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Asian International Students in U.S. Higher Education: A Secondary Data Analysis of Satisfaction Levels and Willingness to Recommend Their Institution

Soongmin Chow
Western Michigan University, soongmin@hotmail.com

ASIAN INTERNATIONAL STUDENTS IN U.S. HIGHER EDUCATION: A SECONDARY DATA ANALYSIS OF SATISFACTION LEVELS AND WILLINGNESS TO RECOMMEND THEIR INSTITUTION

by

Soongmin Chow

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Doctoral Committee:

Donna Talbot, Ph.D., Chair
D. Eric Archer, Ph.D., CCLS
Fen Yu, Ph.D.

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Soongmin Chow, Ph.D.

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International students are integral to U.S. higher education. They bring talent and cultural diversity to U.S. campuses, contribute immensely to the U.S. economy, and create long-lasting political and academic links that aid public diplomacy in the long run (NAFSA, 2003). The U.S. has traditionally been the largest market for international students seeking quality higher education (Institute of International Education, 2018). However, reports show that the U.S. is slowly losing its market share of international students, and the number of new international students coming to the U.S. has been on the decline since 2016/17. Higher education institutions are most concerned over the recruitment of Asian international students, who comprise three-quarters of the total international student population in the U.S.

Using secondary analysis of data from the International Student Barometer (ISB) collected in Fall 2017, this study investigates the overall satisfaction level of Asian international students, the willingness of these students to recommend their institution to future students, the factors that could predict overall satisfaction and institutional recommendation, and whether there were differences among students from the five geographical Asian sub-regions. The study was limited to students in 4-year institutions. There were a total of 7,484 respondents out of whom 5,941 were from the Asian continent, attending eight universities across eight states in the U.S.

The results show that, in general, Asian international students in the U.S. had significantly lower satisfaction levels than their non-Asian counterparts. However, Southern Asian students had, on average, higher overall satisfaction levels than students from Eastern Asia and Western Asia. Multiple regression analysis indicated that satisfaction with learning experiences was the strongest positive predictor for overall satisfaction. Satisfaction with university support services and satisfaction with living experiences also positively predicted overall satisfaction, and the three variables together with age as a negative predictor, explained 31.6% of the variance in the overall satisfaction of Asian international students in general. Gender had no significant influence on overall satisfaction.

The results also show that Asian international students were less willing to recommend their institution compared to non-Asian international students. In general, satisfaction with support services was the strongest positive predictor on willingness to recommend. Overall satisfaction, satisfaction with learning experiences, and satisfaction with living experiences were the other factors that positively predicted willingness to recommend. Multiple regression analysis indicated that the four satisfaction variables explained 19.4% of the variance in Asian international students' willingness to recommend their institution. There were differences among sub-regions on the strength and the significance of the variables as well as the extent that the equation was able to explain variances in willingness to recommend. Implications for practice and recommendations for further research are discussed.

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CHAPTER I

INTRODUCTION

The U.S. has traditionally been the largest market for international students seeking quality higher education (Institute of International Education, 2018). International students add value by bringing talent and cultural diversity to U.S. campuses, creating long-lasting political and academic links as well as aiding public diplomacy (Hughes, 2007; NAFSA, 2003). In the 2019 calendar year, there were over 1.5 million active international students and exchange visitors registered on the Student and Exchange Visitor Information System (SEVIS), of whom 86% were in higher education (SEVP, 2019). The *NAFSA International Student Economic Value Tool* report indicated that during the 2019/20 academic year, international students contributed $38.7 billion to the U.S. economy and supported 415,996 jobs. The data further highlighted that "for every eight international students, three U.S. jobs are created and supported by spending occurring in the higher education, accommodation, dining, retail, transportation, telecommunications and health insurance sectors" (NAFSA, 2020). Hegarty (2014) pointed out that the influence of international students in U.S. higher education went beyond economic value as their enrollment had extended the lifeline of many programs that were under-enrolled by domestic students.

The growth trend in international students coming to study in the U.S. was halted in 2017, amid concerns about the effects of a changing U.S. political climate (Baer, 2017; Fischer, 2017). Institutions sought to reassure international students that they were welcome and that their campuses remained safe, friendly, and diverse. The #YouAreWelcomeHere campaign that started at Temple University in November 2016 quickly caught on with other institutions across the country

(Sandberg, 2017). Despite these efforts, the number of new international students coming to the U.S. continued to decline (Institute of International Education [IIE], 2020b). The initial decline of 3.3% in the 2016/17 academic year worsened in 2017/18 with a further decline of 6.6%. A more modest drop of 0.9% followed in 2018/19 as U.S. institutions made extensive efforts to attract and welcome international students (Sanger & Baer, 2019) and in 2019/20, a 0.6% decline was observed (IIE, 2020b). The *Open Doors 2020* reported a decrease of 1.8% in total international student enrollment in the 2019/20 academic year (IIE, 2020c). This is the first time in nearly two decades that a decrease in total international student enrollment was recorded. The previous decline was from 2003/04 to 2005/06 following the aftermath of the 9/11 terrorist attack when the U.S. tightened its visa regulations.

It cannot be overlooked that global competition for international students had intensified considerably over the last two decades. The *Project Atlas* study on student mobility around the world showed that the U.S. market share for international students and scholars had dropped from 28% in the year 2000 to 20% in the year 2020 (IIE, 2020d). During this period, new host destinations emerged, most notably China and Russia, with 9% and 6% of the market share respectively, while Canada increased their market share more than fourfold. A comparison of the top 10 host destinations for international students in 2000 and 2020 can be found in Appendix A.

Prior research points to the urgency for administrators to realize the dramatic changes over the last decade to the climate surrounding international students, their choices, their recruitment, and retention. Hegarty (2014) stressed the importance that this population brings to the U.S. economy and collegiate life, and advocated immediate attention to “ensure the continued survival of educational programs, the continued international recognition of the U.S. university system, and a positive experience for those willing to choose U.S. universities” (p. 232). Understanding

international student satisfaction and experience is crucial towards their recruitment and retention in a highly competitive global market where qualified international students have the pick of any institution in the world, and word-of-mouth recommendations can be critical in tipping the balance (Roy et al., 2016).

Background of the Study

Although international students constitute only 5.5% of the total higher education student population in the U.S., they make significant cultural, financial, and intellectual contributions (Hegarty, 2014; Lee, 2010; NAFSA, 2018). In addition, international alumni are a great asset to U.S. foreign policy (NAFSA, 2019). Recent trends show that the U.S. is starting to lose ground in a very competitive global market for internationally mobile students (IIE, 2019).

U.S. higher education institutions are deeply concerned about the future of international student recruitment, especially from Asian countries (Sanger & Baer, 2019). Previous studies suggest that Asian international students have a difficult time adapting to both academic and social life in the U.S., and experience high levels of acculturative stress (Leong, 2015; Park et al., 2017; Zhang & Goodson, 2011). However, Asia is the largest continent with its peoples coming from very diverse backgrounds (Gourou et al., 2019) and bringing varying experiences to their educational journeys. Prior studies (Heng, 2018; Leong, 2015; Park et al., 2017) show that students from China face considerable challenges arising from language and cultural barriers. Students from India, on the other hand, struggle with loneliness and homesickness (Atri et al., 2007; Meghani & Harvey, 2016; Roy et al., 2016) while students from the Middle East reported difficulties with adherence to religious practices and perceived discrimination (Razek & Coyner, 2013; Tummala-Narra & Claudius, 2013). It is important for institutions to understand subtle differences among

the Asian international student population in order to identify optimal resources to support these students according to their needs.

If institutions want to grow international student enrollment, it is recommended that they take responsibility in generating positive experiences for international students instead of placing sole responsibility on the students to adapt (Lee, 2010; Lin, 2012; Wekullo, 2019). Understanding student satisfaction gives institutions a glimpse into what students are experiencing, and provides data driven information to help bridge the gap between student and institutional expectations (Ruffalo Noel Levitz, 2019). Student satisfaction has huge impact on retention and successful completion of studies (Fischer, 2007; Schreiner, 2009). Satisfied students are also more likely to further their studies at the same institution and recommend the institution to potential applicants (Garrett, 2014; Roy et al., 2016). Positive word of mouth lends credibility to a university in an environment of aggressive marketing and promotion by higher education providers (Fernandes et al., 2013), and is an important influencer in college decision making, especially for international students (Alfattal, 2017; Tan, 2015).

The literature shows that quality of teaching and faculty expertise together with program value, learning facilities, social connectedness, financial resources, the campus environment, and the various campus support services have significant influence on producing overall satisfactory experiences for students in higher education (Ammigan & Jones, 2018; Cho & Yu, 2014; Gibson, 2010). While overall satisfaction was a strong predictor for institutional recommendation, studies also show that perceived fair treatment was an overriding factor in determining the likelihood for students to recommend their institution to future students (Browne et al., 1998; Lee, 2010). Expectations and the perception of fair treatment could differ considerably by region of origin.

In fact, Roy et al. (2016) found that the students' region or country of origin had the most significant impact on their experience and satisfaction levels.

Problem Statement

A recent survey of U.S. higher education institutions revealed that institutions were most concerned about recruitment from Asia (Sanger & Baer, 2019). The Asian continent is home to 75% of the international student population in the U.S., with students from China and India together making up 48% of the entire population (SEVP, 2020). Although Asian international students constitute the overwhelming proportion of international higher education students in the U.S., previous studies suggest that these students are less satisfied with their experience as compared to international students from other regions (Garrett, 2014; Lee, 2010; Zhao et al., 2005). Challenges faced by these students that affect satisfaction with their experience are manifold and include lack of English language proficiency and cultural knowledge (Leong, 2015; Zhang & Goodson, 2011), social isolation (Hendricksen et al., 2011; Sherry et al., 2010; Tummala-Narra & Claudius, 2013; Wu et al., 2015), difficulties with academic integration (Heng, 2017; Lin, 2012; Mukminin & McMahon, 2013), as well as financial hardship (Chen & Razek, 2016; Glass et al., 2015; Irudayam, 2016).

