.	1	2	3	4	5	
4.	I enjoy other people's stories.	1	2	3	4	5	
5.	I get to know others profoundly.	1	2	3	4	5	
6.	I set others at ease.	1	2	3	4	5	
7.	I sense when others get irritated.	1	2	3	4	5	
8.	I sympathize with others.	1	2	3	4	5	
9.	I like routine.	1	2	3	4	5	Flexibility (FX)
10.	I work according to a plan.	1	2	3	4	5	
11.	I function best in a familiar setting.	1	2	3	4	5	
12.	I work according to strict rules.	1	2	3	4	5	
13.	I have fixed habits.	1	2	3	4	5	
14.	I want predictability.	1	2	3	4	5	
15.	I work according to strict schemes.	1	2	3	4	5	
16.	I look for regularity in life.	1	2	3	4	5	
17.	I am reserved.	1	2	3	4	5	Social Initiative (SI)
18.	I am inclined to speak out.	1	2	3	4	5	
19.	I take initiative.	1	2	3	4	5	
20.	I leave initiative to others to make contacts.	1	2	3	4	5	
21.	I find it difficult to make contacts.	1	2	3	4	5	
22.	I take the lead.	1	2	3	4	5	
23.	I make contacts easily.	1	2	3	4	5	
24.	I am often the driving force behind things.	1	2	3	4	5	
25.	I am nervous.	1	2	3	4	5	Emotional Stability (ES)
26.	I am apt to feel lonely.	1	2	3	4	5	
27.	I am not easily hurt.	1	2	3	4	5	
28.	I keep calm when things do not go well.	1	2	3	4	5	
29.	I worry.	1	2	3	4	5	
30.	I am under pressure.	1	2	3	4	5	
31.	I am insecure.	1	2	3	4	5	
32.	I get upset easily.	1	2	3	4	5	
33.	I like to imagine solutions to problems.	1	2	3	4	5	Open-mindedness (OP)
34.	I am a trendsetter in societal developments.	1	2	3	4	5	
35.	I have feelings for what is appropriate in culture.	1	2	3	4	5	
36.	I have broad range of interests.	1	2	3	4	5	
37.	I seek people from different backgrounds.	1	2	3	4	5	
38.	I try out various approaches.	1	2	3	4	5	
39.	I start a new life easily.	1	2	3	4	5	
40.	I am looking for new ways to attain my goals.	1	2	3	4	5	

Citation:

van der Zee, K., van Oudenhoven, J. P., Ponterotto, J. G., & Fietzer, A. W. (2013). Multicultural Personality Questionnaire: Development of a Short Form. *Journal of Personality Assessment, 95*(1), 118-124.

IV. CULTURAL INTELLIGENCE SCALE (CQS)

	DIRECTIONS: Please select the answer that BEST describes you AS YOU REALLY ARE.	**Strongly disagree** →						**Strongly agree**	
1.	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.	1	2	3	4	5	6	7	CQ-Metacognition
2.	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	1	2	3	4	5	6	7	
3.	I am conscious of the cultural knowledge I apply to cross-cultural interactions.	1	2	3	4	5	6	7	
4.	I check the accuracy of my cultural knowledge as I interact with people from different cultures.	1	2	3	4	5	6	7	
5.	I know the legal and economic systems of other cultures.	1	2	3	4	5	6	7	CQ-Cognition
6.	I know the rules (e.g., vocabulary, grammar) of other languages.	1	2	3	4	5	6	7	
7.	I know the cultural values and religious beliefs of other cultures.	1	2	3	4	5	6	7	
8.	I know the marriage systems of other cultures.	1	2	3	4	5	6	7	
9.	I know the arts and crafts of other cultures.	1	2	3	4	5	6	7	
10.	I know the rules for expressing non-verbal behaviors in other cultures.	1	2	3	4	5	6	7	
11.	I enjoy interacting with people from different cultures.	1	2	3	4	5	6	7	CQ-Motivation
12.	I am confident that I can socialize with locals in a culture that is unfamiliar to me.	1	2	3	4	5	6	7	
13.	I am sure I can deal with the stresses of adjusting to a culture that is new to me.	1	2	3	4	5	6	7	
14.	I enjoy living in cultures that are unfamiliar to me.	1	2	3	4	5	6	7	
15.	I am confident that I can get accustomed to the shopping conditions in a different culture.	1	2	3	4	5	6	7	
16.	I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.	1	2	3	4	5	6	7	CQ-Behavior
17.	I use pause and silence differently to suit different cross-cultural situations.	1	2	3	4	5	6	7	
18.	I vary the rate of my speaking when a cross-cultural situation requires it.	1	2	3	4	5	6	7	
19.	I change my non-verbal behavior when a cross-cultural interaction requires it.	1	2	3	4	5	6	7	
20.	I alter my facial expressions when a cross-cultural interaction requires it.	1	2	3	4	5	6	7	

