A Dissertation

entitled

Factors Impacting International Students' Sense of Belonging

by

Tracey A. Hidalgo

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Doctor of Philosophy Degree in Higher Education

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An Abstract of

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The purpose of this study was to identify the factors that influence international

students' sense of belonging. An in-depth review of existing research on sense of

belonging helped me identify 18 factors closely connected to the sense of belonging of

international students. I categorized these factors into four groups: (a) academic

integration, (b) social integration, (c) campus climate, and (d) transition factors, and

developed a 41-item questionnaire for students. I administered the questionnaire to

international students attending higher education institutions in the Great Lakes region,

which consists of the states of Illinois, Indiana, Minnesota, Michigan, New York, Ohio,

Pennsylvania, and Wisconsin. Ten variables connected to each of the four groups of

factors emerged as statistically significant predictors of international students' sense of

belonging: (a) academic involvement, (b) relationship with faculty, (c) friends/peer

support, (d) learning community, (e) nationalism in host country, (f) on campus services

(support staff), (g) diversity on campus, (h) dietary restrictions, (i) language ability, and

(j) racism/discrimination. The results of the study suggest that the academic environment,

campus services and resources, the racial climate of the campus in regard to diversity or

lack of it, and the nationalism in a country play a role in an international student's sense

of belonging. These results show that institutions must pay attention to a complex set of

factors when trying to recruit and retain their international students.

Dedicated to my husband, children, and my parents.

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Chapter One

Introduction

International students play a pivotal role in the United States' higher education system (Institute of International Education). International students contribute to colleges and universities through intellect, classroom diversity, cultural exchange, and through economic contributions (NAFSA: Association of International Educators). For many decades, the United States higher education system has benefitted from a steadily growing body of international student populations (National Science Board, 2018). However, recent data demonstrates changes in international student enrollments. According to the Student and Exchange Visitor Information System (SEVIS) database, international student enrollment in U.S. colleges and universities reached a peak of 840,160 students in 2016, after which there was a decrease of almost 4% from 2016 to 2017, and an additional decrease of .5% from 2017 to 2018 (SEVIS by the numbers, 2018). International students have been relied upon in recent years to cover gaps left by decreased government funding, and a continuous drop in enrollment could cause financial difficulties for colleges and universities (Wermund, 2018).

While international education has been very beneficial to colleges, universities, and the American economy, international students have not always reported a strong sense of belonging to their institutions or the United States (Glass & Westmont-Campbell, 2014; Mwangi, 2016). The concept of sense of belonging in the context of a college campus reflects students' connection to their campus community. Research (see, e.g., Tinto, 1993; Hurtado and Carter, 1997; Strayhorn, 2012; Wood & Harris III, 2016) demonstrates the strong connection of sense of belonging to significant educational

outcomes such as academic achievement, academic and personal motivation and growth, levels of engagement and participation, and social acceptance. Sense of belonging has been associated with students' academic integration (see, e.g., Le et al., 2016; Curtin et al., 2013), social integration (see, e.g., Strayhorn, 2008; Le, LaCost, & Wismer, 2016), transition to campus (see, e.g., Hussman et al., 2007; Mwangi, 2016), and experience with the campus climate (see, e.g., Wood & Harris III, 2015; Mwangi, 2016).

This study aims to identify the factors related to international students' sense of belonging, and to explore which of the identified factors have a significant contribution to the students' feeling of belongingness to colleges and universities. Research has grouped the factors in four main categories. First come factors connected to students' academic integration such as international students' relationship with their advisor/mentor (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016), their relationship with faculty (Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida 2005; Pascarella & Terenzini, 1980), and their academic involvement (Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009). Next, are factors linked to social integration such as relationship with host families (Banks-Gunzenhauser, 2009; Le et al., 2016), friends/peer support (St-Amand et al., 2017; Singh, 2018; Cartmell & Bond, 2015; Hausmann et al., 2007; Strayhorn, 2008; Le, LaCost, & Wismer, 2016; Morrow & Ackermann, 2012; Chen & Razek, 2016; Pascarella & Terenzini, 1980), culture shock (Poyrazli, & Lopez, 2007; Singh, 2018), cultural/religious organizations (Mwangi, 2016; Hurtado & Carter, 1997), language ability (Chen & Razek, 2016 ; Kwon, 2009; Lau et al., 2018) and racial identity (Wood & Harris III, 2015; Mwangi, 2016; Mwangi & English, 2017; Chen & Razek, 2016). The third group consists of factors associated with

campus climate which are racism/discrimination (Nunez, 2009; Mwangi, 2016; Poyrazli, & Lopez, 2007; Tachine et al., 2017), diversity on campus (Wood & Harris III, 2015; Maestas et al., 2007), and nationalism in the host country (Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016). The last group are factors of transition which are feelings of homesickness (Poyrazli & Lopez, 2007; Hannigan, 2007: Kwon, 2009), culture shock (Chen et al., 2011; Poyrazli, & Lopez, 2007; Singh, 2018), the students' family/friends back home (Lau et al., 2018; Mwangi, 2016; Roksa & Kinsley, 2019; Tachine et al., 2017; Hussman et al., 2007), language ability (Chen & Razek, 2016; Kwon, 2009; Lau et al., 2018), on campus services (Lau et al., 2018; Le et al., 2016; Wood & Harris III, 2015), learning communities/living on campus (Hoffman et al., 2002; Johnson et al, 2007), information networks (Karp et al., 2010), and dietary restrictions (Alakaam, 2016).

A combination of theoretical frameworks guides the study: Tinto's theory of student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. Tinto's theory of student departure is a suitable theoretical framework for this study as it explores several factors that impact sense of belonging such as academic integration and social integration (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016; Maestas et al., 2007; Wood, & Harris, 2015; Glass et al., 2015; Guffrida, 2005; Strayhon, 2008; Chen & Razek, 2016; Morrow & Ackerman, 2012). Hurtado and Carter's work (1997) further augments Tinto's ideas by bringing an emphasis on the institutional influences on students' sense of belonging. This combined framework brings together the ideas of

academic integration, social integration, college transition factors, and perceptions of the campus climate.

The commitment towards culturally diverse and internationally educated communities is the responsibility of all higher education institutions. It is also their duty to integrate all students, regardless of origin, into the campus community (Gieg, 2017). Higher education institutions have recently put an emphasis on international student enrollment and through enrollment efforts "international student enrollments often expand without sufficient consideration of how these enrollments will affect the campus culture (s) already in place, and which capacities will be required to create a campus climate capable of including new and diverse populations" (Glass, Wongtrirat, & Buus, 2015, p. 2). In other words, current recruitment and retention efforts do not focus on creating a campus environment that positively impacts an international students' sense of belonging. With a decrease in the number of international students enrolling in higher educational institutions in the United States, colleges and universities must now focus on retaining the students already in the country. Sense of belonging has long been used as a measure of students' persistence and perception of inclusion within an institution. According to Morrow and Ackermann (2012), students' connection to their institution is important when looking at whether or not students will persist at an institution.

Statement of the Problem

Research on students' sense of belonging demonstrates the positive effects of students' integration in their campus environment on their success (Glass et al., 2015; Guven, 2017; Hoops, 2017; Lechman, 2015). According to Van Horne et al. (2018), there is still "much to learn about the openness and inclusiveness of U.S. higher education

communities, by further examining the experiences of international students on our campuses" (p. 367). While there are several studies that focus on the sense of belonging of different student population types, including international students, many of these studies are single-institution-based studies (Banks-Gunzenhauser, 2009; Guven, 2017; Le et al., 2016; Mwangi, 2016; Wang, 2010; Wolff, 2014), or single populations (Banks-Gunzenhauser, 2009; Chen & Razek, 2016; Halvorsrud, 2014; Tanner, 2013; Yao, 2014). As a result, most research conclusions rarely pertain beyond these locations and populations. In addition, many of the studies' findings often center on relatively few and very specific factors related to sense of belonging, usually linked to a specific institution or geographic location. Two strong examples of such studies include research by Hausmann et al. (2007) and Mwangi (2016) that focused on specific single institutions, and on a narrow set of factors. As a result, conclusions on which factors, or a combination of such, have the greatest influence on international students' sense of belonging are incomplete. Finally, most studies are conducted at four-year institutions (Hausmann et al., 2007; Mwangi, 2016; Museus et al., 2017; Tanner, 2013). Consequently, our understanding of the array of college influences on international students' sense of belonging at a range of institutions is still limited. As Shore et al. (2011) noted, there is still a lot of research that needs to be done to understand how higher education institutions can create inclusive environments that provide opportunities for international students to thrive on college campuses.

Purpose of the Study and Research Questions

The purpose of the study is to determine the factors that impact international students' sense of belonging across a variety of institutions in the United States. More

precisely, the study focuses on the effect that academic integration, social integration, campus climate, and transition factors have on international students' sense of belonging. The study used a cross-sectional survey to collect data from the international students in the Great Lakes region, which consists of the states of Illinois, Indiana, Minnesota, Michigan, New York, Ohio, Pennsylvania, and Wisconsin. I estimate that there is a population of approximately 357,800 international students at different institutions that host international students in the Great Lakes region and have staff that belong to the professional network NAFSA: Association for International Educators. The data set was collected via a web-based survey, utilizing Qualtrics, distributed via email.

This study addresses the following research question: What factors influence international students' sense of belonging to their colleges and universities in the United States? The following more specific sub-questions explore the different aspects of the main research question:

1. What is the level of sense of belonging among international students at higher education institutions in the United States?

2. What influence, if any, do student characteristics and institutional characteristics have on international student sense of belonging?

3. What influence, if any, do academic integration variables have on international student sense of belonging?

4. What influence, if any, do social integration variables have on international student sense of belonging?

5. What influence, if any, do campus climate variables have on international student sense of belonging?

6. What influence, if any, do transition variables have on international student sense of belonging?

7. What combination of student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition variables best predict international student sense of belonging?

Significance of the Study

This study provides a contribution to both research and practice. The study focuses on the effect that academic integration, social integration, campus climate, and transition factors have on international students' sense of belonging. This study aims to quantitatively investigate a more comprehensive set of factors linked to an array of aspects of students' campus inclusion. This study also intends to fill a gap in the literature by making comparisons among multiple institutions, and multiple international student populations, and aims at surveying the Great Lakes region, with the goal to capture a larger sample population. This research intends to fill a gap in the literature by gaining a Great Lakes perspective that is focused on multiple institutions and populations. In addition, this research contributes to literature because "sense of belonging is rarely, if ever, directly assessed so that its independent effects on persistence can be measured" (Hausmann et al., 2007, p. 806). Finally, this research also seeks to understand the applicability of Tinto's theory of student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect international students' sense of belonging. Most research on students' integration has traditionally focused on domestic student populations. In this light, the present study will extend our

understanding of how college influences students' sense of belonging to the international student populations.

With its focus on international students and their perceptions of inclusion, the study contributes to policy design across different types of higher education institutions, providing departments such as international student services offices, student affairs, multicultural student services, offices of diversity and inclusion, and student involvement offices with information they can use to make informed decisions regarding international student populations. In addition, the results of the study can inform institutional work on efforts to assess strategic diversity and inclusion plans. While a variety of factors have been related to students' sense of belonging, it is important to know which factors might affect students the greatest so that universities are able to target their resources and retention efforts effectively when working with international student populations. Finally, this study provides information that is relevant to the diversity of international student populations, and not only individual groups.

Definition of Key Terms

Academic Integration – Academic integration is an international students' academic interaction with faculty and advisors inside and outside of the classroom while enrolled in a higher education institution (Pascarella & Terenzini, 1980).

Campus Climate – Campus climate is the students' views on group interactions and attitudes, and their expectations of the campus and its members in relation to racial and ethnic diversity (Hurtado et al., 1999).

Great Lakes Region – The Great Lakes region consists of the eight states that surround the five great lakes of North America. These states are Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin.

Integration – Integration consists of academic and social involvement in an institution and a psychological sense of belonging (Hausmann et al., 2009).

International Student - F-1 nonimmigrants, as defined in section 101(a)(15)(F) of the Immigration and Nationality Act (INA), are foreign students coming to the United States to pursue a full course of academic study in SEVP-approved schools (U.S. Immigration and Customs Enforcement).

NAFSA (Association of International Educators) – NAFSA is an organization dedicated to international exchange and the policies and practices that affect international exchange (NAFSA: Association of International Educators).

Sense of Belonging - For the purposes of this research, sense of belonging is the connection that students feel towards their campus and is a subjective evaluation of the quality of relationships that students form while on campus based on their interactions (Strayhorn, 2008).

SEVIS - The Student and Exchange Visitor Information System (SEVIS) is a web-based system for maintaining information on international nonimmigrant students and exchange visitors in the United States (U.S. Immigration and Customs Enforcement).

SEVP- The Student and Exchange Visitor Program (SEVP) ensures that government agencies have essential data related to nonimmigrant students and exchange visitors to preserve national security. SEVP provides approval and oversight to schools authorized to enroll F and M nonimmigrant students and gives guidance to both schools

and students about the requirements for maintaining their status (U.S. Immigration and Customs Enforcement).

Social Integration – Social integration is the quality of interactions the student has with peers and the campus community (Pascarella & Terenzini, 1980). This includes interaction with host families and cultural and religious organizations within the community.

Transition – Adjusting to college, making sense of a new environment, and acquiring the skills to negotiate the social, physical, and mental landscape of the college environment (Hurtado and Carter, 1997).

Summary

Understanding the combination of factors that influence international students' sense of belonging has been limited. While sense of belonging and student integration have been studied extensively (Tinto, 1975, 1987, 1993; Pascarelli & Terenzini, 1980; Osterman, 2000), researchers have only recently begun focusing on international student populations (Mwangi, 2016). Sense of belonging is associated with students' academic integration (Le et al., 2016; Curtin et al., 2013), social integration (Strayhorn, 2008; Le, LaCost, & Wismer, 2016), transition to campus (Hussman et al., 2007; Mwangi, 2016), and experience with the campus climate (Wood & Harris III, 2015; Mwangi, 2016). This study utilizes a survey design methodology and quantitative methods of data analysis to identify the factors that have the greatest impact on international students' sense of belonging. The study contributes to research by filling the limited understanding of the factors that impact on sense of belonging for international students. The study also

provides useful insights to college and university efforts aiming to provide opportunities for international students' campus integration.

Chapter Two

Literature Review

This chapter examines the research surrounding international students' sense of belonging in higher education institutions. The initial section examines the purpose of the study followed by an outline of the decrease of international student population over the years and the impact that international student populations have on the U.S. economy. Next, this chapter discusses the concept of sense of belonging followed by a review of research focused on sense of belonging of domestic and international college students. In more detail, first, this section's literature review covers research on four-year institutions, which consists of studies focusing on graduate and undergraduate students. Following the review of research on four-year institutions is a summary of the studies on community colleges. The literature review continues with an exploration of the factors that influence sense of belonging. The chapter concludes with a summary of the explored literature and a description of the theoretical framework that guides the study.

The purpose of the study is to determine the factors that impact international students' sense of belonging across a variety of institutions in the United States. Research has shown that sense of belonging influences "motivational measures such as expectancy of success, valuation of schoolwork, and self-reported effort. Enhancing school belonging can also have a positive effect on academic achievement and school engagement" (St-Amand et al., 2017, p. 107), which affects retention in the higher education setting. Researchers have also noted a positive and significant relationship between belonging and other factors such as positive social relations, and positive mental health (St-Amand et al., 2017).

This study addresses the following research question: What factors influence international students' sense of belonging to their colleges and universities in the United States? The following more specific sub-questions explore the different aspects of the main research question:

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7. What combination of academic integration, social integration, campus climate, and transition variables best predict international student sense of belonging?

International Student Populations

International students contribute over $41 billion to the U.S economy and the money contributed by international students supports over 458,000 jobs (NAFSA: Association of International Educators, 2019). According to the Student and Exchange Visitor Information System (SEVIS) database, international student enrollment in U.S.

colleges and universities have been steadily increasing and reached a peak in 2016 of 840,160 students, an 8.16% increase compared to 776,400 students enrolled in 2015. In 2017, however, international student enrollment fell by almost 4%, from 840,160 in 2016 to 808,640 (National Science Board, 2018). The downward trend in international student enrollment continued from 2017 to 2018 in which there was a .5% drop in total international student enrollment (SEVIS by the Numbers, 2018). Contributing to the .5% total drop in the international student population was a decrease of 6.6% compared with the previous year of new international student enrollment, which some have attributed to the "Trump effect" (Patel, 2018, para 1), which refers to the election of the previous president of the United States of America in 2016, Donald Trump. The steady drop in international student enrollment in U.S. colleges and universities could prove to be problematic because international students have been consistently relied upon in recent years to cover the deficits left by dwindling government funding for U.S. higher education institutions (Wermund, 2018). International students not only contribute financially and through the support of jobs to the U.S economy; they also "contribute to America's scientific and technical research and bring international perspectives into U.S. classrooms, helping prepare American undergraduates for global careers" (Institute of International Education, 2018, para. 2).

Recent enrollments of incoming international students have begun to show signs of slowing down, but enrollment in other countries have begun to show signs of a growing international population. While higher education institutions are currently targeting international students for recruitment and campus internationalization, immigrants, and people from other countries do not necessarily feel welcomed in the

United States (Rampell, 2018). One reason has been attributed to the rising new wave of nationalism across the country (Redden, 2018; Rampell, 2018), and factors such as "visa and immigration policy changes by the Trump administration" (Torbati, 2018 para. 3). According to Saul (2018), changing conditions in English speaking countries and the increasing lure of schools in countries such as Canada and Australia aided in the flattening of international student enrollment in the United States that began in 2016. While there has been a decrease in international student enrollment in the U.S. (National Science Board, 2018), there have been increases in Australia, which had a 12% increase; Canada which had an 18% increase; New Zealand which had a 34% increase; and a 25% increase in Spain, 13% increase in Japan, and 11% increase in China (Wermund, 2018). College administration and immigration experts believe that a general restriction on immigration in recent years has portrayed the United States as not welcoming towards immigrants, which has fueled growth of foreign student populations in other countries (Torbati, 2018 para. 9).

A decrease in the number of international students in American colleges and universities could be catastrophic for the American economy and society, putting our country at a great disadvantage (Rampbell, 2018). A survey conducted by the Council of Graduate Schools and the Graduate Record Examinations Board in the Fall 2015 semester found that approximately 55% of graduate students enrolled in engineering, computer science, and mathematics programs in the United States were international students (Wingfield, 2017). Immigrants are not only educated in the United States and contributing significantly to our science, technology, engineering, and math (STEM) workforce; they also established 28% of all new startups in 2016, and had an

entrepreneurial rate of .53%, while native-born individuals had an entrepreneurial rate of .29% (Fairlie et al., 2016).

Institutional commitment towards promoting inclusion on campus, as stated in most mission statements and diversity and inclusion strategic plans, generally does not include measurement tools for inclusion, which in turn indicates that institutions are rarely if at all measuring whether or not their inclusion initiatives are indeed having the intended benefit of helping international populations feel welcomed. With a decrease in the number of international students enrolling in higher educational institutions in the United States, colleges and universities must now focus on retaining the students already in the country. Research on domestic student retention shows that students' feeling of a sense of belonging to and involvement in the institution, affects their success and retention (Credle & Dean 1991). Like domestic students, international students are susceptible to dropping out of college if they are not having a rewarding college experience or if they do not feel as if they belong.

The Concept of Sense of Belonging

Sense of belonging has long existed as a measure of student persistence and perception of inclusion within an institution. According to Mwangi (2016), research in higher education emphasizes retention and persistence in relation to students' sense of belonging. In alignment with Mwangi's assertion, researchers such as Morrow and Ackermann (2012) report that the students' connection to their institution is important when looking at whether a student will persist at an institution. For international students, sense of belonging is not only about fitting into their host institution; it also affects their performance inside the classroom as "researchers have found that sense of belonging is

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related to academic progress, academic achievement and social acceptance" (Wood & Harris III, 2016 p. 484). Sense of belonging has also been often associated with students' academic outcomes and academic progress, which has made scholars interested in understanding the correlations between belonging and its determinants (Wood & Harris, 2015). According to Osterman (2000), there is research that has linked sense of belonging to significant educational outcomes, which include "1) the development of basic psychological processes important to student success, 2) academic attitudes and motives, 3) social and personal attitudes, 4) engagement and participation, and 5) academic achievement" (p. 327).

While the study of sense of belonging as it relates to college students is not new, according to Mwangi (2016),

> Belongingness has only recently been extended to studies on international student adjustment. For example, Glass and Westmont-Campbell's (2014) quantitative study found that sense of belonging increased cross-cultural interaction between international and host country students, and enhanced international students' academic performance. Additionally, the researchers found that discriminatory experiences had a negative impact on belongingness among these students, while participation in co-curricular activities had a positive effect. (p. 1019)

Meaningful relationships with faculty and advisors, school support systems and resources, feelings of acceptance by peers, and being valued within the institution are some of the factors cited as instrumental to students' feeling of belongingness. In addition, research has shown that their feeling of a sense of belonging (Newmann et al., 2015) critically influences student success in higher education. Research that has focused

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on international students has often placed an emphasis on psychosocial factors such as psychological well-being and homesickness, and sociocultural factors such as cultural norms and intercultural contact as it relates to international student adjustment (Glass & Westmont-Campbell, 2014). While these factors are very important to international students, several other factors, such as academic relationships have also affected international students' adjustment process. In addition, forces external to the educational institution, such as the media and political environment in the host country, have also had an impact (Mwangi, 2016; Fischer, 2019).

The concept of sense of belonging has been included in several models of student persistence in one form or another. Rather than specified and measured as an independent construct, however, sense of belonging is implied as the result of social and academic integration (Pascarella & Terenzini, 1980; Tinto, 1975, 1987, 1993). In research examining various models of student persistence (Pascarella & Terenzini, 1980; Ethington, 1990; Berger & Milem, 1999; Titus, 2004), sense of belonging is rarely, if ever, directly assessed so that its independent effects on persistence can be measured.

Definition of Sense of Belonging

Tinto (1975) focused his study on academic and social integration and was one of the first scholars to investigate a preliminary construct of sense of belonging. Pascarella and Terenzini (1980) used Tinto's work as their guide when creating a conceptual model to measure the dropout process for students using academic and social integration as the measurement for their construct. Tinto concluded that sense of belonging was reflected when a student became integrated into an institution's academic and social systems and had shared values with the institution (Mwangi, 2016). Tinto also believed that students

were less likely to persist if they were not able to establish a sense of belong with an institution through their academic and social interactions (Mwangi, 2016).

Scholars have often defined sense of belonging with a focus on the interactions and relationships that an individual has with other individuals or groups, and the human need to be accepted. Baumeister and Leary (1995) believed that the "need to belong, a need to form and maintain at least a minimum quantity of interpersonal relationships is innate among human beings" (p. 499). In another take on sense of belonging, in their study, Karp et al. (2010) stated that students who they believed experienced a sense of belonging would have reported themselves as enjoying their classes and college experience and felt comfortable while on campus. Bollen and Hoyle (1990) surmised that, "perceived cohesion encompasses an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group" (p. 482). In addition to perceived cohesion having an effect on an individual's sense of belonging, several authors noted that sense of belonging also affects individuals on the cognitive level, which outlines the individual's experiences with the group, and the affective level, in which the individual assesses how they feel about those experiences (Bollen & Hoyle, 1990; Hurtado & Carter, 1997; Strayhorn, 2012).

Sense of belonging has also been studied from relational and psychological perspectives. Hausmann et al. (2007) defined sense of belonging as " the psychological sense that one is a valued member of the college community" (p. 804), while Strayhorn (2012) defined it as a student's "experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on

campus (e.g., faculty, peers)" (p. 3). Strayhorn (2012) also reasoned that sense of belonging is mutually beneficial to the group and the individual.

For the purposes of this research, sense of belonging is defined as the connection that students feel towards their campus and is a subjective evaluation of the quality of relationships that they form while on campus based on their interactions (Strayhorn, 2008). Sense of belonging can also be interpreted "as a process whereby students engage in the institution, interpret their experiences, and make judgment calls about their membership status within the institution" (Wood & Harris III, 2015, p. 33). Tinto's theory of student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging guide this study. Tinto's theory of student departure is suitable for this study as it explores a major component of sense of belonging, academic and social integration. Student integration is an important concept when researching sense of belonging, but the role that the institution plays in the student's feeling of sense of belonging must also be included. In this study, Tinto (1993) combines with the work of Hurtado and Carter (1997) who bring a focus on students' college transition and students' perceptions of the campus climate.

Review of Research

This section of the literature review examines the research regarding sense of belonging for undergraduate students (Van Horne et al., 2018; Soria & Stubblefield, 2015; Nunez, 2009; Morrow & Ackermann, 2012), graduate students (Le et al., 2016; Darwish, 2015; Curtin et al., 2013; Chen & Razek, 2016) and students who attend community colleges (Karp et al., 2010; Wood & Harris III, 2015). Eighteen factors that influence sense of belonging for college students were identified through the literature

review. These factors are explored in detail within this section. In an effort to pursue as many factors that influence sense of belonging as possible, I looked at college student populations in general, and not only international students when constructing the literature review because domestic students often have some similar experiences as international students when attending college. Sense of belonging is not a fixed construct; it is fluid and dynamic, and influenced by factors such as the type of institution that students choose to attend (Cartmell & Bond, 2015 p. 92). Undergraduate students, graduate students, and students who attend community colleges have all had different experiences with sense of belonging in their institution, as highlighted by the literature.

Undergraduate Students

Sense of belonging in four-year institutions has been extensively examined over the past few decades and primarily studied through the lenses of academic and social integration (Van Horne et al., 2018), student strengths awareness (Soria & Stubblefield 2015), campus climate (Nunez, 2009), and intention to persist (Morrow & Ackermann, 2012). Several studies (Morrow & Ackermann, 2012) on undergraduate students have assessed sense of belonging as a predictor of intention to persist from first to second year among students. Morrow and Ackermann (2012) believed that "higher levels of sense of belonging (peer support, faculty support, classroom comfort) and lower levels of perceived isolation" connected to persistence and retention among first to second year students (p. 484). The researchers looked at the variables that had the strongest relationship to persistence and retention and found that while faculty and peer support (sense of belonging) were positive predictors of student persistence, when included with

other significant predictors, motivation, was more closely significant to intention to persist.

Other research conducted on undergraduate student populations has focused on persistence through strengths awareness, which is an assessment that helps an individual assess their positive qualities. There was a strong suggestion that students' sense of belonging was greatly influenced by the students' strengths awareness, which was a result of initiatives on campus to bring awareness to students' strengths. According to Soria and Stubblefield (2015), "qualitative analyses of survey data suggested strengths initiatives enhanced students' self-awareness and confidence, facilitated introductory conversations with peers through the development of a common language, and fostered friendships and a deeper understanding of others" (p. 351). The strengths awareness factors, according to the authors, contributed to the students' sense of belonging and persistence in college.

Researchers have also focused on sense of belonging and how it is affected by students' perceptions of their campus climate, diversity, and racial stereotyping based on students' backgrounds (Nunez, 2009). The racial climate of an institution was determined to be a strong predictor of sense of belonging, and found to positively or negatively impact students' sense of belonging based on the students' perception of the campus climate, along with involvement with their faculty members, and community involvement. Nunez (2009) found that any type of exclusion, whether it was conspicuous or subtle, played a role in hindering the students' sense of belonging towards their university community. Factors such as frequency of students' community service activities, in class participation, partaking in a diversity curriculum, second-generation

immigrant status, and hours per week worked during college were also determined to indirectly affect sense of belonging (Nunez, 2009).

Quantitative research conducted on the academic and social integration (Van Horne et al., 2018) of undergraduate international students at research universities found that international students compared to their domestic peers had lower levels of social satisfaction and sense of belonging. In the study, climate for diversity, academic satisfaction, financial insecurity, difficulty with learning tasks, and academic engagement were all factors that were indicative of the students' level of belonging to their institution and international students had lower levels of sense of belonging in these categories than their domestic peers (Van Horne et al., 2018). In addition, international students did not feel that they had as much respect on campus. In relation to academic engagement and participation in academic tasks however, international students rated their experiences higher than their domestic peers did.

Graduate Students

Graduate students have historically encountered sense of belonging dissimilar to the experiences of undergraduate students at four-year institutions. The studies that draw upon graduate student experiences focus on female graduate student experiences (Le et al., 2016), college of business experiences (Darwish, 2015), experiences with advisor support (Curtin et al., 2013), and adjustment and engagement (Chen & Razek, 2016). These studies point primarily to areas that affected international students' sense of belonging, such as academic support and integration (Le et al., 2016; Darwish, 2015; Curtin et al., 2013), social support and integration (Le et al., 2016; Darwish, 2015; Curtin et al., 2013), and adjustment and engagement (Chen & Razek, 2016).

Among female graduate international students at a predominantly White Midwestern institution, sense of belonging was one of the main factors that gave meaning to the student experience (Le et al., 2016). The students associated their positive experiences with the support they received from their networks in the U.S. such as their professors and advisors, host families, on-campus services, friends, and family in U.S., and attributed their success to their support system (Le et al., 2016). However, another study (Darwish, 2015) that focused on how academic and social integration influenced graduate international student persistence at a Midwestern university found that factors such as English proficiency negatively affected classroom participation and peer interaction, which in turn, negatively affected students' sense of belonging.

Compared to domestic students, graduate international students have been found to place more importance on research and professional experiences, but were equal to domestic students when looking at the importance of social interactions and advisor support (Curtin et al., 2013). Research by Curtin et al. (2013) found that international students experienced a strong sense of belonging when they had a good relationship with their advisors. The relationships that students have with their advisors "illustrate the importance of advisors in positively affecting all doctoral students' sense of belonging and academic self-concept," which enhances their persistence and pedagogical experience (Curtin et al., 2013, p. 130).

Lastly, four additional key themes that influence the adjustment and engagement or sense of belonging of graduate students have also emerged in the literature. These themes are mentoring relationships, socialization, perceived self-efficacy, and the perception of engagement (Chen & Razek, 2016). These themes were developed as a

result of exploring the perspectives of mentoring relationships, socialization, and factors of perception. For graduate students, academic and social engagement is strongly influenced by their adjustment to college life in the United States (Chen & Razek, 2016). Chen and Razek (2016) found that "the adjustment process of Indian students impacted how they engaged academically and socially on campus. Additionally, an interdependent relationship was further found between academic and social engagement, with an increase in academic engagement corresponding with a decrease in social involvement, and vice versa" (p. 16).

Community College Students

Sense of belonging of international student populations at community colleges is not extensively studied. Over the past decade, however, some authors have looked at the impact of sense of belonging on international students at community colleges. According to research, some factors that influence community college students' sense of belonging are information networks (Karp et al., 2010), academic and social integration (Wood & Harris III, 2015; Sabourin, 2017), and English language proficiency (Sabourin, 2017).

Research on community college students' sense of belonging links to information networks, which facilitate the advancement of a students' knowledge regarding the inner workings of the institution that they attend and support a sense of belonging (Karp et al., 2010). These information networks provide the students with information on topics or issues such as professors or the types of services on campus available to them. The importance of information networks in the college experience for community college students was discovered by Karp et al. (2010) who conducted semi-structured interviews with community college students in an attempt to discover what the initial experience

was like for students who attended these institutions, and how these experiences affected progress towards degree attainment.

Wood and Harris III (2015) defined sense of belonging within the relationships that students have with faculty, staff, and other students. Sense of belonging was measured though the lenses of "quality of relationships with students, quality of relationships with instructors, and quality of relationships with administrative personnel and offices" (p. 38). Wood and Harris III's findings are consistent with studies about sense of belonging. For community college students, interaction with faculty members, diversity, and support services on campus positively affects sense of belonging, while collaborative learning negatively affects sense of belonging (Wood & Harris III, 2015). Garcia et al., (2019) also believed that international students at community colleges who are required to register full-time, are more likely to feel connected with faculty, their peers, and the institution. In addition, community college students' sense of belonging has been strongly related to factors such as language barriers, teammates (peers), and homesickness (Sabourin, 2017), which can have a positive or negative effect. Transition to campus (Sabourin, 2017) for community college students was also an indicator of their sense of belonging, which is very similar to that of students who are attending four-year institutions.