Despite these concerns, there is limited empirical research on international student satisfaction in the U.S. Most studies are set in the context of either a single campus or a few campuses, and tend to generalize the population as one group, paying little attention to differences in student origin (Lee, 2010; Schulte & Choudaha, 2014). Choudaha et al. (2012) re-iterated that international students are not all the same, and that understanding differences in international student profiles can help higher education institutions with market segmentation and prioritize outreach strategies.

Arambewela and Hall (2009) pointed out that the Asian international student population is diverse in terms of culture, language, and values, and requires a highly differentiated and segmented approach in addressing issues related to student satisfaction. However, there is paucity in the literature of large scale studies comparing Asian international students from different geographical sub-regions.

Significance of the Study

In the Encyclopaedia Britannica, Gourou et al. (2019) describe Asia as the largest and most diverse continent with its peoples having the broadest variety of human adaptation on any continent. However, few studies took into consideration the diversity of Asian international students and how students from different sub-regions might differ in their experience and satisfaction rates. Furthermore, no study could be found that examined the experiences of international students in the U.S. whose home countries were in Central Asia although in Bista's (2015) study on associations between Asian international students' quality of personal contact and gains in learning, participants were categorized as coming from East Asia, South and Central Asia, and Southeast Asia. However, no specific conclusions could be made on Central Asian students in that study because South and Central Asian students were combined as one category.

Unlike previous studies, this study explores the similarities and differences in the experiences and overall satisfaction of Asian international students by disaggregating the data into five geographical sub-regions: Central Asia, Eastern Asia, Southern Asia, Southeastern Asia, and Western Asia. The sub-regions were in accordance with the M49 standard from the United Nations Statistics Division. In addition, the study employs a quantitative methodology

utilizing a large dataset comprising over 7,000 respondents from eight higher education institutions across the U.S.

The information is especially important to enrollment management professionals at higher education institutions in recruitment planning and retention strategies, by identifying differences in these market segments, thus moving away from a monolithic view of Asian international students. The information may also help university administrators and student affairs professionals in efforts to improve service provision by taking into account different student needs, making optimal use of resources to support adjustment and learning. In addition, my study adds to the literature on how international students from different Asian sub-regions perceive satisfaction with their experience of studying in the U.S. and what factors influence the willingness to recommend their institution to future students.

Purpose Statement and Research Questions

The purpose of this study is to examine the overall satisfaction levels of Asian international students in U.S. higher education, and the willingness to recommend their institution to future students.

My research questions are as follows:

1. Is there a significant difference in overall satisfaction level between Asian international students and other international students in the U.S.?
2. How does overall satisfaction vary among Asian international students in the U.S.?
    a. Is there a difference in the average satisfaction level of students who come from different geographical sub-regions of Asia? If so, which sub-regions differ?

   b. To what extent is overall satisfaction predicted by students' demographic characteristics and satisfaction with experiences in learning, living, and university support services?

3. Is there a significant difference in willingness to recommend their institution between Asian international students and other international students in the U.S.?
4. How does willingness to recommend their institution vary among Asian international students?
   a. Is there a difference among Asian students by geographical sub-region in the willingness to recommend their institution? If so, which sub-regions differ?
   b. To what extent is willingness to recommend their institution predicted by students' demographic characteristics, overall satisfaction, and satisfaction with experiences in learning, living and support services?
5. What do Asian international students have to say about their experiences in the U.S.?
   a. What were the positive and negative experiences students from different sub-regions expressed in regards to learning, living, and university support services that could have an impact on overall satisfaction?
   b. What were the positive and negative factors that could have influenced the willingness for them to recommend their institution?
   c. Were there differences among students from the various Asian sub-regions?

Conceptual Framework

Student satisfaction is complex and multifaceted. Various factors emerge in the literature on what influences student satisfaction. Among them, quality of teaching and faculty expertise

appear consistently as major influencers (DeShields et al., 2005; Elshanourby, 2015; Garrett, 2014; Zhou & Cole, 2017). Other factors that had significant impact include program quality and perceived value (Alves & Raposo, 2007; Shahsavar & Sudzina, 2017), learning facilities (Guo, 2016; Lai et al., 2015), social connectedness (Alemu & Cordier, 2017; Hendrickson et al., 2011), financial resources (Glass et al., 2015; Irudayam, 2016), and campus environment (Elliott & Healy, 2001; Fischer, 2007). Some studies found that university support services were equally important (Annamdevula & Bellamkonda, 2016; Cho & Yu, 2014; Helgesen & Nesset, 2007; Khoo et al., 2017) where deficiencies lead to dissatisfaction. Alemu and Cordier (2017) summarized that the strongest influences on student satisfaction were (a) academic and education quality, (b) living and support service experiences, and (c) cultural proximity.

Previous studies also show that while overall satisfaction was strongly linked to willingness to recommend their institution (Garrett, 2014; Lang & Hyde, 2013; Roy et al., 2016), individual factors that influenced satisfaction need not have the same impact on institutional recommendation. Although academic factors were consistently indicated as the strongest influencers for overall satisfaction, the perception of fair treatment was shown to be the most important influence leading a student to recommend the host university to others (Browne et al., 1998; Lee, 2010). Expectations and the perception of fair treatment could differ considerably by region of origin.

Roy et al. (2016) came to the conclusion that the most significant differences in experiences and satisfaction were by world region or country of origin, rather than by academic level, institution type, or institution location. Asian international students are a diverse group. It is posited that students from the different geographical sub-regions in the Asian continent have differences in the extent that academic, social, or support services affect their overall satisfaction and the

willingness to recommend their institution to future students, and that sub-regional differences are a significant mediating factor in how these students perceive overall satisfaction and the willingness to recommend their institution. Figure 1 illustrates the relationships between learning experience, living experience, and support services, and the overall satisfaction level of Asian international students in U.S. higher education institutions as well as the willingness for them to recommend their institution, mediated by sub-region of origin.

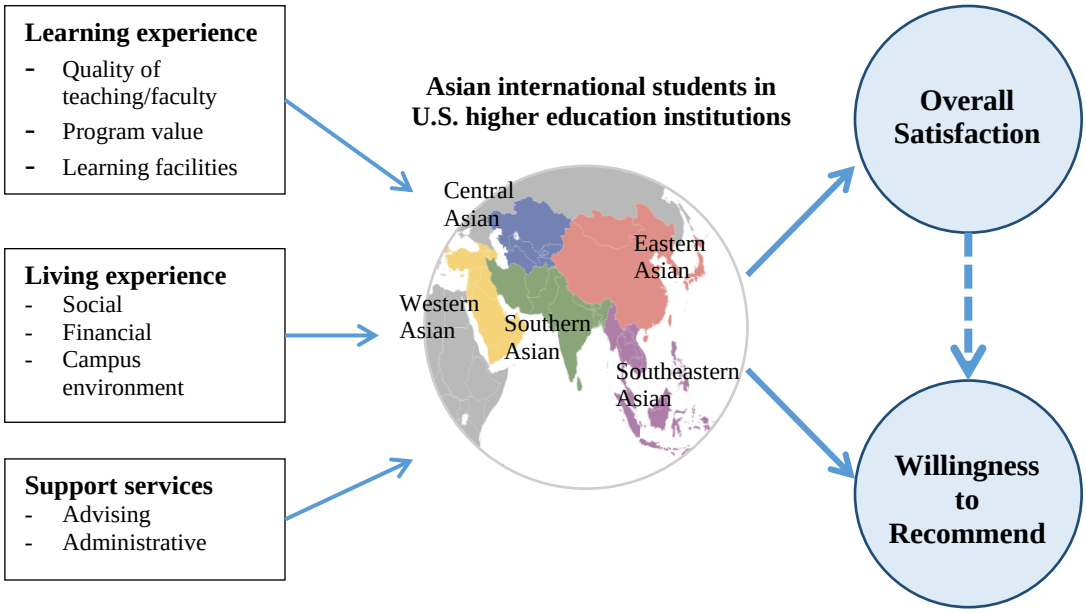

Figure 1. Conceptual framework of the study.

Methods Overview

I used a quantitative research design to address my research questions utilizing post-hoc secondary analysis of data collected from the International Student Barometer (ISB), an annual survey of international students at higher education institutions in various parts of the world. The ISB consists of 256 closed- and open-ended questions that relate to the decision-making, expectations, perceptions, and intentions of international students from application to graduation

(i-graduate, n.d.). Since its inception in 2005, the instrument garnered over 3 million responses from students worldwide. It has been periodically tested for validity and reliability and refined through 14 cycles to become the industry standard for understanding the international student experience (Browne & Brett, 2012). Most importantly, ISB is the largest dataset available that collects information on the nationality of their respondents.

I chose students from the Asian continent who are studying in the U.S. as the population for my study because they form the largest population of international students. However, there have been inconsistencies in various publications as to the term Asian international students, and this pertains mainly to whether or not students from the Middle East are included in this population. Publications by the Institute of International Education (IIE), a premier organization in the U.S. on international education, categorized international students from the Middle East not with Asia, but with students from North Africa to make up MENA (Middle East and North Africa) as a region. This had influenced other studies to do the same when analyzing and reporting international students by region of origin (Glass et al., 2014; Roy et al., 2016). On the other hand, data maintained on the Student and Exchange Visitor Information System (SEVIS) includes international students from the Middle Eastern countries to be part of the Asian international student population in the U.S. (SEVP, 2019). I included students from the Middle East in this study. The Middle Eastern countries are categorized as West Asia in accordance with the M49 standard (United Nations Statistics Division, 1999).