Citation:

Ang, S., Van Dyne, L., Koh, C., Yee Ng, K., Templer, K. J., Tay, C. and Chandrasekar, N. A. (2007a). Cultural Intelligence: Its Measurement and Effects on Cultural Judgment and Decision Making, Cultural Adaptation and Task Performance. *Management and Organization Review*, 3(3), 335–371.

V. DEPRESSION, ANXIETY, AND STRESS SCALE (DASS-21)

DIRECTIONS: ***Considering the past semester****, please read each statement and select a number (0, 1, 2 or 3), which indicates how much the statement applied to you*

The rating scale is as follows: 0 = *Did not apply to me at all;* **1** *= Applied to me to some degree or some of the time;* **2** *= Applied to me to a considerable degree or a good part of time;* **3** *= Applied to me very much or most of the time*

1.	I found it hard to wind down.	0	1	2	3
2.	I was aware of dryness of my mouth.	0	1	2	3
3.	I couldn't seem to experience any positive feeling at all.	0	1	2	3
4.	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).	0	1	2	3
5.	I found it difficult to work up the initiative to do things.	0	1	2	3

6.	I tended to over-react to situations.	0	1	2	3
7.	I experienced trembling (e.g. in the hands).	0	1	2	3
8.	I felt that I was using a lot of nervous energy.	0	1	2	3
9.	I was worried about situations in which I might panic and make a fool of myself.	0	1	2	3
10.	I felt that I had nothing to look forward to.	0	1	2	3
11.	I found myself getting agitated.	0	1	2	3
12.	I found it difficult to relax.	0	1	2	3
13.	I felt down-hearted and blue.	0	1	2	3
14.	I was intolerant of anything that kept me from getting on with what I was doing.	0	1	2	3
15.	I felt I was close to panic.	0	1	2	3
16.	I was unable to become enthusiastic about anything.	0	1	2	3
17.	I felt I wasn't worth much as a person.	0	1	2	3
18.	I felt that I was rather touchy.	0	1	2	3
19.	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).	0	1	2	3
20.	I felt scared without any good reason.	0	1	2	3
21.	I felt that life was meaningless.	0	1	2	3
22.	I breathed every day. *(lie scale q.1)*	0	1	2	3

Legend: Red = stress, Green = anxiety, Black = depression

Citation:

Lovibond, S.H. & Lovibond, P.F. (1995). *Manual for the Depression Anxiety & Stress Scales*. (2nd Ed.). Sydney: Psychology Foundation.

VI. ADDITIONAL QUESTIONS

1. **In your own words, please tell us how you are adjusting to the cultural differences between Canada and your native country. Are there any other cultural differences that we have not asked you about, but are affecting your adjustment in Canada?**
2. **Before leaving to study outside of my own country, I was aware of the following stereotypes about my ethnic group/nationality…**
3. **After spending time in Canada, I have become aware of the following stereotypes about my ethnic group/nationality…**

VII. ENGLISH LANGUAGE SELF-ASSESSMENT (ELSA - CUT)

DIRECTIONS: Please read each statement carefully, and indicate your level of proficiency in English, for each section. B = basic level, I = Intermediate level, A = advanced level, P = proficient level, NL = native-like level