Factors that Impact Sense of Belonging

Based on the research review, 18 factors affect international students' sense of belonging while studying in the United States. While some of the factors were mentioned more frequently in the literature than others, it can be noted that frequency may just mean that researchers have chosen to focus their research on certain factors related to sense of

belonging over others. According to Cartmell and Bond (2015), "when students do not feel a sense of belonging at school, motivation, engagement, academic achievement and attendance are all at risk" (p. 90). The authors also found that increased sense of belonging results in higher self-efficacy and lower depression among student populations (Cartmell & Bond, 2015).

The factors that influence sense of belonging include: relationships with advisors and mentors, relationships with faculty, academic involvement, host families, friend and peer support, culture shock, cultural/religious organizations, language ability, race/ethnicity, racism/ discrimination, diversity, nationalism in host country, homesickness, family and friends back home, on campus services, learning communities, information networks, and dietary restrictions. Based on the theoretical framework of this study, the 18 factors were placed into four groups: factors related to academic integration (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016; Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida, 2005; Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009); factors related to social integration (Banks-Gunzenhauser, 2009; Le et al., 2016; St-Amand et al., 2017; Singh, 2018; Cartmell & Bond, 2015; Hausmann et al., 2007; Strayhorn, 2008; Morrow & Ackermann, 2012; Chen & Razek, 2016; Poyrazli & Lopez, 2007; Singh, 2018; Mwangi, 2016; Hurtado & Carter, 1997; Kwon, 2009; Lau et al., 2018; Wood & Harris III, 2015; Mwangi & English, 2017); factors related to campus climate (Nunez, 2009; Mwangi, 2016; Poyrazli & Lopez, 2007; Tachine et al., 2017; Wood & Harris III, 2015; Maestas et al., 2007; Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016); and transition factors

(Poyrazli & Lopez, 2007; Hannigan, 2007: Chen et al., 2011; Singh, 2018; Lau et al., 2018; Mwangi, 2016; Roksa & Kinsley, 2019; Tachine et al., 2017; Hussman et al., 2007; Chen & Razek, 2016; Kwon, 2009; Le et al., 2016; Wood & Harris III, 2015; Hoffman et al., 2002; Johnson et al., 2007; Karp et al., 2010; Alakaam, 2016).

Factors of Academic Integration

Academic integration factors that affect students' sense of belonging include: international students' relationship with their advisor/mentor (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016), their relationship with faculty (Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida 2005; Pascarella & Terenzini, 1980), and their academic involvement (Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009). In his original study, Tinto linked academic integration with students' academic performance. He acknowledged however that students' interaction with their faculty also affects their academic integration.

Relationship with Advisor/Mentor

The relationship that international students have with their advisor or mentor emerged as one of the factors that impact international students' sense of belonging. Le et al. (2016) found that participants in their study confirmed that their sense of belonging and ability to adjust to their new surroundings was heavily influenced by their advisors and mentors. Students felt that these people served as a support system for academic and personal issues. The authors suggested that as a result of their findings, faculty should be trained and equipped with the tools necessary to help the international students with whom they interact with and create a more effective and productive advising relationship (p. 147).

The study by Le et al. (2016) was preceded by that of Curtin et al. (2013) who found that advisors who served international student populations connected them to their departments, oriented them to their fields, and served as concrete knowledge (that the student could rely on) of the student's field. The authors also made recommendations regarding the proficiencies of a good advisor, which included being accessible, promoting progress in a timely manner, treating students as colleagues and peers in training, and affirming the student's ability to succeed.

In further research on the importance of the mentor/advisor effect on sense of belonging, Chen and Razek (2016) also looked at the relationship between advisors/mentors and the effect that this relationship had on sense of belonging. They found that "students who expressed a sense of belonging and perceived themselves to be academically and socially adjusted to the university identified significant individuals such as faculty, coworkers, and staff who served as mentors and sources of academic or cultural knowledge" (p. 14). The faculty, coworkers, and staff of the institution also provided emotional support to the students while they adjusted to college life. The students Chen and Razek (2016) interviewed had an interest and commitment to research and were engaged academically, a direct result of the relationships that they had with their advisors.

Relationship with Faculty

The relationships that international students form with faculty members have proven to be one of the ingredients that are vital to their success and feeling of sense of belonging. Although Tinto's model includes faculty with social integration, Tinto also recognizes that faculty interaction boosts academic integration (Pascarella & Terenzini,

1980). Maestas et al. (2007) echoed the sentiment that for international students, faculty connections, and academic engagement with faculty aided in their academic success and sense of belonging to the campus community. In addition to students making connections with faculty members, when those faculty verbally validate students by making positive statements such as telling them "you belong here" and "you can succeed," the result from the students was a higher perceived sense of belonging with faculty (Newman et al., 2015). Newman et al. (2015) also found that participants in their study who had more engagement with their faculty members (both formal and informal) perceived a greater sense of belonging.

Other researchers also found that faculty interaction affected students' sense of belonging while in college. Wood and Harris (2015) focused their study on the effect of academic engagement on sense of belonging and in their research found that faculty student interaction was a significant predictor of sense of belonging for students. This sentiment was confirmed by Chen and Razek (2016) who mentioned that students who felt supported by faculty members perceived themselves as being well adjusted to their academic programs.

Continuing the expansion of research that provided insight into the faculty role in sense of belonging, Glass et al. (2015) "identified five factors related to belonging: empathetic faculty, perceived peer support, perceived isolation, perceived faculty support and comfort, and perceived classroom comfort" (p. 355). Their qualitative study on the impact of student-faculty interactions on sense of belonging identified the importance of student-faculty interactions for international students, and the impact that interaction had on the student's intention to persist. The authors also found additional factors, which

students believed had an impact on their level of sense of belonging; participation, inclusion, knowing, and possible selves (Glass et al., 2015).

The findings of Glass et al. (2015) aligned with Guiffrida (2005) who indicated that the relationships students had with their faculty members had an effect on that student's satisfaction with their college experience, their academic achievement while at college, and finally their choice to stay at that particular institution. The author also mentioned in their assessment of the study that "students spoke often of their relationships with faculty when they were asked to describe assets and liabilities to their college experiences" (p. 707). The descriptions emphasized the importance of faculty in the academic journey of these students.

Academic Involvement

Research has shown that academic involvement affects a student's sense of belonging. Strauss and Volkwein (2004) found that student satisfaction, sense of belonging, and willingness to attend an institution were mostly influenced by academic integration such as classroom experiences and student growth. Students who expressed that they had more academic integration also showed an increase in sense of belonging, while those who did not have the same experience with academic integration, and in fact had less academic integration had a decrease in sense of belonging over time (Hausmann et al., 2007). There are many students, however, who tend to shy away from academic involvement as "classroom participation is influenced by multiple factors such as cultural backgrounds, discussion topics, and peer dominance in discussion" (Kwon, 2009, para 18). Kwon (2009) believed that international students did not speak up as often as native

speakers did, which increased the possibility of these students feeling marginalized, and as a result increasing their academic failure.

Factors of Social Integration

Academic integration is a major aspect of students' higher education experience. The students' interaction with their community and those in it plays an equally important role in students' sense of belonging. Social integration is the quality of interactions the student has with peers and the campus community (Pascarella & Terenzini, 1980). The factors linked to social integration are relationship with host families (Banks-Gunzenhauser, 2009; Le et al., 2016), friends/peer support (St-Amand et al., 2017; Singh, 2018; Cartmell & Bond, 2015; Hausmann et al., 2007; Strayhorn, 2008; Le, LaCost, & Wismer, 2016; Morrow & Ackermann, 2012; Chen & Razek, 2016; Pascarella & Terenzini, 1980), cultural/religious organizations (Mwangi, 2016; Hurtado & Carter, 1997), and racial identity (Wood & Harris III, 2015; Mwangi, 2016; Mwangi & English, 2017; Chen & Razek, 2016).

Relationship with Host Families

While interaction with faculty members and advisors affects international students' sense of belonging on campus, host families affect their sense of belonging during the time they spend away from academia. Banks-Gunzenhauser (2009) showed the importance of host families for international students when the author made reference to a student who stated that their "host family took every opportunity to provide them with a lifetime's experience, all the while demonstrating the warmth and nurturing that they had grown accustomed to during their youth" (p. 9). Several years later, Le et al. (2016) also found that for some of the students in their study, "familial support came from their host

families, who welcomed them to the U.S. and helped them adjust to their new lives"
(p.139). Students also maintained the relationships they had formed after they left, and
the host families served as the familial connection needed by students during their time at
their respective institutions.

Friends/ Peer Support (Domestic and International)

International students are also greatly affected by the support they receive from
their peers. Research has shown that building and sustaining sense of belonging is
directly affected by the social relationships that students experience with their peers, and
social integration is influenced by the quality of peer-group interactions that students
experience (St-Amand et al., 2017; Pascarella & Terenzini, 1980). In a dissertation
entitled *Investigating the sense of belonging of international students through a
predictive model*, Singh (2018) found that peer connection was one of the major
predictors that either hinder or enhance sense of belonging for international students.
Research on peer support for International New Arrivals (INR) by Cartmell and Bond
(2015) also showed "the importance of positive relationships with peers in promoting a
sense of belonging" for international students (p. 99). In their study, they highlighted that
if a student did not have a good relationship with their peers and did not feel a sense of
belonging, their motivation, engagement, academics and class attendance were negatively
affected.

Student interaction with peer groups and faculty, support from their peers, and
support from parents have all been associated with positive sense of belonging in the
initial stages of a students' academic year (Hausmann et al., 2007). Academic integration,
however, was associated negatively when discussed in the context of sense of belonging

for the same student population (Hausmann et al., 2007). The importance of peers in students' feelings of belongingness was also mentioned by Strayhorn (2008) who determined that his focus group (African American males) had a lack of sense of belonging because they felt among other things alienated, socially isolated, and unwelcomed by their peers, which increased their chances of not persisting through college. In the study by Le et al. (2016) on the international experience, friends was also listed as important to international students while studying in the United States.

Peer support has also been related to persistence (Morrow & Ackermann, 2012). Morrow and Ackermann (2012) established that "peer support was a significant predictor of second-year retention" (p. 489). This finding meant that students who had adequate peer support, which has been linked to sense of belonging, persisted onto their second year. In addition to retention among international students, Chen and Razek (2016) noted that students who were engaged on campus formed social ties, which in turn, positively influenced their adjustment on campus and opened up opportunities for students to have access to opportunities that influenced their global knowledge and provided additional sense of social support. The "social ties that students formed with American and other international students also increased their motivation to participate in social initiatives on campus, and which further expanded the opportunities they had to interact with others, increasing their social circles" (Chen & Razek, 2016, p. 16).

Cultural/Religious Organizations

Students participating in Mwangi's (2016) study stressed the importance of cultural and religious organizations in helping an international student feel as though they belonged as "students voiced that they could more easily relate to peers who were from

their own culture or who were also dealing with culture shock/transition to the United States" (p. 1027). Students also expressed the need for organizations that consisted of people from their own backgrounds who were not necessarily affiliated with their campus. Hurtado and Carter (1997) also discovered a link between sense of belonging and involvement in community and religious organizations for college students who wanted to feel a sense of belonging with their off-campus communities. Community involvement gave the feeling of maintaining their ties with their own communities through cultural and religious organizations.

Racial Identity

Wood and Harris III (2015) focused on the increased complication that occurs with cultural identity, and the relationships that form with racial isolation and sense of belonging. They found that even though there were relational complications, greater levels of sense of belonging were associated with cultural identities that were stronger (Wood & Harris III, 2015). Mwangi (2016) however reported different findings in her study of Black students at a Historically Black colleges and universities (HSBCU). While students understood that they were of the same race as their peers, in that they were all Black, they felt more connected to their ethnicity or nationality (for example being from Trinidad and Tobago or Kenya) than they did to their racial identity (being Black). In her study, "students described their perceptions of self-identity, particularly regarding their race, ethnicity, and nationality as impacting their perceived level of fit at their university" (Mwangi, 2016). In their study on Black immigrant students, Mwangi and English (2017) also found that "black immigrants employ their culture as a protective factor against social, political, and economic barriers that ultimately aid in their educational success"

(p. 112). Similar to interaction with peers who were ethnically or culturally similar,
students were also more likely to gravitate towards faculty members who the students
perceived as having similar ethnicities and cultures to their own (Chen & Razek, 2016).

Factors Connected to Perceptions of Campus Climate

Research has associated a set of factors that affect students' sense of belonging
when interacting with their campus climate. Campus climate is the students' views on
group interactions and attitudes, and their expectations of the campus and its members in
relation to racial and ethnic diversity (Hurtado et al., 1999). Campus climate has always
been an important influencer of sense of belonging for students. The campus climate
factors that influence sense of belonging are racism/discrimination (Nunez, 2009;
Mwangi, 2016; Poyrazli & Lopez, 2007; Tachine et al., 2017; Essed, 1990; Feagin &
Sikes, 1994; Pierre & Mahalik, 2005; Lee & Rice, 2007; Sherry et al., 2009; Ash et al.,
2020; Fischer, 2007; Museus, 2014), diversity on campus (Wood & Harris III, 2015;
Maestas et al., 2007; Astin, 1993 b; Hurtado & Carter, 1997; Milem et al., 2005; Gurin &
Nagda 2006; Amit & Bar-Lev, 2014), and nationalism in the host country (Kemmelmeir
& Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Holmes, 2019; Najar &
Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016; Simonsen, 2016; Young et al.,
2019).

Racism/Discrimination

In their studies of sense of belonging, several authors found that racism,
discrimination, or stereotypes affected students' sense of belonging (Nunez, 2009;
Mwangi, 2016; Poyrazli & Lopez, 2007; Ash et al., 2020). Poyrazli and Lopez (2007)
found that immigrants and international students had experiences of discrimination that

were similar to those of their non-White peers. The perception of discrimination led to students feeling more stressed and having lower self-esteem (Poyrazli & Lopez, 2007). Nunez (2009) focused her study on Latino students and sought to understand how unwelcoming campuses affected students. The study found that the racial climate, if negative, strongly predicted a negative sense of belonging for the study group.

In her study about international students at Historically Black colleges and universities, Mwangi (2016) discovered that there were several pre-conceived notions about Black Americans, which negatively affected the international students' sense of belonging when they began attending a HBCU. Several international students had a difficult time with being considered a racial minority in the United States because most of these students based their perceptions of race in the context of their predominantly Black home countries. These students were unexpectedly faced with issues of race that they had never encountered in their home country because they were a racial majority. These students "who had not examined issues of race in the U.S. expressed confusion or dissonance regarding the dominance of race in U.S. society" (Mwangi, 2016, p. 1025). Navigating college and negative experiences associated with it are exacerbated by racial encounters for students as students have discussed through their own experiences "how racist encounters extended their sense of isolation and marginalization" in the campus community (Tachine et al., 2017, p. 796).

Diversity on Campus

Higher education institutions have been focusing on diversity and internationalization with the aim of creating a more inclusive environment. Interaction among students from different racial and ethnic groups "seems to have a positive effect

on sense of belonging, with greater levels of socialization with other races being a strong predictor of connectedness" (Wood & Harris III, 2015. p. 27), which in turn leads to increased retention among institutions. Campus environments that do not have a positive attitude towards diversity have hastened student departure. In contrast, campuses that have positive attitudes towards diversity have been beneficial towards all students attending (Maestas et al., 2007).

Nationalism in Host Country

Nationalism is rooted in a feeling of superiority of one group over another (Kemmelmeir & Winter, 2008) and is oftentimes directed towards immigrants living in a country when lower levels of internationalism are favored. While factors directly related to the campus such as on campus services and relationship with faculty or advisors have a major effect on students' sense of belonging, the level of nationalism in the host country also plays a role in how welcomed students feel. In situations of increased nationalism, treatment of immigrants increases in negativity, and negatively affects the immigrants' sense of belonging (Bonikowski & DiMaggio, 2016; Holmes, 2019). Although there is much evidence that immigrants are helpful to the economy and improve their environment and the society in which they live, nationalists often believe that this is not true, and that immigrants should not hold privileges similar to that of citizens (Bonikowski & DiMaggio, 2016).

Despite a lack of literature on the wave of nationalism in the United States that was driven by the previous administration, the documentation of the existing political climate creates a narrative that has followed the historical studies of nationalism. Donald Trump, the previous president of the United States, won his election through policies of

nationalism, which encourage fear of and hate towards immigrants (Horak, 2019).

According to Saul (2017 a), "the movement of students from one country to another is sensitive to fluctuations tied to political and economic forces" (para 10). After the previous president of The United States was elected, based on his comments that were perceived as anti-immigrant, Canadian universities saw a postelection surge in interest from overseas applicants that included both international and from the United States. Applicant traffic for the University of Toronto went from the typical 1000 per day to over 10,000 after the United States election results in November 2016 (Najar & Saul, 2016).

In addition to the effect of the previous administration's anti-immigrant sentiment after they were elected, policies such as the 'travel ban' have affected the view certain international students have on the U.S. One of the reasons that fewer students than usual came from India was because of concerns about the Trump administration's travel ban affecting Muslim countries. Even though India was not affected by the travel ban, students did not feel welcomed because they were from Muslim areas of their country (Saul, 2017 b; Horak, 2019).

In today's world, the media plays a big role in forming people's opinions. The forming of opinions based on media content is no different for international students, as their sense of belonging was also affected by what they saw in the media (Mwangi, 2016) regarding American feelings towards immigrants, and the treatment of immigrants in the United States. The president of the United States of America had been successful in mobilizing the media through creating the feeling that the honor of the country is at stake through negative connotations about immigrants (Feinstein, 2016). This media

mobilization and negative connotation regarding immigrants increases the sense of nationalism in host country inhabitants and increases the fear in immigrants.

Factors of Transition

Transition occurs when a student is adjusting to college, making sense of a new environment, and acquiring the skills to negotiate the social, physical, and mental landscape of the college environment (Hurtado & Carter, 1997). A student's transition to their campus community is affected by feelings of homesickness (Poyrazli & Lopez, 2007; Hannigan, 2007: Kwon, 2009), culture shock (Chen et al., 2011; Poyrazli & Lopez, 2007; Singh, 2018), their family/friends back home (Lau et al., 2018; Mwangi, 2016; Roksa & Kinsley, 2019; Tachine et al., 2017; Hussman et al., 2007), language ability (Chen & Razek, 2016; Yao, 2016; Kwon, 2009; Lau et al., 2018), on campus services (Lau et al., 2018; Le et al., 2016; Wood & Harris III, 2015; Li & Kaye, 1998; McMahon, 2011; Jaschik, 2021), learning communities (Hoffman et al., 2002; Johnson et al, 2007; Garza et al., 2021), information networks (Karp et al., 2010), and dietary restrictions (Alakaam, 2016; Brown, 2009). While factors such as on campus services learning communities/living on campus, and information networks have helped students transition to their campus environment, factors such as homesickness, culture shock, perceived language ability, and dietary restrictions have been shown to negatively impact an international students' sense of belonging. The factors identified through the literature are explored next.

Homesickness

Scholars have found evidence of homesickness (Poyrazli & Lopez, 2007; Hannigan, 2007: Kwon, 2009) in international students who are transitioning to their new

college environment. Homesickness has been described as the "psychological reaction to the absence of significant others and familiar surroundings" (Poyrazli & Lopez, 2007 p. 263). Students who experience homesickness long for their home environment. International students who experience homesickness typically experienced low self-esteem, depression, difficulties adjusting to their college environment, which translates to lower levels of sense of belonging, and loneliness, which induces negative effects on behavior and psychological well-being (Poyrazli & Lopez, 2007). Among several factors, age and gender were proven to have more of an effect on homesickness, as younger students felt more homesick than their older peers, and female international students felt homesick more often than their male peers (Poyrazli & Lopez, 2007; Kwon, 2009).

Culture Shock

International students are often anticipating what life is like in the United States based on television shows and the experiences of others. When students arrive, the reality is often different to what they expected and this often leads to the student experiencing culture shock, which is "the anxiety and feelings of disorientation and uncertainty that a person feels when he/she has to function within a different and unknown culture" (Chen et al., 2011, p. 4). International students tend to encounter difficulties adjusting to their host countries because of culture shock, which occurs as a result of a difference in norms in their host country's culture and the students lack of knowledge regarding what are acceptable or unacceptable behaviors (Poyrazli & Lopez, 2007). Because of the culture shock, students are unable to form positive bonds, which in turn negatively affects their sense of belonging. There are several factors that affect culture shock such as a person's personality, their previous international experience, age, gender, and institutional support

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(Chen et al., 2011). Students seem to experience less culture shock, however, with increased interaction with members of the host country, as they are able to teach students about cultural norms and expectations (Singh, 2018).

Family Members/ Friends Back Home

Family members and friends back home influence international students' sense of belonging while they are in the United States. Leaving family and friends back home creates a void for international students (Lau et al., 2018). International students try to compensate for the created void by maintaining contact with the family and friends left behind. In maintaining that contact, Mwangi (2016) established that family and friends in the international students' home countries play a role in their lives as college students in the United Sates. Not only do family members play a role in the general life of students while here in the United States; they also play a major role in the academic outcomes for the students. Students who maintain the support of their friends and family members back home have better psychological wellbeing, which creates increased engagement, and in turn produces better academic outcomes for the students (Roksa & Kinsley, 2019). Students who are not well connected to their friends and family members are also at risk of that broken connection translating to a lack of feeling of connectedness towards their institution (Tachine et al., 2017). In this light, students who were connected to their family felt more connected to the institution. This feeling of belonging towards an institution that was influenced by connection towards family occurred because family members created sense of belonging for the students if they approved of the institution, and provided inspiration for the students through their words of encouragement (Tachine et al., 2017). While most studies have shown that family support positively affected

students' sense of belonging, Hussman et al. (2007) found that "having more parental support, was associated with a faster decline in sense of belonging over time" for African American students (p. 824).

Language Ability (English Proficiency)

A significant challenge experienced by many international students is their language ability, or ability to speak English in the United States (perceived or actual). According to Chen and Razek (2016), "factors influencing perceived self-efficacy, such as fear and language-related challenges, also affected the engagement levels of students and their willingness to be involved on campus" (p. 15). Language ability also proved to be a social barrier for international students when communicating with others, which made them less willing to interact (Chen & Razek, 2016; Yao, 2016). Singh (2018) noted that international students who came to the U.S. without confidence in their English-speaking abilities were often less likely to interact with domestic students, which increased their dissatisfaction with their college experience, and decreased their sense of belonging. Language ability has been especially pertinent to Asian international students who felt as if they had lower levels of English proficiency than their European peers which contributed to the higher levels of overall strain for the students (Kwon, 2009).

Language ability however goes beyond the social aspect for students as many can also experience difficulty in the classroom. Students who perceived themselves as not being proficient enough have encountered problems in the classroom such as not asking questions in class and not orally expressing themselves (Lau et al., 2018). Such experiences can negatively contribute to the students' understanding of the course content. Kwon (2009) found that international students who attended English as a Second

Language programs while in college were more likely to feel intimidated or isolated in English speaking classes than their peers. In addition, language skills that were not sufficient for the classroom negatively affect students who have to take part in classroom activities and understand their course content, when they have reading tasks, writing assignments, and when taking exams (Lau et al., 2018).

On Campus Services

International student populations in higher education institutions often require on campus services that may differ from those geared for their domestic peers (students who are not attending college on a non-immigrant visa) such as the need for an international office that services their immigration needs. On campus services have proven to be a necessary part of adjustment for international students, as these services aid in the adaptation process for international students (Lau et al., 2018). Research (Le et al., 2016) has shown that in addition to some of the major factors that impact international students' sense of belonging, such as relationships with faculty and advisors, student services also affect international students' feelings of a sense of belonging. Authors Wood and Harris III (2015) focused their study on the effect of academic engagement on sense of belonging and found that usage of student services, among other factors, was a significant predictor of sense of belonging. In their study *Exploring predictors of sense of belonging in Trinidad and Tobago,* Niehaus et al. (2019) also found that students' interactions with their support services on campus in the form of interaction with student services staff positively affected their sense of belonging.

Learning Communities

Based on the Sense of Belonging instrument by Hoffman et al. (2002), learning communities were found to facilitate the development of relationships that integrated both academic and social aspects of university life by allowing for greater interaction among peers around common challenges and stressors thereby increasing students' feeling of a sense of belonging. Interaction between students and their peers was encouraged because the international students and their peers were experiencing similar problems and the students were able to support each other, which increased their bonds during their time in college (Hoffman et al., 2002). Students who lived in residence halls also experienced positive effects on their sense of belonging as they were able to socially integrate with their peers and receive support from them. Johnson et al (2007) were encouraged by the research that "explored the influence of living on campus on students' sense of belonging" (p. 528). They reported that "in general, students living in residence halls reported higher levels of both peer support and social integration than their nonresident peers" (p. 528).

Information Networks

Karp et al. (2010) found that student integration was encouraged when students participated in information networks while in college. They defined information networks as the social relationships that students formed that helped them navigate the institutions processes and procedures through the knowledge that they gained from their networks (Karp et al., 2010). The authors determined that for students, "knowing people to say hello to in the hallways did not strongly influence sense of belonging; knowing people through whom one could learn about professors, course options, or support services did" (Karp et al., 2010, p. 10). Information networks were further described as inclusive of

professors or classmates where ties were made and strong enough to promote the sharing of information.

Dietary Restrictions

Dietary restrictions and food preferences (Brown, 2009) also affected students' ability to be involved on campus. "Some cultures have values and restrictions concerning what foods are acceptable in the diet and what ways are applicable to prepare and cook the food" (Alakaam, 2016, pg. 100), which affects the events students can participate in. Because participation may involve the uncomfortable conversations that are involved when there are no meals available for the students to eat along with everyone else, students may avoid the event altogether.

Summary of Literature

Research on students' sense of belonging demonstrates the immense number of factors that impact students' sense of belonging while pursuing higher education at American colleges and universities. The factors explored that influence sense of belonging are relationships with advisors and mentors, relationships with faculty, academic involvement, host families, friends and peer support, culture shock, cultural/religious organizations, language ability, race/ ethnicity, racism/discrimination, diversity, nationalism in host country, homesickness, family and friends back home, on campus services, learning communities, information networks, and dietary restrictions. The factors that contributed to sense of belonging produced emerging themes that have been framed into factors of academic integration, factors of social integration, factors connected to the perceptions of campus climate, and factors of transition.

Students indicated that academic integration factors such as the relationships that they had with their advisor or mentor (Le et al., 2016; Curtin et al., 2013; Chen and Razek, 2016), relationships they had with faculty members (Maestas et al., 2007; Wood, & Harris, 2015; Glass et al., 2015; Guffrida, 2005), and the students' academic involvement on campus (Strauss, & Volkwein, 2004; Hausmann et al., 2007) affected their sense of belonging. The relationships that students formed with their advisors aid in their ability to adjust to living in the United States, and according to literature, positively impact their sense of belonging (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016). Academic integration is very important for students' transitioning to the United States and academic involvement or lack thereof in the classroom can also determine students' sense of belonging (Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009).

Social integration as a theme emerged and linked to social characteristics such as peer interactions (Le et al., 2016; Strayhon, 2008; Chen & Razek, 2016; Morrow & Ackerman, 2012), interactions with host families (Le et al., 2016; Banks-Gunzenhauser, 2009), and cultural/religious organizations (Mwangi, 2016; Hurtado and Carter, 1997). Social integration also encompassed a students' language ability (Chen & Razek, 2016; Lau et al., 2018), which influences their comfort level when interacting with others, and the students' view of their own race/ethnicity in relation to their peers (Mwangi & English, 2017; Wood & Harris III, 2015; Chen & Razek, 2016). These interactions proved to be pivotal for students who were adjusting to their college lives within the U.S.

International students' sense of belonging is also impacted by campus climate factors such as racism/discrimination (Tachine et al., 2017; Nunez, 2009; Mwangi, 2016;

Poyrazli & Lopez, 2007), diversity on campus (Wood and Harris III, 2015; Maestas et al., 2007), and a host country's level of nationalism (Bonikowski & DiMaggio, 2016; Kemmelmeir & Winter, 2008; Najar & Saul, 2016; Saul, 2017 a; Saul, 2017 b) if it is not portrayed as being welcoming. Based on the literature, campus climate is important for higher education institutions to be aware of when trying to recruit and retain international students. Lastly, the transition to being on campus was affected by variables such as homesickness (Poyrazli & Lopez, 2007; Hannigan, 2007; Kwon, 2009)), relationships with family and friends at home (Roksa, & Kinsley 2019; Mwangi, 2016; Tachine et al., 2017; Hussman et al., 2007), information networks (Karp et al., 2010), on campus services (Wood & Harris III, 2015; Le et al., 2016), dietary restrictions (Chen & Razek, 2016; Alakaam, 2016), and learning communities (Hoffman et al., 2002).

Theoretical Framework

Research has shown that there is a strong relationship between student campus engagement and their sense of fit and sense of belonging (Strayhorn, 2008; Mwangi, 2016; Museus et al., 2017). This study is guided by Tinto's theory of student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. According to Tinto, sense of belonging was realized when students became integrated into an institution's academic and social systems and had shared values with the institution (Mwangi, 2016). Tinto's theory of student departure is a suitable theoretical framework for this study as it explores several factors that impact sense of belonging, such as academic integration and social integration (Le et al., 2016; Curtin et al., 2013; Maestas et al., 2007; Wood, & Harris, 2015; Glass et al., 2015; Guffrida, 2005; Strayhon, 2008; Chen & Razek, 2016; Morrow

& Ackerman, 2012; Andrade, 2006; Mamiseishvili, 2012; Soria et al., 2012; Singh, 2018;

Davis et al., 2019; Garcia et al., 2019; Rienties et al., 2012; Tinto, 2012; Matirosyan et

al., 2019). Tinto's focus on student integration is often cited in research structured around

sense of belonging in higher education. Tinto also believed that students are less likely to

persist if they were not able to establish a sense of belong with an institution through their

academic and social interactions (Mwangi, 2016).

His theory however has been criticized by several researchers for his primary

focus on the student's role as opposed to the role of the institution in the development of

sense of belonging (Mwangi, 2016). Johnson et al. (2007) pointed out that Tinto's theory

of student departure focuses on the student's role in their feeling of sense of belonging,

but does not focus on the role that the institution plays in ensuring that the student feels

as if they belong. Karp et al. (2010) pointed out that according to Tinto, "student

integration into an institution can occur along two dimensions, the academic and the

social. Academic integration occurs when students become attached to the intellectual life

of the college, while social integration occurs when students create relationships and

connections outside of the classroom" (p. 3). Hurtado and Carter (1997) determined that

researchers who chose to use Tinto's theoretical framework needed to determine whether

it was sufficient as is, or whether the model should be elaborated to encompass variables

that could not be included in the original model, such as experiences with racism and

diversity.

Student integration is an important concept when researching sense of belonging,

but the role that the institution plays in the students' feeling of sense of belonging must

also be included. In this study, Tinto's theoretical framework (1993) will be combined

with the work of Hurtado and Carter (1997). Hurtado and Carter's work focuses on how college transition and perceptions of the campus climate affect college students' sense of belonging (Umbach & Wawrzynski, 2015; Strayhorn, 2018; Harper & Hurtado, 2007; Fischer, 2007; Johnson et al., 2007; Hurtado & Ponjuan, 2005). Hurtado and Carter (1997) offered their concept of sense of belonging to capture the student's view of whether they feel included in the campus community. Hurtado and Carter's work "illustrates the interplay between the individual and the institution" and students' success, which is in part predicated upon the extent to which they feel welcomed by institutional environments and climates" (Johnson et al., 2007, p.526).

This study on the factors that impact international students' sense of belonging focuses on the most prevalent factors that influence international students' sense of belonging through the lens of Tinto, and Hurtado and Carter. The study focuses on the factors of academic integration, factors of social integration, factors connected to the perceptions of campus climate, and factors of transition to encompass a variety of factors that impact an international students' sense of belonging. Most of the research on student involvement conducted by Tinto, and Hurtado and Carter have traditionally focused on domestic student populations; however, their research applies to international populations because international students are experiencing the same institutions that the domestic students have been exposed to. Figure 1 outlines the conceptual model that combines the works of Tinto and Hurtado and Carter.

Based on the theoretical framework, I developed a survey consisting of six different areas that focuses on measurement of sense of belonging, the student demographics, and factors that influence the students' sense of belonging. The areas

consist of student and institutional characteristics (8 items); academic integration (6

items); social integration (6 items); campus climate (6 items); transition (11 items); sense

of belonging (4 items).