I conducted descriptive and inferential statistics to analyze closed-ended responses to the survey. SPSS was used to aid with these analyses. The dependent variables for this study were overall satisfaction and willingness to recommend. The independent variables were region of origin, satisfaction with learning experience, satisfaction with living experience, satisfaction with institu-

tional support services, age, and gender. Exploratory tests with level of study (undergraduate, graduate) and type of study (degree-seeking, exchange) were conducted and were found to be not significant in influencing overall satisfaction and willingness to recommend.

In addition to closed-ended responses, the survey asked respondents to give open comments in the areas of learning, living, and support services, as well as why they chose to recommend or not recommend their university. I conducted content analysis of the comments to elicit themes that emerged in regard to positive and negative experiences, and whether certain themes were more prevalent by sub-region. NVivo was used to aid with the analysis.

Chapter I Summary

Although the U.S. remains the top destination for international students worldwide, a decline in new international student enrollment seen for the first time in the 2016/17 academic year is the start of a worrisome trend that has continued until the 2019/20 academic year. Research on international student satisfaction is important to higher education enrollment management leaders in an increasingly competitive, globalized environment. Studies have shown that students who are satisfied with their experiences have higher retention rates, are more likely to successfully graduate from their programs, and have a higher propensity to recommend their institution to future students. Asian international students comprise three quarters of the overall international student population in U.S. higher education, yet previous research indicates that this population had the most difficulties with cultural adjustments, and correspondingly low satisfaction rates. However, few studies take into account the diversity of Asian international students.

Through secondary analysis of a dataset from the International Student Barometer survey, my study aims to explore similarities and differences in satisfaction rates and recommendation

propensity among international students from different geographical sub-regions of Asia, as well as what these students wrote about their experiences in open comments. The findings will help U.S. institutions understand what Asian international students need to thrive across all aspects of campus and academic life, and to implement targeted approaches in meeting those needs.

In the next chapter, I provide a review of international students in the U.S., and studies on Asian international student experiences. I also review the literature on satisfaction in higher education and the factors that impact student satisfaction as well as willingness to recommend their institution.

CHAPTER II

LITERATURE REVIEW

International students add cultural diversity and international awareness to U.S. campuses while generating significant contributions to the country's economy. With students from the Asian continent making up three quarters of the international student population in U.S. higher education, it is important for staff and administrators who serve international students to understand the experiences and satisfaction levels of these students in order to build a successful community of learners. It is equally important for higher education enrollment management to understand the factors that propel these students to recommend their institution as this could be critical in a globally competitive recruiting environment where the U.S. is starting to lose ground.

This chapter broadly reviews international students in the U.S. with particular attention to studies on Asian international students' experiences, student satisfaction in higher education, and willingness to recommend. Previous research is explored on the impact of student satisfaction, factors that influence satisfactory experiences as well as factors that influence willingness for students to recommend their institutions to future students.

International Students in the United States

The United Nations Educational Scientific and Cultural Organization defines international (or internationally mobile) students as "students who have crossed a national or territorial border for the purpose of education and are now enrolled outside their country of origin" (UNESCO, n.d.). The U.S. Department of Homeland Security refers to an international student as a non-

immigrant whose primary purpose is to complete an academic or vocational course of study at a SEVP-certified school or program (Student and Exchange Visitor Program, 2019).

In the U.S., the three main sources of international student data and reports are the Institute for International Education (IIE), NAFSA: Association of International Educators (NAFSA), and the Student and Exchange Visitor Information System (SEVIS). The *Open Doors* is an annual report published by the IIE with data from U.S. institutions, providing information on international students in the U.S., U.S. students studying abroad, and global student mobility in general. The report is funded by the U.S. Department of State's Bureau of Education and Cultural Affairs, and used by U.S. embassies, the Departments of State, Commerce, and Education, as well as U.S. colleges and universities to inform policy decisions about educational exchanges, trade in educational services, and study abroad activity (Bureau of Educational and Cultural Affairs, 2020). NAFSA is a nonprofit association dedicated to international education and exchange (NAFSA, n.d.). The association publishes an annual report of the economic contributions of international students to the U.S., and research papers examining social, economic, political, and higher education system trends affecting international higher education. SEVIS is a database managed by the U.S. Department of Homeland Security (DHS) and provides information to both DHS and Department of State, on F, M, and J non-immigrants who are in the U.S. education system (Student and Exchange Visitor Program, 2020).

International Student Enrollment Trends

The U.S. emerged as a major destination for international students after World War II, when American higher education expanded rapidly and with improved quality (Altbach et al., 1985). The earliest figures published by the IIE (2019) indicated that there were 25,464 international

students in the U.S. in the 1948/49 academic year. Student numbers increased, steadily breaching the 100,000 mark in 1966/67, and doubled over the next decade to more than 200,000 in 1976/77. The upward trend continued over the next three decades, reaching over half a million in 2002/03 before a slight dip immediately following the events of September 11, 2001 (Appendix B). However, recovery was swift and enrollment numbers began to climb in 2006/2007. In an analysis of international student mobility, Choudaha (2017) observed that the 2008 global financial crisis and its resultant state budget cuts drove higher education institutions to rely increasingly on student tuition. Since international students paid higher tuition than in-state residents, international recruitment became a strategic focus for many institutions. Increased efforts by institutions at recruitment and retention saw an exponential growth in international student numbers, reaching the one million mark in the 2015/16 academic year.

The upward trend was again halted in 2017/18 and more notably, new enrollments were fewer than in the preceding year. This was the first time since 2004/05 when new enrollments were tracked, that a decline was observed (IIE, 2017). In a survey of 522 higher education institutions across the U.S., Baer (2017) attributed the decline to problems with visa delays and denials, the increasing costs of U.S. higher education, and the deteriorating U.S. social and political climate. Fischer (2017) noted that an executive order by President Trump that barred citizens from six predominantly Muslim countries from entering the U.S. had cast aspersion in the international community and dampened the interest of potential students. Choudaha (2017) noted that strong anti-immigration undertones from the U.S. government had negatively impacted the perception of safety, post-graduation work, and immigration opportunities for international students. Higher education institutions tried to mitigate the situation assuring international students that U.S. campuses continue to be safe and welcoming. In November 2016, Temple University started the

#YouAreWelcomeHere social media campaign to offer the simple message that international students worldwide were welcome (Sandberg, 2017). Through social and professional networks, the campaign spread to over 200 colleges, universities, and intensive English programs across the U.S. within a one-year period. In 2019, NAFSA became the official coordinating body of the official #YouAreWelcomeHere Twitter account, Facebook page, and website in support of more than 300 participating institutions and countless organizations. Figure 2 shows the trend in total and enrolled international students in U.S. higher education from 1948/49 to 2019/20. Students in optional practical training (OPT), which was first reported separately for the 1979/80 academic year, accounts for the difference between the two figures.

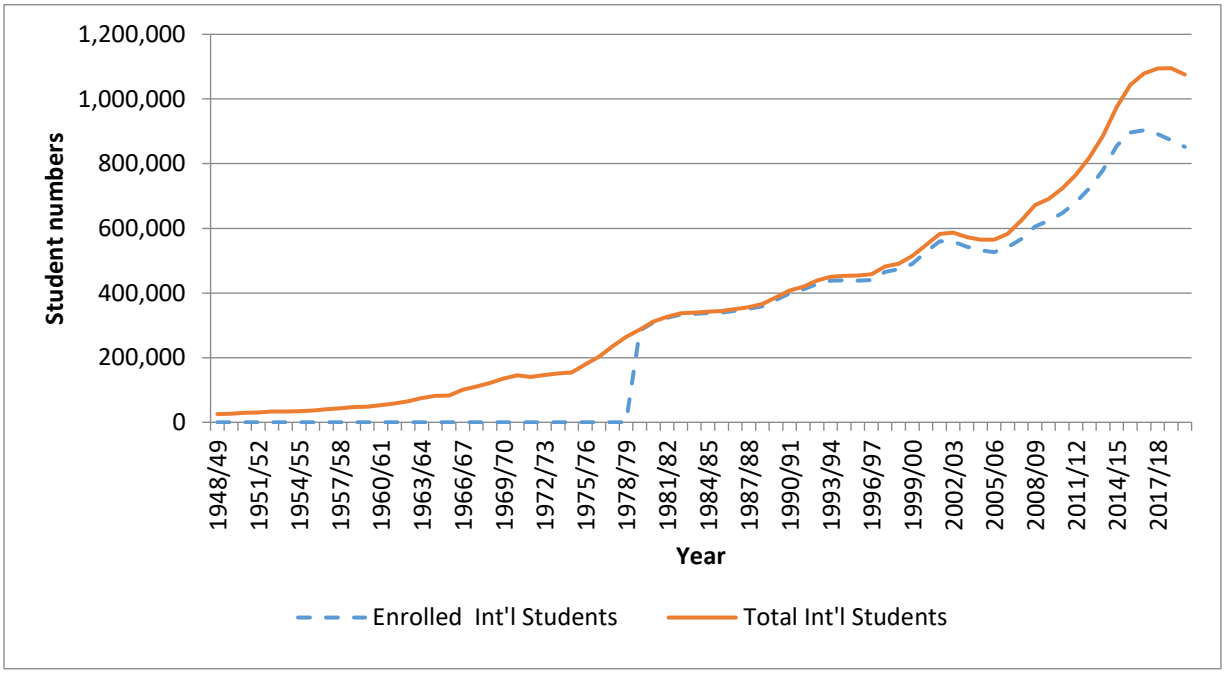

Figure 2. International students in U.S. higher education.

Note: Adapted from *Open Doors 2020* enrollment trends historical data (https://opendoorsdata.org/data/international-students/enrollment-trends/). In the public domain.