	Speaking	***B***	***I***	***A***	***P***	***NL***
1.	I can participate in a group conversation on familiar topics.	1	2	3	4	5
2.	I can initiate, maintain and finish a conversation naturally.	1	2	3	4	5
3.	I can speak without hesitating for longer than feels natural to me.	1	2	3	4	5
4.	I can describe processes or events in some detail.	1	2	3	4	5
5.	I can give my opinions in study contexts such as tutorials.	1	2	3	4	5
6.	I can make formal presentations in English if I have time to prepare.	1	2	3	4	5
7.	I can summarise stories or news items.	1	2	3	4	5
8.	I can participate in discussions or debates on hypothetical issues.	1	2	3	4	5
9.	I can monitor my own errors when I'm speaking.	1	2	3	4	5
10.	Most people can understand my pronunciation.	1	2	3	4	5

	Listening	***B***	***I***	***A***	***P***	***NL***
1.	I can understand informal conversations about familiar topics.	1	2	3	4	5

2.	I can understand lectures and presentations if they are clearly delivered.	1	2	3	4	5
3.	I can follow discussions in tutorial or study groups.	1	2	3	4	5
4.	I can usually understand spoken language without asking for repetition.	1	2	3	4	5
5.	I can understand TV news and current affairs programs.	1	2	3	4	5
6.	I can usually follow the main points in discussions and debates.	1	2	3	4	5
7.	I can guess unknown words from the context in which they are spoken.	1	2	3	4	5
8.	I usually realise when someone is joking or being ironic.	1	2	3	4	5

	Reading	***B***	***I***	***A***	***P***	***NL***
1.	I can understand the main points in newspaper articles.	1	2	3	4	5
2.	I can understand lecture notes online or handouts.	1	2	3	4	5
3.	I can understand the main points in my course reading texts.	1	2	3	4	5
4.	I can understand most general texts in detail if I read them slowly.	1	2	3	4	5
5.	I can find information I need in a general text quickly and easily.	1	2	3	4	5
6.	I can read complex reports, articles and other extended texts easily.	1	2	3	4	5
7.	I can understand the implicit meaning of a text and recognise irony.	1	2	3	4	5

	Writing	***B***	***I***	***A***	***P***	***NL***
1.	I can write summaries from articles in my discipline area.	1	2	3	4	5
2.	I know how to take notes in lectures.	1	2	3	4	5
3.	I can describe processes or events in writing.	1	2	3	4	5
4.	I can express my own opinions clearly on a range of topics.	1	2	3	4	5
5.	I can present arguments in a systematic way in an essay.	1	2	3	4	5
6.	I can write an extended report.	1	2	3	4	5
7.	I understand the concept of 'referencing' as it applies at my school.	1	2	3	4	5
8.	I am confident that I can avoid plagiarizing other texts when I write.	1	2	3	4	5
9.	I can write in a range of styles according to the audience and purpose.	1	2	3	4	5

Curtin University of Technology. (2017). English Language Self-Assessment. Retrieved from http://unienglish.curtin.edu.au/local/docs/Self_assessment.pdf

VIII. DEMOGRAPHIC INFORMATION

DIRECTIONS: Please answer each question as accurately as possible, by marking the correct answer or filling in the space provided.

1) How old are you? _____

2) What is your native country? _____

3) What is your native language? _____

4) What is your gender?

☐ Female ☐ Male ☐ Transgender female ☐ Transgender male Other *(please specify)* _____

5) What is your sexual preference?

For more information about gender identity and sexual orientation, including how to find support services in your area, please visit **HealtLinkBC:** *https://www.healthlinkbc.ca/health-topics/abj9152*

Clicking the link will take you away from the survey. Instead, please save the link for later, or open it as a new tab: "right-click" and select "open link in new tab."

☐ Heterosexual ☐ LGBTQ ☐ Bisexual curious ☐ I would rather not say Other *(please specify)* _____

6) **What is your current marital/relational status? _____**
7) **What is your ethnicity?** *(e.g., Arab, British, Chinese, Danish, East Indian, Filipino, Korean, Mexican*) **_____**
8) **What country were you born in? _____**
9) **What is your race?** *(e.g., Asian, African, Caucasian, First Nations, Hispanic, Mixed races, White)* **_____**
10) **How would you best describe your hometown?**

☐ Remote rural area ☐ Rural area near town or city ☐ Small town ☐ Small city ☐ Big city

11) **Which of the following best describes the social class of your family, relative to others in your country?**

☐ Lower Class ☐ Working Class ☐ Middle Class ☐ Upper Middle Class ☐ Elite *(i.e. wealth, power, status)*