Summary

Based on the literature reviewed, four themes that affect international students'

sense of belonging emerged (academic integration, social integration, campus climate,

and transition), and these themes consists of 18 factors. The theoretical framework

identified to aid in answering the research question is a combination of Tinto and Hurtado

and Carter's work on students' sense of belonging. Research on international students has

shown that international students face unique challenges related to acculturation and

integration (Curtin et al., 2013, p 109). These challenges can result in negative student

outcomes such as "anxiety, hostility, lowered self-esteem, social withdrawal, and

depression" (Mwangi, 2016, p, 1020), and should be addressed with the aim of ensuring

that international students are better equipped to adapt to college life in the United States.

Chapter Three

Methodology

The purpose of the study is to determine which factors significantly affect international students' sense of belonging. This study is quantitative in nature. The survey instrument used to gather data includes an array of variables identified through a detailed review of existing research. The survey instrument aims to collect data directly from international students. It gathers data on the international students' attitudes or feelings towards the factors that impact their sense of belonging and uses statistical analysis to make sense of the data (Creswell, 2009).

This chapter describes the research design of the study and the methods of data collection and analysis. The survey instrument consists of six sub-sections including student and institutional characteristics, academic integration, social integration, campus climate, transition factors, and sense of belonging. The factors used for the survey instrument are derived from the literature. This chapter also describes the research questions, the reliability and validity of the research tool used to measure sense of belonging and the independent variables, the sample population, and the procedures in administering the survey, and analyzing the data. Finally, this chapter covers the delimitations, limitations and assumptions of the study. This study seeks to understand how sense of belonging is affected by academic integration, social integration, campus climate, and transition factors.

This study addresses the following research question: What factors influence international students' sense of belonging to their colleges and universities in the United

States? The following more specific sub-questions explore the different aspects of the main research question:

1. What is the level of sense of belonging among international students at higher education institutions in the United States?

2. What influence, if any, do student characteristics and institutional characteristics have on international student sense of belonging?

3. What influence, if any, do academic integration variables have on international student sense of belonging?

4. What influence, if any, do social integration variables have on international student sense of belonging?

5. What influence, if any, do campus climate variables have on international student sense of belonging?

6. What influence, if any, do transition variables have on international student sense of belonging?

7. What combination of student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition variables best predict international student sense of belonging?

Research Design

The study follows a survey research design. Survey research is a specific type of field study that involves the collection of data from a sample of elements (Visser et al., 2000). In designing a survey, one must first understand the objectives of the study (Iarossi, 2005). Once the objectives of the study are identified, it is important to create questions that can accurately measure the opinions and experiences of the sample

population of the study (Pew Research Center). The researcher must identify the topics that will be covered by the survey questions, whether the answers to these questions should be closed ended or opened, and ensure that the questions asked are not biased or offensive and easy for the respondent to understand (Pew Research Center). After the survey instrument is designed, it is necessary to conduct a survey pretest as it is an "essential step in the questionnaire design process to evaluate how people respond to the overall questionnaire and specific questions" (Pew Research Center, Para 3). The survey pre-test helps the researcher determine the respondents' perception and understanding of the survey so that necessary changes can be made before the survey is distributed.

The objective of this study's survey is to understand the factors that impact international students' sense of belonging. Based on an extensive literature review, 18 factors that influence sense of belonging emerged: relationships with advisors and mentors, relationships with faculty, academic involvement, host families, friends and peer support, culture shock, cultural/religious organizations, language ability, race/ethnicity, racism/discrimination, diversity, nationalism in host country, homesickness, family and friends back home, on campus services, learning communities, information networks, and dietary restrictions. Following the theoretical frameworks, developed by Tinto, and Hurtado and Carter, I gathered the 18 factors into 4 groups: factors linked to students' academic integration (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016; Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida, 2005; Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009); factors linked to students' social integration (Banks-Gunzenhauser, 2009; Le et al., 2016; St-Amand et al., 2017; Singh, 2018; Cartmell & Bond, 2015; Hausmann et al., 2007; Strayhorn, 2008;

Morrow & Ackermann, 2012; Chen & Razek, 2016; Poyrazli & Lopez, 2007; Singh, 2018; Mwangi, 2016; Hurtado & Carter, 1997; Kwon, 2009; Lau et al., 2018; Wood & Harris III, 2015; Mwangi, 2016; Mwangi & English, 2017); factors linked to campus climate (Nunez, 2009; Mwangi, 2016; Poyrazli & Lopez, 2007; Tachine et al., 2017; Wood & Harris III, 2015; Maestas et al., 2007; Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016); and transition factors (Poyrazli & Lopez, 2007; Hannigan, 2007: Chen et al., 2011; Singh, 2018; Lau et al., 2018; Mwangi, 2016; Roksa & Kinsley, 2019; Tachine et al., 2017; Hussman et al., 2007; Chen & Razek, 2016; Kwon, 2009; Le et al., 2016; Wood & Harris III, 2015; Hoffman et al., 2002; Johnson et al, 2007; Karp et al., 2010; Alakaam, 2016).

The survey design of this study aims to collect information on all 18 factors directly from the international students in the Great Lakes region. There are several pros and cons to conducting survey research distributed via email. Some of the positive attributes of survey research are that one can gather data from many people; it is cost effective, convenient, and reliable. The ability to gather mass quantities of data is important for quantitative research. In addition, the potential number of survey respondents for this study exceeds 357,800 and the survey method is best equipped to deal with this volume. The survey is cost effective, as I do not have to physically distribute the surveys or conduct interviews that may involve the time and cost of getting to different locations. I can administer surveys from the computer and will not have to arrange meetings with respondents. The information obtained is also reliable because of the standardization and consistency in the questions asked and the answers available.

Some other benefits of surveys are that there can be a good representation of a general population if an adequate sample is gathered, there is statistical significance in results, and decreased opportunity for researcher bias (Story & Tait, 2019). A disadvantage of survey research relates to instrument questions and the probability that respondents may not clearly understand the questions (Story & Tait, 2019).

Population and Sample Selection for this Study

The population is the international student population residing in the Great Lakes region of the United States. International students are considered anyone who is currently in the United States on F-1 visa status and required to be enrolled full-time in a degree granting institution. An F-1 student is primarily a foreign national who is enrolled in an academic program at a U.S. college or university. International students in the United States currently number 1,095,299; of these, 872,214 are enrolled as students and 223,085 are listed with the Optional Practical Training employment authorization (Institute of International Education, 2019). For academic year 2018/2019, international students came to the U.S. from all geographic locations around the world: Africa and Sub-Saharan Africa - 40,290 students; Asia - 768,260 students; Europe - 90,996 students; Latin America and the Caribbean - 80,962 students; Middle East and North Africa - 81,126 students; North America - 26,122; Oceana - 7,542; 1 student was listed as stateless (Institute of International Education, 2019 a).

The Great Lakes region consists of eight states: Indiana, Illinois, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. The population of international students in the Great Lakes region is listed in the Student and Exchange Visitor Program (SEVP) database of schools that are allowed to host F-1 students.

Indiana has 113 higher education institutions that host international students and 29,083 international students; Illinois has 280 higher education institutions that host international students and 53,724 international students; Michigan has 201 higher education institutions that host international students and 33,236 international students; Minnesota has 147 higher education institutions that host international students and 15,279 international students; New York has 465 higher education institutions that host international students and 124,277 international students; Ohio has 195 higher education institutions that host international students and 37,314 international students; Pennsylvania has 277 schools that host international students and 51,818 international students; and Wisconsin has 172 schools that host international students and 13,067 international students (IIE, 2020; Study in the States, 2020). These states' national rankings are 10, 5, 9, 19, 2, 8, 6, and 21 respectively for international student enrollment. I estimated a survey distribution to approximately 357,800 international students by contacting all institutions that host international students in the Great Lakes region. As can be seen from the information above, the Great Lakes region has six out of the top ten states hosting international students in the United States.

Data was collected via a web-based survey developed in Qualtrics. The link to the survey was sent out via email. International students received the link as part of an introductory email distributed to them by their international education advisors. Three follow-up emails were sent to ensure that an adequate number of responses are gathered. The information for the international education advisors who were asked to distribute the survey came through my professional network Association for International Educators (NAFSA). Currently, there are 2330 NAFSA members in the Great Lakes region, 339

NAFSA members in Illinois, 194 NAFSA members in Indiana, 242 NAFSA members in Michigan, 134 NAFSA members in Minnesota, 665 NAFSA members in New York, 240 NAFSA members in Ohio, 376 NAFSA members in Pennsylvania, and 140 NAFSA members in Wisconsin. The population of this study encompasses the international students across institutions of higher education situated in the Great Lakes region and belonging to NAFSA regions 4 (Minnesota), 5 (Illinois, Michigan, and Wisconsin), 6 (Indiana and Ohio), 9 (Pennsylvania) and 10 (New York).

Instrument

The survey instrument includes all variables connected to factors influencing international students' sense of belonging. The instrument groups variables under the following categories: academic integration (6 items); social integration (6 items); campus climate (6 items); and transition factors (11 items). The questions included in the instrument poll international students' perspectives regarding the factors that impact their sense of belonging; many measure several of the factors identified. In addition, the instrument questions collect data on student and institutional characteristics (8 items) and the students' responses on their sense of belonging (4 items). Before the survey instrument was administered to the Great Lakes international student population, a pretest was conducted to ensure that the questions are easy understood by international students and avoid bias or offensive language (Pew Research Center, 2020).

Student and Institutional Characteristics

The student and institutional characteristics variables include age, gender, country of origin, number of years in the United States, degree level, major area of study, name of institution, and where student lives (see appendix A). Research on sense of belonging

demonstrates the importance of a set of background characteristics for college students as "a rather substantial body of research on college impact suggests that students' interactions with the college environment are not independent of the particular background characteristics that they bring to college" (Pascarella & Terenzini, 1980, p. 63).

Academic Integration

According to Tinto, academic integration consists mostly of the students' academic performance in college; however, Tinto also believed that interactions with faculty could enhance academic integration for students (Pascarella & Terenzini, 1980). Tinto also found that in addition to faculty impact on academic integration, students are influenced by the relationship they have with their mentor/advisor. The survey collects data on a range of academic integration factors and includes questions from Pascarella & Terenzini (1980) who studied freshman persistence and voluntary dropout decisions based on Tinto's theoretical model. According to research, academic integration factors include: relationship with advisor/mentor (Le et al., 2016; Curtin et al., 2013; Chen & Razek, 2016); relationship with faculty (Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida, 2005; Pascarella & Terenzini, 1980); and academic involvement (Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009). These factors play an important role in the students' adjustment in college. The following questions capture these factors.

1. There are many opportunities to meet and interact with faculty outside of class.

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree

() Strongly Agree

2. Faculty members interact often with me during class time.

   () Strongly Disagree
   () Disagree
   () Agree
   () Strongly Agree

3. Since coming to this college/university, I have developed a close, personal relationship with at least one faculty member.

   () Strongly Disagree
   () Disagree
   () Agree
   () Strongly Agree

4. There are many opportunities to meet with my mentor/advisor at any time.

   () Strongly Disagree
   () Disagree
   () Agree
   () Strongly Agree

5. My meetings with my mentor/advisor have been very useful/beneficial.

   () Strongly Disagree
   () Disagree
   () Agree
   () Strongly Agree

6. My academic experience has been very engaging and productive.

   () Strongly Disagree
   () Disagree
   () Agree
   () Strongly Agree

Social Integration

The survey collects data on a range of social integration factors. According to research, the following social integration factors play an important role in the students' adjustment in college: relationship with host families (Banks-Gunzenhauser, 2009; Le et al., 2016), friends/peer support (St-Amand et al., 2017; Singh, 2018; Cartmell & Bond,

2015; Hausmann et al., 2007; Strayhorn, 2008; Le et al., 2016; Morrow & Ackermann, 2012; Chen & Razek, 2016); cultural/religious organizations (Mwangi, 2016; Hurtado & Carter, 1997); and racial identity (Wood & Harris III, 2015; Mwangi, 2016; Mwangi & English, 2017; Chen & Razek, 2016). The following questions capture these factors.

1. I meet with a host family.

   ( ) Never
   ( ) 1 to 4 times a month
   ( ) 5 to 9 times a month
   ( ) 10 or more times a month

2. Since coming to this college/university I have developed close friendships with other students.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

3. My relationships with other students have had a positive influence on me.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

4. I belong to at least one student organization on campus.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

5. I belong to at least one cultural/religious organization outside of campus.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

6. I feel welcomed within groups of other students who look like me.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree

( ) Strongly Agree

Campus Climate

Research (Nunez, 2009; Mwangi, 2016; Poyrazli & Lopez, 2007; Tachine et al., 2017; Wood & Harris III, 2015; Maestas et al., 2007; Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Mwangi, 2016; Feinstein, 2016) has associated a set of factors that affect students' sense of belonging. These factors are racism/discrimination, campus diversity, and nationalism in the host country. Data on the campus climate group of factors is collected with the following survey questions:

1. I have experienced racism/discrimination on campus because of my ethnicity or nationality.

    ( ) Never
    ( ) 1 to 4 times a month
    ( ) 5 to 9 times a month
    ( ) 10 or more times a month

2. I have observed racism/discrimination being directed at others on campus.

    ( ) Never
    ( ) 1 to 4 times a month
    ( ) 5 to 9 times a month
    ( ) 10 or more times a month

3. My campus has many people from different cultures and nationalities.

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

4. I feel anxious interacting with domestic students.

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

5. I feel unsafe on campus because of the current political climate in the United States.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

6. As an international student, I feel inferior to Americans because of the current political climate in the United States.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

Transition Factors

A student's transition to their campus community is affected by feelings of homesickness, culture shock, their family/friends back home, language ability, on campus services, learning communities/living on campus, information networks, and dietary restrictions (Poyrazli & Lopez, 2007; Hannigan, 2007: Kwon, 2009; Chen et al., 2011; Poyrazli & Lopez, 2007; Singh, 2018; Lau et al., 2018; Mwangi, 2016; Roksa & Kinsley, 2019; Tachine et al., 2017; Hussman et al., 2007; Chen & Razek, 2016; Kwon, 2009; Le et al., 2016; Wood & Harris III, 2015; Hoffman et al., 2002; Johnson et al, 2007; Karp et al., 2010; Alakaam, 2016). The transition section of the survey instrument collects data on the factors identified in the literature that affect students' ability to transition to their new environment. Questions were included from studies by Mumford (1998), Poyrazli and Lopez (2007), Chen & Razek (2016), and Niehaus et al., (2019). Data on the transition factors is collected with the following survey questions:

1. I miss my family and friends back home.

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree

( ) Strongly Agree

2. It is really difficult to cope with my new cultural environment.

> ( ) Strongly Disagree
> ( ) Disagree
> ( ) Agree
> ( ) Strongly Agree

3. I rely heavily on my family members and friends back home for advice and emotional support.

> ( ) Strongly Disagree
> ( ) Disagree
> ( ) Agree
> ( ) Strongly Agree

4. I have used my institution's on-campus services that are there specifically for international students.

> ( ) Never
> ( ) 1 to 4 times a month
> ( ) 5 to 9 times a month
> ( ) 10 or more times a month

5. There is at least one student support services staff member on this campus I can go to when I have a problem.

> ( ) Strongly Disagree
> ( ) Disagree
> ( ) Agree
> ( ) Strongly Agree

6. Being a member of a learning community or a class cohort has helped me adjust to life in the United States.

> ( ) Strongly Disagree
> ( ) Disagree
> ( ) Agree
> ( ) Strongly Agree

7. Living on campus has helped me adjust to life in the United States.

> ( ) Strongly Disagree
> ( ) Disagree
> ( ) Agree
> ( ) Strongly Agree

8. I feel accepted by the local people in the community where I live.

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

9. I utilize the campus information network that provides information on campus resources (library, gym, tutoring center etc.) and professors.

( ) Never
( ) 1 to 4 times a month
( ) 5 to 9 times a month
( ) 10 or more times a month

10. I am able to follow my dietary restrictions with campus food.

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

11. My language skills (English proficiency) are good.

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

Question 5 was adapted from the study on sense of belonging by Niehaus et al., (2019), while questions 9, 10, and 11 were adapted from Mumford's (1998) study on culture shock. Mumford tested his questions initially with 15 participants; the questions were developed from the data gathered through research on several different reports of people who had emotional reactions to working abroad (Mumford 1998). Mumford's culture shock questions were subsequently used in studies by Chen et al. (2011), and Presbitero (2016).

Sense of Belonging

Sense of belonging (SB) is measured by a four-question survey instrument developed by Inkelas et al. (2007). The instrument measures satisfaction and sense of

belonging for the National Study of Living–Learning Programs (NSLLP). Four questions comprise the sense of belonging scale: (a) "I feel comfortable on campus," (b) "I would choose the same college over again," (c) "My college is supportive of me," (d) "I feel that I am a member of the campus community" (Inkelas et al., Appendix A – 7).

The scale's validity was pilot tested in 2003 at four institutions. The survey, originally administered in 2002, was revised based on feedback. The construct validity was determined by studying group differences and evaluating similarities and dissimilarities across themes. Differences between the demographic groups, sample students, and Living Learning community participants confirmed results from prior research (Inkelas et al., 2006). Instrument reliability was determined through measures developed in 2003 using factor analysis and Cronbach alpha reliability testing. Pilot testing in 2003 resulted in Cronbach alpha reliability of .874 for sense of belonging. Reliability re-testing with the 2004 NSLLP data had Cronbach alpha scores ranging from .624 to .918 (Inkelas et al., 2006).

The NSLLP instrument was later used by Niehaus et al. (2019) who measured how the sense of belonging of students was related to their "student engagement; particularly students' co-curricular involvement, peer interactions, and interactions with student services staff members" (p. 21). In their study, the tool had a Cronbach alpha of .874, and factor loadings between .663 and .841. Niehaus et al. also recorded root-mean-square error of approximation (RMSEA) of .056 and comparative fit index (CFU) of .997. A four-point symmetric Likert scale will be used to measure students' perceptions on sense of belonging and the factors that affect sense of belonging. ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree). A four-point frequency scale ((1)

Never, (2) 1 to 4 times a month, (3) 5 to 9 times a month, (4) 10 or more times a month) will also be used to measure items that are not measurable by a Likert scale.
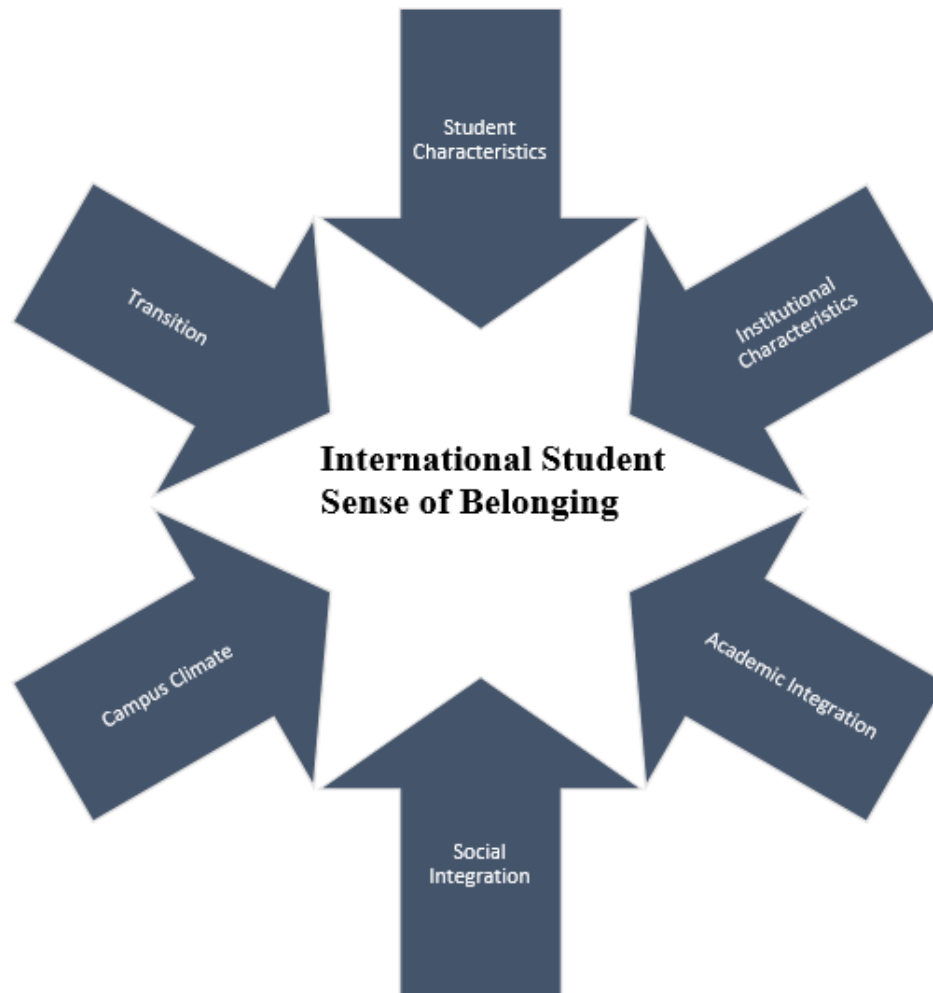
Figure 1. Conceptual Model of Factors that Impact International Students' Sense of Belonging

Variables

The dependent variable for this study is sense of belonging. This variable is continuous, as it is measurable using a Likert scale. Table 1 summarizes the categories and independent variables used for the survey instrument.

Table 1

Summary of variables

Categories	Variables	Type of Variable
Student Characteristics	Age group	Categorical
Student Characteristics	Gender	Categorical
Student Characteristics	Country of origin	Categorical
Student Characteristics	Number of years in the United States	Continuous
Student Characteristics	Degree Level	Categorical
Student Characteristics	Major area of study	Categorical
Institutional Characteristic	State that institution is located	Categorical
Institutional Characteristic	Type of institution	Categorical
Academic Integration	Student relationship with Advisor/Mentor	Ordinal
Academic Integration	Student relationship with faculty	Ordinal
Academic Integration	Academic involvement	Ordinal
Social Integration	Relationship with host families	Continuous
Social Integration	Friends/peer support	Ordinal
Social Integration	Cultural/religious organizations	Ordinal
Social Integration	Racial Identity	Ordinal
Campus Climate	Racism/Discrimination	Continuous
Campus Climate	Diversity on campus	Ordinal
Campus Climate	Nationalism in host country	Ordinal

Categories	Variables	Type of Variable
Transition	Homesickness	Ordinal
Transition	Culture shock	Ordinal
Transition	Family members/friends back home	Ordinal
Transition	Language Ability	Ordinal
Transition	On Campus services	Continuous
Transition	Learning communities	Ordinal
Transition	Information networks	Continuous
Transition	Dietary restrictions	Ordinal
Sense of Belonging		Ordinal

Field Work/Distribution

Data was collected via a web-based survey developed in Qualtrics. The link to the survey was sent out via email. Web-based surveys have been an effective means of collecting data (Cook et al., 2000). A web-based survey also reduces researcher bias; in addition, participants (via random sampling) are ensured anonymity, which should help increase honesty in responses. International students received the link as part of an introductory email distributed to them by their international education advisors, and three follow-up emails were sent to ensure that an adequate number of responses are gathered to accurately measure sense of belonging and the factors that affect sense of belonging for international students.

The information for the international education advisors was obtained through my professional network NAFSA: Association for International Educators. I participated in a professional academy in 2017 - 2018 and created a network of contacts with international educators from different types of institutions across the United States. These international

educators were asked to distribute the survey on my behalf. There are also NAFSA region IV (Iowa, Minnesota, Missouri, North Dakota, South Dakota), VI (Ohio, Indiana and Kentucky), NAFSA region V (Illinois, Michigan and Wisconsin), NAFSA region VIII (Delaware, Maryland, Pennsylvania, Virginia, Washington, D.C. and West Virginia) and NAFSA region IX (New Jersey, New York) members that I personally know or have access to through the member directory. In addition, there is a NAFSA International Student and Scholar Services community, and a Teaching Learning and Scholarship community that I used to distribute the study to members who are a part of the listserv. Currently, there are 2,330 NAFSA members in the Great Lakes region, 339 NAFSA members in Illinois, 194 NAFSA members in Indiana, 242 NAFSA members in Michigan, 134 NAFSA members in Minnesota, 665 NAFSA members in New York, 240 NAFSA members in Ohio, 376 NAFSA members in Pennsylvania, and 140 NAFSA members in Wisconsin.

To enhance the response rate, the survey instrument included incentives to the students who complete it offering a chance to win one of five $40 Amazon gift cards. The end of the survey asked students who are interested in entering the drawing to provide their email addresses. The email addresses were entered into a random drawing, and the winners were notified via their email addresses. The gift card was electronic in nature and sent directly to the email address provided.

Instrument Testing

Prior to distribution, the survey instrument was tested with five currently enrolled international students at The University of Toledo. This instrument testing helped clarify questions and remove bias and offensive language. After the survey was administered to

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the 5 test respondents, I gathered feedback regarding the survey, the time burden on the respondent, and the ability of the respondents to understand the questions answered. I adjusted the survey questions based on feedback received.

Human Participants and Ethics Precautions

At the University of Toledo, I will applied for Institutional Review Board (IRB) human subject research approval from the Human Research Protection Program (HRPP). The Institutional Review Board (IRB) for the University of Toledo received a request to approve the protocols for this study. The survey's first page included information on the researchers, the survey's purposes, the consent form for student participation in the research, and document waiver to allow me to collect data without the participant signature. This study followed the basic principles of the University of Toledo's HRPP by ensuring that respondents understand that participation is voluntary, consent is adequately utilized, the privacy of respondents will be protected, the subject pool will be fairly selected, and the survey represents very low risk to students who participate (Human Research Protection Program).

Data Management and Analysis

The Qualtrics Survey Software was used for data collection. Data was stored in a cloud server and on a password protected external hard drive to ensure survey safety and integrity. This study seeks to answer seven research questions and uses descriptive statistics, correlational analysis, regression analysis, and factor analysis to evaluate and understand the data.

To address research sub-question one (What is the level of sense of belonging among international students at higher education institutions in the United States?), I used

descriptive statistics to understand patterns emerging from the data. In using descriptive statistics, I assessed the frequency of data such as the mean, median, and mode for the sample population. This type of analysis aided in meaningful description of the data.

Research sub-questions two through six were addressed using correlational analysis. This analysis was used to determine through statistical significance the strengths of the relationships between a set of variables and the variable on sense of belonging. Regression analysis was used to answer sub-question seven (What combination of academic integration, social integration, transition, and campus climate characteristics best predict international student sense of belonging?). Regression analysis was used to determine the relationship between sense of belonging and the independent variables.

To further augment the data analysis of the study, factor analysis was used on the sense of belonging instrument to determine whether the instrument performs similar to or better than in previous studies (Niehaus et al., 2019; Inkelas et al., 2007). Factor analysis helps a researcher identify causal factors that explain correlations within a set of observed variables. Data was analyzed using the SPSS statistics 27 software program.

Delimitations

This study sets several delimitations. First, the study is delimited to responses from international students; survey responses from domestic students will not be collected. Second, this study is delimited to international students who are not minors. Third, the study is delimited to the Great Lakes region; as a result, survey respondents will only have the option to select one of the eight states in the Great Lakes region when completing the survey.

Limitations

The survey distribution is limited to the Great Lakes region of the Midwest. As a result, responses will capture the Midwestern experience. That experience may not necessarily be representative of students' experiences in other regions of the country. The survey will be distributed through my NAFSA network, which is also a limitation, as not every school that hosts F-1 international students may have a NAFSA membership.

Another limitation links to the international students' advisors this study asks for help in distributing the survey. Not all advisors will see value in the survey, or will have the time or energy to distribute it. As a result, access to the students may be limited. Another limitation could be participant dropout as some students may begin the survey but choose not to complete it. To mitigate the limitation of differences in understanding and interpretation, I will use instrument testing. However, students may still abandon the survey on this basis. Other limitations to getting the surveys completed are survey fatigue, and respondents answering questions honestly. Lastly, there may be access and impairment issues for students who may want to answer the survey but are unable to do so.

Summary

Chapter three described the methodology that was used to gather the data for research on the factors that impact international students' sense of belonging. The study utilizes an instrument that collected data from international students in the Great Lakes region. The instrument has 7 blocks of questions and collected data on student and institutional characteristics, academic integration, social integration, transition, and

campus climate. The instrument was tested using a small number of international

students, and distributed through the NAFSA: Association of International Educators

network.

Chapter Four

Results

In the present study, I identified 18 factors that impacted international student sense of belonging. Through an extensive literature review, these 18 factors were grouped into four categories following the combination of theoretical frameworks that guided the study: Tinto's theory of individual departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. The categories were (a) academic integration, (b) social integration, (c) campus climate, and (d) transition factors.

The study utilized a survey, which reached students during a very tumultuous time for international students living in the United States. Students faced many social justice issues such as the Black Lives Matter movement that highlighted racial injustice (Belam, 2021; Buchanan et al., 2020), and a global coronavirus pandemic (Centers for Disease Control and Prevention, 2020). Additionally, during the time the survey was distributed, there was an increase in nationalism, which resulted in a decrease in acceptance for immigrants living in the United States (Holmes, 2019). The results of this survey may very well reflect the feelings of students in this moment in the history of the United States, or the survey may truly reflect how international students feel, regardless of all the external social issues facing the United States.

This chapter summarizes the results of the study. First, it describes the demographics of the survey sample with detailed tables. Next, it shares the findings along each of the study's research questions following the combination of theoretical frameworks that guided the study: Tinto's theory of individual departure and Hurtado and

Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. Spearman correlation, Kruskal-Wallace, Mann-Whitney U and linear regression analysis were used to address questions one through seven and to determine the factors that best predict international students' sense of belonging. Throughout the chapter, tables and graphs provide an illustration of the results of the data analysis.

Purpose of the Study and Research Questions

The purpose of the study was to determine the factors that impacted international students' sense of belonging across a variety of institutions in the United States. More precisely the study focused on the effect that academic integration, social integration, campus climate, and transition factors had on international students' sense of belonging. The study used a cross-sectional survey to collect data from the international students in the Great Lakes region, which consisted of the states of Illinois, Indiana, Minnesota, Michigan, New York, Ohio, Pennsylvania, and Wisconsin.

This chapter outlines the results of the research conducted to answer the following research question: What factors influence international students' sense of belonging to their colleges and universities in the United States? This overarching research questions was broken into the following more specific sub-questions:

1. What is the level of sense of belonging among international students at higher education institutions in the United States?

2. What influence, if any, do student characteristics and institutional characteristics have on international student sense of belonging?

3. What influence, if any, do academic integration variables have on international student sense of belonging?

4. What influence, if any, do social integration variables have on international student sense of belonging?

5. What influence, if any, do campus climate variables have on international student sense of belonging?

6. What influence, if any, do transition variables have on international student sense of belonging?

7. What combination of student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition variables best predict international student sense of belonging?

Data Collection/ Field Work

I collected data from higher education institutions that hosted F-1 international students in the eight Great Lakes States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. The survey targeted international students; to reach the students, the international education advisors at institutions were contacted first. The survey was first distributed to institutions that the Institute of International Education (IIE) identified as the top five hosting institutions for international students in 2019 for each of the eight Great Lakes States and to institutions where I personally knew the international student advisors who worked in the international office. The total number of institutions initially contacted was 44 institutions. I then received permission from The Association of International Educators (NAFSA) to invite survey participants through their listservs: the International Student Advising Network, the International Scholar

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Advising Network, and the Research and Scholarship Network. The invitation to participate was posted on the three listservs on May 26, 2020. Emails were sent to international student advisors, student organizations, and students directly if the institution shared the student email addresses through a directory information request. Requests for survey distribution assistance were shared with approximately 260 higher education institutions based on the NAFSA listservs, the International Student Advising Network, the International Scholar Advising Network, the Research and Scholarship Network, and the institutions identified as the top five hosting institutions by IIE.