Impact of International Students

In a book chapter examining cross-cultural psychological issues encountered by international students in the U.S., Paige (1990) described the many roles that international students assumed in their host universities and societies, the ways in which they are perceived, as well as the critical issues that arise out of their increasingly significant presence on U.S. campuses. He viewed international students as having the important roles of learners as well as sources of learning for domestic students. He proposed that one of the best ways for domestic students to gain access to cross-cultural learning and cross-cultural research was through extensive interaction with international students. However, this was not easily achieved as the psychological barriers to learning across cultures were formidable, with international students being often viewed as outsiders who challenged the beliefs and the norms of their host society.

The benefits that international students bring to the U.S. were reinforced in the *Report of the Strategic Task Force on International Student Access* released in January 2003 (NAFSA, 2003). The report noted that international students enriched culture and diversity of thought in American higher education. In addition, the taskforce highlighted that international students studying in the U.S. learn to appreciate American political values and institutions, laying the foundation for mutual understanding and goodwill, becoming an immense aid to foreign policy. The report quoted then Secretary of State Colin Powell as saying "The professional partnerships and lifelong friendships that are created through international education are important for a secure, prosperous future, not only for our own country but also for the world as a whole" (NAFSA, 2003, p. 4).

The economic benefits that international students bring were highlighted in various publications. The 2020 *Open Doors* report (IIE, 2020c) indicated that international students contributed $44 billion to the U.S. economy in 2019, created or supported 415,996 direct and indirect jobs in

the 2019/20 academic year, and that 60% of international student funding came from abroad. Data from NAFSA over the past 10 years showed steady increases in economic contributions (Figure 3). Beyond direct spending for tuition and fees, international students made significant economic contributions through indirect spending in housing, dining, retail, transportation, insurance, and telecommunications sectors. According to a study from the National Foundation for American Policy, nearly one quarter of the founders of U.S. startup companies worth $1 billion and above first arrived as international students (Anderson, 2018).

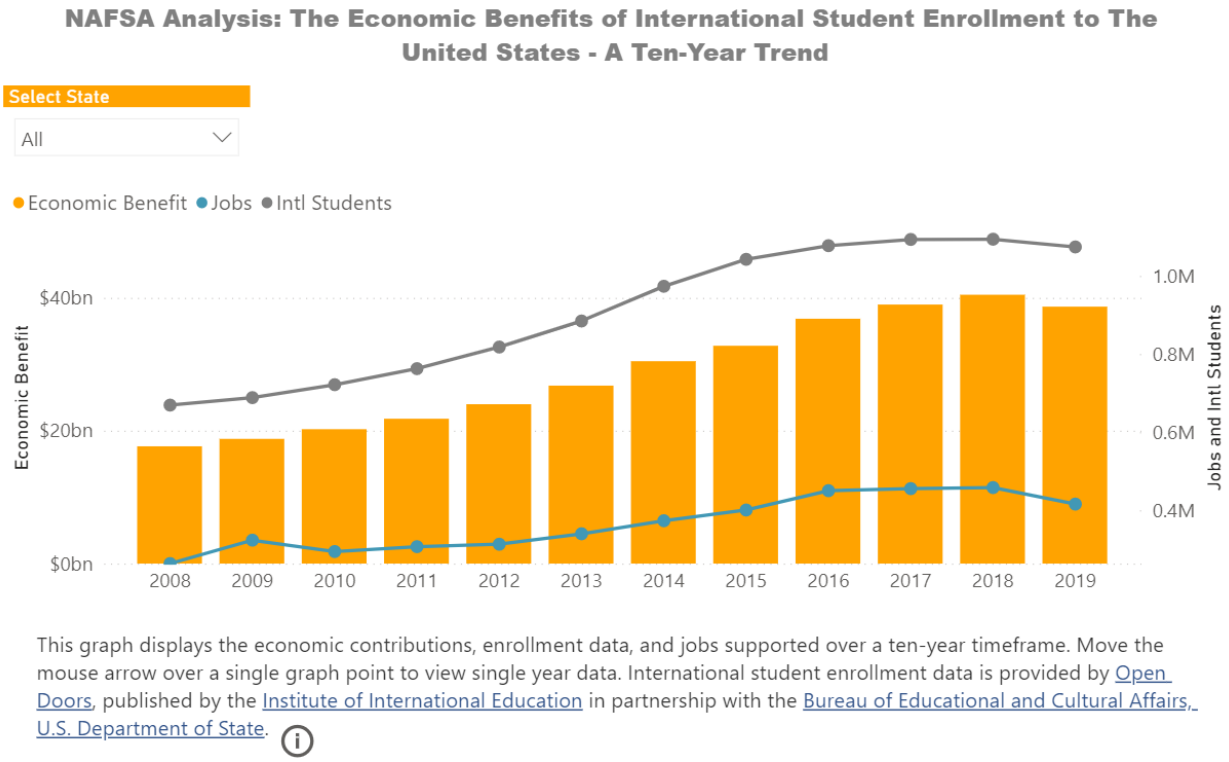

Figure 3. Economic benefits of international student enrollment.

Note: Adapted from NAFSA: Association of International Educators (https://www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-student-economic-value-tool-v2). In the public domain.

Hegarty (2014) reviewed the available literature on international students to highlight the scale of influence of international students on the U.S. university system. He noted that international students often enroll in programs that were under-enrolled by domestic students and thereby became the lifeline for the existence of many programs in U.S. universities. He stressed the need for U.S. institutions to do more to attract international students as global competition to recruit these students had intensified. Among his recommendations were that universities increase scholarships to attract the best students, and ensure a positive experience for students who were enrolled.

Global Competition

In Choudaha's (2017) analysis of international student mobility trends, he described the years between 1999 and 2006 as characterized by a rising demand for skilled talent in economic and technological developments. Institutions were motivated by access to research funding to attract the best talents from across the world. The U.S. became the destination of choice for master's and doctoral students in science and technology fields who took advantage of the research opportunities and reaped the economic rewards. However, the terrorist attack on the U.S. on September 11, 2001 and the ensuing tightening of visa regulations changed the equation. At around the same time, the Bologna process that promoted intergovernmental cooperation between European countries in the field of higher education had started to take shape, fostering greater student mobility within Europe, while Canada and Australia intensified their efforts to attract international students who sought to study in an English-speaking country.

In 2006, NAFSA sounded the alarm by calling for a national strategy to enhance U.S. leadership and competitiveness in attracting international students. In its report, *Restoring U.S. Competitiveness*, the association stressed the importance of international students and scholars to

U.S. economy, security, and scientific leadership (NAFSA, 2006). The report stressed that international exchanges were not a threat to U.S. security but rather, were integral to creating a world where we can be more secure. Studies on global mobility trends show the emergence of traditionally source countries for international students such as China, Russia, and Malaysia becoming new destination countries, and growing at faster rates than established countries (IIE, 2018; NUOS, 2019). The data indicated that while the global demand for international education had increased from 2.1 million in the year 2001 to 5.3 million in 2018, the U.S. market share of international students had dropped from 28% to 21% in the corresponding period (IIE, 2019). In a follow-up report, NAFSA warned of the dangers of a continued decline in U.S. global competitiveness in terms of valuable talent lost to other countries, as well as economic losses costing billions of dollars (NAFSA, 2019).

Challenges Faced by International Students

International students face a myriad of challenges as sojourners to a new country, adjusting to college and a new education system, as well as having to re-establish their social network. The literature is well documented with their plight in relation to language barriers, difficulties adjusting to the academic culture, homesickness, feelings of isolation, perceived discrimination, financial hardships, as well as the stress and anxiety in coping with these challenges (Lin, 2012; Sherry et al., 2010; Tummala-Narra & Claudius, 2013; Wu et al.; 2015).

In a review of empirical research conducted between 1996 and 2005 on international student adjustment and academic achievement, Andrade (2006) proposed that international students had greater academic and adjustment challenges than domestic students. In many cases, the underlying issues were related to lack of language proficiency and cultural knowledge. She further proposed

that variables that linked adjustment to academic achievement included language proficiency, study habits, educational background, and personal characteristics such as gender, country of origin, and year in school. In spite of difficulties with language and other issues, international students were academically successful due to compensating factors such as academic skills, motivation, and effort. She also suggested that international students were generally more satisfied with the academic aspects than the social aspects of their experiences.

The impact of language proficiency and cultural knowledge on international student experience continued to be highlighted in a later study by Lin (2012). Using a case study methodology, Lin examined the academic, cultural, and social experiences of six international students at a suburban university in Southeastern U.S. She reported that language and communication related issues were the main challenges. In addition, the students felt stressed because of insufficient knowledge about the American educational system and teaching styles. The study also found that in coping with cultural differences, some students chose to assimilate while others found it safer to withdraw. Lin then stressed the importance for schools to provide social services to help students cope with these difficulties and to bridge the gap in cultural differences.

Wu et al. (2015) conducted a qualitative case study to understand the adaptation issues of international students at a city in southern U.S. They interviewed 10 students and reported on the academic, social, and cultural challenges that they faced. While all the participants acknowledged that their professors were professional and approachable, they noted that language barriers and lacking understanding of American classroom expectations created difficulties in communicating and interacting with their professors. Outside the classroom, the students encountered social challenges such as difficulty with different communication patterns, loneliness, and feelings of isolation from domestic classmates. The students also experienced culture shock due to differences

in values and belief systems. In order to overcome these challenges, the students talked about utilizing university resources such as the writing center, campus counseling services, recreation center, student organizations, and participating in campus activities.

From an online survey of 1,100 international students at the University of Toledo, Sherry et al. (2010) identified that the major challenges and vulnerabilities faced by the students were concerns over finances and health insurance, homesickness, lack of community inclusion and cultural understanding, and the need for additional assistance with spoken English. The authors recommended that universities developed initiatives to raise the profile of international students on campus, increase financial assistance and scholarships, as well as create opportunities for students to improve spoken English.