12) **What was/is your religion?**
Please specify the major religious grouping you belonged or currently belong
(e.g., Catholic, Protestant, Jewish, Muslim, Buddhism, Atheism, None, etc.)
My Religion in Childhood was: _____
My Family's Religion is: _____
My Current Religion is: _____

13) **Here in Canada, what communities (*religious, clubs, music/arts groups, volunteer services*) have you joined outside school?**

_____

14) **If you have joined any outside of school community since coming to Canada, what languages does your community mainly use?**

☐ Not Applicable ☐ My native language ☐ English Other *(please specify)* _____

15) **What is the highest degree or level of school you have completed?**
(if currently enrolled, indicate the highest degree received)

☐ High School Equivalent ☐ Associate Degree or a Post-Secondary Certificate ☐ Bachelor's Degree (e.g., BA, BSc, BEd)

☐ Master's Degree (e.g., MA, MS, MEd) ☐ Professional Degree (e.g., Medicine, Law) ☐ Doctorate (e.g., PhD)

☐

16) What is your TOEFL/IELTS score for English? Not applicable

TOELF_____ or IELTS_____

17) How often do you use English in your social settings (outside school)?

☐ Daily ☐ Weekly ☐ A few times a month ☐ A few times a year ☐ Extremely rare

18) Is language barrier an obstacle to adjusting to the Canadian culture?

☐ It is a huge obstacle ☐ It is an obstacle ☐ I am not sure ☐ It is not an obstacle ☐ It is not an obstacle at all

19) **Who encouraged you about your decision to come to Canada?**
(please select ALL applicable answers)

Encouraged me to come

☐ My own goals
☐ My desire to improve myself
☐ My friends
☐ My favorite teacher
☐ My mother
☐ My father
☐ My relatives
☐ Other *(please specify)*

20) **Who discouraged you about your decision to come to Canada?**
(please select ALL applicable answers)

Discouraged me from coming

Alternative goals ☐
My fears ☐
Friends ☐
A teacher(s) ☐
My mother ☐
My father ☐
Other relatives ☐
Other *(please specify)* ☐

21) How long have you lived in Canada? *(total amount of time)*

☐ 1-3 months ☐ 4-6 months ☐ 6 months to 1 year ☐ 1-2 years ☐ 3-5 years ☐ More than 5 years

22) How many Canadian friends do you have?

Canadian Friends in person _____ *Canadian Friends on social media* _____

Canadian Friends at school _____ *Canadian Friends outside school* _____

23) Are you currently an undergraduate or graduate student?

☐ Undergraduate ☐ Graduate ☐ Non-degree Other *(please specify)* _____

24) What is your major or area of study?

_____

25) What university/institution are you studying at?

_____

26) What is your GPA?

My current GPA is _____ *My desired GPA would be* _____

My expected GPA was _____ *GPA scale used by my school is* _____

Student Services Short Survey (q. 27-29):

27) What student services would you like to have available at your current academic institution?

_____

28) During my staying in Canada, I have used mental health services (e.g., counselling) that were not provided by my Canadian academic institution:

☐	☐	☐	☐	☐
Not true	Slightly true	Moderately true	Very true	Exactly true

29) What student services have you used at your current academic institution? How would you rate the helpfulness of those services?

	Not used	Poor	Somewhat helpful	Good	Excellent
Academic tutoring	☐	☐	☐	☐	☐
Language tutoring (English/French)	☐	☐	☐	☐	☐
International Student Services	☐	☐	☐	☐	☐
Financial Aid & Awards	☐	☐	☐	☐	☐
Library services	☐	☐	☐	☐	☐
Co-op services	☐	☐	☐	☐	☐
Student Health & Wellness	☐	☐	☐	☐	☐
Accessibility services	☐	☐	☐	☐	☐
Academic adviser	☐	☐	☐	☐	☐
Campus life	☐	☐	☐	☐	☐
Counselling services	☐	☐	☐	☐	☐
Register's office	☐	☐	☐	☐	☐
Career & Professional development	☐	☐	☐	☐	☐
Athletics & Recreational	☐	☐	☐	☐	☐
Residence services	☐	☐	☐	☐	☐
Food services	☐	☐	☐	☐	☐
Book store	☐	☐	☐	☐	☐
IT help services	☐	☐	☐	☐	☐
Study abroad & International experience	☐	☐	☐	☐	☐
Religious services (prayer, meditation, counselling)	☐	☐	☐	☐	☐

30) How stressful would you describe your current financial situation?