The research utilized Qualtrics to distribute the surveys. Surveys remained open in the period from May 13 until June 29, 2020. In the end, I estimated that international student advisors from 33 institutions emailed the request for survey participation to their approximately 30,000 undergraduate and graduate students. In addition, students who received the survey also forwarded the request for survey participation to their peers who lived in the Great Lakes states. As a result, undergraduate and graduate international students from a total of 56 institutions participated in the study. The total number of returned surveys was 1,164, which resulted in a 3.9% response rate. Of the 56 participating institutions, there were 7 two-year colleges and 49 four-year institutions, while 31 institutions were public and 21 institutions were private. Of the 56 institutions, there were 16 small institutions, 21 medium institutions, 12 large institutions, and 7 extra-large institutions represented in the sample. Institutions categorized as "small" had a student population of less than 5,000 students, institutions categorized as "medium" had a student population of 5,000 to 15,000 students, institutions categorized as "large" had a

student population of 15,000 to 30,000 students, institutions categorized as "extra-large" had a student population above 30,000 students.

Sample Description

The survey instrument included questions that required a forced response. There were 1,190 survey attempts of which 1,064 responses were sufficient for the data analysis (n = 1,064). The responses deemed sufficient for data analysis were at least 68% complete. As a result, 126 survey attempts were discarded as insufficient for data analysis. Table 2 indicates the demographics of international students who participated in the survey. Of the 1064 responses, 483 were from males (45.4%) and 578 responses - from females (54.3%); three remaining respondents (.3%) did not identify a gender. A total of 276 (25.9%) participants identified as belonging to the age group 18-20, while the largest group of the sample 434 (41.1%) students belonged to the 21-25 age group. The three smallest age groups were 228 (21.4%) students 26-30 years, 75 (7%) students who were 31-35, and 48 (4.5%) students who were 36+ years. Most of the respondents, 437 (41.1%), had been living in the United States for 5-9 years, while 351 (33%) had been living in the United States for more than 10 years, and 276 (25.9%) participants for 0-4 years.

Table 2

Demographic Characteristics of Respondents (N = 1064)

		Frequency	Percent
Gender	Male	483	45.4
	Female	578	54.3
	Other	3	0.3
	Total	1064	100.0
Age Group	18-20	276	25.9
	21-25	437	41.1
	26-30	228	21.4
	31-35	75	7.0
	36+	48	4.5
	Total	1064	100.0
Number of years in the United States	0-4	276	25.9
	5-9	437	41.1
	10+	351	33.0
	Total	1064	100.0

All eight of the Great Lakes states were represented in the sample, with 63 (5.9%) respondents attending institutions in Illinois, 102 (9.6%) respondents attending institutions in Indiana, 88 (8.3%) respondents attending institutions in Michigan, 106 (10%) respondents attending institutions in Minnesota, 131 (12.3%) respondents attending institutions in New York, 287 (27%) respondents attending institutions in Ohio, 105 (9.9%) respondents attending institutions in Pennsylvania, and 182 (17.1%) respondents attending institutions in Wisconsin (see Figure 2). I focused on the Great Lakes region because it has six out of the top ten states hosting international students in the United States and hosts approximately one third (357,800) of the total population of

international students in the United States. This study can be generalized to populations with demographics similar to those of the study's participants.
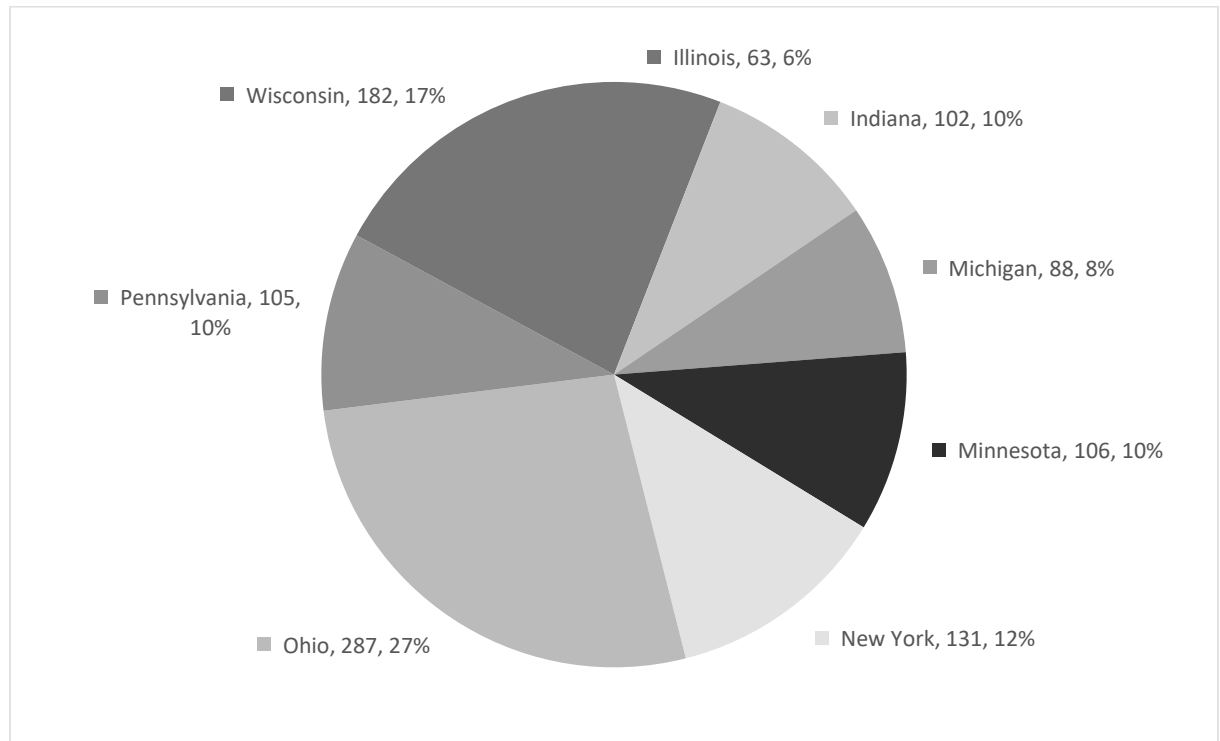
Figure 2. State that Institution of Respondents is Located In (N = 1064)

Study participants were very diverse and represented 123 countries around the world. For the purposes of this study, the countries were grouped into ten regions, Africa, Asia, the Caribbean, Central America, Europe, Middle East, North America, Oceana, South America, and other. The largest group of responses came from the Asia region consisting of 582 (54.7%) respondents, followed by Africa with 168 (15.8%) respondents. The other regions in the sample consisted of the Caribbean with 25 (2.3%) respondents, Central America with 16 (1.5%) respondents, Europe with 91 (8.6%) respondents, Middle East with 94 (8.8%) respondents, North America with 17 (1.6%) respondents, Oceana with 11 (1%) respondents, South America with 58 (5.5%)

respondents, and 2 (0.2%) respondents for which a country or geographic region could not be identified (see Figure 3).
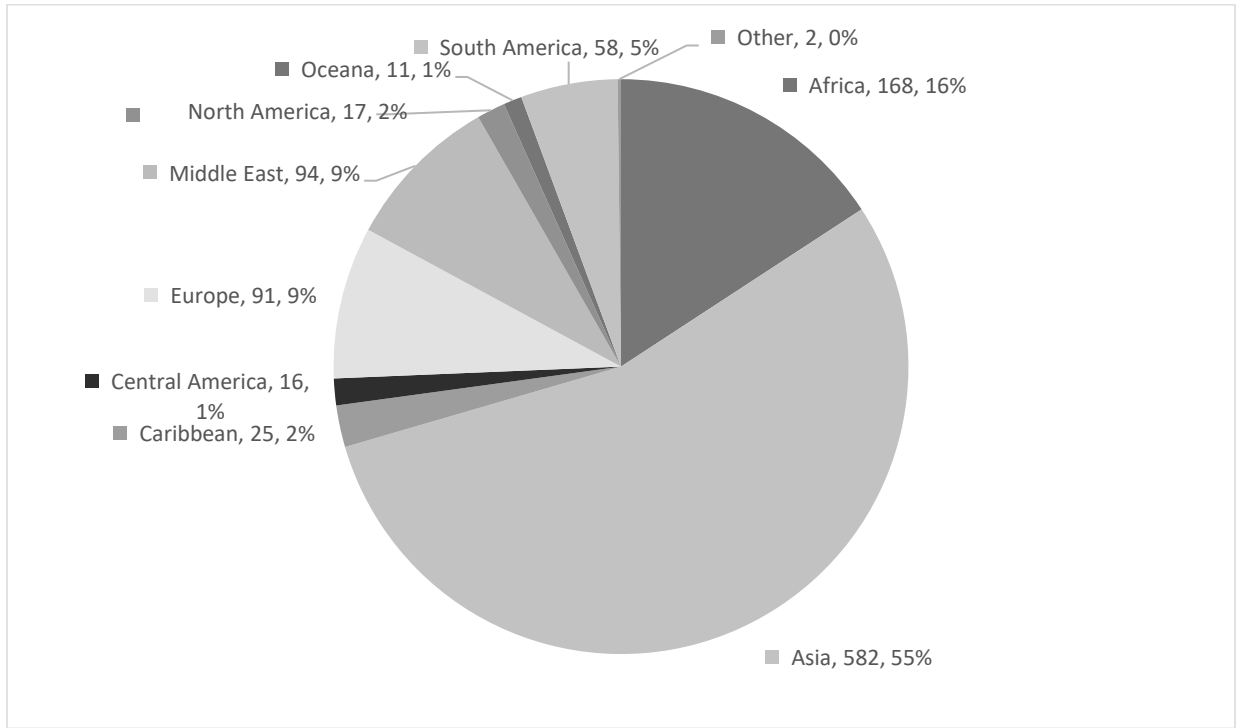
Figure 3. Region of Origin of Respondents (N = 1064)

Of the 56 institutions represented in the study, most of the students, 976 (91.7%), attended four-year institutions, while the remaining 88 (8.3%) attended two-year institutions (see Table 3).

Table 3

Institution type, Two-year vs Four-year college of responses (N = 1064)

		Frequency	Percent
Institution Type	2-year college	88	8.3
	4-year college	976	91.7
	Total	1064	100

Of the 56 institutions represented in the study, most of the students, 789 (74.2%),

attended public institutions, while the remaining 275 (25.8%) attended private institutions

(see Table 4).

Table 4

Institution type Public vs Private of responses (N = 1064)

		Frequency	Percent
Institution Type	Public	789	74.2
	Private	275	25.8
	Total	1064	100

The size of the institutions that students attended were organized into four

categories (see Table 5). The smallest number of students, 177 (16.6%), attended small

institutions; the largest number of students 373 (35.1%) attended medium-sized

institutions; 309 (29%) students attended large institutions; and 205 (19.3%) students

attended extra-large institutions.

Table 5

Sizes of Institutions Attended by Respondents (N = 1064)

		Frequency	Percent
Size of Institution	Small	177	16.6
	Medium	373	35.1
	Large	309	29.0
	Extra-large	205	19.3
	Total	1064	100.0

Student major areas of study were organized into five categories (see Table 6).

Over half of the students, 568 (53.4%), studied in majors related to STEM fields; 165

(15.5%) were majoring in the social sciences field; 152 (14.3%) studied in the field of business; 71 (6.7%) students studied in majors related to arts; and 108 (10.2%) students identified their major as other.

Table 6

Distribution of Majors amongst the Participants (N = 1064)

		Frequency	Percent
Area of Study	Arts	71	6.7
	STEM	568	53.4
	Social Science	165	15.5
	Business	152	14.3
	Other	108	10.2
	Total	1064	100.0

While most respondents, 516 (48.5%), were pursuing their bachelor's degree, 263 (24.7%) were pursuing their master's degree, 206 (19.4%) were pursuing a doctoral degree, and 79 (7.4) were pursuing associates degrees. Table 7 outlines the frequencies and percentages of the survey respondents' majors.

Table 7

Degrees Pursued by International Students (N = 1064)

		Frequency	Percent
Degree Pursuing	Associates Degree	79	7.4
	Bachelor's Degree	516	48.5
	Master's Degree	263	24.7
	Doctoral Degree	206	19.4
	Total	1064	100

Lastly there was a significant difference in the number of students who lived on versus off campus. Of the 1064 students surveyed, 780 (73.3%) students lived off campus while the other 284 (26.7%) students lived on campus (see Table 8).

Table 8

Frequencies of Students Living On vs Off Campus (N = 1064)

		Frequency	Percent
Living on vs off campus	On Campus	284	26.7
	Off Campus	780	73.3
	Total	1064	100.0

Based on the above responses, most respondents were more likely to be Asian females, aged 21 to 25 years, and have been living in the United States 5 to 9 years. In addition, students were more likely to live off campus, and pursue a bachelor's degree in a STEM major at medium sized four-year public institutions.

Preparation of Data for Analysis

I cleaned the collected survey data and manually coded it once it was downloaded from Qualtrics to Microsoft Excel. In addition, I created dummy variables for the student characteristics variables. In the initial stages of data cleaning, I deleted 120 cases that started the survey but did not provide any information beyond being an international student or not. None of the 120 responses provided answers to any of the questions. Next, an additional 56 participants that responded to demographic questions did not complete the survey. Another 27 respondents answered demographic questions but did not complete any survey questions on the key measures of Academic Integration, Social Integration, Campus Climate, or Transition Factors, and Sense of Belonging. In total,

1070 participants provided responses to at least 63% of the survey items. There were four missing data patterns in the survey: 84% complete, 79% complete, 68% complete, and 63% complete. The assumption was made that the missing data patterns occurred at random, therefore the data within these patterns was not discarded. An additional six records were removed because I could not identify the respondents' institution. If institution could not be established, there was no way for me to know whether the respondent was part of the sample that was being targeted.

To determine whether all 1,064 responses could be used, I had to answer the question: were data missing completely at random? Multiple imputation was conducted for missing data to decrease the possibility of bias in data analysis. I completed Little's Missing Completely at Random (MCAR) test in SPSS 27 and determined that missing data ranged from 2.5 to 7.8 points. This data range helped me determine how many imputed files (complete data sets) should be generated. Since missing data is common in quantitative research (Dong & Peng, 2013), missing data handling methods allow for a decrease in the loss of information and an increase in the reliability of statistical conclusions. Missing data mostly occurred in latter items on the survey that included the dependent variable, as some of the data in the survey was missing due to partial item nonresponse (Cheema, 2014). The missing data increased as respondents got further into the survey, which may be attributed to survey fatigue or because some of the respondents did not want to answer some of the survey questions. Missing data also included some of the items on the sense of belonging scale and responses for these items were imputed. Cheema (2014) suggested that missing data could be dealt with by using missing data imputation, (estimating what the student's response would have been based on previous

responses) therefore, I performed multiple imputation to decrease data attrition and to increase the reliability of the dataset. Because missing data ranged from 2.5 to 7.8, the number of imputed data files needed was 10. Once the data was cleaned and coded, I conducted correlation analysis to check for collinearity.

To address research sub-question one (What is the level of sense of belonging among international students at higher education institutions in the United States?), I used descriptive statistics in the form of a frequency analysis (such as the mean, median, and mode for the sample population) to further understand types of patterns emerging from the data. In addition, a factor analysis was also conducted to determine the reliability of the factor loadings for the individual items on the sense of belonging scale. Research sub-questions two through six were addressed using frequency analysis and correlational analysis. Frequency analysis allowed me to understand patterns in the data, while correlational analysis allowed me to determine the strengths of the relationships between a set of variables and the variable on sense of belonging. Dummy variables were created for the variable region of origin for the purposes of data analysis, it was not necessary to create dummy variables for the additional student characteristic and institutional variables. Finally, linear regression analysis was used to answer sub-question seven (What combination of student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition variables) best predict international student sense of belonging?). Linear regression analysis was used to determine the relationship between sense of belonging and the independent variables in the study.

Summary of Results

I transferred the data collected in Qualtrics to Excel for coding and cleaning, then uploaded the cleaned and coded data to SPSS, and analyzed using SPSS 27. The results of the study follow organized along each of the research questions.

Reliability Analysis

The dependent variable sense of belonging (SB) is measured by a survey instrument developed by Inkelas et al. (2007). Four questions comprise the sense of belonging scale: (a) "I feel comfortable on campus," (b) "I would choose the same college over again," (c) "My college is supportive of me," (d) "I feel that I am a member of the campus community" (Inkelas et al., Appendix A – 7). The scale's validity was pilot tested in 2003 at four institutions. The survey, originally administered in 2002, was revised based on feedback. Differences between the demographic groups, sample students, and Living Learning community participants confirmed results from prior research (Inkelas et al., 2006). Instrument reliability was determined through measures developed in 2003 using factor analysis and Cronbach alpha reliability testing. Pilot testing in 2003 resulted in Cronbach alpha reliability of .874 for sense of belonging. Reliability re-testing with the 2004 NSLLP data had Cronbach alpha scores ranging from .624 to .918 (Inkelas et al., 2006). For this study, a reliability analysis was conducted on the sense of belonging scale. Table 9 outlines the Cronbach alpha score for the sense of belonging variable. The dependent variable sense of belonging scale Cronbach's alpha showed a high reliability of $\alpha = .83$. A four-point symmetric Likert scale was used to measure students' perceptions on sense of belonging ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree).

Table 9

Descriptive Statistics of the Reliability (N = 1064)

	N	Cronbach Alpha α
Sense of Belonging	1064	.83

While the Cronbach's alpha for this study was α = .83, a sense of belonging study by Niehaus et al., (2019) using the same sense of belonging scale, had a Cronbach's alpha of α = .874.

Research Question 1: What is the level of sense of belonging among international students at higher education institutions in the United States?

The sense of belonging variable was calculated based on the responses of participants on the individual items inquiring after their feelings towards their institution. The average of the four items was used to measure international students' sense of belonging. To determine the level of sense of belonging among international students at higher education institutions in the United States, I conducted frequency analysis (see Table 10). The mean score for the instrument was 3.13 (SD = .58). International students responding to the survey reported fairly high levels of sense of belonging with an average score of 3.13 and a standard deviation of .58. The standard deviation of .58 means that $\pm$ 1 standard deviation includes a range of sense of belonging scores from 2.55 to 3.70.

Table 10

Descriptive Statistics of Sense of Belonging Variable

	n	*Mean*	*SD*
Sense of Belonging	*1037*	*3.13*	*0.58*

Of the 1064 students surveyed, 151 (14.2%) students strongly agreed that they felt a sense of belonging while attending a higher education institution in the United States, when responding to the items on the sense of belonging scale (M = 3.13, SD = 0.58), and 602 (56.6%) students agreed that they felt a sense of belonging. A smaller number of the respondents, 257 (24.2%), disagreed that they felt a sense of belonging while attending a higher education institution in the United States, while 27 (2.5%) strongly disagreed that they felt a sense of belonging (see Table 11).

Table 11

Frequencies of Students Feelings of Sense of Belonging (N = 1064)

		Frequency	Percent
Feelings of Sense of Belonging	Strongly Agree	151	14.2
	Agree	602	56.6
	Disagree	257	24.2
	Strongly Disagree	27	2.5
	Missing	27	2.5
	Total	1064	100.0

The range of scores for the survey items was from 1 to 4 ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree), with a mean score ranging from 3.00 (SD = .83) to 3.30 (SD = .61) for each item. A factor analysis was also conducted to determine the reliability of the factor loadings for the individual items on the sense of belonging scale. International students responding to the first question on the sense of belonging scale "I feel comfortable on campus" reported fairly high levels of sense of belonging with an average score of 3.30 and a standard deviation of .61. The standard deviation of .61 means that ± 1 standard deviation includes a range of scores from 2.69 to 3.91. The

first question had a factor loading of .860 which means that 86% of the variance was explained by this question. International students responding to the second question on the sense of belonging scale "I would choose the same college over again" reported fairly high levels of sense of belonging with an average score of 3.00 and a standard deviation of .83. The standard deviation of .83 means that ± 1 standard deviation includes a range of scores from 2.07 to 3.83. The second question had a factor loading of .851 which means that 85.1% of the variance was explained by this question. International students responding to the third question on the sense of belonging scale "My college is supportive of me" reported fairly high levels of sense of belonging with an average score of 3.16 and a standard deviation of .66. The standard deviation of .66 means that ± 1 standard deviation includes a range of scores from 2.50 to 3.82. The third question had a factor loading of .796 which means that 79.6% of the variance was explained by this question. International students responding to the fourth question on the sense of belonging scale "I feel that I am a member of the campus community" reported fairly high levels of sense of belonging with an average score of 3.04 and a standard deviation of .74. The standard deviation of .74 means that ± 1 standard deviation includes a range of scores from 2.30 to 3.78. The fourth question had a factor loading of .753 which means that 75.3% of the variance was explained by this question (see Table 12).

Table 12

Descriptive Statistics of Individual Items for the Sense of Belonging Scale

	Min	Max	Mean	SD	Factor Loading
I feel comfortable on campus	1.00	4.00	3.30	0.61	.860
I would choose the same college over again	1.00	4.00	3.00	0.83	.851
My college is supportive of me	1.00	4.00	3.16	0.66	.796
I feel that I am a member of the campus community	1.00	4.00	3.04	0.74	.753

Note: Scale reliability α = .83

Research Question 2: What influence, if any, do student and institutional characteristics have on international student sense of belonging?

Spearman correlational analysis was conducted to determine the influence of an array of student and institutional characteristics on international student sense of belonging. Statistically significant variables were categorized by their correlation co-efficient and effect size as "small" for any correlation value between .10 and .29, "medium" for any correlation value between .30 and .49, "large" for any correlation value between .50 and .69, and "extra-large" for any correlation value .70 and greater. (Cohen, 1988; Rosenthal, 1996; Marinis, 2014). The alpha level for statistical analysis was set at .01 when determining statistical significance.

Two student characteristics emerged as slightly significant (small effect) in relation to an international student's sense of belonging: number of years in the United States and living on or off campus. The correlational analysis showed that there was a statistically significant relationship between the number of years an international student

lived in the United States ($r = -.084$, p $= .008$) and the mean scores of students on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and a statistically significant relationship between living on campus ($r = .078$, p $= .008$) and the mean scores of students on the sense of belonging scale ($M = 3.13$, $SD = 0.58$). There was also a statistically significant relationship between country of origin – Europe, ($r = .099$, p $= .002$) and country of origin – Middle East, ($r = -.098$, p $= .002$), and the mean scores of students on the sense of belonging scale ($M = 3.13$, $SD = 0.58$). In addition, the correlational analysis showed that there was a statistically significant relationship between the state that the institution was located in – Minnesota ($r = -.086$, p $= .007$) and the mean scores of students on the sense of belonging scale ($M = 3.13$, $SD = 0.58$).

There were no statistically significant relationships between the mean scores of international students on the sense of belonging scale and the student characteristics (a) age (b) gender, (c) country of origin (Africa, Asia, Caribbean, Central America, North America, Oceana, South America, Other), (d) degree pursuing, (e) major. There were no statistically significant relationships between the mean scores of international students on the sense of belonging scale and the institutional characteristics (a) institution type (2 or 4 year), (b) institution size, (c) whether the institution was public or private, or (d) state that the institution was located in (Michigan, Wisconsin, Pennsylvania, New York, Illinois, Indiana, Ohio) (see Table 13).

Table 13

Correlations between the Sense of Belonging Scale and (a) Student Characteristics, (b)

Institutional Characteristics

Student Institutional Characteristics	Sense of Belonging Scale		
	r	*p*	Effect Size
Age	-.037	.236	---
Gender	-.041	.189	---
Country of origin - Africa	.020	.510	---
Country of origin - Asia	-.043	.178	---
Country of origin - Caribbean	.001	.969	---
Country of origin - Central America	.011	.731	---
Country of origin - Europe	.099	.002	Small
Country of origin - Middle East	-.098	.002	Small
Country of origin - North America	.065	.038	---
Country of origin - Oceana	.032	.311	---
Country of origin - South America	.036	.243	---
Country of origin - Other	-.014	.654	---
Number of years in the United States	-.084	.008	Small
Degree pursuing - Associates	-.009	.771	---
Degree pursuing - Bachelors	-.013	.689	---
Degree pursuing - Masters	.004	.906	---
Degree pursuing - Doctorate	-.030	.347	---
Major - Business	-.050	.119	---
Major - Arts	.021	.511	---
Major - STEM	.036	.254	---
Major - Social Sciences	.002	.962	---
Major - Other	-.029	.374	---
Living on or off campus	-.078	.014	Small
Institution type (2 or 4 year)	-.037	.243	---

Student Institutional Characteristics	Sense of Belonging Scale		
	r	*p*	Effect Size
Institution size	-.034	.286	---
Public or private	-.048	.130	---
State - Michigan	.022	.477	---
State - Wisconsin	.036	.260	---
State - Pennsylvania	.016	.618	---
State - New York	.067	.033	---
State - Illinois	-.020	.528	---
State - Indiana	-.001	.963	---
State - Minnesota	-.086	.007	Small
State - Ohio	.036	.230	---

I conducted further analysis to determine whether there were differences between the individual categories in each of the nine student characteristics.

Age. A Spearman correlation analysis indicated that there was no statistically significant relationship (r = -.037, p = .236) between the age of an international student and sense of belonging. Further, a Kruskal-Wallace nonparametric test was conducted, and this test indicated that no statistically significant difference existed on the scores of sense of belonging for international students who were of different ages. This result suggests that there were no differences in the level of sense of belonging among international student attending higher education institutions in the United States based on their age χ^2 (5, N = 1037) = 4.50, p = 0.354 (see Table 14).

Table 14

Mean Rank of Each Age Group

Age Group	n	Mean Rank
18 to 20	272	543.54
21 to 25	425	508.34
26 to 30	221	518.52
31 to 35	74	475.72
36+	45	544.89
Total	1,037	--

Gender. A Spearman correlation analysis indicated that there was no statistically significant relationship (r = -.041, p = .189) between the age of an international student and sense of belonging. Further, a Mann-Whitney U test was conducted, and this test indicated that no statistically significant difference existed on the scores of sense of belonging for international students who were of different genders. This result suggests that there were no differences in the level of sense of belonging among international student attending higher education institutions in the United States based on their gender U(1037) = 126,348.70, Z = -1.326, p = 0.188 (see Table 15).

Table 15

Mean Rank of each Gender

Gender	n	Mean Rank
Male	471	530.74
Female	563	506.42
Total	1037	--

Country of Origin. A total of 123 countries represented in the survey were grouped into 10 regions for reporting purposes and data analysis. A Spearman correlation analysis indicated that there was a statistically significant relationship between country of origin – Europe, (r = .099, p = .002, effect size: small) and country of origin – Middle East, (r = -.098, p = .002, effect size: small), and the mean scores of students on the sense of belonging scale (M = 3.13, SD = 0.58). There was no statistically significant relationship between country of origin Africa (r = .029, p = .347), Asia (r = -.043, p = .178), Caribbean (r = .001, p = .969), Central America (r = .011, p = .731), North America (r = .065, p = .038), Oceana (r = -.032, p = .311), South America (r = .036, p = .243), Other (r = -.014, p = .654) and the mean scores of students on the sense of belonging scale (M = 3.13, SD = 0.58). A Kruskal-Wallace nonparametric test was conducted, and this test indicated that a statistically significant difference existed for the sense of belonging of international students attending higher education institutions who were from different countries of origin. This result suggests that there are differences in the level of sense of belonging among international student attending higher education institutions in the United States based on their country-of-origin χ2 (9, N = 1037) = 26.39, p = 0.002 (see Table 16). Students from North America, Oceana, and Europe had the highest mean rank scores, while students from the Middle East, Asia, and Africa had the lowest mean rank scores. There was a difference in mean rank score of 242 between the highest ranked, which consisted of students from North America (667.84) and students from the Middle East (425.84).

Table 16

Mean Rank of each Region of Origin

Region	n	Mean Rank
Africa	158	520.13
Asia	571	507.59
Caribbean	25	521.29
Central America	16	545.73
Europe	91	612.79
Middle East	91	425.84
North America	17	667.84
Oceana	10	613.13
South America	56	563.83
Other	2	425.70
Total	1037	--

Number of Years in the United States. A Spearman correlation analysis

revealed a statistically significant relationship (r = -.084, p = .008, effect size: small)

between the mean scores of participants on the sense of belonging scale (M = 3.13, SD =

0.58) and the number of years participants lived in the United States. In order to

determine whether a statistically significant difference existed amid the different number

of years on the sense of belonging scale, a Kruskal-Wallis nonparametric test was

conducted. According to Morgan et al. (2019), the Kruskal Wallace nonparametric test

shows whether there is an overall variance among groups. The Kruskal-Wallis

nonparametric test indicated that a statistically significant difference existed in the scores

of the sense of belonging scale among the number of years an international student has

been studying in the Unites States, $\chi2$ (14, N=1037) = 15.96, p = 0.316. The mean scores

suggest that students who participated in this study experienced the greatest sense of

belonging after they had been living in the United States for more than ten years (see

Table 17).

Table 17

Mean Rank of Number of Years in the United States

Number of years in the United States.	n	Mean Rank
0 to 4 years	820	532.39
5 to 9 years	188	451.50
10+ years	29	573.70
Total	1037	--

Degree Pursuing. The results of a Spearman correlation analyses indicated that a

statistically significant relationship did not exist between degree level Associates (r = -

.026, p =.416), Bachelors (r = -.013, p =.689), Masters (r = .004, p =.906), and Doctoral

(r = -.030, p =.347), and sense of belonging (M = 3.13, SD = 0.58). A Kruskal-Wallis

nonparametric test indicated that no statistically significant differences existed on the

scores of the sense of belonging scale (M = 3.13, SD = 0.58) among students pursuing

different degree levels while studying in the United States. This suggests that there were

no differences in their sense of belonging among students studying at higher education

institutions in the United States based on their degree level $\chi2$ (3, N = 1037) = 3.55, p =

0.318 (see Table 18).

Table 18

Mean Rank of each Degree Level

Degree Level	n	Mean Rank
Associates	76	577.82
Bachelors	505	512.57
Masters	257	521.35
Doctoral	199	509.82
Total	1037	--

Academic Major. The results of a Spearman correlation analyses indicated that a statistically significant relationship did not exist between any of the student's academic majors Arts ($r = .021$, $p = .511$), STEM ($r = .036$, $p = .254$), Social Sciences ($r = .002$, $p = .962$), Business ($r = -.054$, $p = .094$), and Other ($r = -.029$, $p = .374$), and sense of belonging ($M = 3.13$, $SD = 0.58$). A Kruskal-Wallis nonparametric test indicated that no statistically significant differences existed on the scores of the sense of belonging scale among students who had different majors while studying in the United States. This suggests that there were no differences in their sense of belonging among students studying at higher education institutions in the United States based on their major χ^2 (4, $N = 1037$) $= 3.68$, $p = 0.460$ (see Table 19).

Table 19

Mean Rank of each Academic Major

Academic Major	n	Mean Rank
Arts	69	542.23
STEM	554	528.99
Social Sciences	160	520.05
Business	148	487.47
Other	106	494.12
Total	1037	--

Living On or Off Campus. A Spearman correlation analysis indicated that there was a statistically significant relationship (r = -.078, p = .014, effect size small) between the mean scores of participants on the sense of belonging scale (M = 3.13, SD = 0.58) and whether a student lived on or off campus. Further, a Mann-Whitney U test was conducted, and this test indicated that a statistically significant difference existed on the scores of sense of belonging for international students who either live on or off campus. This result suggests that there are differences in the level of sense of belonging among international student attending higher education institutions in the United States based on whether they lived on campus. U(1037) = 94,290.40, Z = -2.503, p = .0136 (see Table 20). The mean scores suggest that students experienced the greatest sense of belonging when living on campus (M = 557).

Table 20

Mean Rank of Living On or Off Campus

Living on or off campus	n	Mean Rank
On Campus	275	557.13
Off Campus	762	505.24
Total	1037	--

Institution Type (2 or 4 year). A Spearman correlation analysis indicated that there was no statistically significant relationship (r = -.037, p = .243) existing between the institution that an international student attended and sense of belonging. Further, a Mann-Whitney U test was conducted, and this test indicated that no statistically significant difference existed on the scores of sense of belonging scale (M = 3.13, SD = 0.58) for international students who attended a two-year or a four-year institution. This result suggests that there were no differences in the level of sense of belonging among international student attending higher education institutions in the United States U(1037) = 37,376.50, Z = -1.18, p = 0.241 (see Table 21).

Table 21

Mean Rank of Institution Type

Institution Type	n	Mean Rank
2-year	85	555.28
4-year	952	515.76
Total	1037	--

Institution Size. The results of a Spearman correlation analyses indicated that a statistically significant relationship (r = -.034, p = .286) did not exist between the size of an institution that an international student attended and sense of belonging (*M* = 3.13, *SD* = 0.58). A Kruskal-Wallis nonparametric test indicated that no statistically significant differences existed on the scores of the sense of belonging scale among students who attended institutions that were small, medium, large or extra-large. This suggests that there were no differences in their sense of belonging among students studying at higher education institutions in the United States based on institution size $\chi 2$ (3, N=1037) = 6.61, p = 0.089 (see Table 22).