Perceived discrimination and social isolation proved to be significant challenges to acculturation for Muslim international students. In a qualitative study of 15 Muslim graduate international students aimed at learning the perspectives of these students in regards to cultural and religious adjustment in the U.S., Tummala-Narra and Claudius (2013) reported that the students missed family members and friends from home and had difficulty making friends in the U.S. The students also related experiences of overt and aversive discrimination, and it was especially pertinent to those with more visible markers of difference such as wearing of head-scarf, skin color, and accent. The authors highlighted that access to social support from religious communities in the U.S. was critical to coping with acculturation challenges.

Similarly, Lee and Rice (2007) reported that the perception of unfair treatment was more prevalent among international students who were more visible as minorities. In interviews with 24 international students at a university in the U.S. Southwest, the authors found that difficulties encountered ranged from situations of on-campus social interactions and interactions with faculty

and administration, denial of funding or job opportunities, and in off-campus interactions such as with housing and shopping. However, they reported that students from Western and English-speaking countries encountered minimal to no discrimination compared to students from other regions. They attributed this to neo-racism, described as racism based on culture and national origin.

Asian International Students

The 2019 Annual SEVIS report indicated that of the 1.52 million international students in the U.S., 75% were from the Asian continent, with 48% coming from either China or India. Despite their large numbers, studies suggested that Asian international students had more difficulties with college adjustment and experienced higher levels of acculturative stress compared to European international students (Fritz et al., 2008; Zhang & Goodson, 2011; Zhao et al., 2005).

In a survey to measure differences between international students and students who were permanent U.S. residents at an ethnically diverse community college in southern California, Fritz et al. (2008) found no significant differences in anxiety level between the two groups. However, when examining differences within the international student group, they found that Asian international students had significantly higher anxiety levels than European international students. The study involved 71 international students from Asia, 40 international students from Europe, and 97 U.S. permanent residents. The results highlighted that important differences between cultural groups could be obscured when international student populations are analyzed as one homogeneous group. The authors speculated that Asian students may feel more anxiety and pressure because their failure is not perceived as an individual one, but rather implicates their whole family. The study showed Asian international students found it harder to deal with the new language and to make new friends.

Zhang and Goodson (2011) reviewed a total of 64 quantitative studies published between 1990 and 2009 that reported on factors associated with international students' psycho-social adjustments in the U.S. They found that the most frequently reported predictors of psychosocial adjustment for this population were stress, social support, English language proficiency, region/country of origin, length of residence, acculturation, social interaction with Americans, self-efficacy, gender, and personality. In regards to region/country of origin, they reported that Europeans and South Americans adjusted better than Asians.

Using data from the 2001 National Survey of Student Engagement (NSSE), Zhao et al. (2005) did a comparison between international students and American students on their engagement in effective educational practices. They reported that compared to American freshmen, international freshmen scored better in areas of academic engagement and personal development, but spent less time socializing and relaxing, and were overall less satisfied with their college experience. By their senior year, however, there was no difference between American and international students in amount of time spent socializing and relaxing. However, among international students, they found that Asian international students were less satisfied with the campus environment and were "less engaged in active and collaborative learning and diversity-related activities" (p. 219) compared to White or Black international students.

Although the studies compared international students by region, Asian students were grouped as from one region. There are very few studies that examined differences among Asian international students. Arambewela and Hall (2009) pointed out that the Asian international student population was diverse in terms of culture, language, and values, and required a highly differentiated and segmented approach in addressing issues that they faced. Research on Asian

international students that took into account country or region of origin tended to be qualitative in nature and focused mainly on students from China, India, or Saudi Arabia.

Students from China and East Asia

Studies show that language and cultural barriers were major issues for students from East Asian countries. In a study of Chinese international students in the U.S., Heng (2018) conducted three interviews with 18 first- and second-year undergraduate students over the course of one academic year and asked them to write four journal entries. She identified that the five main challenges students faced were language issues, differences in thinking styles, understanding classroom expectations, grappling with sociocultural content, and finding balance between work and play. The results were consistent with Leong's (2015) findings that students from China have a more difficult time adjusting to life in the U.S. due to considerable cultural and language barriers. Leong interviewed 11 international undergraduate students at one regional, teaching-intensive university in the U.S. east coast to assess the factors that facilitate or impede international students' academic and social experiences. She pointed out that there were far wider differences between East Asian and American culture and language as compared to the cultures and languages of Europeans, South Americans, Africans, and South Asians.

Park et al. (2017) interviewed nine East Asian graduate students at one large, public research university in Midwestern U.S. to explore the adjustment challenges that these students faced. They reported language barrier to be the main cause for acculturative stress while homesickness and discrimination produced psychological challenges. They also reported that in dealing with these challenges, the students relied on social support from family and community members rather than professional counseling services.

In a paper offering theoretical insight on the situation of Chinese international students, Bodycott (2012) noted that Chinese students' psychological and sociocultural adaptation was underpinned by embedded cultural values and expectations. A key principle was in the Confucian culture of filial piety that emphasized respect and obedience toward authority and older individuals. This often led to perceptions of Chinese students as being passive learners, uncritical thinkers, reticent, and unwilling to participate in class. In a case study on engaging Chinese undergraduate international students at a business school in Midwestern U.S., Ross and Chen (2015) observed that institutional features and policies with emphasis on high grades had unintentionally reinforced perceived problems associated with Chinese international students of being silent in class, self-segregating, and having an instrumental view of education. Heng (2017) utilized the interview data from her 2016 research to give voice to Chinese international students on what they would like to say to their teachers, host peers, and school administrators. She reported that regardless of their language competencies or academic achievements, these students wanted better proactive connectedness and inclusion from teachers and peers, especially when they first arrived. The students indicated a desire for teachers to take their background into consideration in teaching and assessment, and to show care and interest. They also would like host peers to be more open-minded and culturally inviting, as well as for administrators to provide better academic and social support.

Students from India and South Asia

While language was reportedly a major issue with East Asian international students in the U.S., South Asian international students were partially buffered through having higher English language proficiency and better familiarity with Western culture. TOEFL test data show that

South Asian countries such as India and Pakistan have among the highest scores with averages above 90 iBT as compared to China's average of 79 iBT (Educational Testing Services, 2018).

In a literature review examining Indian international students in the U.S., Kushner (2010) noted that family influence, traditional gender roles, and the effect of globalization were major factors influencing their experience studying abroad. She explained how U.S. societal values that emphasized individualism, independence, and self-sufficiency conflicted with traditional Indian values, giving rise to anxiety, stress, and intensified cultural adjustment issues. In a qualitative study on key factors influencing the adjustment and engagement experiences of Indian graduate students at one university in Midwestern U.S., Chen and Razek (2016) reported that high-quality relationships, especially with faculty, were instrumental to facilitating transition and positively influenced academic and social engagement on campus. Friendships with U.S. students increased students' cultural adjustment and opened up access to academic and social opportunities, while interactions with other international students provided a sense of social support. They also found financial pressures, conflicting class and work schedules, academic priorities, and dietary restrictions to be barriers to engagement.

The theme of mental health and depression among Indian international students in the U.S. was explored in a few studies, with the recommendation that institutions recognize distinct depression, acculturation, and enculturation patterns in order to better support these students (Atri et al., 2007; Meghani & Harvey, 2016; Rahman & Rollock, 2004). In Meghani and Harvey's (2016) study of differences in trajectories of depressive symptoms, acculturation, and enculturation among Indian international graduate students in their first academic year in the U.S., the authors reported that social support was a major factor in predicting depressive symptom trajectories. They also noted that a majority of students maintained a high level of identification with Indian

culture throughout the study, and that being able to connect with individuals of similar ethnic backgrounds protected them against greater depressive symptoms. The authors pointed out that gender roles in India was more conservative than in the U.S., and that students who arrived with more traditional attitudes about gender showed greater depressive symptoms. The results supported Atri et al.'s (2007) study on the role of social support, hardiness, and acculturation as predictors of mental health among international students of Asian Indian origin where they highlighted the belonging aspect of social support as most crucial for mental health. In an earlier study, Rahman and Rollock (2004) surveyed 199 international students from Bangladesh, India, and Pakistan at a large Midwestern U.S. university and, reported that perceived prejudice was predictive of depression symptoms.

Students from Saudi Arabia and the Middle East

Islam is the predominant religion in Saudi Arabia and the Middle East (Gourou et al., 2019) and a major influence on the adaptation of students from the region. Razek and Coyner (2013) conducted a qualitative study involving eight Saudi students, two administrators, and two faculty members at one Midwestern research university in the U.S. to explore the cultural challenges that impacted the students and the university community with the sudden surge of students from Saudi Arabia since 2005. They premised that Saudi students being majority Muslims, and having been raised in a highly collectivistic society known for its strict rules and adherence to traditions, were challenged by the absence of the religious role in American education setting. The authors reported that Saudi students tended to see themselves not as individuals but that their conduct was representative of their religion, region, and country. They also revealed that the students' interactions on campus both in academic and social settings were highly influenced by their culture

and collectivistic thinking. The highly collectivistic nature of the Saudi students was illustrated in McKean's (2016) qualitative study of Saudi Arabian undergraduate students where he reported that relationship within group would take precedence over academic integrity. Other aspects of cultural differences included notions of punctuality, apprehension over alcohol consumption in social events that jeopardized religious values, and discomfort in first interactions with the opposite gender.