☐	☐	☐	☐	☐
I have no worries	Occasionally stressful	Somewhat stressful	Stressful but no changes needed	I had to make stressful changes

31) What are your intentions after graduation?

☐	☐	☐	☐	☐
I am going back to my native country	I do not want to think about that	I have not decided yet	I plan to go somewhere else	I am planning to stay in Canada

32) Did you find it difficult to fill this survey in English?

☐	☐	☐	☐	☐
Very difficult	Somewhat difficult	I am not sure	A little difficult	Not difficult at all

Raffle Prize

1) **Would you like to participate in a raffle prize with the chance of winning a $100 cash prize?**

If you agree, you must provide identification information, so you can be contacted in the eventuality of winning. Your information will be used for the raffle prize only. Five prizes of $100 each will be offered to five lucky participants.

☐ **YES**, I want to be included in the raffle prize

☐ **NO**, I don't want to be included in the raffle prize

2) **If you <u>selected to be included</u> in the raffle prize, please include your name and contact information bellow:**

First Name _____

Contact email _____

Future Participation

1) **Would you like to provide your email address and be contacted for participation in a future research study?**

☐ **YES**, I agree to participate in future research

☐ **NO**, I do not want to participate in future research

2) **If you agreed to be contacted for participation in future research, please provide your contact information.**

My First name is *My email address is*

_____

3) **If you have taken this survey on SONA, please write your name and email address, in order to receive course credit. Your info has to match that on SONA!**

(if this does not apply to you, leave the space blank and click "Submit")

My name and email are

_____

Appendix D – Ethics Approvals

Board of Record
University of Victoria

Human Research Ethics Board (HREB)
Administrative Services Building
Room B202
PO Box 1700 STN CSC
Victoria, BC V8V 2Y2

Certificate of Ethical Approval for Harmonized Minimal Risk Study

Also reviewed and approved by:

Simon Fraser University
University of British Columbia
University of Northern BC

Principal Investigators:	Primary Appointment:	Board of Record Approval Reference #:
Florin Timish	**University of Victoria**	**BC18-109**

Study Title: **A model of cultural fit for international students: The influence of multicultural personality, academic motivation and self-efficacy, cultural intelligence, and cultural contrast on students' academic engagement and psychological well-being while studying in Canada**

Study Approved: **19-JUN-2018** Expiry Date: **18-JUN-2019**

Research Team Members: **Dr. Joan M. Martin, Supervisor**

Sponsoring Agencies: **None**

Documents included in this approval:

Document Name	Approved version date
Human Research Ethics Application – V2	June 6, 2018
Recruitment Poster – V2	June 6, 2018
Email Recruitment "To International Students Centers/Services or Institutional Planning and Analysis" – V2	June 6, 2018
Cultural Fit Study Welcoming Page – V2	June 6, 2018
Participant Consent Form – V2	June 6, 2018
Questionnaires (Cultural Fit; Your Experience in Canada; Multicultural Personality Questionnaire; Life Orientation Test; Achievement Goal Questionnaire; Cultural Intelligence Scale; Student Self-Efficacy Questionnaire; Student Engagement Instrument; Dweck Mindset Instrument; Depression, Anxiety & Stress Scale; English Language Self-Assessment) – V1	April 18, 2018
Demographic Information – V1	April 18, 2018
Email from Capilano College	June 8, 2018
Email from SFU Psychology Office	June 18,2018

This ethics approval applies to research ethics issues only and does not include provision for any administrative approvals required from individual institutions before research activities can commence.

The Board of Record (as noted above) has reviewed and approved this study in accordance with the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2, 2014).

The "Board of Record" is the Research Ethics board designated on behalf of the participating REBs involved in a harmonized study to facilitate the ethics review and approval process. In the event that there are any changes or amendments to this approved protocol, please notify the Board of Record.