Table 22

Institution Size

Institution Size	n	Mean Rank
Small	69	561.79
Medium	554	511.88
Large	160	494
Extra-Large	148	532.55
Total	1037	--

Public or Private Institution. A Spearman correlation analysis indicated that there was no statistically significant relationship (*r* = -.048, p = .130) between whether an international student attended a public or private institution and sense of belonging. Further, a Mann-Whitney U test was conducted, and this test indicated that no statistically significant difference existed on the scores of sense of belonging for international students who attended public or private institutions. This result suggests that there were no differences in the level of sense of belonging among international student

attending higher education institutions in the United States based on their institution being public or private $U(1037) = 97,425.1$, $Z = -1.53$, $p = 0.130$ (see Table 23).

Table 23

Public or Private Institution

Gender	n	Mean Rank
Private	271	542.50
Public	766	510.70
Total	1037	--

State. The results of a Spearman correlation analyses indicated that a statistically significant relationship did not exist between State - Michigan, State - Wisconsin, State - Pennsylvania, State - New York, State - Illinois, State - Indiana, State - Ohio that the higher education institution was in and the student and sense of belonging. A Kruskal-Wallis nonparametric test indicated that a very small statistically significant differences existed on the scores of the sense of belonging scale ($M = 3.13$, $SD = 0.58$) among students who lived in any of the eight states surveyed while studying in the United States. More specifically, there was a statistically significant relationship ($r = -.086$, $p = .007$, effect size: small) between the state - Minnesota and the scores of the sense of belonging scale ($M = 3.13$, $SD = 0.58$). This suggests that there were small differences in their sense of belonging among students studying at higher education institutions in the United States based on the Great Lakes state that their institution was in $\chi2$ (8, N = 1037) = 14.30, p = 0.048 (see Table 24). Students studying at higher education institutions located in New York had the highest mean rank score of 571.09 while students studying in higher education institutions located in Minnesota had the lowest mean rank score of 442.68.

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Table 24

Mean Rank of each State

State	n	Mean Rank
Illinois	61	495.72
Indiana	101	517.70
Michigan	84	541.30
Minnesota	103	442.68
New York	129	571.09
Ohio	281	502.08
Pennsylvania	102	533.40
Wisconsin	176	542.33
Total	1037	--

Research Question 3: What influence, if any, do academic integration variables have on international student sense of belonging?

Academic integration variables that affect students' sense of belonging include: international students' relationship with their advisor/mentor, their relationship with faculty members, and their academic involvement. Tinto linked academic integration with students' academic performance and acknowledged that students' interaction with their faculty also affects their academic integration. Respondents completed six questions for the academic integration variables, which focused on faculty and advisor interactions with the student, and the student's classroom experience. A four-point symmetric Likert scale ((4) strongly agree, (3) agree, (2) disagree, (1) strongly disagree) was used to measure students' perceptions of the academic integration variables that affect sense of belonging. I conducted a frequency analysis to determine patterns in the data.

Most respondents, 530 (49.8%), agreed that they had the opportunity to meet with their advisor, while 270 (25.4%) strongly agreed that they had the opportunity to meet with their advisor, 198 (18.6%) disagreed, and 39 (3.7%) strongly disagreed. In addition, 541 (50.8%) respondents agreed that meetings with their advisor were useful, 348 (32.7%) strongly agreed that meetings with their advisor were useful, 117 (11%) disagreed, and 31 (2.9%) strongly disagreed. Interactions with faculty were also mostly positive for respondents; 542 (50.9%) students agreed that they had the opportunity to meet with faculty outside of the classroom while 228 (21.4%) strongly agreed, 214 (20.1%) disagree, and 53 (5%) strongly disagreed. Respondents also had favorable interactions with faculty while in class and perceived their relationships with faculty as being close, 584 (54.9%) agreed that faculty members interacted with them often while 251 (23.6%) strongly agreed, 178 (16.7%) disagreed and 24 (2.3%) strongly disagreed. 446 (41.9%) respondents agreed that they had close relationships with faculty while 274 (25.8%) strongly agreed, 237 (22.3%) disagreed, and 80 (7.5%) strongly disagreed. Lastly, 581 (54.6%) respondents agreed that their academic experience was productive and 334 (31.4%) strongly agreed, 96 (9%) disagreed and 26 (2.4%) strongly disagreed that their academic experience was productive (see Figure 4).
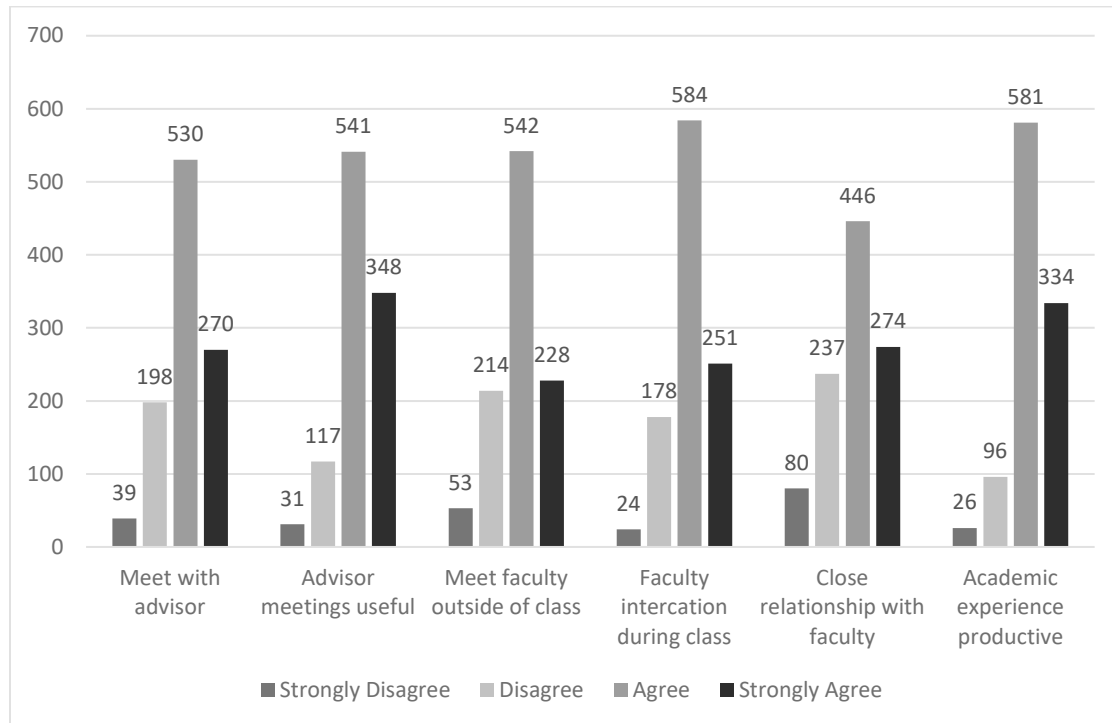
Figure 4. Frequencies of Academic Integration Variables (N = 1064)

To address the third research question, I conducted Spearman correlation analyses. Spearman correlation helped conclude whether there was any statistically significant relationship between the dependent variable (sense of belonging scale) and the academic integration independent variables. The alpha level for statistical analysis was set at .01 when determining statistical significance. Three academic integration variables emerged as having statistically significant relationships with the sense of belonging of international students, which was measured using the sense of belonging scale (*M* = 3.13, *SD* = 0.58). The variables were: (a) relationship with advisor/mentor, (b) relationship with faculty, and (c) academic involvement (see Table 25).

Table 25

Correlations between the Sense of Belonging Scale and Academic Integration Factors

Academic Integration Variables	Sense of Belonging Scale		
	r	*p*	Effect Size
Relationship with advisor/mentor	.415	<.001	Medium
Relationship with faculty	.447	<.001	Medium
Academic involvement	.464	<.001	Medium

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .415, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the relationship they had with their advisor or mentor (*M* = 3.08, *SD* = 0.67). This suggests that international students attending higher education institutions in the United States who had a relationship with their advisor or mentor reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .447, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the relationship they had with their faculty members at the institution (*M* = 2.94, *SD* = 0.60). This suggests that international students attending higher education institutions in the United States who had a relationship with their faculty reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .464, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and their academic involvement (*M* = 3.18, *SD* = 0.70). This suggests that international students attending higher education

institutions in the United States who were more involved academically reported a greater sense of belonging.

Research Question 4: What influence, if any, do social integration variables have on international student sense of belonging?

Social integration reflects the quality of interactions the student has with peers and the campus community (Pascarella & Terenzini, 1980). The variables linked to social integration are relationship with host families, friends/peer support, cultural/religious organizations, and a student's racial identity (a student's feeling of commonality within a racial group). Respondents completed six questions for the social integration variables, which focused on the social relationship's students formed on and off campus. A four-point symmetric Likert scale ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree) and a four-point frequency scale ((1) Never, (2) 1 to 4 times a month, (3) 5 to 9 times a month, (4) 10 or more times a month) were used to measure students' perceptions of the social integration variables that affect sense of belonging. I conducted a frequency analysis to determine patterns in the data.

Most respondents, 463 (43.5%), agreed that they had formed close friendships since coming to the United States, 355 (33.4%) respondents strongly agreed, 139 (13.1%) disagreed, and 46 (4.3%) strongly disagreed. In addition, 544 (51%) respondents agreed that the relationships that they formed with other students were positive, 337 (31.7%) respondents strongly agreed that the relationships that they formed with other students were positive, 98 (9.2%) disagreed, and 24 (2.3%) strongly disagreed. Memberships in on-campus organizations were also mostly positive for respondents; 370 (34.8%) students agreeing that they belong to at least one on-campus organization and 301 (28.3%)

strongly agreed that they belong to at least one on-campus student organization, while 224 (21.1%) disagreed, and 108 (10.2%) strongly disagreed. Respondents did not have a high frequency of memberships in off campus organizations; 396 (37.2%) disagreed that they had memberships in at least one off-campus organization, 233 (21.9%) respondents strongly disagreed, 240 (22.6%) agreed, and 134 (12.6%) strongly agreed. Lastly, 563 (52.9%) respondents agreed that they felt welcomed by other students who were similar to them and 272 (25.6%) strongly agreed, while 128 (12%) disagreed, and 40 (3.8%) strongly disagreed (see Figure 5).
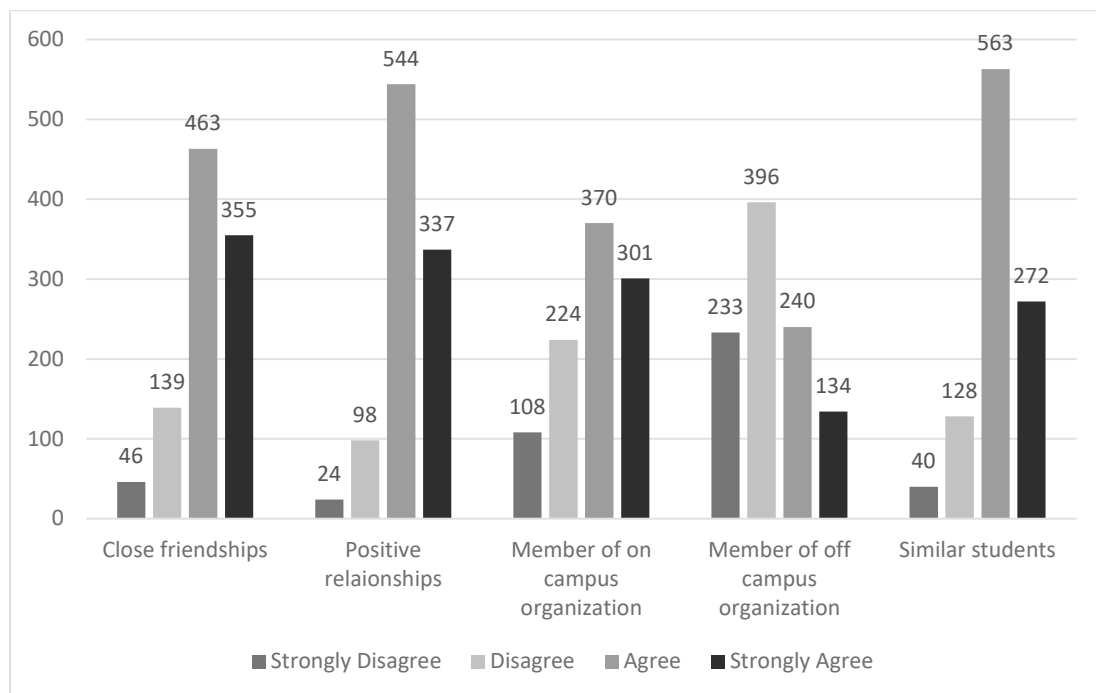
Figure 5. Frequencies of Social Integration Variables (N = 1064)

There was a significant difference in the number of students who met or did not meet with a host family. Of the 1064 students surveyed, 780 (73.3%) students did not meet with a host family, while 284 (26.7%) students met with a host family 1 to 4 times a

month, 26 (2.5%) students met with a host family 5 to 9 times a month, and 10 (2.5%) students met with a host family more than 10 times a month (see Figure 6).
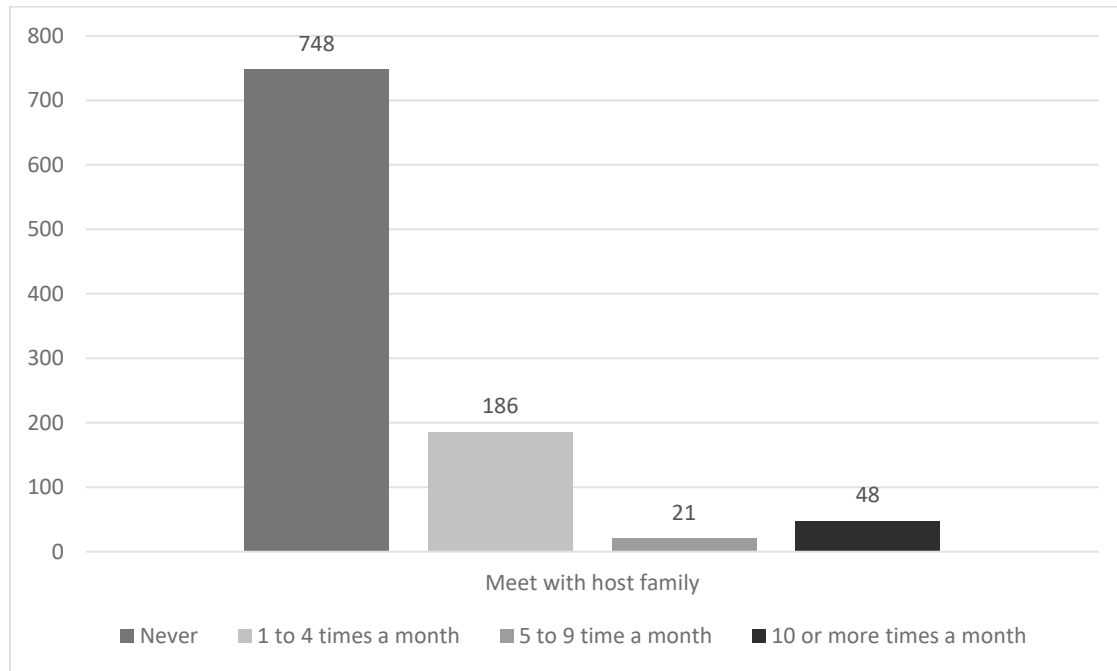
Figure 6. Frequencies of Social Integration Variable Host Family (N = 1064)

To address the fourth research question, Spearman correlation analyses were conducted and helped conclude whether there was any statistically significant relationship between the dependent variable (sense of belonging scale) and the social integration independent variables. The alpha level for statistical analysis was set at .01 when determining statistical significance. Statistically significant relationships emerged between the sense of belonging of international students which was measured using the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and the following variables: (a) relationship with host family, (b) friends/peer support, (c) cultural/religious organizations, and (d) racial identity (see Table 26).

Table 26

Spearman Correlations between the Sense of Belonging Scale and Social Integration

Factors

Social Integration Variables	Sense of Belonging Scale		
	r	*p*	Effect Size
Relationship with host family	.092	.005	Small
Friends/peer support	.445	<.001	Medium
Cultural/religious organizations	.207	.001	Small
Racial identity	.361	<.001	Medium

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .092, p = .005, effect size: small) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the relationship they had with their host families (*M* = 1.837, *SD* = 0.75). This suggests that international students attending higher education institutions in the United States who had a relationship with a host family reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .445, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the support they had from their friends and peers (*M* = 3.16, *SD* = 0.70). This suggests that international students attending higher education institutions in the United States who received support from their friends and peers reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (*r* = .207, p = .001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the student's membership in a

cultural or religious organization ($M = 2.57$, $SD = 0.79$). This suggests that international students attending higher education institutions in the United States who belonged to a cultural or religious organization reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship ($r = .361$, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and the student's racial identity, which is the race the student identifies as ($M = 3.06$, $SD = 0.75$). This suggests that international students attending higher education institutions in the United States who had a relationship with students of a similar racial identity reported a greater sense of belonging.

Research Question 5: What influence, if any, do campus climate variables have on international student sense of belonging?

Campus climate reflects the students' views on group interactions and attitudes, and their expectations of the campus and its members in relation to racial and ethnic diversity (Hurtado et al., 1999). Campus climate has always been an important influencer of sense of belonging for students. The campus climate variables that influence sense of belonging in this study included racism/discrimination, diversity on campus, and nationalism in the host country. Respondents completed six questions in the survey for the campus climate variables, which focused on the experiences students had with racism, diversity, and interaction with domestic students. A four-point symmetric Likert scale ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree) and a four-point frequency scale ((1) Never, (2) 1 to 4 times a month, (3) 5 to 9 times a month, (4) 10 or more times a month) were used to measure students' perceptions of the campus climate

variables that affect sense of belonging. I conducted a frequency analysis to determine patterns in the data.

More than half of the students responding to the survey, 687 (64.6%) students, had never experienced racism, and 563 (52.9%) students reported never observing racism; 266 (25%) students reported that they experienced racism 1 to 4 times a month, while 365 students (34.3%) reported observing racism 1 to 4 times a month. A smaller but still significant number of students, 38 (3.6%), experienced racism 5 to 9 times a month, and 12 (1.1%) students experienced racism 10 times or more a month. 58 (5.5%) students observed racism 5 to 9 times a month, and 17 (1.6%) students responded that they observed racism 10 or more times a month (see Figure 7).
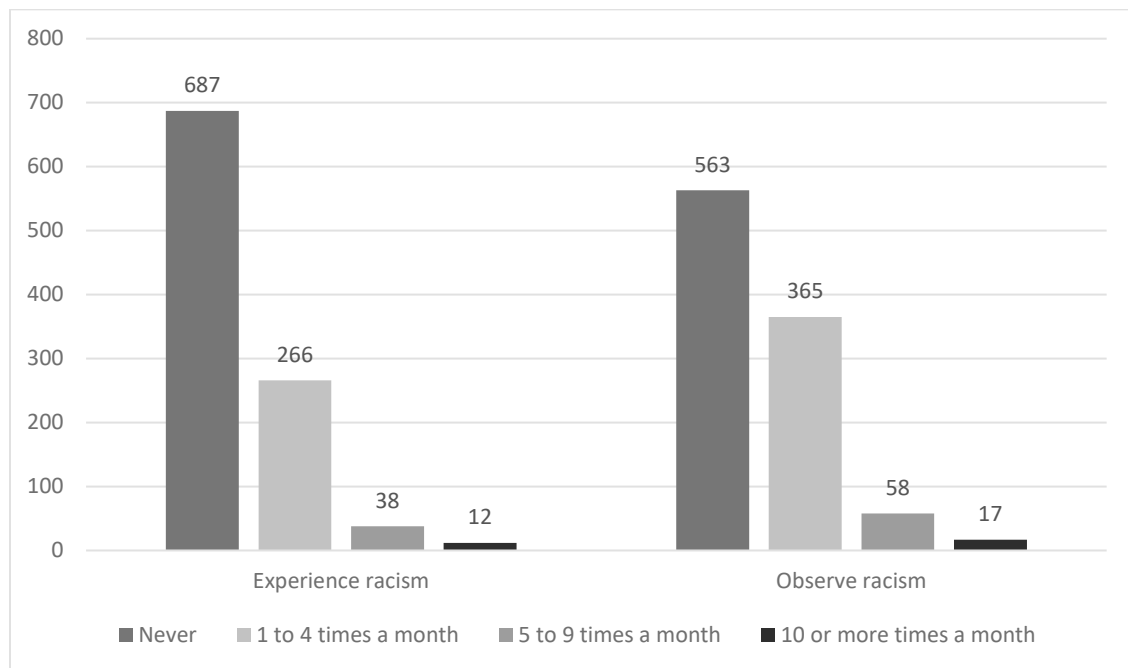
Figure 7. Frequencies of Campus Climate Variables - Racism (N = 1064)

In their responses to the questions addressing campus climate variables, the study participants showed an overall positive outlook regarding their campus climate. A large

number of respondents, 428 (40.2%), agreed that their campus was diverse, and 455 (42.8%) respondents strongly agreed that their campus was diverse, 84 (7.9%) disagreed, and 28 (2.6%) strongly disagreed. Overall, many respondents did not feel anxious interacting with domestic students, 409 (38.4%) disagreed that they felt anxious interacting with domestic students, 194 (18.2%) strongly disagreed, 307 (28.9%) agreed, and 85 (8%) strongly agreed. Students also did not feel unsafe on campus; 479 (45%) respondents disagreed that they felt unsafe on campus because of the current political climate and 218 (20.5%) strongly disagreed; 222 (20.9%) agreed and 76 (7.1%) strongly agreed. In addition, 386 (36.3%) students disagreed when responding to whether they felt inferior to Americans because of the current political climate, 233 (21.9%) students strongly disagreed, 284 (26.7%) agreed, and 92 (8.6%) strongly agreed (see Figure 8).
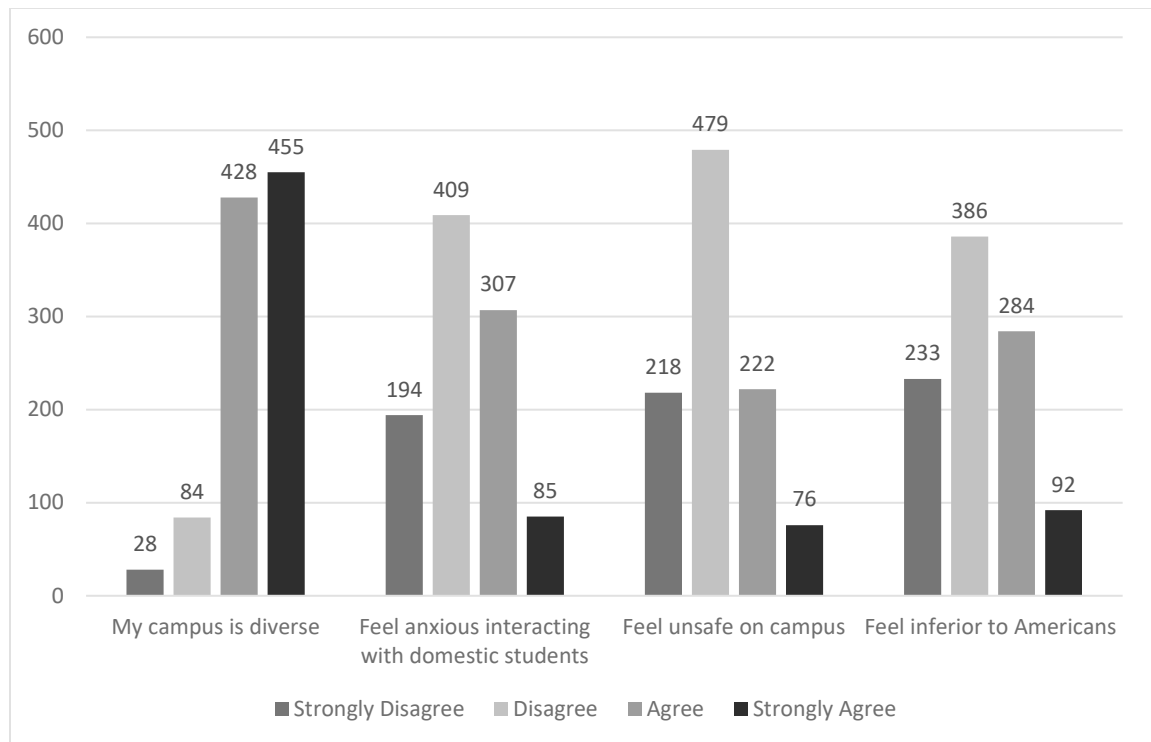
Figure 8. Frequencies of Campus Climate Variables (N = 1064)

In addressing the fifth research question; What influence, if any, do campus climate variables have on international student sense of belonging? Spearman correlation analyses were conducted and helped conclude whether there was any statistically significant relationship between the dependent variable (sense of belonging scale) and the campus climate independent variables. The alpha level for statistical analysis was set at .01 when determining statistical significance. Statistically significant relationships were found between the sense of belonging of international students which was measured using the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and the following variables: (a) racism/discrimination, (b) diversity on campus, and (c) nationalism in host country (see Table 27).

Table 27

Correlations between the Sense of Belonging Scale and Campus Climate Variables

Campus Climate Variables	Sense of Belonging Scale		Effect Size
	r	*p*	
Racism/discrimination	-.258	<.001	Medium
Diversity on campus	.366	<.001	Medium
Nationalism in host country	-.410	<.001	Medium

A Spearman correlation analysis revealed a statistically significant relationship (*r* = -.258, p = .001, effect size: medium) between the mean scores of participants on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and witnessing or experiencing racism or discrimination ($M = 1.45$, $SD = 0.58$). This negative relationship suggests that international students attending higher education institutions in the United States who

witnessed or experienced racism or discrimination reported a lower level of sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (r = .366, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (M = 3.13, SD = 0.58) and students who attended a diverse campus (M = 3.31, SD = 0.75). This suggests that international students attending higher education institutions in the United States who belonged to a diverse campus reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (r = -.410, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (M = 3.13, SD = 0.58) and students who experienced nationalism in their host country (M = 2.23, SD = 0.69). This negative relationship suggests that international students attending higher education institutions in the United States who experienced nationalism in their host country reported a lower sense of belonging.

Research Question 6: What influence, if any, do transition variables have on international student sense of belonging?

Transition occurs when a student is adjusting to college, making sense of a new environment, and acquiring the skills to negotiate the social, physical, and mental landscape of the college environment (Hurtado & Carter, 1997). A student's transition to their campus community is affected by feelings of homesickness, culture shock, reliance on their family/friends back home, their perceived language ability, on campus services, learning communities, information networks, and the student's ability to facilitate their

dietary restrictions while on campus. While variables such as on campus services

learning communities/living on campus, and information networks have helped students

transition to their campus environment, factors such as homesickness, culture shock,

perceived language ability, and dietary restrictions have been shown to negatively impact

an international students' sense of belonging.

Respondents completed 10 questions for the transition variables, which focused

on the transition variables, such as relationships with friends and family in home country,

navigating campus, dietary restrictions, and English proficiency. A four-point symmetric

Likert scale ((1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree) and a four-

point frequency scale ((1) Never, (2) 1 to 4 times a month, (3) 5 to 9 times a month, (4)

10 or more times a month) were used to measure students' perceptions of the transition

variables that impact sense of belonging. I conducted a frequency analysis to determine

patterns in the data.

Of the 1064 survey responses, 444 (41.7%) of the students agreed that they

missed their friends and family back home while an additional 444 (41.7%) students

strongly agreed that they missed their friends and family back home, 77 (7.2%)

disagreed, and 30 (2.8%) strongly disagreed. Several of the respondents did not find it

difficult to cope with their new environment: 166 (15.6%) respondents strongly disagreed

when responding to whether they were having difficulty coping with their new

environment, while 497 (46.7%) respondents disagreed, 261 (24.5%) agreed that it was

difficult to cope with their new environment, and 71 (2.6%) strongly agreed.