In a qualitative study of 15 Muslim graduate international students aimed at learning the perspectives of these students in regards to cultural and religious adjustment in the U.S., Tummala-Narra and Claudius (2013) identified social isolation and perceived discrimination as common challenges. They interviewed 15 Muslim graduate international students who had been in the U.S. for at least one year, eight of whom were from Turkey, two were from Libya, and one each from Bangladesh, China, Iran, Morocco, and Saudi Arabia. The authors reported participants' experiences of dynamic shifts in their religious identity over time, and stresses arising from an inability to practice their religion in a way that was familiar to them. A majority of students interviewed related experiences of overt and aversive discrimination. The authors highlighted that access to social support from religious communities in the U.S. was critical to their coping with acculturation challenges.

The theme of perceived discrimination was also highlighted by Hanassab (2006), who surveyed 640 international students enrolled in the University of California-Los Angeles and reported that students from the Middle East and Africa experienced more discrimination than international students from other regions.

Students from Southeast Asia and Central Asia

No study could be found that specifically focused on international students from the Central Asian region in the U.S. Similarly, there is very little recent literature on the experiences of international students from Southeast Asia in U.S. higher education. There were two studies specific to the adaptation and acculturation of Indonesian graduate students in the U.S. In a qualitative study on the cross-cultural academic engagement of Indonesian doctoral students, Mukminin and McMahon (2013) found that academic workload – including the volume of home-work and reading assignments as well as teaching assistantship responsibilities – prohibited them from full classroom engagement in the first semester of their studies in the U.S. English language writing skills continued to be a problem in subsequent semesters. Nguyen and Larson (2017) conducted a qualitative study to explore how Indonesian graduate students utilized student affairs functions to facilitate adaptation and adjustment to their graduate institutions. They reported that the students encountered initial culture shock due to inaccurate preconceptions of U.S. college life pre-arrival as well as academic challenges stemming from differences in the way courses were organized compared to their previous experience in Indonesia. The study highlighted the importance of culturally relevant student organizations, inclusive environments, and religiously affiliated centers in the adjustment processes of these students, and the role that student affairs professional play in making students feel welcomed and included.

Comparative Studies

In one of the few studies that did take the diversity of Asian international students into consideration, Bista (2015) grouped participants into three sub-regions: Eastern Asia, South and Central Asia, and Southeastern Asia. In an online survey of 705 participants from 25 universities

across the U.S., Bista reported that students from East Asia had lower gains in learning compared to students from South and Central Asia as well as students from Southeast Asia.

A few other studies made comparisons between students from Eastern and Southern Asia. Frey and Roysircar (2006) surveyed 57 South Asian and 53 East Asian international graduate students at one Midwestern university in the U.S. to compare perceived prejudice, acculturation, and frequency of help resource utilization between the two groups. They found that South Asian international graduate students utilized help resources at a significantly higher rate than East Asian international graduate students. Furthermore, South Asian students utilized help resources more frequently as they became more acculturated to the U.S. whereas no relationship was found between acculturation and frequency of utilization of help resources for East Asian students. Rice et al. (2012) conducted a quantitative study to examine self-critical perfectionism, acculturative stress, and depression among international graduate students from China and India at a major university in the U.S. Participants in their study consisted of 129 students from China, and 166 students from India. They found that students from China reported higher levels of acculturative stress than students from India and attributed this to Indian students having more exposure and familiarity with Western culture than Chinese students. In spite of this, they reported a stronger link between depression and self-critical perfectionism among Indian students than among Chinese students. They proposed that Chinese culture being more accepting of self-critical perfectionism as a possible factor.

Roy et al. (2016) conducted a study of international students' experiences in U.S. institutions. Their sample consisted of 4,683 students who had formerly applied to World Education Services (WES) for foreign credential evaluation. They reported that students from China, Latin America, Middle East, and North Africa had the most problems with English language

proficiency, while students from India struggled more with loneliness and homesickness. They also reported that students from Sub-Saharan as well as North Africa and the Middle East cited discrimination as a major challenge in building social networks.

Student Satisfaction in Higher Education

Elliott and Healy (2001) described student satisfaction as a "short-term attitude resulting from an evaluation of a student's educational experience" (p. 2) and was a result of actual performance meeting or exceeding expectations. Aldemir and Gülcan (2004) defined university students' satisfaction as "the positive and negative attitudes developed by the students with regard to their institutions" (p. 111). Strauss and Volkwein (2004) ascribed overall student satisfaction as a major factor in student commitment.

The concept of students as customers of higher education and thereby the measure of student (customer) satisfaction had always been a contentious issue particularly among traditional members of the academic community (Guilbault, 2018; Harvey & Green, 1993). Astin (1993) noted, however, that student satisfaction could not be legitimately subordinated to any other educational outcome as most students spend a considerable amount of time and energy to attend college, and therefore their perception of the value from that experience should be given substantial weight. DeShields et al. (2005) pointed out that the value of student satisfaction should be based on the long-term interests of students and society, and institutional goals and commitment. They proposed that satisfied students were necessary to accomplish the goals of higher educational institutions. Pescaru (2017) advocated for assessing student satisfaction as a means for higher education institutions to identify aspects that set them apart from others, to discover areas that lead to dissatisfaction and improve on them so as to meet students' needs and expectations.

It was uncommon in the 1980s for higher education to ask for student feedback (Harvey, 2003). A change occurred in the UK following the recommendation of the Cooke Commission Report for student satisfaction surveys to be part of an institution's internal quality assurance process. The National Student Survey (NSS) was implemented in 2005 as a nationwide survey that asked all final year students in UK public universities for feedback on their course experience (HEFCE, 2017). In the U.S., the National Survey of Student Engagement (NSSE) is a nationwide survey of public and private 4-year colleges and universities that was first launched in 2000 with the participation of 275 institutions. It is administered to freshman- and senior-level students who have attended the institution for at least two terms, and collects information on participation in programs and activities, as well as quality of experience (NSSE, 2018). The number of institutions that participated had expanded to 601 in NSSE 2020. Other forms of student satisfaction surveys that are widely used include the Noel-Levitz Student Satisfaction Inventory (SSI), i-graduate's International Student Barometer (ISB) and Student Barometer (SB), as well as various adaptations of Parasuraman et al.'s (1988, 1991, and 1994) SERVQUAL instrument.

Although student satisfaction studies have been gaining momentum worldwide, very few studies were conducted in the U.S., and of those even fewer sought information on international student satisfaction. The following sections therefore reflect on student satisfaction studies in general that had been carried out in various parts of the world.

Impact of Student Satisfaction

Student satisfaction data is important to an institution's enrollment management agenda. Studies have shown that students who are satisfied with their college experience are more likely to successfully complete their education and graduate from the institution (Fischer, 2007;

Schreiner, 2009). They are also more likely to consider furthering their education at the same institution, and recommend the institution to potential applicants (Garrett, 2014; Roy et al., 2016; Shahsavar & Sudzina, 2017).

Fischer (2007) conducted a longitudinal study of first-time students entering colleges in 1999 to examine racial and ethnic differences in adjusting to college and the consequences that different adjustment strategies have on college satisfaction and academic achievement. She found that college satisfaction and social ties were significantly related to retention for all ethnic groups. In another study, Schreiner (2009) surveyed 27,816 students at 65 4-year institutions in the U.S. over three academic years from 2006 to 2009, using student satisfaction data to determine the predictability of retention. She reported that satisfaction indicators almost doubled the ability to predict retention beyond demographic characteristics and institutional features. In a study of 1286 community college students in southern California, Oja (2011) found that satisfaction was statistically related to student success in terms of academic performance but not necessarily to persistence.

In analyzing satisfaction data from the International Student Barometer, Garrett (2014) found close correlation between overall satisfaction scores and the willingness of international students to recommend the institution. The analysis was based on a subset of data from 2013, representing about 50 comprehensive universities from three countries – Australia, U.K., and U.S. – that had generated over 60,000 international student responses. Shahsavar and Sudzina, (2017) conducted a quantitative study to measure student satisfaction determinants and loyalty. The study involved 1,030 Danish university students enlisted through Facebook. One of their key findings was that student satisfaction was the most important factor that led to students' loyalty to their institution. In Annamdevula and Bellamkonda's (2016) study of the effects of service

quality on student loyalty in Indian universities, they reported that satisfied students exhibited loyalty as measured through pride with the university, propensity to recommend the university to family and friends, continuance with the next level of studies at the university, and care about the university. Roy et al.'s (2016) survey of international students in U.S. institutions also found a strong link between overall satisfaction and the likelihood to recommend their institution.

Aldemir and Gülcan (2004) cited Öngider and Yüksel (2002) in pointing out that what was even more important was the effect of satisfaction on students' physical and psychological health because dissatisfaction would cause stress, which in turn provoked psychological and psychosomatic disorders. Lee and Rice (2007) drew attention to the fact that international student dissatisfaction would override the positive benefits of them studying in the U.S. in terms of friendship, diplomacy, and promotion of U.S. educational systems and governance.

Factors Influencing Satisfaction

Elliott and Shin (2002) stressed that knowing what influences student satisfaction was the first step towards improving it. Many studies have been conducted over the last two decades to examine the reasons for students' satisfaction or dissatisfaction with their higher education experience. Gibson (2010) carried out a review of the literature on student satisfaction in higher education published over the past 15 years and noted that one difficulty in comparing results was that not all studies included the same variables, and studies may include similar variables with very different names. In a study involving 837 international students across 62 Korean universities, Alemu and Cordier (2017) summarized that the strongest influences on student satisfaction were academic and education quality, living and support service experiences, as well as cultural proximity. Ammigan and Jones (2018) examined the level of satisfaction of degree-seeking,

undergraduate international students with their experience at higher education institutions in Australia, U.K., and U.S. using ISB data from 2016. They reported that overall satisfaction was positively impacted by arrival, learning, living, and support services experiences.