Board of Record Research Ethics Board Representative
Name: Dr. Rachael Scarth
Signature:

Title: Associate VP Research Operations
Date: 20-JUN-2018

PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Florin Timish

has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)

Date of Issue: **13 June, 2018**

Board of Record
University of Victoria

Human Research Ethics Board (HREB)
Administrative Services Building
Room B202
PO Box 1700 STN CSC
Victoria, BC V8V 2Y2

Certificate of Ethical Approval for Annual Renewal of Harmonized Minimal Risk Study

Also reviewed and approved by:

Simon Fraser University
University of British Columbia
University of Northern BC

Principal Investigators:	Primary Appointment:	Board of Record Approval Reference #:
Florin Timish	**University of Victoria**	**BC18-109**

Study Title: **A model of cultural fit for international students: The influence of multicultural personality, academic motivation and self-efficacy, cultural intelligence, and cultural contrast on students' academic engagement and psychological well-being while studying in Canada**

Renewal Approved: **08-MAY-2019** Expiry Date: **18-JUN-2020**

Research Team Members: **Dr. Joan M. Martin, Supervisor**

Sponsoring Agencies: N/A

Documents included in this approval:

Document Name	**Approved version date**
Request for annual renewal- V2	May 8, 2019

This ethics approval applies to research ethics issues only and does not include provision for any administrative approvals required from individual institutions before research activities can commence.

The Board of Record (as noted above) has reviewed and approved this study in accordance with the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2, 2014).

The "Board of Record" is the Research Ethics board designated on behalf of the participating REBs involved in a harmonized study to facilitate the ethics review and approval process. In the event that there are any changes or amendments to this approved protocol, please notify the Board of Record.

Board of Record Research Ethics Board Representative
Name: Dr. Rachael Scarth Title: Associate VP Research Operations
Signature: Date: 08-MAY-2019

Florin Timish Project

KS **Karen Shirley**
6/3/2018 8:53 AM

To: Florin Cc: Eugenie Lam; Cheryle Wilson

Dear Florin,

As Chair of the REB for Camosun College, I am letting you know that I have reviewed your application. Based on the information presented in it, your study has been approved.

Your data collection is approved from 1/07/2018 to 31/08/2018. If your data collection should extend beyond that time period, you are required to complete and submit the following document: http://camosun.ca/innovates/_documents/project-completion-renewal.pdf. You must also complete and submit the form when you have finished the elements of your research that involve contacting the participants.Any changes to the protocol(s) for this study must be formally requested by submitting a request for amendment from the Camosun REB. Any adverse event, should one occur during this study, must be reported immediately to the Camosun REB.

I hope your research goes well. Yours is a valuable project.

Best,

Karen Shirley
REB Chair, Camosun College

Approval for BC18-109

PW **Phillip Wiebe**
7/27/2018 1:47 PM

To: Cc: Elizabeth Kreiter

Dear Florin

TWU approves for your proposed study, for which UVic has given its endorsement

Best wishes in your research

phw

Phillip H Wiebe, PhD
Professor of Philosophy
Human Research Ethics Co-Chair
Trinity Western University, Canada

TRINITY WESTERN UNIVERSITY

Human Research Ethics Board - Trinity Western University

Certificate of Approval

Principal Investigator: Florin Timish

Department: Educational Psychology and Leadership Studies

Supervisor (if student research): Joan J. Martin

Co-Investigators:

Title: A model of cultural fit for international students: The influence of multicultural personality, academic motivation and self-efficacy, cultural intelligence, and cultural contrast on students' academic engagement and psychological well-being while studying in Canada

HREB File No.: 18EA07

Approval Date: July 27, 2018

Certificate Expiry Date: July 26, 2019

Certification

This is to certify that Trinity Western University Human Research Ethics Board (HREB) has examined the research proposal and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans.

Elizabeth Kreiter	for	Phillip Wiebe
M.L.I.S.		Ph.D.
HREB Coordinator		HREB Chair

This Certificate of Approval is valid for one year and may be renewed.

The HREB must be notified of *all* changes in protocol, procedures, or consent forms.

A final project form must be submitted upon completion.

The required forms for the above are at:
https://www.twu.ca/research/research-services/research-ethics/approval-forms

7600 Glover Rd., Langley, BC, Canada, V2Y 1Y1 T: (604) 888-7511, F: (604) 513-2047