Additionally, 358 (33.6%) respondents agreed that they relied heavily on their friends and

family back home, 198 (18.6%) strongly agreed that they relied on their friends and

family back home, 333 (31.3%) disagreed, and 106 (10%) strongly disagreed. Many

students, 429 (40.3%), agreed that their English proficiency was good and most of the

respondents, 510 (47.9%), strongly agreed that their English proficiency was good, 36

(3.4%) disagreed, and 7 (0.7%) strongly disagreed. Students responding to the survey

believed that there was at least one support services staff member available to help them

with their problems; 552 (51.9%) agreed that there was a support staff person available to

assist with their problems and 245 (23%) strongly agreed, 135 (12.7%) disagreed, and 50

(4.7%) strongly disagreed. Over half of the students, 575 (54%), agreed that being a

member of a learning community or class cohort helped them adjust to life in the United

States while 185 (17.4%) strongly agreed, 185 (17.4%) disagreed, and 37 (3.5%) strongly

disagreed. Lastly, 535 (50.3%) respondents agreed that they were able to follow their

dietary restrictions with campus food and 135 (12.7%) students strongly agreed that they

were able to follow their dietary restrictions with campus food, 212 (19.9%) disagreed,

and 100 (9.4%) strongly disagreed (see Figure 9).
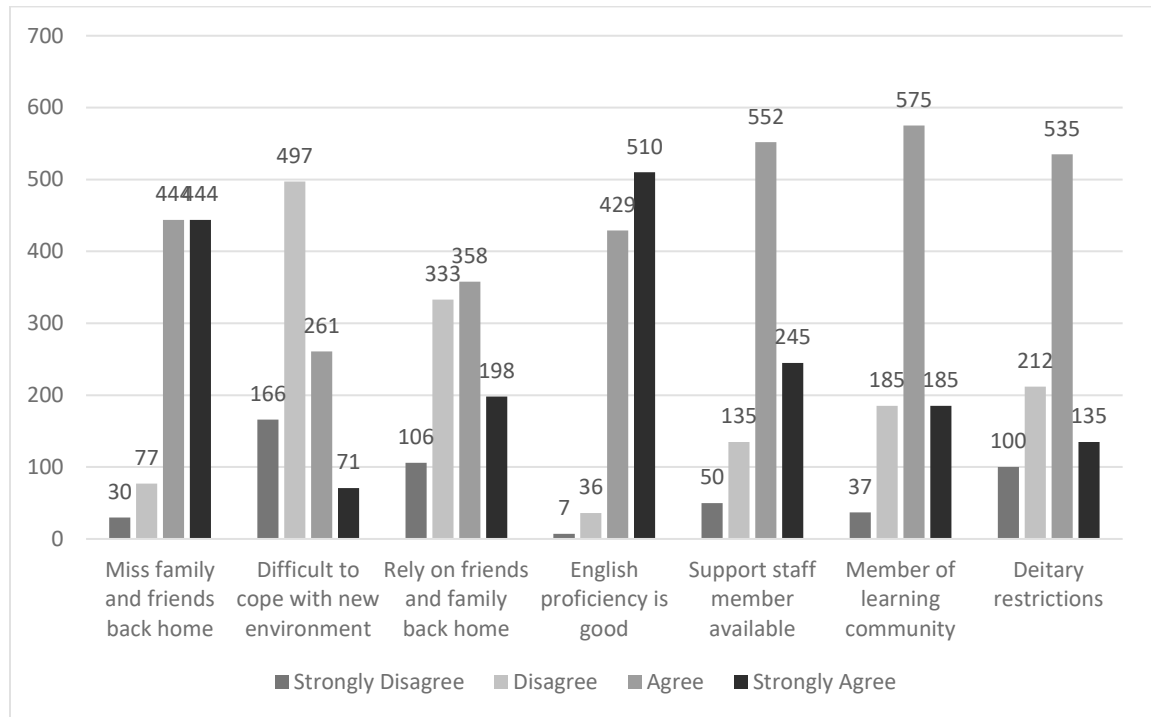
Figure 9. Frequencies of Transition Variables (N = 1064)

There was a significant difference in the number of times students used on campus services or information networks. Of the 1064 students surveyed, 255 (24%) students did not use on-campus services, while 615 (57.8%) students used their on-campus services 1 to 4 times a month, 95 (8.9%) students used their on-campus services 5 to 9 times a month, and 38 (3.6%) students used their on-campus services more than 10 times a month. Students responding to the survey used information networks more often than they did on-campus services. Of the 1064 students surveyed, 81 (7.6%) students did not use on-campus information networks, while 456 (42.9%) students used the on-campus information networks 1 to 4 times a month, 184 (17.3%) students used the on-campus information networks 5 to 9 times a month, and 282 (26.5%) students used the on-campus information networks more than 10 times a month (see Figure 10).
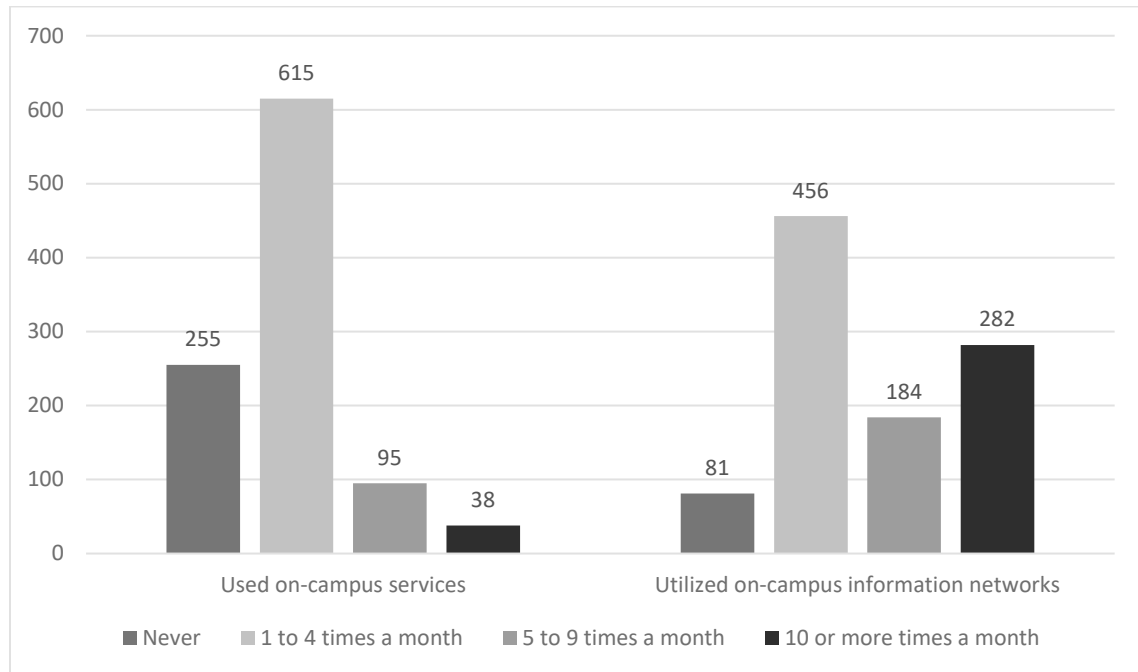
Figure 10. Frequencies of Transition Variables (a) Campus Services and (b) Information Networks (N = 1064)

Of the 284 respondents who lived on campus, 140 (49.3%) agreed that living on-campus aided in their adjustment to living in the United states while 86 (30.3%) students strongly agreed that living on-campus aided in the adjustment to living in the United States, 33 (11.6%) disagreed, and 7 (2.65%) strongly disagreed. Of the 780 respondents who lived off campus, 482 (61.8%) agreed that thy felt welcomed by their local community while 124 (15.9%) students strongly agreed that they felt welcomed by their local community, 92 (11.8 %) disagreed, and 18 (2.3%) strongly disagreed (see Figure 11).
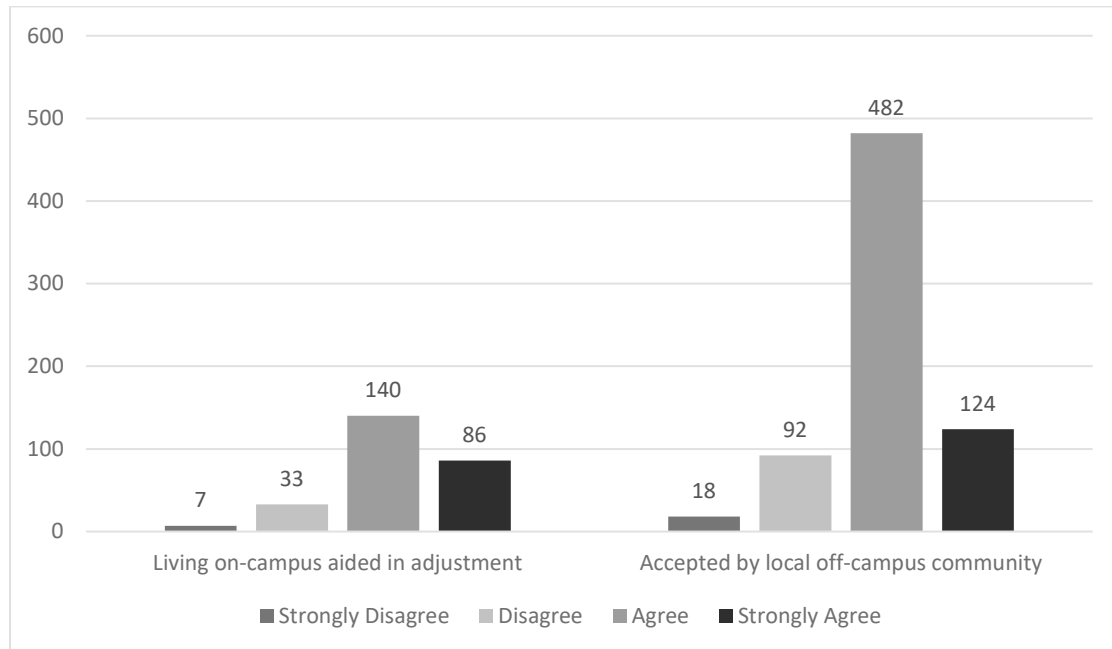
Figure 11. Frequencies of Transition Variables for Students Living On-campus (N = 284) or Off-campus (N = 780)

To address the sixth research question, What influence, if any, do transition variables have on international student sense of belonging? Spearman correlation analyses were conducted, and statistically significant relationships were found between the sense of belonging of international students which was measured using the sense of belonging scale *(M = 3.13, SD = 0.58)* and seven of the eight transition variables. The following variables: (a) culture shock, (b) family/friends back home, and (c) on campus services (support staff) and on campus services (campus services) (d) learning community, (e) information networks, (f) dietary restrictions, (g) language ability (see Table 28) were found to affect sense of belong among international students. The alpha level for statistical analysis was set at .01 when determining statistical significance. There

was no significant relationship between feelings of homesickness and an international

students' sense of belonging.

Table 28

Spearman Correlations between the Sense of Belonging Scale and Transition Variables

Transition Variables	Sense of Belonging Scale		
	r	*p*	Effect Size
Feelings of homesickness	-.044	.167	--
Culture shock	-.289	<.001	Small
Rely on family/friends back home	-.165	<.001	Small
On campus services (support staff)	.386	<.001	Medium
On campus services (campus services)	.178	<.001	Small
Learning community/living on campus	.425	<.001	Medium
Information networks	.198	<.001	Small
Dietary restrictions	.326	<.001	Medium
Language ability	.300	<.001	Medium

A Spearman correlation analysis revealed a statistically significant relationship (*r* = -.288, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the students who experienced culture shock (*M* = 2.24, *SD* = 0.81). This suggests that international students attending higher education institutions in the United States who experienced culture shock reported a lower sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (*r* = -.165, p = <.001, effect size: small) between the mean scores of participants on the sense of belonging scale (*M* = 3.13, *SD* = 0.58) and the relationship they had with their

family and friends in their home country ($M = 2.65$, $SD = 0.91$). This suggests that international students attending higher education institutions in the United States who had a relationship with their family and friends in their home country reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship ($r = .386$, p = <.001, effect size: medium) and ($r = .178$ p = <.001, effect size small) between the mean scores of participants on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and international students' use of on campus services support staff ($M = 3.00$, $SD = 0.77$) and campus services ($M = 1.92$, $SD = 0.70$). This suggests that international students attending higher education institutions in the United States who used on campus services reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship ($r = .425$, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and international students who were members of a learning community ($M = 2.91$, $SD = 0.73$). This suggests that international students attending higher education institutions in the United States who were members of a learning community reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship ($r = .198$, p = .001, effect size: small) between the mean scores of participants on the sense of belonging scale ($M = 3.13$, $SD = 0.58$) and the students' participation in information networks ($M = 2.66$, $SD = 0.97$). This suggests that international students attending higher education institutions in the United States who participated in information networks reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (r =.326, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (M = 3.13, SD = 0.58) and the dietary restrictions of students (M = 2.71, SD = 0.83). This suggests that international students attending higher education institutions in the United States who were able to accommodate their dietary restrictions reported a greater sense of belonging.

A Spearman correlation analysis revealed a statistically significant relationship (r = .300, p = <.001, effect size: medium) between the mean scores of participants on the sense of belonging scale (M = 3.13, SD = 0.58) and the language ability of a student (M = 3.46, SD = 0.60). This suggests that international students attending higher education institutions in the United States who believed that they had good language ability reported a greater sense of belonging.

Research Question 7: What combination of student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition variables best predict international student sense of belonging?

Research question 7 aimed at determining whether international student sense of belonging could be predicted by (a) student characteristics, (b) institutional characteristics, (c) academic integration variables, (d) social integration variables, (e) campus climate variables, and (f) transition variables. I conducted a linear regression analysis using variables that were identified as statistically correlated to sense of belonging. A linear regression was used because there was an established relationship between the dependent variable sense of belonging, and the independent variables. The alpha level for statistical analysis was set at .01 when determining statistical significance.

Twenty- three variables were found to be significantly related to an international

students' sense of belonging (see Table 29).

Table 29

Statistically Significant Correlations between (a) Student Characteristics, Academic

Integration, Social Integration, Campus Climate, and Transition Variables and (b)

International Student Sense of Belonging

Independent Variable	Factor Type	r	P	Effect Size
Number of years in the United States	Student Characteristics	-.084	.008	Small
Living on or off campus	Student Characteristics	-.078	.014	Small
Country of origin - Europe	Student Characteristics	.092	.008	Small
Country of origin - Middle East	Student Characteristics	-.098	.002	Small
State - Minnesota	Institutional Characteristics	-.086	.007	Small
Academic involvement	Academic Integration	.464	<.001	Medium
Relationship with faculty	Academic Integration	.447	.020	Medium
Relationship with advisor/mentor	Academic Integration	.415	<.001	Medium
Friends/peer support	Social Integration	.445	<.001	Medium
Racial identity	Social Integration	.361	<.001	Medium
Cultural/religious organizations	Social Integration	.207	<.001	Small
Relationship with host family	Social Integration	.092	.005	Small
Nationalism in host country	Campus Climate	-.410	<.001	Medium
Diversity on campus	Campus Climate	.366	<.001	Medium
Racism/discrimination	Campus Climate	-.258	<.001	Small
Learning community	Transition	.425	<.001	Medium
On campus services (support staff)	Transition	.386	<.001	Medium

Independent Variable	Factor Type	r	P	Effect Size
Dietary restrictions	Transition	.326	<.001	Medium
Language ability	Transition	.300	<.001	Medium
Culture shock	Transition	-.289	<.001	Small
Information networks	Transition	.198	<.001	Small
On campus services	Transition	.178	<.001	Small
Rely on family/friends back home	Transition	-.165	<.001	Small

The linear regression analysis included the 23 variables that were statistically significantly correlated with the sense of belonging scale (see Table 30) based on the Spearman correlational analysis. The correlational analysis established that there was a linear relationship between the Independent variables and dependent variable. The final regression analysis resulted in a statistically significant model (F = 113.23, df = 10, p = <.001). Together, the variables in the model accounted for 52.5% (R^2) of the variation in scores on the sense of belonging scale. 10 of the 20 variables emerged as statistically significant predictors of sense of belonging in the final model: (a) academic involvement, (b) relationship with faculty, (c) friends/peer support, (d) learning community, (e) nationalism in host country, (f) on campus services (support staff), (g) diversity on campus, (h) dietary restrictions, (i) language ability, (j) racism/discrimination. The test for multicollinearity or variance inflation factor (VIF) was conducted as part of the linear regression analysis; the assumption that there is no relationship between independent variables occurs when the multicollinearity value is below 5 for each variable in the regression (Hair et al., 2011). The multicollinearity data ranges of 1.12 to 2.33 for the

independent variables in this study suggests that there is no relationship between them

(see Table 30).

Table 30

Linear Regression to Determine the Factors Which Best Predict an International

Students' Sense of Belonging While Attending College in the United States

Independent Variables	Factor Type	*Beta*	*sig*	VIF
Academic involvement	Academic Integration	.14	<.001***	1.52
Relationship with faculty	Academic Integration	.10	<.001***	1.59
Friends/peer support	Social Integration	.12	<.001***	1.40
Nationalism in host country	Campus Climate	-.18	<.001***	1.24
Diversity on campus	Campus Climate	.17	<.001***	1.15
Racism/discrimination	Campus Climate	-.14	<.001***	1.17
On campus services (support staff)	Transition	.10	<.001***	1.39
Learning community	Transition	.13	<.001***	1.44
Language ability	Transition	.13	<.001***	1.13
Dietary restrictions	Transition	.13	<.001***	1.12

a. Final regression output - Dependent Variable: Sense of Belonging; $F(10, 1036) = 113.23$, *p*-value =.001, R-squared = .525
b. *. p<.05; **. p<.01; ***. p<.001

The 10 variables that emerged as statistically significant predictors of sense of

belonging for international students were: (a) academic involvement, (b) relationship

with faculty, (c) friends/peer support, (d) learning community, (e) nationalism in host

country, (f) on campus services (support staff), (g) diversity on campus, (h) dietary

restrictions, (i) language ability, (j) racism/discrimination, and they belonged to all four

factors (a) academic integration, (b) social integration, (c) campus climate, and (d)

transition. The 10 variables accounted for 52.5% (R^2) of the variation in scores on the

sense of belonging scale. None of the student or institutional characteristics were found to be statistically significant when included in the regression analysis.

A Normal probability plot was conducted on the independent variable during the linear regression analysis to determine if the dataset was normally distributed. The almost linear pattern of the line shows that the data set was a good fit (see Figure 12).

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: SB

Imputation Number: Original data
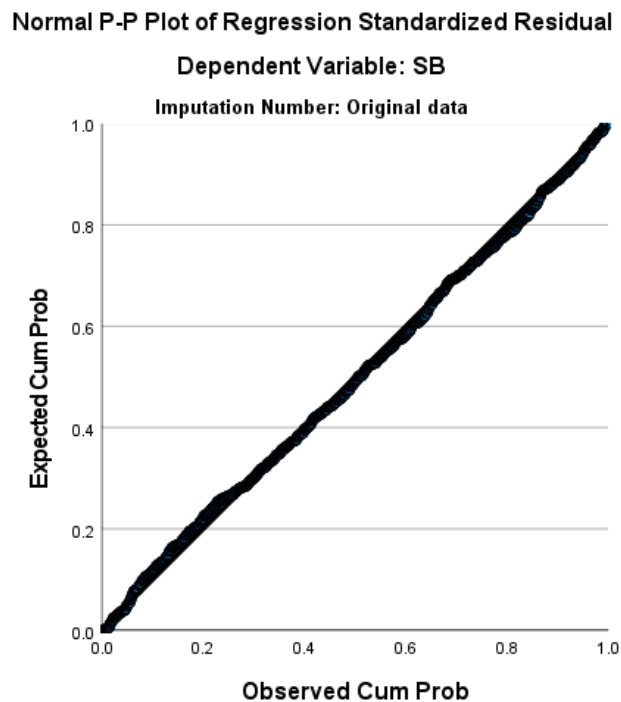
Figure 12. Normal Probability Plot

Summary

This chapter was a report of the analysis that examined the factors that impact international students' sense of belonging while attending higher education institutions in the United States. The purpose of the study is to determine the factors that impact international students' sense of belonging across a variety of institutions in the United States. More precisely the study focuses on the effect that academic integration, social

integration, campus climate, and transition factors have on international students' sense

of belonging and what combination of these factors best predict an international student's

sense of belonging.

A total of 1064 international students from 56 higher education institutions took

part in the study. These institutions are located in the Great Lakes region, which consists

of the states of Illinois, Indiana, Minnesota, Michigan, New York, Ohio, Pennsylvania,

and Wisconsin. The data gathered via the Qualtrics was transferred to SPSS 27 for

analysis using frequency analyses, cross tabs, Spearman correlation analyses, the Mann-

Whitney U Test, the Kruskal-Wallis nonparametric test, and linear regression analysis.

The cross tabulations provided information regarding students' demographics and how

they interacted with the factors that impact an international students' sense of belonging.

Spearman correlation analyses determined that there were statistically significant

relationships between several of the independent variables identified in the survey and

international students' sense of belonging. Finally, the linear regression allowed for

determining that 10 of the 23 variables identified are significant predictors of

international student sense of belonging.

Chapter Five

Discussion

This study aimed to understand the factors that impact international students' sense of belonging while attending a higher education institution in the United States. Belongingness has long been viewed as a basic human impetus as people share a need to belong (Maslow, 1962; Strayhorn, 2018). I examined how student characteristics, institutional characteristics, academic integration, social integration, campus climate, and transition factors impacted international student sense of belonging. While there has been much research on the topic of sense of belonging, on the factors that impact sense of belonging, and on the ways sense of belonging impacts outcomes such as student achievement and persistence, little is known about the full experiences of international student sense of belonging and the campus environments that create a sense of belonging for the students (Strayhorn, 2018). For the purposes of this research, sense of belonging is defined as the connection that students feel towards their campus and is a subjective evaluation of the quality of relationships that they form while on campus based on their interactions (Strayhorn, 2008). After conducting this study however, the sense of belonging definition can be expanded to include the connectedness that a student feels towards their campus which is influenced by their academic integration, peer interactions, the campus climate, and experiences transitioning to campus.

This study was guided by Tinto's theory of student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. According to Tinto, students who became integrated into an institution's academic and social systems and had shared values with the

institution experienced higher rates of sense of belonging (Mwangi, 2016). Student

integration is an important concept when researching sense of belonging, as is the

concept of campus climate. Hurtado and Carter's (1997) work focuses on how college

transition and perceptions of the campus climate affect college students' sense of

belonging, mainly encompassing the student's view of whether they feel included in the

campus community. This study's literature review identified 18 factors that impacted

international student sense of belonging. I grouped the 18 factors into four categories:

academic integration, social integration, campus climate, and transition factors.

The study utilized a survey, which reached students during a very tumultuous

time for international students living in the United States. Students faced many social

justice issues such as the Black Lives Matter movement that highlighted racial injustice

(Belam, 2021; Buchanan et al., 2020), and a global coronavirus pandemic (Centers for

Disease Control and Prevention, 2020). Additionally, during the time the survey was

distributed, there was a greater recognition of nationalism, which resulted in a perceived

decline in acceptance for immigrants living in the United States (Holmes, 2019). The

results of this survey may very well reflect the feelings of students in this moment in the

history of the United States, or the survey may truly reflect how international students

feel, regardless of all the external social issues facing the United States.

To address research sub-question one (What is the level of sense of belonging

among international students at higher education institutions in the United States?), I used

descriptive statistics in the form of a frequency analysis (such as the mean, median, and

mode for the sample population) to further understand types of patterns emerging from

the data. Research sub-questions two through six were addressed using frequency

analysis and correlational analysis. Frequency analysis allowed me to understand patterns in the data, while correlational analysis allowed me to determine the strengths of the relationships between a set of variables and the variable on sense of belonging. Finally, a linear regression analysis was conducted to determine which of the four-student characteristic, one institutional characteristic and 18 factors identified by literature had the greatest impact on international student sense of belonging.

This chapter discusses the factors identified as statistically significant in their relationship with international students' sense of belonging. It also discusses several key findings associated with the findings that address the main research question: What factors influence international students' sense of belonging to their colleges and universities in the United States? These discussions are followed by the theoretical implications for the study, recommendations for practice, some limitations of the study and recommendations for future research.

Key Findings

Five important findings in relation to the factors that impact international students' sense of belonging emerged from this study. First, findings showed that international students who participated in the study had a high sense of belonging while attending higher education institutions in the United States. Participants in the study reported an overall mean score of 3.13 on the (4-point Likert) sense of belonging scale. Participants from Africa ($M = 3.14$, $SD = .55$), the Caribbean ($M = 3.14$, $SD = .51$), South America ($M = 3.22$, $SD = .60$), Central America ($M = 3.24$, $SD = .57$), Oceana ($M = 3.28$, $SD = .53$), Europe ($M = 3.29$, $SD = .54$), and North America ($M = 3.41$, $SD = .60$) reported mean scores that were higher than the overall mean score on the sense of

belonging scale, while participants from Asia ($M = 3.11$, $SD = .56$) and the Middle East ($M = 2.90$, $SD = .65$) reported mean scores that were lower than the overall mean score on the sense of belonging scale for all participants.

The second finding that emerged showed that international student sense of belonging could be predicted by a combination of academic integration, social integration, campus climate, and transition factors. Ten factors emerged as statistically significant predictors of sense of belonging for international students. They include (a) academic involvement, (b) relationship with faculty, (c) friends/peer support, (d) learning community, (e) nationalism in host country, (f) on campus services (support staff), (g) diversity on campus, (h) dietary restrictions, (i) language ability, (j) racism/discrimination and they belonged to all four groups (a) academic integration (b) social integration, (c) campus climate, and (d) transition (see Table 30).

Third, international students' feelings towards nationalism in the host country emerged as the strongest predictor of their sense of belonging. The level of sense of belonging for respondents decreased with an increase in scores for survey questions related to nationalism in the host country. While nationalism has not been traditionally studied in the context of international student sense of belonging, this study shows the importance of this factor.

Fourth, the campus climate group of factors had the strongest impact on an international students' sense of belonging. The three campus climate factors nationalism in the host country, diversity, and racism/discrimination had the strongest beta coefficients of all the factors that emerged as significantly correlated to an international

students' sense of belonging. This finding suggests that international students are affected most by their campus environment while attending college in the United States.

Finally, the fifth key finding was actually a surprising one: no student or institutional characteristic emerged as significantly correlated with international students' sense of belonging. Studies in the past such as those by Tinto (1993) and Astin (1993) have emphasized the influence of student and institutional characteristics on student sense of belonging. This study's findings on the perceptions of sense of belonging amongst international students do not align with prior research, thus further emphasizing the importance of campus environments and efforts to involve students who are newcomers to the United States.

Detailed Discussion of Findings

In this section, I discuss the five key findings in detail and in the following order:

- international students' sense of belonging
- the utility of the model that brings together academic integration, social integration, campus climate, and transition factors to predict international student sense of belonging
- the impact of nationalism on international student sense of belonging
- the importance of campus climate factors for international student sense of belonging, and
- the limited influence of student and institutional characteristics as predictors of international student sense of belonging

International Students' Sense of Belonging

The results of the study showed that international student sense of belonging was high among international students who took the survey. Participants in the study reported an overall mean score of 3.13 on the (4-point Likert) sense of belonging scale. Research has shown that a students' sense of belonging has historically been tied to their retention and intention to persist (Morrow & Ackermann, 2012; Mwangi, 2016) and shows the level of connection students have to their institution. For international students, sense of belonging is not only about the connection they have with their institution; it is also an indicator of their academic involvement and social ties within the institution (Glass & Westmont-Campbell, 2014; Wood & Harris III, 2016). As this study confirmed, international students' sense of belonging has also been tied to their relationship with faculty, and their feeling of acceptance by peers.

Country of origin, specifically students from the Middle East had lower mean scores on the sense of belonging scale ($M = 2.90$, $SD = .65$) while students from Europe ($M = 3.29$, $SD = .54$) and North America ($M = 3.41$, $SD = .59$) had higher mean scores on the sense of belonging scale. This finding shows that international students who looked more like the domestic population, felt a greater sense of belonging. When comparing institution type, students who attended two-year institutions had a slightly higher mean score ($M = 3.17$, $SD = .65$) on the sense of belonging scale than students who attended four-year institutions. Garcia et al., (2019) believes that because international students at community colleges are required to register full-time, they are more likely to feel connected with faculty, peers, and the institution. In addition, students who lived on-campus had a slightly higher mean score ($M = 3.18$, $SD = .62$) on the sense of belonging scale than students who lived off campus.

With its focus, this study expanded scholars' interest to also encompass international students. For studies that have been quantitative in nature, research examining various models of student persistence (Pascarella & Terenzini, 1980; Ethington, 1990; Berger & Milem, 1999; Titus, 2004) has rarely, if ever, directly assessed sense of belonging and its effects on persistence among international students. Other quantitative studies have analyzed sense of belonging among international students in relation to the effect of different variables on sense of belonging (Garza et al., 2021; Garcia et al., 2019) but have not measured the level of sense of belonging among international student populations.

This study adds to the existing research by presenting a quantifiable level of sense of belonging among international students who are studying in the United States. This study also supports the findings of a quantitative study by Curtain et al. (2013), in which international students rated their sense of belonging as being high, with a mean score of 3.77 on a 5-point scale. Previous studies have shown that for international students finding a sense of belonging can be difficult (Rivas et al., 2019; Van Horne et al., 2018; Mwangi, 2016; Yao, 2016); however, this study shows that international students studying in the United States typically have a high level of sense of belonging.

The Utility of the Model that Brings Together Academic Integration, Social Integration, Campus Climate, and Transition Factors to Predict International Students' Sense of Belonging

The purpose of this study was to determine what combination of factors had the greatest impact on an international students' sense of belonging. Research that combines a diversity of academic integration, social integration, campus climate, and transition

factors influence on international students' sense of belonging is limited. The present study addressed the need to bring a broader range of factors in the analysis of international students' sense of belonging. This study explored the factors that impacted 1064 international students who attended 56 institutions across the eight Great Lakes states. I ran a linear regression analysis that consisted of the 23 variables that emerged as statistically significant in their relationship with international student sense of belonging when examined separately. The combined effect of these 23 variables on sense of belonging resulted in a statistically significant model (F = 113.23, *df* = 10, *p* = <.001). Together, the 10 factors that emerged as significant predictors of sense of belonging in the model accounted for 52.5% (R^2) of the variation in scores on the sense of belonging scale. The 10 factors that emerged as statistically significant appear in the final regression model displayed in Table 30, and include (a) nationalism in host country, (b) diversity on campus (c) racism/discrimination, (d) academic involvement, (e) learning community, (f) language ability, (g) dietary restrictions, (h) friends/peer support, (i) on campus services (support staff), (j) relationship with faculty.

Nationalism in the host country emerged as the strongest negative predictor of an international students' sense of belonging, while diversity on campus emerged as the strongest positive predictor of an international students' sense of belonging. Among the other factors that emerged as significant, academic integration was the strongest predictor of academic involvement, friend/peer support was the strongest predictor of social integration, and learning communities, language ability, and dietary restrictions were all equally the strongest predictors of an international student's transition to their higher education experience in the United States.

The results of this study show that researchers can now look at student sense of belonging through the lens of an expanded model that includes academic integration, social integration, campus climate, and transition factors. The model that combined academic integration, social integration, and campus climate and transition factors showed that campus climate had the greatest impact on international student sense of belonging, transition factors second, academic integration factors third, and social integration factors fourth. The campus climate factor nationalism in host country had the highest beta coefficient ($\beta = -.18$), followed by diversity on campus ($\beta = .17$), and lastly by racism/discrimination ($\beta = -.14$). Prior research has also pointed to the influence of each of these factors separately on students' sense of belonging including nationalism in the host country (Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016), racism/discrimination (Nunez, 2009; Mwangi, 2016; Poyrazli & Lopez, 2007; Tachine et al., 2017), and diversity on campus (Wood & Harris III, 2015; Maestas et al., 2007; Astin, 1993 b; Hurtado & Carter, 1997; Milem et al., 2005; Gurin & Nagda 2006). In combination, these factors played a significant role in the overall model in this study.

Transition factors had the second highest influence on international students' sense of belonging. All of the factors in this group positively impacted international students' sense of belonging. This study supported the findings of prior research, which have shown that students' transition to their campus community is affected by the students' perceived language ability (Chen & Razek, 2016; Kwon, 2009; Lau et al., 2018), on campus services (support staff) (Lau et al., 2018; Le et al., 2016; Wood & Harris III, 2015), learning communities (Hoffman et al., 2002; Johnson et al, 2007), and

dietary restrictions (Alakaam, 2016; Brown, 2009). The factors learning community, language ability, and dietary restrictions all had beta coefficients of .13, while on campus services (support staff) had a beta coefficient of .10.

There were several transition factors that emerged in the literature review such as feelings of homesickness (Poyrazli & Lopez, 2007; Hannigan, 2007: Kwon, 2009) and culture shock (Chen et al., 2011; Poyrazli & Lopez, 2007; Singh, 2018) that did not emerge as significantly related to an international student sense of belonging in this study's model. This was very interesting as there is an abundance of literature that points to these factors as having a great impact on an international student's adjustment while in the United States. It is useful to note that several of the studies that focused on factors such as homesickness and culture shock, did not assess the impact of these factors on an international students' academic and social integration, and their perceptions of the campus climate.

This study aligned with prior research findings, which demonstrate that academic integration in the form of academic involvement (Strauss & Volkwein, 2004; Hausmann et al., 2007; Kwon, 2009) and the relationship that international students have with faculty at their institution (Maestas et al., 2007; Newman et al., 2015; Glass et al., 2015; Chen & Razek, 2016; Guiffrida 2005; Pascarella & Terenzini, 1980) impacted an international students' adjustment. Academic involvement ($\beta = .14$) and the relationships formed with faculty ($\beta = .10$) emerged as very important for international students in this study as well. These factors not only aid students with adjusting to the academic life of college in the United States; they also increase the level of persistence among international students. Friend/peer support ($\beta = .12$) was the only social integration factor

which emerged as significant in the regression model. This finding supported a large body of literature, which has noted the importance of the friendships that students form when they attend college (St-Amand et al., 2017; Singh, 2018; Cartmell & Bond, 2015; Hausmann et al., 2007; Strayhorn, 2008; Le, LaCost, & Wismer, 2016; Morrow & Ackermann, 2012; Chen & Razek, 2016; Pascarella & Terenzini, 1980).

This study contributes to existing research by providing empirical findings showing that several factors impact international students' sense of belonging. The final model shows the value of looking at academic and social integration, the campus environment and transition factors in combination, to better understand the way international students adjust to their new environment. The results of this study add to research by showing that academic integration (academic involvement and relationship with faculty), social integration (friend/peer support), campus climate (nationalism in host country, diversity on campus, and racism/discrimination), and transition factors (language ability, learning communities, campus services (support staff), and dietary restrictions) all combine to emerge as important predictors of international students' sense of belonging.

The Impact of Nationalism in Host Country on International Students' Sense of Belonging

The Impact of nationalism in the host country is a factor that has not been traditionally included in studies of factors that impact international students' sense of belonging. Nationalism in the host country had the highest standardized Beta coefficient ($\beta = -.18$) of all the factors that were significant in their relationship with international students' sense of belonging, which means that this factor played the strongest role in the

combination of factors that together influenced an international student's sense of belonging. The prominence of nationalism results in the increasingly negative treatment of immigrants, which negatively affects the immigrants' feeling of being welcome (Bonikowski & DiMaggio, 2016). The results of this study emphasized the negative influences of nationalism on international students as well.

While nationalism has come to the forefront over the past several years (Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016; Young et al., 2019), research has shown that in the United States, natives have had constant feelings of nationalism throughout the years (Young et al., 2019). Nationalism is seen as the "pre-disposition to protect the interests of native born over those of the foreign born" (Young et al., 2019, p. 412) and occurs when host country natives have negative feelings towards immigrants. International students bear the burden of these experiences even though their time in the United States is temporary. This is especially true for Middle Eastern students ($M = 2.07$, $SD = .60$) whose mean score for negative experiences with nationalism in the host country was the highest among students from all of the regions. The results of this study showed that students from Middle Eastern countries were more likely to be impacted by feelings of nationalism in the United States than students from any other region in the world that was represented in this study. This could be due to policies by the previous political administration in the United States, which perpetuated a fear of immigrants by creating a "travel ban" which affected mostly majority Muslim countries. As a result, many students from Muslim majority countries or Muslim majority areas of their country felt unwelcome in the United States (Saul, 2017 b; Horak, 2019).