Learning Experience

DeShields et al. (2005) surveyed 143 business undergraduate students at one state university in South Central Pennsylvania and reported that faculty (professors who were understanding, accessible, professional, and provide feedback) and classes (courses with real-world relevance, properly scheduling) were key factors to a positive college experience which, in turn, determined overall satisfaction. This was re-iterated in Gibson's (2010) findings that academic staff/teaching and classes/curriculum were significant predictors of overall satisfaction in almost all of the studies that were reviewed over the past 15 years. Zhou and Cole (2017) used longitudinal study data involving 191 international and 409 American students to compare the extent to which involvement in college life was influenced by race/ethnicity, gender, and language background, and the extent to which the involvement influenced overall satisfaction. The authors reported that student-faculty interactions had the biggest impact on overall satisfaction for both groups.

Arambewela et al. (2006) conducted a sequential mixed method study of graduate students from China, India, Indonesia, and Thailand at five universities in Victoria, Australia and reported that quality of education was a major factor influencing satisfaction. In Fernandes et al.'s (2013) survey of graduating students at a British university in the United Arab Emirates, the authors found that teaching quality and variables directly associated with the students' program of study had the most significant impact on student satisfaction.

The perceived value of the program (Alves & Raposo, 2007; Shahsavar & Sudzina, 2017) and learning facilities (Guo, 2016; Lai et al., 2015) were some of the other factors associated with learning experiences that had significant impact on overall satisfaction. In a survey of 2,687 students randomly selected from 13 Portuguese state universities, Alves and Raposo (2007) found that image had the highest influence on satisfaction, followed by value and quality. The construct "image" consisted of whether or not the university was a good place to study, was innovative and future looking, and adequately prepares students. "Value" consisted of whether or not studying at the university led to attainment of a good job, was a good investment, and valorized by employers. The construct "quality" was related to global quality, quality of teacher's skill and knowledge, and quality of course content. In Shahsavar and Sudzina's (2017) study in Denmark, perceived value and 'quality of software' (lecturers' teaching ability, administrative staff services) were reported to be the two most important factors for student satisfaction. Guo (2016) conducted a survey involving 3,600 students from five universities in China to determine student satisfaction factors in higher education. The author reported that teaching attitude, selection of teaching materials, and teaching equipment had significant positive influence on student satisfaction. In Lai et al.'s (2015) study to assess the antecedents and consequences of student satisfaction in higher education, they surveyed students from two large private universities in Malaysia and found that student satisfaction was influenced not only by academic quality, but also by the university core services, information technology services, and skill building.

Living Experience

Studies on the influence of living experiences on overall satisfaction had mixed results. In an analysis of the 1999 National Longitudinal Survey of Freshmen (NLSF) dataset, Fischer

(2007) found that campus racial climate and formal social ties were significant factors to college satisfaction. In another study involving 84 international students at one university in Hawaii, Hendrickson et al. (2011) reported a significant positive relationship between feelings of social connectedness, satisfaction, and contentment. They noted that international students with a higher ratio of host national friends were significantly more satisfied, felt better connected socially, and less homesick. Alemu and Cordier (2017) found that satisfaction in living arrangements and social activities was positively correlated with international students' overall satisfaction.

Other studies however, reported that campus life and the social factor were not significantly related to satisfaction (Aldemir & Gülcan, 2004; Helgessen & Nesset, 2007). Aldemir and Gülcan (2004) conducted a case study at the Faculty of Business at one Turkish university to determine the level and the factors for university students' satisfaction with their institution. They reported that academic factors were most important in predicting student satisfaction, and that extracurricular activities were non-significant. In Helgesen and Nesset's (2007) study involving 389 undergraduate students at a university college in Norway, the authors reported that the social factor, incorporating interactions with other students, social activities/arrangements, and life in town, did not have significant influence on overall satisfaction.

Irudayam (2016) conducted a survey of international students at one medium-sized private university in New England and found that financial stability through assistantships, on-campus employment, and institutional or external scholarships had the greatest influence on student satisfaction. The finding was supported by Glass et al.'s (2015) qualitative study involving 40 international students at two major universities in the U.S., where they reported more negative experiences were encountered by students with low financial resources. Chen and Razek (2016) pointed out that financial pressure was a barrier to campus engagement among Indian graduate

students at a private university in the U.S. Midwest and an acculturative factor influencing their experience on campus.

Support Services

The significance of support services to overall student satisfaction also saw mixed results. DeShields et al. (2005) found that advising staff did not have a significant influence on overall satisfaction while Helgesen and Nesset (2007) reported that academic services, information, and facilities were significant factors. Helgesen and Nesset's findings were supported by Lai et al. (2015) who reported, among others, the significance of university core services and information technology services to student overall satisfaction. In a survey of 918 undergraduate students from three universities in India, Annamdevula and Bellamkonda (2016) found that six factors of service quality as in teaching, administrative services, support services, hostel facilities, library and lab facilities, and internationalization were major influencers of student satisfaction, and explained 85% of variance in student satisfaction. Johnson et al. (2016) examined the relationship between student engagement, academic achievement, and student satisfaction among senior students at the University of Arkansas in the Agricultural, Food and Life Sciences program. Using data from 144 responses to the 2013 NSSE, they found that quality student support services together with positive interpersonal relationships, and effective learning and study practices were significant predictors of student satisfaction.

Cho and Yu (2014) conducted an online survey of international students at one large public university located in the Southeastern region of the U.S. to examine the roles of university support in determining international students' well-being. They found that university support increased international students' school-life satisfaction and reduced their psychological stress.

Another finding from Irudayam's (2016) study of international students in the U.S. was that arrival services such as airport pickup, visa application assistance, medical insurance, and locating housing were more important than assistance with setting up of utilities. She also indicated that services provided by the institution's international student advisors had discernable effects on student satisfaction. In Khoo et al.'s (2017) study involving 324 students at two private, tertiary educational institutions in Singapore, the authors concluded that students who were satisfied with the institution's non-academic services were more likely to have intentions of remaining loyal to the institutions and of paying a higher fee to remain with the institution than were unsatisfied students.

Demographic Characteristics

Besides learning experiences, living experiences, and university support services, studies also show that satisfaction levels could vary according to demographic characteristics. Aldemir and Gülcan (2004) conducted a case study of student satisfaction in higher education involving 419 undergraduate business students at Dokuz Eylül University in Turkey. One of the key findings from their survey was that age and gender were significantly associated with student satisfaction. They reported that female students have higher satisfaction rates than male students, and younger students (18-19 age group) were more satisfied than older students (22-23 age group). The age factor was supported by Zhang and Goodson's (2011) findings from their journal article review. Zhang and Goodson reviewed 64 studies published in peer-reviewed journals between January 1990 and January 2009 to examine the predictors of psychosocial adjustment of international students in the U.S. They concluded that students reporting greater satisfaction tended to be younger, more acculturated to the U.S. culture, and more proficient in English, having stayed in the United States longer. Both Alemu and Cordier (2017) as well as Gibson (2009), however,

reported that gender was not significantly correlated with students' overall satisfaction. In another study involving 233 undergraduate commerce students at a university in New Zealand, Clemes et al. (2008) reported that juniors were more satisfied than sophomores. They also found that Asian students were less satisfied than Western students with their overall university experiences. The ethnicity factor with Asian students being less satisfied supported Zhao et al.'s (2005) findings from the NSSE 2001 data. However, in Gibson's (2010) review of journals on business student satisfaction, ethnicity was not found to be a significant influence on overall satisfaction.

The concept of cultural proximity could be more relevant than ethnicity for international students. Alemu and Cordier's (2017) concept of cultural proximity was based on characteristics like shared language, food, clothes, religion, and lifestyle as well as closeness of social frameworks, power distributions, and societal values. They reported that "being in the East Asian cultural sphere" was one of the most important and significant factors in explaining the variation in international student satisfaction at Korean universities. In their study, students from China, Hong Kong, Taiwan, Japan, Vietnam, and Mongolia were included as "being in the East Asian cultural sphere" and were likely more satisfied living and studying in Korea due to long-standing historical and cultural ties compared to international students from other regions. Rienties et al. (2011) conducted a study involving 958 domestic Dutch and international freshman students at five business schools in the Netherlands and concluded that cultural distance was a major factor in the academic success and social integration of international students. The notion of cultural distance was derived from studies by Ward and Kennedy (1993) as well as Furnham and Alibhai (1985), and suggested that international students who made relatively small cross-cultural transitions (e.g., from Germany to the Netherlands) experienced less psychological stress and had easier sociocultural adjustment than students who made a large cross-cultural transition (e.g., from China to the Netherlands). The

study categorized students into four groups: Dutch, Western, mixed-Western, and non-Western. The mixed-Western group would comprise students with both Western and non-Western influence (e.g., a student with Turkish parents who were born and raised in Germany but speak Turkish at home). The authors reported that international students with a mixed-Western ethnic background performed better in both academic and social integration; they attained higher study performance compared to domestic students and are better integrated than international students of a non-Western background. Glass et al. (2014) surveyed 298 international students at a major research university in the U.S. mid-Atlantic region to find out the extent to which recreation participation, intercultural friendship, and adaptation to college varied by region of origin. They reported that students from Eastern/Southeastern Asia perceived greater constraints to participation than students from Europe, South Asia, and Middle East/North Africa. The results led them to conclude that an international student's region of origin moderated access to the institution's informal culture which, in turn, impacted adaptation and satisfaction with their academic environment. This aligned with the findings in Roy et al.'s (2016) survey of international students' experiences in U.S. institutions, where they reported that the most significant differences in experiences and satisfaction were by world region or country of origin, rather than by academic level, institution type, or institution location.