Identifying oneself as part of a group relies on what is perceived as that group's acceptance (Simonsen, 2016), and with the anti-immigration rhetoric that has recently become a rally cry in the Unites States, international students have become more sensitive to their place in American society. Research has focused on the socioeconomic, political, and cultural adaptation of immigrants, but there has been little focus on whether immigrants feel as though they belong in the host country (Simonsen, 2016). Many of this study's student respondents felt unsafe on campus because of the current political climate, and also felt inferior to Americans because of the current political climate. Students from Europe and North America were the least impacted by feelings of nationalism when compared to international students of other nationalities. In addition, students who had lived in the United States for 10 or more years were also less impacted by nationalism in their host country when compared to students who had not lived in the United States as long.

Despite a lack of literature on nationalism in the United States and the effect on international students' sense of belonging, there is an established narrative that has followed the historical studies of nationalism. The findings of this study extend literature that focuses on nationalism and bring a quantifiable insight on the impact nationalism has on international student sense of belonging. This study showed that nationalism in the host country is an important factor that impacts international student sense of belonging and should be studied further.

The Importance of Campus Climate Factors for International Student Sense of Belonging

The strongest cluster that emerged from the four groups was campus climate. The campus climate factors nationalism in host country (β = -.18), diversity on campus (β = .17), and racism/discrimination (β = -.14), had the highest standardized beta coefficients in the sense of belonging model and showed the greatest impact on international student sense of belonging. This result showed that the campus climate set the stage for international students' perception of belonging and was the most important group of factors for international students. Nationalism in host country and experiences with racism and discrimination emerged as strong negative predictors of sense of belonging among international students, while diversity on campus was a strong positive predictor of sense of belonging among international students on campus. The preceding section focused on nationalism in more detail; here I discuss further the remaining factors of campus climate.

For many international students who come from a country where they are a member of the predominant ethnicity or ethnic group, at their campus and while in the host country, they are unexpectedly faced with issues of race that they had never encountered in their home country. Students who participated in the survey indicated that experiencing or witnessing racism or discrimination while attending college in the United States negatively impacted their sense of belonging. In other words, international students attending higher education intuitions in the United States were likely to experience a decrease in their feeling of sense of belonging with an increase in exposure to occurrences of racism or discrimination. More specifically, this study showed that while

experiences with racism/discrimination were relatively low for the population surveyed, students from Africa (*M* = 1.39, *SD* = .63), Asia (*M* = 1.32, *SD* = .51), and the Caribbean (*M* = 1.40, *SD* = .49), were more likely to report experiences with racism/discrimination.

In the United States, racism and discrimination continue to be a part of daily life for racial minorities (Essed, 1990; Feagin & Sikes, 1994; Pierre & Mahalik, 2005). Experiencing racism can also be a psychological stressor that affects mental health, physical health, and adjustment of international students studying in the U.S. (Pierre & Mahalik, 2005). While racism and White dominance have long been a part of higher education in the U.S. (Ash et al., 2020), international students may not have thought before coming to the United States that racism or discrimination was an experience that they may have when attending college. Several international students reported witnessing or experiencing racism or discrimination, which, as researchers have pointed out, is not uncommon in a higher education setting. According to Ash et al. (2020), "Students of color report experiencing both outright racial macroaggressions as well as racial micro aggressions on campus, therefore, college campuses are replete with stories of racialized bias incidents in the so-called post-racial American society" (p. 3).

It is also important to note that international students experience racism and discrimination to varying degrees based on their perceived outward appearance. While students who looked like the predominant White population (European decent) were less likely to report experiences with racism, students who were identifiably ethnic-looking such as students from the Middle East, Latin America, Asia, or Africa were more likely to report experiences of racism or discrimination (Lee & Rice, 2007; Sherry et al., 2009). Based on the current study's findings, international students of different ethnic origins

were equally likely to report that they observed racism regardless of their region of origin. Encounters with racism and discrimination have left international students with higher levels of anxiety, low levels of self-esteem, feelings of inferiority, and depression, all factors that could lead to student attrition (Pierre & Mahalik, 2005).

Finally, international students who perceived their campus as diverse were more likely to report having a high sense of belonging while attending college in the United States. In this study, students from the Caribbean ($M = 3.17$, $SD = .64$) and Central America ($M = 3.11$, $SD = .58$) had stronger beliefs that their campuses were diverse. In addition, students who lived off campus ($M = 3.35$, $SD = .75$) and students who attended two-year institutions ($M = 3.40$, $SD = .58$) also saw their campuses as more diverse. Campus diversity not only affects international students' sense of belonging; it also impacts their academic development and social experiences on campus, while also increasing their satisfaction with their college experience (Astin, 1993 b; Hurtado & Carter, 1997). Diversity on campus also positively affects international students' cultural awareness as they are exposed to different cultures and racial understanding among students of different cultures is promoted (Astin, 1993 b). Increased diversity on campus assists students with their adaptation to campus life and life in a new country.

Research has shown that students who attend college at predominantly White institutions with low diversity have been more likely to be stressed by their minority status, which has increased their psychological sensitivity towards the overall campus climate (Hurtado and Carter, 1997). This occurs because colleges with predominantly White student populations and little amounts of diversity have been unable to provide opportunities for international students to have "cross-racial" interactions, which has

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limited their learning of other social and cultural groups (Milem et al., 2005). Conversely, a campus environment that is more diverse creates better higher educational experiences for international students, which in turn enhances their learning. With faculty involvement, diversity also creates a positive classroom environment for international students and provides several educational benefits (Milem et al., 2005). When international students are exposed to more diverse campuses, they become more tolerant, and experience more tolerance from their peers. Campus diversity allows students to learn about each other's culture and differences, which in turn, leads to an appreciation of different perspectives and life experiences and promotes inclusion and social justice (Gurin & Nagda 2006).

The findings in this study support the importance that literature has placed on the impact of campus climate factors on international students' sense of belonging (Hurtado & Carter, 1997; Fischer, 2007; Museus, 2014; Museus et al., 2017). The results of this study also confirm the findings of several studies, both quantitative and qualitative, which have shown that minority students have been more likely to report that their campus climate has been hostile or unwelcoming (Fischer, 2007; Museus, 2014). Several authors have focused on the effects of diversity (Gurin & Nagda 2006; Milem et al., 2005; Hurtado & Carter, 1997; Amit & Bar-Lev, 2014), racism/discrimination (Essed, 1990; Feagin & Sikes, 1994; Pierre & Mahalik, 2005; Ash et al., 2020; Lee & Rice, 2007; Sherry et al., 2009), and nationalism (Young et al., 2019; Simonsen 2016; Kemmelmeir & Winter, 2008; Bonikowski & DiMaggio, 2016; Horak, 2019; Najar & Saul, 2016; Saul, 2017 b; Mwangi, 2016; Feinstein, 2016), on international students' adjustment, and the

results of this study confirm the importance of these factors for international students' sense of belonging.

The Limited Influence of Student and Institutional Characteristics as Predictors of International Student Sense of Belonging

An interesting result of the study was that no student or institutional characteristics emerged as a significant predictors of international students' sense of belonging. The student characteristics utilized in the study were (a) age, (b) gender, (c) country of origin, (d) number of years in the United States, (e) academic major, and (f) living on or off campus. The institutional characteristics utilized in this study were (a) institution type (2 or 4 year), (b) institution size, (c) whether the institution was public or private, and (d) state that the institution was located in. Both Tinto (1993) and Astin (1993) have theorized that student characteristics influence student sense of belonging and their intention to persist in college. Their research has mostly involved domestic students in the United States, however, and had not taken into consideration the experiences of international students.

In their study, Hausmann et al. (2007) also found that student characteristics were not associated with student sense of belonging. Once international students come to the United States, they are all seen as and treated as international students, which would probably make their background characteristics less prominent in studies of their sense of belonging. Higher education institutions typically have international offices that cater to all the immigration and transitional needs of international students. The ubiquitous presence of international student officers dedicated to international students may offer an explanation as to why institutional characteristics did not emerge significant predictors in

this study's final model. It may be that international student officers play a buffer effect to institutional characteristics masking effects of size or bureaucratic processes across student services that domestic students face on a daily basis (Hausmann et al., 2007).

While student and institutional characteristics did not emerge as significant predictors of sense of belonging, they were found to be significant in their relationship with several of the factors that impacted international student sense of belonging. A chi-square test of independence revealed that there was a statistically significant relationships between number of years in the United States and the social integration factor friend/peer support and a statistically significant relationship between academic involvement and a student's region of origin. Finally, a student's relationship with faculty was also significantly correlated to whether they lived on or off campus.

This study has shown a significant difference between domestic student populations and international student populations when conducting sense of belonging studies. This fifth key finding adds a different dimension to current literature that has emphasized the role of student and institutional characteristics on student sense of belonging. As this study has shown that student and institutional characteristics do not significantly impact international students' sense of belonging, future literature may benefit from focusing more on the factors that impact international students' sense of belonging and less on the student and institutional characteristics. Based on previous studies, it is more likely that domestic populations benefit more from the assessment of these background characteristics than international student populations.

Theoretical Implications

To approach this study's research questions, I combined Tinto's theory on student departure and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging. An increasing amount of existing research has studied international student sense of belonging from Tinto's lens (Le et al., 2016; Curtin et al., 2013; Maestas et al., 2007; Wood, & Harris, 2015; Glass et al., 2015; Guffrida, 2005; Strayhon, 2008; Chen & Razek, 2016; Morrow & Ackerman, 2012; Andrade, 2006; Mamiseishvili, 2012; Soria et al., 2012; Singh, 2018; Davis et al., 2019; Garcia et al., 2019) and Hurtado and Carter's lense (Umbach & Wawrzynski, 2015; Strayhorn, 2018; Harper & Hurtado, 2007; Fischer, 2007; Johnson et al., 2007; Hurtado & Ponjuan, 2005) however the two theories have not been employed together to study international student sense of belonging.

The combination of Tinto's theoretical framework, which focuses on academic and social integration, with Hurtado and Carter's model, which focuses on campus climate and transition, allowed me to bring together diverse factors that research has connected separately to international students on the one hand and to student sense of belonging on the other. The literature surrounding international student sense of belonging helped guide the grouping of the factors that impact international student sense of belonging. The students' academic and social integration factors were guided by Tinto's theory, while Hurtado and Carter's model focused on transition and campus climate factors. It would have been insufficient to conduct this study without categorizing and performing a detailed analysis of all factors that impact international students' sense of belonging. Tinto's and Hurtado and Carter's work provided an excellent guide for this

study and should be used together to conduct studies on international student sense of belonging.

Tinto's theory on student departure was a very useful starting guide for this study as several of the factors that emerged through this study's literature review closely aligned with established literature that focused on academic integration and social integration (Rienties et al., 2012; Tinto, 2012; Matirosyan et al., 2019; García et al., 2019). Factors such as relationships with faculty, relationships with advisors, and academic integration fit well into Tinto's academic integration. For Tinto's social integration, factors such as friend/peer support, a student's racial identity, the cultural and religious organizations that they belonged to, and the relationships they had with host families, all accounted for an international student's social integration while attending college in the United States. Tinto's theory has been rightfully critiqued for not including all factors that impact a student's sense of belonging; therefore, Hurtado and Carter's work was included in this research study.

Hurtado and Carter's work did an excellent job of filling in the gap left by Tinto's theory of student departure. The 11 factors (nationalism in host country, diversity on campus, racism/discrimination, learning community, on campus services (support staff), dietary restrictions, language ability, culture shock, information networks, on campus services, rely on family/friends back home) that impacted international student sense of belonging, which were not a right fit for the academic integration and social integration groups in Tinto's theory, were captured in the campus climate and transition categories of Hurtado and Carter's model. Established literature has aligned Hurtado and Carter's model with sense of belonging in higher education (Museus et al., 2017; Museus et al.,

2018; Hussain & Jones, 2019). The combination of Tinto's and Hurtado and Carter's work allowed for acknowledging the expanded range of factors that have been linked to 1) international student adjustment and 2) student sense of belonging.

This study showed that academic integration and social integration as proposed by Tinto, and campus climate and transition as proposed by Hurtado and Carter, were all significantly related to international students' sense of belonging. The results of this study align with previous literature on international students' sense of belonging. However, while several previous studies have focused on academic integration and social integration, or campus climate and transition factors, none of them has connected the four areas. This connection, and the subsequent results, show that this area of sense of belonging should be explored further.

By combining Tinto and Hurtado and Carter, this study filled the gap left by traditional theories that have not explicitly included the experiences of minority populations in college (Museus, 2014). This study was also the first study to concentrate on the sense of belonging of a wide cross section of international students who attended higher education institutions in the Great Lakes area. This study did not exclude types of international student or types of institutions, and was therefore able to capture data from students representing over 123 countries and 56 institutions, which consisted of two-year, four-year, public, and private institutions. The conclusions of this study are based on the multiple institutions and the multiple student populations represented.

Recommendations for Practice

Based on the results of the present study I suggest a few recommendations for practice. Recommendations were made in the context of three of the five findings and the results of the linear regression analysis.

Recommendations Based on The Impact of Nationalism in Host Country on International Students' Sense of Belonging

While institutions cannot control the general political climate of the host country, they can create safe spaces and encourage an increase in acceptance for their international students on campus. As higher education institutions are places of learning, institutions should encourage domestic students to learn about foreign cultures. This can be done by making study abroad or study away experiences a mandatory part of degree attainment. If a mandatory study abroad is not practical, institutions can create curriculum about diverse cultures in mandatory elective courses and make attending an on-campus cultural activity mandatory. Institutions can also make foreign language studies mandatory so that students understand the effort that one must make to learn a foreign language and thus hopefully help domestic students become more patient with students for whom English is their second or third language.

Recommendations Based on The Importance of Campus Climate Factors for International Student Sense of Belonging

In this study, international students felt a rise in their feelings of belonging when there was an increase in their perception of campus diversity. One of the changes that institutions can make to increase tolerance in diversity is by creating spaces that document the diversity of the campus, which can include hanging photos of faculty, staff,

and students who are diverse and in diverse settings around campus (McCullough &

Gotian, 2020). As a multicultural person myself, I have often participated in photoshoots

at the university because I wanted the international students and other diverse students to

look at the materials published or distributed by the institution and see someone they

recognize and identify with. Institutions should also encourage international and domestic

student organizations to work together so that they can have an appreciation of each

other's culture, similarities, and differences. It is also important for diversity to be

represented in the staffing at the institution such as staffing the immigration office with

diverse staff. Having an immigration office with no international or diverse staff or

students will not make an international student feel like diversity is truly a focus of the

institution. As is usually mentioned in other studies, institutions should also ensure that

their diversity is reflected in the staff, faculty, and administrative ranks, and not just

within the student body.

Recommendations Based on The Limited Influence of Student and Institutional Characteristics as Predictors of International Student Sense of Belonging

The limited influence of student and institutional characteristics on an

international students' sense of belonging may stem in part because of the support that

students receive from their international office and staff. An institution's support staff

should be funded and well trained (Jaschik, 2021). Higher education institutions should

also teach all of their staff how to work with international students (cross cultural

training) as opposed to allowing campus wide staff to develop the habit of relying only

on the international office support staff to assist international students. It is also important

for staff who work with international students to understand the difficulties that

international students face when they come to the United States (Li & Kaye, 1998; McMahon, 2011). It is helpful for campus departments to be assigned funding so that they can hire international students to not only encourage learning in the department, but to give students the opportunity to interact with staff members is a more relaxed setting.

Additional Recommendations Based on Results of the Regression Analysis

Academic Involvement. Academic involvement is necessary for international students to be successful while pursuing their advanced degrees in the United States. While most colleges offer orientation courses, these should be made mandatory for all international and domestic students as opposed to optional. Orientation courses should teach students about classroom etiquette and expectations, standards for coursework completion, academic resources, and classroom culture (e.g., it is OK to ask the professor questions and to speak up in the classroom). Orientation classes should also teach about diversity, not only in terms of race, but also culture, religion, abilities, food preferences, and socio-economic status among other things. Students should be encouraged to join an organization that they may feel comfortable in and one they have nothing in common with to try to learn about themselves and others. Orientation should also include anti-bias training, to give students the opportunity to assess their own biases, and reflect on them (McCullough & Gotian, 2020). It is also important for institutions that enroll international students to create programs and services that encourage students to interact with their American peers in the academic setting (Zhao et al., 2005). Institutions should also reach out to their international students to let them know about campus resources that will encourage their academic involvement such as tutoring, advising hours, and other campus academic resources (Jaschik, 2021).

Relationship with Faculty. International students typically have to adapt to their host country, but it is important to determine whether higher education institutions can assist international students in that process by ensuring that faculty members are involved in the adaptation process. As institutions continue to recruit international students, faculty members will continue to have more internationally diverse classrooms and must be adequately prepared for this. Teaching faculty about the cultures of the international students they interact with through "intercultural communication training" (Yeh et al., 2021, p. 104) can reduce misunderstanding in the classroom and strengthen the relationships that faculty members have with their international students.

It is also important to acknowledge that in several instances, a faculty's belief that an international student lacked English proficiency as a reason for poor class performance as opposed to the belief that the student lacked academic preparedness and experience, varied by the race of the faculty member and their country of origin (Jin & Schneider, 2019; Yeh et al., 2021). This preconceived notion of the cause of difficulties that international students face in the classroom points to a need for faculty to be actively involved in intercultural training and learn teaching methods that can be adapted to different populations. Yeh et al. (2021) showed that faculty were more aware of their teaching methods and how they interacted with their international students after they received intercultural training. Some of the adaptations that faculty members made were ending classes early so students could have one-on-one interaction with the faculty member after class if they had any additional questions or providing different methods for communication such as handouts in addition to class announcements for assignments (Yeh et al., 2021). In addition, institutions should ensure that faculty members are having

mandatory face-to-face meetings with international students who are enrolled in their classes. Faculty members recognize that international students experience loneliness and in some cases experiences of cultural differences with the U.S. (Jin & Schneider, 2019). However, students who have more positive experience with faculty inside and outside of the classroom will experience greater levels of sense of belonging.

Friends/Peer Support. Higher education institutions can purposefully encourage positive interactions between international students and their peers through programs such as advising networks, co-curricular involvement to highlight the student's academic learning, encouraging students to be involved in learning communities, and peer mentoring (Strayhorn, 2018). Faculty and staff should also be made aware of these efforts so that they can encourage international students to participate to build the friend/peer support they receive on campus. An increase in international students' sense of belonging based on the interactions with peers also increases student success. Institutions should focus on policies that encourage positive social interactions (Strayhorn, 2018) by creating programs such as an organization match, where incoming students are asked to complete a brief survey regarding their background and preferences, which would then generate matches for the students based on active campus organizations. In addition, these organizations would be informed of their new student matches and can reach out to students to encourage their participation and help them feel welcomed to campus.

Learning Communities. In his Social Theory of Learning, Wegner (1998) saw learning as social in nature. Learning communities are typically comprised of students taking their classes in cohorts, and have the added advantage of increasing student and faculty partnerships in an educational environment, which in turn increases student

success (Garza et al., 2021). Campuses typically have learning communities for students who live on-campus, but, as reflected in this study, most of the students live off-campus, which should be taken into consideration. Creating learning communities based on major and encouraging students to meet with colleagues outside of class should be one of the goals of institutions who truly want to integrate their international students into the campus community. In learning communities, students do not have to make new friends every semester for each new class and are able to get over the social obstacle of meeting new people, while focusing on their academic needs. In addition to an academic advisor, students should have a "faculty contact," if they need advice, or a student who has preceded them in their major as part of their "community."

Dietary Restrictions. Campuses can create partnerships with neighborhood restaurants that serve ethnic foods so that students have a wider variety of foods that they could choose from that may not be available in the cafeteria. Campuses should also try having an international menu available where they can cook foods from a different country maybe once a week to show international students that they care and to also introduce domestic students to food from different cultures. Most international foods are easy to cook and ingredients can be found at local groceries, which makes cooking these foods a viable option for campus food services.

Language Ability. Lastly, colleges and universities can ensure that students who are not confident in their language abilities are offered programming that can help them adjust to life and college in the United States. Programs such as those that pair students who would like to practice their English with native English speakers help students develop their speaking confidence and can help them make more friends and persist as a

result. Administrators can also encourage faculty members to provide students with resources that can assist with their written and spoken English, so that they can have increased classroom participation.

Limitations

This study's findings need to be interpreted in the context of several of its limitations. While assessing limitations is an important aspect of any research, these limitations do not decrease the additional understanding that was achieved regarding factors that impact international students' sense of belonging (Johnson et al., 2019). The first limitation stemmed from the study's delimitation to the Great Lakes region. As the survey was only distributed in the Great Lakes states, the results cannot be readily generalized to the international students of other regions in the United States.

Secondly, it is very likely that the study was only distributed by institutions where the international education advisors had a good relationship with their student population, which may have skewed the sense of belonging results positively. One of the demographic questions asked by the survey was the name of the institution. Even though the survey was anonymous, it is very likely that any institutions that perceived that they did not have a good relationship with their international students may not have sent out the survey because they would not want the results to reflect badly on their institution. One of the institutions that I contacted wanted to be assured that their institution would not be identified in the data analysis before they agreed to distribute the survey. One very real concern by institutions was that their students may in fact be unhappy with their services, which an institution would not want broadcasted in a study.

Another potential limitation is that students who chose to respond to the survey were the students who were actively involved with their own institutions (for example they checked their emails). It is very likely that these students who were involved were the students who would have a higher sense of belonging to their institution. In addition, students could have withheld information in their reporting because they were asked certain identifying questions such as the name of their institution. The opposite could have also happened where students reported a lower sense of belonging towards their institution than what they truly felt.

The survey for this study was administered during a time in which there was a heightened awareness of racist events in the United States such as the Black Lives Matters Movement (Belam, 2021; Buchanan et al, 2020), and the Coronavirus pandemic (Centers for Disease Control and Prevention, 2020), which coincided with a dramatic increase in racism and hate crimes towards people who are of Asian origin (Fuller, 2021; Sturla et al., 2021)). There was also an increased awareness of anti-immigrant sentiment because of the political environment at the time (Holmes, 2019). Due to these events, it may be likely that students responding were acutely aware of racism and nationalism in the United States, which may have caused them to respond to these questions based on what was happening and not necessarily on their overall experience since coming to the United States.

Institutional representation was another limitation. While I was able to receive responses from a significant cross section of public, private, two-year, and four-year institutions in all eight Great Lakes states, there was very little representation from institutions that hosted large international student populations. When a request for survey

distribution was sent out to the top hosting institutions, of the ones that responded, they were unable to distribute the survey because of their own research priorities or because they were receiving too many requests to distribute surveys to their international student populations.

This study was intentionally quantitative in nature as a way of capturing as much data as possible regarding international student sense of belonging. With that being said, there is value to being able to gather qualitative data. As students were not able to expand on their answers, or provide follow up information, I may have missed some information that may have explained some of the trends discovered in the data. In addition, instrument reliability was another limitation that could have occurred. As no tested instruments measuring academic integration, social integration, campus climate, and transition factors were available, I obtained questions from different studies in an attempt to measure all of the factors established by literature.

Estimating the number of surveys distributed could also be seen as a limitation. I was not able to send surveys directly to students and instead relied on the help of international education advisors and other students who had friends attending Great Lakes states institutions. Because of this, I can only estimate the number of surveys that were distributed based on trends in the responses and IPEDS data for individual institutions. Lastly, the higher sense of belonging scores may be attributed to the type of institution that sent out the survey. It is more likely that the students who responded to the survey felt integrated into their college environment, they had a positive view of their judgement of "fit' within their environment, and that they received support in the collegiate environment (Hoffman et al., 2002). The higher scores could also be attributed

to the responding students being more actively engaged or more heavily invested in their respective collegiate experiences (Marinis, 2014). Based on the results of the study, there were many different reasons why international students have a higher sense of belonging while attending a higher education institution in the United States.

Recommendations for Future Research

This study's findings and limitations suggest a few future research possibilities. This study did not control for institution type, i.e., public or private, two-year or four-year, and the type of degree that the international student when conducting the analysis. These areas are all good starting points for future research on international student sense of belonging. A larger national study of international students would confirm whether this study is consistent with the feelings of students in other geographic location in the United States. While the Great Lakes region provides a very good representation of international student populations, it would be interesting to have first-hand responses from students living in Eastern, Western and Southern regions. It would also be beneficial to conduct a mixed methods study (interviews in addition to survey) where students can elaborate more on their choices. There is great value in allowing people to express themselves outside of the choices of a four-point Likert scale and some themes not discovered during they survey could be discovered. Another possibility is a longitudinal study where students can be interviewed at different junctures of their academic career to determine how sense of belonging is affected by number of years in the United States. In the initial correlational analysis of this study, length of time in the US (five to nine years), was one of the factors that correlated with sense of belonging. It

would be interesting to see whether sense of belonging increases over time, decreases over time, or sees increases and decreases at different times.

Future research could also take a closer look at sense of belonging among different countries of origin. Country of origin, specifically students from the Middle East had lower mean scores on the sense of belonging scale ($M = 2.90$, $SD = .65$) while students from Europe ($M = 3.29$, $SD = .54$) and North America ($M = 3.41$, $SD = .59$) had higher mean scores on the sense of belonging scale. Further analysis as to whether this pattern is consistent for all international students from these specific regions and why would be beneficial. It would also be interesting to study how the factors that impacted sense of belonging in this study would influence an international student's intent to stay at the current institution or to continue with studies or complete studies, also maybe how it impacts GPA.

International students' adaptation to different systems of education, e.g., class participation that may be more difficult for students who come from cultures where they do not interact with the faculty and other students in class (Yildirim, 2014; Yau, 2014), would also be a great topic to explore. This study established that transition factors are important to international student sense of belonging and additional research should be conducted to determine how a student's transition to college in the United States affects their feelings towards the campus climate (Hurtado and Carter, 1997). Chi Square test of independence showed several relationships with student characteristics and several of the academic integration, social integration, campus climate, and transition factors. It would be interesting to take a closer look at these relationships between the student characteristics and variables.

Summary and Conclusion

This study examined the factors that were most likely to impact international students' sense of belonging while they attended a higher education institution in the United States. Based on a literature review, I identified 18 factors, and grouped them together into the categories of academic integration, social integration, campus climate, and transition factors. International students are an important part of the higher education landscape and with the recent drop in international student enrollment, it is imperative for higher education institutions to focus on the retention of students who are already attending institutions in the United States. While prior research has focused on international students and on students' sense of belonging, none of these studies has sought to create a comprehensive set of factors in an attempt to determine which of the factors, and in what combination, have an influence on international students' sense of belonging. Tinto's theory of student departure (1993) and Hurtado and Carter's work on how college transition and perceptions of the campus climate affect college students' sense of belonging (1997) guided this study. Tinto and Hurtado and Carter have not been used together to study sense of belonging amongst international student populations. The combination of Tinto's theory and Hurtado and Carter's work allowed me to create a perspective that encompassed the academic, social, campus climate, and transition factors that affect the sense of belonging of an international student in a U.S. college. The results of this study identified a combination of ten factors that were statistically significant predictors of international students' sense of belonging: (a) academic involvement, (b) relationship with faculty, (c) friends/peer support, (d) learning community, (e) nationalism in host country, (f) on campus services (support staff), (g) diversity on

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campus, (h) dietary restrictions, (i) language ability, (j) racism/discrimination. These 10

factors belonged to all four groups (a) academic integration (b) social integration, (c)

campus climate, and (d) transition. This research shows that for international students,

there is a wide combination of factors that affect their sense of belonging outside of the

typically researched academic and social factors. The research thus provides higher

education institutions with a fresh perspective on ways that they can meaningfully engage

with their international students to help them feel welcomed on campus.

References

Alakaam, A. A. (2016). International Students' Eating Habits and Food Practices in Colleges and Universities. In Bista, K., & Foster, C. (Eds.), *Campus Support Services, Programs, and Policies for International Students* (pp. 99-118). IGI Global. http://doi:10.4018/978-1-4666-9752-2.ch006

Amit, K., & Bar-Lev, S. (2014). Immigrants' sense of belonging to the host country: the role of life satisfaction, language proficiency, and religious motives. *Social Indicators Research*, *124*(3), 947-961.

Andrade, M. S. (2006). International student persistence: Integration or cultural integrity?. *Journal of College Student Retention: Research, Theory & Practice*, *8*(1), 57-81.

Ash, A. N., Hill, R., Risdon, S., & Jun, A. (2020). Anti-racism in higher education: A model for change. *Race and Pedagogy Journal: Teaching and Learning for Justice*, *4*(3), 2.

https://soundideas.pugetsound.edu/cgi/viewcontent.cgi?article=1071&context=rpj

Astin, A. W. (1993). *What matters in college?: Four critical years revisited*. Jossey-Bass.

Astin, A. W. (1993 b). Diversity and multiculturalism on the campus: How are students affected? *Change: The Magazine of Higher Learning*, *25*(2), 44-49.

Banks-Gunzenhauser, M. (2009). *Sense of belonging and opportunities for academic success for immigrant Latino students: A case study* (Publication No. 3373642) [Doctoral dissertation, University of Iowa]. ProQuest Dissertations and Theses Global.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal

attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3),

497– 529.

Belam, M. (2021, January 29) *Black Lives Matter movement nominated for Nobel peace

prize*. The Guardian. https://www.theguardian.com/world/2021/jan/29/black-

lives-matter-nobel-peace-prize-petter-eide-norweigan-mp

Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of

integration in a causal model of student persistence. *Research in Higher

Education*, *40*(6), 641-664.

Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical

examination. *Social forces*, *69*(2), 479-504.

Bonikowski, B., & DiMaggio, P. (2016). Varieties of American popular nationalism.

American Sociological Review, *81*(5), 949-980.

Brown, L. (2009). The role of food in the adjustment journey of international students. In

A. Lindgreen & M. Hingley (Eds), *The new cultures of food: Marketing

opportunities from ethnic, religious and cultural diversity* (pp. 37-56). Routledge.

Buchanan, L., Bui, Q., Patel, J. (2020, July 3) *Black Lives Matter May Be the Largest

Movement in U.S. History*. The New York Times.

https://www.nytimes.com/interactive/2020/07/03/ us/george-floyd-protests-

crowd-size.html

Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengstler, D. (1992). The convergence

between two theories of college persistence. *The Journal of Higher Education*,

63(2), 143-164.

Cartmell, H., & Bond, C. (2015). What does belonging mean for young people who are

International New Arrivals? *Educational & Child Psychology*, *32*(2), 89-101

Cheema, J. R. (2014). A review of missing data handling methods in education research.

Review of Educational Research, *84*(4), 487-508.

Centers for Disease Control and Prevention. (2020) Covid-19.

https://www.cdc.gov/coronavirus/ 2019-ncov/symptoms-testing/symptoms.html

Chen, C. Y., & Razek, N. A. (2016). *Acculturation and sense of belonging: Engagement*

patterns for Indian graduate students in the United States. Allied Academies

International Conference: Proceedings of The Academy of Educational

Leadership (AEL), *21*(1), 13-17.

Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological*

Measurement, *12*(4), 425-434.

Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in

web-or internet-based surveys. *Educational and Psychological Measurement*,

60(6), 821-836.

Credle, J. O., & Dean, G. J. (1991). A comprehensive model for enhancing Black student

retention in higher education. *Journal of Multicultural Counseling &*

Development, *19*(4), 158–165. https://doi.org/10.1002/j.2161-

1912.1991.tb00552.x

Creswell, J. W., & Creswell, J. D. (2009). *Research design: Qualitative, quantitative, and*

mixed methods approaches. Sage publications.

Curtin, N., Stewart, A. J., & Ostrove, J. M. (2013). Fostering academic self-concept:

    Advisor support and sense of belonging among international and domestic

    graduate students. *American Educational Research Journal*, *50*(1), 108-137.

Darwish, R. (2015). *Sense of belonging among international students enrolled in*

    graduate level business programs: A case study. (Electronic Thesis or

    Dissertation).

Davis, G. M., Hanzsek-Brill, M. B., Petzold, M. C., & Robinson, D. (2019). Students'

    sense of belonging: The development of a predictive retention model. *The journal*

    of scholarship of teaching and learning, *19*(1).

Dong, Y., & Peng, C. Y. (2013). Principled missing data methods for researchers.

    SpringerPlus, *2*(1), 222. https://doi.org/10.1186/2193-1801-2-222

Essed, P. (1990). *Everyday racism: Reports from women of two cultures*. Hunter House.

Ethington, C. A. (1990). A psychological model of student persistence. *Research in*

    Higher education, *31*(3), 279-293.

Fail, H., Thompson, J., & Walker, G. (2004). Belonging, identity and third culture kids:

    Life histories of former international school students. *Journal of Research in*

    International Education, *3*(3), 319-338.

Fairlie, R. W., Reedy, E. J., Morelix, A., & Russell, J. (2016). *Kauffman index of startup*

    activity: National trends 2016. SSRN. http://dx.doi.org/10.2139/ssrn.2828359

Feagin, J. R., & Sikes, M. P. (1994). *Living with racism: The black middle-class*

    experience. Beacon Press.

Feinstein, Y. (2016). Rallying around the president: when and why do Americans close

ranks behind their presidents during international crisis and war? Social science

history, *40*(2), 305-338.

Fischer, E. M. J. (2007). Settling into campus life: Differences by race/ethnicity in

college involvement and outcomes. *The Journal of Higher Education*, *78*(2), 125-

161.

Fischer, K. (2019, January 3) *For American colleges, China could be the new travel ban-*

but worse. The Chronicle of Higher Education.

https://www.chronicle.com/article/for-american-colleges-china-could-be-the-new-

travel-ban-but-worse/

Fuller, T. (2021, February 27). *He Came From Thailand to Care For Family. Then Came*

a Brutal Attack. The New York Times.

https://www.nytimes.com/2021/02/27/us/asian-american-hate-crimes.html

García, H. A., Garza, T., & Yeaton-Hromada, K. (2019). Do we belong? A conceptual

model for international students' sense of belonging in community colleges.

Journal of International Students, *9*(2), 460-487.

Garza, T., Huerta, M., García, H. A., & Lau, J. (2021). Exploring sense of belonging,

socioacademic integrative moments, and learning communities related to ELs'

persistence based on reenrollment decisions in Community Colleges. *Community*

College Review, *49*(1), 30–51. https://doi.org/10.1177/0091552120964873

Gieg, S. (2017). The impact of student organizations on sense of belonging for

international students. *Journal of the Student Personnel Association at Indiana*

University, 1-14.

Glass, C. R., & Westmont, C. M. (2014). Comparative effects of belongingness on the academic success and cross-cultural interactions of domestic and international students. *International Journal of Intercultural Relations*, *38*, 106-119.

Glass, C. R., Kociolek, E., Wongtrirat, R., Lynch, R. J., & Cong, S. (2015). Uneven experiences: The impact of student-faculty interactions on international students' sense of belonging. *Journal of International Students*, *5*(4), 353.

Glass, C. R., & Gesing, P. (2018). The development of social capital through international students' involvement in campus organizations. *Journal of International Students*, *8*(3), 1274-1292.

Glass, C. R., Wongtrirat, R., & Buus, S. (2015). *International student engagement: Strategies for creating inclusive, connected, and purposeful campus environments*. Stylus Publishing, LLC.

Guiffrida, D. (2005). Othermothering as a framework for understanding African American students' definitions of student-centered faculty. *The Journal of Higher Education*, *76*(6), 701-723.

Gurin, P., & Nagda, B. R. A. (2006). Getting to the what, how, and why of diversity on campus. *Educational Researcher*, *35*(1), 20-24.

Guven, S. T. (2017). *A study of international students' perspectives on campus life (Publication No.* 10633345) [Master's Thesis, University of Massachusetts Lowell]. ProQuest Dissertations & Theses Global.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152.

Halvorsrud, K. (2014) *Negotiating the racial and ethnic boundaries of citizenship: white South African migrants in the UK and their sense of* belonging (Publication No. 632490) [Doctoral dissertation, University of Nottingham]. EThos. http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos. 632490

Hannigan, T. P. (2007). Homesickness and acculturation stress in the international student. *Psychological Aspects of Geographical Moves: Homesickness and Acculturation Stress*, 63-72.

Harper, S. R., & Hurtado, S. (2007). Nine themes in campus racial climates and implications for institutional transformation. *New directions for student services*, *2007*(120), 7-24.

Hausmann, L. R., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, *48*(7), 803-839.

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention: Research, Theory & Practice*, *4*(3), 227–256. https://doi.org/10.2190/DRYC-CXQ9-JQ8V-HT4V

Holmes, K. (2019, December 13) *The problem of nationalism.* The Heritage Foundation. https://www.heritage.org/conservatism/commentary/the-problem-nationalism

Horak, S., Farndale, E., Brannen, M. Y., & Collings, D. G. (2019). International human resource management in an era of political nationalism. *Thunderbird International Business Review, 61*(3), 471–480. https://doi.org/10.1002/tie.21959

The University of Toledo, (2020). *Human Research Protection Program.*

https://www.utoledo.edu/research/rsp/irb/

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the

campus racial climate on Latino college students' sense of belonging. *Sociology of*

Education, 324-345.

Hurtado, S., Milem, J., Clayton-Pedersen, A., & Allen, W. (1999). Enacting diverse

learning environments: Improving the climate for racial/ethnic diversity in higher

education. ASHE-ERIC Higher Education Report, Vol. 26, No. 8.

https://eric.ed.gov/?id=ED430514

Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate.

Journal of Hispanic Higher Education, *4*(3), 235-251.

Hussain, M., & Jones, J. M. (2019). Discrimination, diversity, and sense of belonging:

Experiences of students of color. *Journal of Diversity in Higher Education*.

Iarossi, G. (2005). *The power of survey design: A user's guide for managing surveys,*

interpreting results, and influencing respondents. World Bank.

Institute of International Education. (2018). *Economic Impact of International students*.

New York. https://www.iie.org/Research-and-Insights/Open-

Doors/Data/Economic-Impact-of-International-Students

Institute of International Education (IIE), (2019 a). *Data by region fact sheets.*

https://opendoorsdata.org/

Institute of International Education (IIE), (2019). *Data by state fact sheets.*

https://opendoorsdata.org/

Institute of International Education (IIE), (2019). *Enrollment.* https://opendoorsdata.org/

Inkelas, K. K., Vogt, K., Longerbeam, S., Owen, J., & Johnson, D. (2006). Measuring outcomes of living-learning programs: Examining college environments and student learning and development. *Journal of General Education, 55*(1), 40-76.

Inkelas, K., Drechsler, M., Szelényi, K., Kim, Y., McCarron, G., Soldner, M., & Mainieri, T. (2007). National study of living-learning programs. *UW-Madison Customized Report*.

Jaschik, S. (February 17, 2021) College Belonging. *Inside Higher Ed*. https://www.insidehighered.com/news/2021/02/17/author-discusses-her-book-college-belonging-and-first-generation-students

Jin, L., & Schneider, J. (2019). Faculty views on international students: A survey study. *Journal of International Students*, *9*(1), 84-99.

Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development*, *48*(5), 525-542.

Johnson, R. M., Strayhorn, T. L., & Travers, C. S. (2019). Examining the academic advising experiences of Black males at an urban university: An exploratory case study. *Urban Education*. https://doi.org/10.1177/0042085919894048

Karp, M. M., Hughes, K. L., & O'Gara, L. (2010). An exploration of Tinto's integration framework for community college students. *Journal of College Student Retention: Research, Theory & Practice*, *12*(1), 69-86.

Kwon, Y. (2009). Factors affecting international students' transition to higher education institutions in the United States – From the perspective of office of international students. *College Student Journal*, *43*(4).

Lau, J., Garza, T., & Garcia, H. (2018). International students in community colleges: On-campus services used and its affect on sense of belonging. *Community College Journal of Research and Practice*, *43*(2), 109-121.

Le, A. T., LaCost, B. Y., & Wismer, M. (2016). International female graduate students' experience at a midwestern university: Sense of belonging and identity development. *Journal of International Students*, *6*(1), 128-152.

Lechman, K. (2015). *An exploration of the role of perceived instructor cultural intelligence, students' feelings of validation, and sense of belonging on students' intent to persist*. (Publication No. osu1428914849) [Doctoral dissertation, Ohio State University]. Ohiolink Electronic Theses & Dissertations Center.

Lee, J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination. *Higher Education,* 53, 381–409.

Li, Y. (2018). Do All Asian Americans Feel Alike? Exploring Asian American College Students' Sense of Belonging on Campuses (Publication No. bgsu1542046823067658) [Doctoral dissertation, Bowling Green State University]. Ohiolink Electronic Theses & Dissertations Center.

Li, G., Chen, W., & Duanmu, J. L. (2010). Determinants of international students' academic performance: A comparison between Chinese and other international students. *Journal of Studies in International Education*, *14*(4), 389-405.

Li, Z., Heath, M. A., Jackson, A. P., Allen, G. E., Fischer, L., & Chan, P. (2017).

    Acculturation experiences of Chinese international students who attend American

    universities. *Professional Psychology: Research and Practice*, *48*(1), 11.

Maestas, R., Vaquera, G. S., & Zehr, L. M. (2007). Factors impacting sense of belonging

    at a Hispanic-serving institution. *Journal of Hispanic Higher Education, 6*(3),

    237–256

Mamiseishvili, K. (2012). International student persistence in US postsecondary

    institutions. *Higher Education*, *64*(1), 1-17.

Marinis, J. (2014). *Factors that Influence Student Athlete Sense of Belonging into Ohio*

    Private Division II College Campus Culture. (Publication No. toledo1414678247)

    [Doctoral dissertation, University of Toledo]. Ohiolink Electronic Theses &

    Dissertations Center.

Maslow, A. H. (1962). *Toward a psychology of being*. Van Nostrand Reinhold.

McCullough, D., & Gotian, R. (2020). Tips for boosting campus diversity. *Nature*,

    584(7822), 654–655. https://doi.org/10.1038/d41586-020-02367-5

McMahon, P. (2011). Chinese voices: Chinese learners and their experiences of living

    and studying in the United Kingdom. *Journal of Higher Education Policy and*

    Management, *33*(4), 401-414.

Milem, J. F., Chang, M. J., & Antonio, A. L. (2005). *Making diversity work on campus:*

    A research-based perspective. Association American Colleges and Universities.

Morgan, G. A., Barrett, K. C., Leech, N. L., & Gloeckner, G. W. (2019). IBM SPSS for

    introductory statistics: Use and interpretation. Routledge.

Morrow, J., & Ackermann, M. (2012). Intention to persist and retention of first-year

students: The importance of motivation and sense of belonging. *College Student

Journal*, *46*(3), 483-491.

Mumford, D. B. (1998). The measurement of culture shock. *Social Psychiatry and

Psychiatric Epidemiology*, *33*(4), 149–154.

Museus, S.D. (2014) The Culturally Engaging Campus Environments (CECE) Model: A

New Theory of Success Among Racially Diverse College Student Populations. In:

Paulsen M. (eds) Higher Education: Handbook of Theory and Research. Higher

Education: Handbook of Theory and Research, vol 29. Springer, Dordrecht.

https://doi.org/10.1007/978-94-017-8005-6_5

Museus, S. D., Yi, V., & Saelua, N. (2017). The impact of culturally engaging campus

environments on sense of belonging. *The Review of Higher Education*, *40*(2),

187-215.

Museus, S. D., Yi, V., & Saelua, N. (2018). How culturally engaging campus

environments influence sense of belonging in college: An examination of

differences between White students and students of color. *Journal of Diversity in

Higher Education*, *11*(4), 467.

Mwangi, C. A. G. (2016). Exploring sense of belonging among black international

students at an HBCU. *Journal of International Students*, *6*(4), 1015.

Mwangi, C. A. G., & English, S. (2017). Being Black (and) immigrant students: When

race, ethnicity, and nativity collide. *International Journal of Multicultural

Education*, *19*(2), 100-130.

NAFSA: Association of International Educators (2019). *Economic value statistics*.

    https://www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-

    student-economic-value-tool-v2

Najar, N., Saul, S. (2016, November 16) 'Is It Safe?' Foreign Students Consider College

    in Donald Trump's U.S. *The New York Times*.

    https://www.nytimes.com/2016/11/17/us/is-it-safe-foreign-students-consider-

    college-in-donald-trumps-us.html?action=click&module=Related

    Coverage&pgtype=Article&region=Footer

National Science Board, (2018). Science and Engineering Indicators 2018. *National*

    Science Foundation (NSB-2018-1).

    https://www.nsf.gov/statistics/2018/nsb20181/report

Newman, C., Wood, J & Harris II, F. (2015). Black men's perceptions of sense of

    belonging with faculty members in community colleges. *The Journal of Negro*

    Education. 84. 564.

Niehaus, E., Williams, L., Zobac, S., Young, M., & Fullerton, A. (2019). Exploring

    predictors of sense of belonging in Trinidad and Tobago. *Journal of College*

    Student Development 60(5), 577-594. doi:10.1353/csd.2019.0057.

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and

    discrimination on the adjustment of minority students to college. *The Journal of*

    Higher Education, *67*(2), 119-148.

Nunez, A. (2009). A critical paradox? Predictors of Latino students' sense of belonging

    in college. *Journal of Diversity in Higher Education*, (1), 46.

    https://doi.org/10.1037/a0014099

Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research*, *70*(3), 323-367.

Pascarella, E. T. (1984). Reassessing the effects of living on-campus versus commuting to college: A causal modeling approach. *The Review of Higher Education*, *7*(3), 247-260.

Pascarella, E. T., & Terenzini P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *The Journal of Higher Education*, *51*(1), 60. https://doi.org/10.2307/1981125

Patel, V. (November 13, 2018) Is the 'Trump effect' scaring away prospective international students? *The Chronicle of Higher Education*. https://www.chronicle.com/article/Is-the-Trump-Effect-/245067

Pew research Center, (2020). *Questionnaire design*. https://www.pewresearch.org/methods/u-s-survey-research/questionnaire-design/

Pierre, M. R., & Mahalik, J. R. (2005). Examining African self-consciousness and Black racial identity as predictors of Black men's psychological well-being. *Cultural Diversity and Ethnic Minority Psychology*, *11*(1), 28. https://psycnet.apa.org/fulltext/2005-01525-003.pdf

Poyrazli, S., & Lopez, M. D. (2007). An exploratory study of perceived discrimination and homesickness: A comparison of international students and American students. *The Journal of Psychology*, *141*(3), 263-280.

Presbitero, A. (2016). Culture shock and reverse culture shock: The moderating role of cultural intelligence in international students' adaptation. *International Journal of Intercultural Relations*, *53*, 28–38. https://doi.org/10.1016/j.ijintrel.2016.05.004

Rampell, C. (2018, March 19) Trump is bent on destroying one of our winningest

    exports. *The Washington Post*. https://www.washingtonpost.com/opinions/trump-

    is-bent-on-destroying-one-of-our-winningest-exports/2018/03/19/8a6292d6-2bb2-

    11e8-8ad6-fbc50284fce8_story.html?noredirect=on&utm_term=.a90e08eb352d

Rienties, B., Beausaert, S., Grohnert, T., Niemantsverdriet, S., & Kommers, P. (2012).

    Understanding academic performance of international students: The role of

    ethnicity, academic and social integration. *Higher education*, *63*(6), 685-700.

Rivas, J., Hale, K., & Burke, M. G. (2019). Seeking a sense of belonging: Social and

    cultural integration of international students with American college students.

    Journal of International Students, *9*(2), 682-704.

Roksa, J. & Kinsley, P. (2019). The role of family support in facilitating academic

    success of low-income students. *Research in Higher Education*, 60(4), 415-436.

Rosenthal, J. A. (1996). Qualitative descriptors of strength of association and effect size.

    Journal of Social Service Research, *21*(4), 37-59.

Sabourin, J. J. (2017). *International student-athlete adjustment experience at community*

    colleges in the midwest (Publication No. 10605340) [Doctoral dissertation, Iowa

    State University]. ProQuest Dissertations & Theses Global.

Saul, S. (2017 a, March 16). Amid 'Trump effect' fear, 40% of colleges see dip in foreign

    applicants. *The New York Times*.

    https://www.nytimes.com/2017/03/16/us/international-students-us-colleges-

    trump.html?action=click&module= RelatedCoverage&pgtype=

    Article&region=Footer

Saul, S. (2017 b, November 13). Fewer foreign students are coming to U.S., survey

    shows. *The New York Times*. https://www.nytimes.com/2017/11/13/us/fewer-

    foreign-students-coming-to-us.html

Sherry, M., Thomas, P., & Chui, W. H. (2010). International students: A vulnerable

    student population. *Higher education*, *60*(1), 33-46.

Simonsen, K. B. (2016). How the host nation's boundary drawing affects immigrants'

    belonging. *Journal of Ethnic and Migration Studies*, *42*(7), 1153-1176.

Singh, A. (2018). *Investigating the sense of belonging of international students through a*

    predictive model (Publication No. 16467) [Doctoral dissertation, Iowa State

    University]. Iowa State University Digital Repository.

Soria, K. M., & Stubblefield, R. (2015). Knowing me, knowing you: Building strengths

    awareness, belonging, and persistence in higher education. *Journal of College*

    Student Retention: Research, Theory & Practice, *17*(3), 351-372.

Soria, K. M., Troisi, J. N., & Stebleton, M. J. (2012). Reaching out, connecting within:

    Community service and sense of belonging among college students. Higher

    Education in Review, *9*, 65–85

St-Amand, J., Girard, S., & Smith, J. (2017). Sense of belonging at school: Defining

    attributes, determinants, and sustaining strategies. *IAFOR Journal of Education*,

    5(2), 105-119.

Story, D. A., & Tait, A. R. (2019). Survey Research. *Anesthesiology, 130*(2), 192–202.

    https://doi.org/10.1097/ALN.0000000000002436

Strauss, L. C. & Volkwein, J. F. (2004). Predictors of student commitment at two-year

    and four-year institutions. *The Journal of Higher Education 75*(2), 203-227.

Strayhorn, T. L. (2008). Fittin'in: Do diverse interactions with peers affect sense of

    belonging for Black men at predominantly White institutions? *NASPA Journal*,

    45(4), 501-527.

Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational*

    success for all students. Routledge.

Strayhorn, T. L. (2018). *College students' sense of belonging: A key to educational*

    success for all students. Routledge.

Student and Exchange Visitor Program. (2008*). SEVIS by the numbers biannual report*

    on international student trends.

    https://www.ice.gov/doclib/sevis/pdf/byTheNumbersApr2018.pdf

Study in the States, (2020). School search. https://studyinthestates.dhs.gov/school-search

Sturla, A. Alsharif, M., Sgueglia, K. (2021, February 27). *Suspect charged with hate*

    crime in stabbing attack against Asian man in New York City. CNN.

    https://www.cnn.com/2021/02/26/us/hate-crime-stabbing-attack-asian-man-new-

    york/index.html

Tachine, A. A., Cabrera, N. L., & Bird, E. Y. (2017). Home away from home: Native

    American students' sense of belonging during their first year in college. *Journal*

    of Higher Education, *88*(5), 785-807.

Tanner, G. G. (2013). *The graduate experience of Mexican international students in US*

    doctoral programs. (Publication No. 3606508) [Doctoral dissertation, Michigan

    State University]. ProQuest Dissertations and Theses Global.

Tinto, V. (1975) "Dropout from Higher Education: A Theoretical Synthesis of Recent

    Research" *Review of Educational Research* vol.45, 89-125.

Tinto, V. (1987). *Leaving College: Rethinking the Causes and Cures of Student Attrition.* The University of Chicago Press: Chicago.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition 2nd edition.* The University of Chicago Press.

Tinto, V. (2012). Enhancing student success: Taking the classroom success seriously. *Student Success*, *3*(1), 1.

Titus, M. A. (2004). An examination of the influence of institutional context on student persistence at 4-year colleges and universities: A multilevel approach. *Research in higher education*, *45*(7), 673-699.

Torbati, Y. (2018, November 13) Fewer foreign students coming to United States for second year in row, survey finds. Reuters. https://www.reuters.com/article/us-usa-immigration-students/fewer-foreign-students-coming-to-united-states-for-second-year-in-row-survey-idUSKCN1NI0EN

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher education*, *46*(2), 153-184.

Van Horne, S., Lin, S., Anson, M., & Jacobson, W. (2018). Engagement, satisfaction, and belonging of international undergraduates at U.S. research universities. *Journal of International Students*, *8*(1), 351. doi:10.5281/zenodo.1134313

Visser, P. S., Krosnick, J. A., & Lavrakas, P. J. (2000). Survey research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (p. 223–252). Cambridge University Press.

Wang, L. (2010). *Visual Explorations of the West Campus of the University of Cincinnati: How to Build a Stronger Sense of Belonging for International Students at the University of Cincinnati*. (Publication No. ucin1277000572) [Master's Thesis, University of Cincinnati]. Ohiolink Electronic Theses & Dissertations Center.

Ward, C. A., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock*. Routledge.

Wermund, B. (2018, March 23) Trump blamed as U.S. colleges lure fewer foreign students. *Politico*. https://www.politico.com/story/2018/04/23/foreign-students-colleges-trump-544717

Wolff, L. (2014). *International students' sense of belonging*. (Publication No. 1567640) [Master's thesis, University of the Pacific]. ProQuest Dissertations and Theses Global.

Wood, J. L., & Harris III, F. (2015). The effect of academic engagement on sense of belonging: A hierarchical, multilevel analysis of Black men in community colleges. *Spectrum: A Journal on Black Men*, *4*(1), 21-47.

Yao, C. W. (2014). *Being and belonging: A critical phenomenological study of undergraduate Chinese international students' sense of belonging in residence*. (Publication No. 3620602) [Doctoral Dissertation, Michigan State University]. ProQuest Dissertations and Theses Global.

Yao, C. W. (2016). "Better English is the better mind": Influence of language skills on sense of belonging in Chinese international students. *Journal of College & University Student Housing*, *43*(1).

Yeh, E., Jaiswal-Oliver, M., Sharma, R., & Wan, G. (2021). Enhancing Asian

immigrants' and international students' learning: Faculty cultural awareness and

pedagogy training. *Journal of Asian Pacific Communication (John Benjamins*

Publishing Co.), *31*(1), 100–121. https://doi.org/10.1075/japc.00059.yeh

Yildirim, Ö. (2014). Adjustment problems of international students studying in the USA:

The effects of English language and academic culture. *International Journal of*

Global Education, *3*(4).

Young, C., Ziemer, K., & Jackson, C. (2019). Explaining Trump's popular support:

Validation of a nativism index. *Social Science Quarterly*, *100*(2), 412-418.

Zhao, C. M., Kuh, G. D., & Carini, R. M. (2005). A comparison of international student

and American student engagement in effective educational practices. *The Journal*

of Higher Education, *76*(2), 209-231.

Survey Questions

Section 1 - Student Characteristics

1. What is your age group? (18-20, 21-25, 26-30, 31-35, 36+)

2. What is your gender (male, female, other)

3. What is your country of origin

4. How many years have you been in the United States (0-4, 5-9, 10+)

5. What degree are you currently pursuing (Associates, Bachelors, Masters, Doctorate)

6. What is your area of study

> Agriculture and Natural Resources Conservation
> Architecture
> Area, Ethnic and Multidisciplinary studies
> Arts: Visual and Performing
> Culinary/ Hospitality
> Business
> Communication
> Information Systems/ Computer Science
> Education
> Engineering
> English and Foreign Languages
> Health professions
> Law enforcement/protective services
> Law/Legal professions
> Liberal Arts/General Studies/Humanities
> Medicine
> Philosophy and religious studies
> Physical Sciences and Mathematics
> Social Sciences
> Other

7. What is the name of your institution

8. Where do you live (on campus, off campus)

Section 2 - Academic Integration

9. There are many opportunities to meet and interact with faculty outside of class

   ( ) Strongly Disagree
   ( ) Disagree

( ) Agree
( ) Strongly Agree

10. Faculty members interact often with me during class time

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

11. Since coming to this college/university, I have developed a close, personal relationship with at least one faculty member

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

12. There are many opportunities to meet with my mentor/advisor at any time

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

13. My meetings with my mentor/advisor have been very useful/beneficial

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

14. My academic experience has been very engaging and productive

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

Section 3 - Social integration

15. I meet with a host family

   ( ) Never
   ( ) 1 to 4 times a month
   ( ) 5 to 9 times a month
   ( ) 10 or more times a month

16. Since coming to this college/university I have developed close friendships with other students

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

17. My relationships with other students have had a positive influence on me

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

18. I belong to at least one student organization on campus

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

19. I belong to at least one cultural/religious organization outside of campus

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

20. I feel welcomed within groups of other students who look like me

   ( ) Strongly Disagree
   ( ) Disagree
   ( ) Agree
   ( ) Strongly Agree

Section 4 - Campus climate

21. I have experienced racism/discrimination on campus because of my ethnicity or nationality

   ( ) Never
   ( ) 1 to 4 times a month
   ( ) 5 to 9 times a month
   ( ) 10 or more times a month

22. I have observed racism/discrimination being directed at others on campus

   ( ) Never

( ) 1 to 4 times a month
( ) 5 to 9 times a month
( ) 10 or more times a month

23. My campus has many people from different cultures and nationalities

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

24. I feel anxious interacting with domestic students

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

25. I feel unsafe on campus because of the current political climate in the United States

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

26. As an international student, I feel inferior to Americans because of the current political climate in the United States

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

Section 5 – Transition

27. I miss my family and friends back home

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

28. It is really difficult to cope with my new cultural environment

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

29. I rely heavily on my family members and friends back home for advice and emotional support

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

30. I have used my institution's on-campus services that are there specifically for international students

    ( ) Never
    ( ) 1 to 4 times a month
    ( ) 5 to 9 times a month
    ( ) 10 or more times a month

31. There is at least one student support services staff member on this campus I can go to when I have a problem

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

32. Being a member of a learning community or a class cohort has helped me adjust to life in the United States

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

33. Living on campus has helped me adjust to life in the United States

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

34. I feel accepted by the local people in the community where I live

    ( ) Strongly Disagree
    ( ) Disagree
    ( ) Agree
    ( ) Strongly Agree

35. I utilize the campus information network that provides information on campus resources (library, gym, tutoring center etc.) and professors

( ) Never
( ) 1 to 4 times a month
( ) 5 to 9 times a month
( ) 10 or more times a month

36. I am able to follow my dietary restrictions with campus food

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

37. My language skills (English proficiency) are good

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

Section 6 - Sense of belonging

38. I feel comfortable on campus

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

39. I would choose the same college over again

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

40. My college is supportive of me

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

41. I feel that I am a member of the campus community

( ) Strongly Disagree
( ) Disagree
( ) Agree
( ) Strongly Agree

Appendix B

Informed Consent Form

Higher Education
2801 West Bancroft St
Toledo, Ohio 43606
419-530-5673
Fax #

ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM
Factors Impacting International Students' Sense of Belonging

Principal Investigator: *Dr. Snejana Durst, Associate Professor, 419-530-5673*

Other Investigators: *Tracey Hidalgo, Doctoral Candidate, 419-530-4229*

Purpose: You are invited to participate in the research project entitled *Factors Impacting International Students' Sense of Belonging* which is being conducted at the University of Toledo under the direction of *Dr. Snejana Durst and Tracey Hidalgo.* The purpose of this study is *to determine the factors that impact international students' sense of belonging across a variety of institutions in the United States.*

Description of Procedures: This research study will take place via a web-based survey for one 8-minute session. You will be asked to complete a set of questions regarding your feelings of a sense of belonging while attending college or university in the United States.

Potential Risks: *There is a low risk of breach of confidentiality identified for this study*

Potential Benefits: The only direct benefit to you if you participate in this research may be that you will learn about how *surveys* are run and you may learn more about *Factors Impacting International Students' Sense of Belonging.* The field of higher education will benefit from this research by enriching the limited understanding of the factors that impact on international students' sense of belonging. The study also provides useful insights to college and university efforts aiming to offer opportunities for international students' campus integration. Others may benefit by learning about the results of this research. If you participate in this study, you can enter for the chance to win one of five $40 Amazon gift cards. After completing the survey, you will only need to enter your email address to be considered for the opportunity to win one of the five $40 Amazon gift cards.

Confidentiality: Consent documents and data will be stored in a cloud server and on a password protected external hard drive to ensure survey safety and integrity. Tracey Hidalgo will have access to the data. The data will be kept for seven years before it is

destroyed. The data will be reported in aggregate and individual survey responses will not be singled out for this study.

Voluntary Participation: The information collected from you may be de-identified and used for future research purposes. As a reminder, your participation in this research is voluntary. Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo or any of your classes, or the institution that you are currently attending. You may skip any questions that you may be uncomfortable answering. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

Contact Information: If you have any questions at any time before, during or after your participation *{or experience any physical or psychological distress as a result of this research}* you should contact Tracey Hidalgo 419-530-4229.

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Human Research Protection Program on the main campus at (419) 530-6167.

CONSENT SECTION – Please read carefully

Welcome to the research study on Factors Impacting International Students' Sense of Belonging (300652-UT)

We are interested in understanding factors impacting international students' sense of belonging. You will be presented with information relevant to factors impacting international students' sense of belonging and asked to answer some questions about it. Please be assured that your responses will be kept completely confidential.

The survey should take you no longer than 8 minutes to complete, and you can enter in a drawing for the chance to win one of five $40 Amazon gift cards for your participation. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail tracey.hidalgo@utoledo.edu.

By clicking the button below, you acknowledge that your participation in the study is voluntary, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Appendix C

Email to International Education advisors

My name is Tracey Hidalgo (student investigator) and I am a doctoral candidate at The University of Toledo. I am also the Assistant Director for the Office of International Student and Scholar Services at The University of Toledo. My dissertation is being directed by Dr. Snejana Durst (principal investigator). I am writing this email to request your help in recruiting participants for my study. The research study is entitled "Factors Impacting International Students' Sense of Belonging." This study was approved by the University of Toledo's Institutional Review Board. You can help me recruit participants for my study by distributing my survey via email to all of the international students who are currently enrolled at your institution.

I would like to recruit international students, either undergraduate or graduate level, to participate in an online survey. No identifying information will be asked of the student. In addition, no costs will be incurred by either your institution or the individual participants, and students have the opportunity to win one of five $40 gift cards after survey completion. Participants will provide demographic information and will be presented with an online questionnaire to help me better understand their experiences of sense of belonging while attending college or university in the United States. We anticipate that you may have questions prior to deciding if you can help with our recruitment. Please direct any questions that you may have to Tracey Hidalgo at 419-530-4256 or via email tracey.hidalgo@utoledo.edu, or Dr. Snejana Durst at 419-530-4705 or via email at Snejana.SlantchevaDurst@UToledo.edu

Again, if you have any questions regarding this study at any time, please contact Tracey Hidalgo (student investigator) tracey.hidalgo@utoledo.edu, or Dr. Snejana Durst: Snejana.SlantchevaDurst@UToledo.edu (Principle investigator).

Thank you for your time and participation.

Tracey Hidalgo,

tracey.hidalgo@utoledo.edu

University of Toledo

Appendix D

Email to Participants

Good day participant,

My name is Tracey Hidalgo (student investigator) and I am a doctoral candidate at The University of Toledo. I am also the Assistant Director for the Office of International Student and Scholar Services at The University of Toledo. My dissertation is being directed by Dr. Snejana Durst (principal investigator). I would like you to participate in my study. The research study is entitled "Factors Impacting International Students' Sense of Belonging," and seeks to understand the factors that impact your feelings of belongingness while attending college or university in the United States. This study was approved by the University of Toledo's Institutional Review Board.

I am recruiting international students, either undergraduate or graduate level, to participate in an online survey. No identifying information will be asked of you. In addition, you have the opportunity to win one of five $40 gift cards after survey completion. You will provide demographic information and will be presented with an online questionnaire to help me better understand the factors impacting your feelings of a sense of belonging while studying in the United States. If you have questions prior to deciding if you want to participate in the survey, please direct them to Tracey Hidalgo (student investigator) at 419-530-4256 or via email tracey.hidalgo@utoledo.edu, or Dr. Snejana Durst (principal investigator) at 419-530-4705 or via email at Snejana.SlantchevaDurst@UToledo.edu

To participate in the survey, click on the following link:

Thank you for your time and participation.

Tracey Hidalgo,

tracey.hidalgo@utoledo.edu

University of Toledo