Ethnic visibility is another factor that could impact students' perception of overall satisfaction. In a quantitative study at one large Australian university involving 221 international students from 37 countries, Tan and Liu (2014) examined the relationship among perceived cultural distance, expected discrimination, and preferred acculturation orientations among ethnically visible and non-visible international students in Australia. They categorized international students as ethnically visible, if their primary ethnicity/ancestry did not fit Anglo,

European, or Caucasian categories, irrespective of country of birth. They reported that ethnically visible international students scored higher on expected discrimination and perceived cultural distance than ethnically non-visible students. The findings supported Lee's (2010) survey of 501 international students at one large public university in the U.S. Southwest. The study examined international students' experiences at a U.S. university and how these experiences influenced the propensity to recommend their university to others from their home country. Lee reported that students from predominantly non-White regions of the world had greater difficulties and more negative experiences compared to students from predominantly White regions.

Satisfaction and Dissatisfaction

DeShields et al. (2005) conducted a study focused on the determinants of college satisfaction and retention. They surveyed 160 undergraduate business students at a state university in South Central Pennsylvania. Using Herzberg's two-factor theory, the authors pointed out that certain factors could be dissatisfiers or hygiene factors, meaning their absence can lead to dissatisfaction but having them does not necessarily increase satisfaction. In their study, they found academic advising to be such a factor. The hygiene factor theory was also mentioned by Fernandes et al. (2013), who reported that while teaching quality, academic support, and organization management were significant determinants of program satisfaction, library services, IT services, and assessment and feedback were surprisingly, not significant. The authors surmised that adequate library and IT resources could have been bare minimum expectations, making them "hygiene" factors that were "necessary to ensure dissatisfaction was avoided—but by themselves will not lead to higher satisfaction among students" (p. 624).

In a study to examine the role of student satisfaction with university experience in shaping co-creation behavior, Elsharnouby (2015) conducted an online survey at one leading state-owned university in Qatar. He reported that student–administrative/IT interaction and student–student interaction did not have a significant effect on student satisfaction. He suggested that both these factors were dissatisfiers where negative experience may lead to dissatisfaction, but positive experience does not necessarily lead to overall satisfaction. Similarly, Gibson (2010) noted that quality of campus services and facilities were important predictors although less so than academic factors, and deemed these factors as dissatisfiers.

Willingness to Recommend

International student mobility had increased considerably over the past two decades and with it, institutions accepting international students had proliferated. Roy et al. (2016) commented that with the intense global competition for qualified international students who have their pick of institutions anywhere in the world, word-of-mouth recommendation could be a critical factor in decision making. Fernandes et al. (2013) suggested that positive word of mouth offered credibility to a university in an environment of aggressive marketing and promotion by higher education providers, an extensive array of choices, and often indiscernible differentiation in program offerings.

Recent studies on college choice in the U.S. highlighted the importance of institutional recommendation. Johnston (2010) explored the influence of sources of information on university choice for undergraduate students at a regional public university in the U.S., and found that family and friends were highly influential as sources of information in the decision making. The results were supported by Tan's (2015) sequential explanatory mixed method study on factors that influenced international students' college choice at two 4-year institutions in the U.S. where he

reported family and friend recommendations to be the main factor that led to these students selecting their current institutions. Alfattal (2017) conducted a survey to compare influencers of college choice between domestic and international students at one comprehensive public university in California. He reported that some factors were significantly different for international and domestic students, and that international students were more reliant on factors such as a college reputation of quality and its consequent word-of-mouth.

Factors Influencing Willingness to Recommend

While there were fewer studies on factors influencing willingness for students to recommend their institution, the majority show overall satisfaction to be a strong predictor (Ammigan, 2019; Elliott & Healy, 2001; Helgesen & Nesset, 2007; Shahsavar & Sudzina, 2017).

In a study utilizing ISB data of international undergraduate students in the U.S., U.K., and Australia, Ammigan (2019) found that international students who were more satisfied with their overall experience were more likely to recommend future students to apply to their institutions. He also reported that satisfaction with dimensions of arrival, learning, living, and support services experiences positively influenced institutional recommendation to future students, and of the four dimensions, "overall satisfaction with learning" had the strongest impact.

Clemes et al. (2008) reported that overall satisfaction was significant but accounted for only a small amount of the variation in willingness to recommend (R^2 = 41.1%), indicating the presence of other important factors. In one of the earliest studies on student satisfaction in the U.S., Browne et al. (1998) concluded that while global satisfaction was associated with perceptions of educational program quality, propensity to recommend the college was more closely related to service provision, that is, whether the student felt he or she had been treated in a fair and

sympathetic manner and can trust the institution. The finding was supported by Lee (2010) who reported that the perception of receiving fair and equal treatment was most important followed by satisfaction with institutional services and the university's reputation. These findings though did not align with Shahsavar and Sudzina's (2017) study that showed while the university's image and student satisfaction had a direct and significant effect on willingness to recommend the institution, quality of software was not significant. They defined quality of software as human ware, which included "human elements as teaching, academic standard, pedagogical methods, and personal contact with teaching staff and administrative staff" (p. 6). Also, Fernandes et al. (2013) reported that students were far more likely to recommend their institution if they were satisfied with program quality rather than with facilities and ancillary services.

In terms of demographic characteristics, Lee (2010) found that likelihood to recommend was impacted by region of origin with students from East Asia as being least likely to recommend. In Roy et al.'s (2016) study, students from developing regions such as Sub-Saharan Africa (93%), and India (93%) were found more likely to recommend their institution than students from developed countries such as Europe (84%) and Oceania (74%). The authors attributed this to comparable quality of higher education at a lower cost in the developed countries coupled with higher expectations of the U.S. education experience.

Chapter II Summary

International students bring diversity of thought to U.S. campuses in addition to economic contributions as well as benefits to foreign diplomacy. However, recent trends show a decline in the attractiveness of the U.S. as a favored destination for globally mobile students. The literature is rife with challenges encountered by international students, from language and cultural barriers

to academic and social adaptations, as well as psychological distress and perceived discrimination. With students from the Asian continent making up three quarters of all international students in the U.S., and studies that show this population as particularly vulnerable, recent recommendations are for institutions to do more to bridge the gap instead of placing the burden solely on international students to adapt. The literature also shows vast differences in the experiences and challenges faced by students from East Asia, South Asia, and West Asia, indicating that a one-size-fits-all approach might not be optimal in trying to understand the social, cultural, intellectual, and personal challenges of these students.

The measure of international students' overall satisfaction with their experience is important to institutions seeking to recruit and retain this population. The literature shows that the students' experience with their learning environment had a huge influence on satisfaction. However, the results were less clear on the impact of living experiences and university support services. Studies also show that recommendation of an institution by students who have had satisfactory experiences is a major factor influencing international students' college choice.

There seems to be conflicting results as well on how demographic characteristics, especially students' origin, affected experiences. Therefore, a major focus of this study investigates whether or not international students from different sub-regions of the Asian continent had differences in satisfaction rates and willingness to recommend their institution.

CHAPTER III

METHODS

The purpose of this study is to examine the overall satisfaction levels of Asian international students in U.S. higher education, and the willingness to recommend their institution to future students. In this chapter, I outline my research design and rationale, describe my data source, sample, and data analysis plan, and finally, discuss limitations and delimitations.

The research questions that guided this study were:

1. Is there a significant difference in overall satisfaction level between Asian international students and other international students in the U.S.?
2. How does overall satisfaction vary among Asian international students in the U.S.?
    a. Is there a difference in the average satisfaction level of students who come from different geographical sub-regions of Asia? If so, which sub-regions differ?
    b. To what extent is overall satisfaction predicted by students' demographic characteristics and satisfaction with experiences in learning, living and university support services?
3. Is there a significant difference in willingness to recommend their institution between Asian international students and other international students in the U.S.?
4. How does willingness to recommend their institution vary among Asian international students?
    a. Is there a difference among Asian students by geographical sub-region in the willingness to recommend their institution? If so, which sub-regions differ?

   b. To what extent is willingness to recommend their institution predicted by students' demographic characteristics, overall satisfaction and satisfaction with experiences in learning, living and support services?

5. What do Asian international students have to say about their experiences in the U.S.?
   a. What were the positive and negative experiences students from different sub-regions expressed in regards to learning, living, and university support services that could have an impact on overall satisfaction?
   b. What were the positive and negative factors that could have influenced the willingness for them to recommend their institution?
   c. Were there differences among students from the various Asian sub-regions?

Research Design and Rationale

My research design is largely quantitative, based on post-hoc secondary data analysis. Creswell (2009) defined quantitative research as "a means for testing objective theories by examining the relationship among variables" (p. 4). The two most common strategies in quantitative research are survey research and experimental research. In this study, I utilized the data from an existing survey to address my research questions.

Doolan and Froelicher (2009) proposed that secondary data analysis (involving the use of an existing data set to confirm the findings of previous research or to answer new research questions) was an efficient, affordable, and effective approach to research as it allowed access to large datasets and presented low risk to participants as long as precautions were taken to ensure anonymity. The methodology had gained popularity especially in the field of nursing studies (Dunn et al., 2015; Magee et al., 2006) as well as in educational research (Myers & Myers, 2017;

Oseguera & Hwang, 2014). Doolan and Froelicher further suggested that the appropriateness of using secondary data analysis was dependent upon having an important research question and finding a data set that was adequate to address the question. Important considerations for the data set included appropriateness of sample, measures, recency, and whether or not there was excessive missing data.

My rationale for utilizing secondary data analysis was that I was able to gain access to a large dataset that was inherently suited to address my research questions, and that the number of respondents from the dataset would exceed the number of responses I could hope to obtain if I were to conduct a survey on my own.

Heale and Twycross (2015) noted that consideration must be given not only to the results of a study, but also the rigor of the research. They proposed that in quantitative research, rigor was achieved through measurement of validity and reliability. They defined validity as the extent to which a concept was accurately measured while reliability was the extent that an instrument would produce the same results when repeated under the same conditions. They mentioned the three major types of validity as content validity, construct validity, and criterion validity, and outlined three attributes of reliability as homogeneity or internal consistency, stability, and equivalence.

Data for this study was obtained from the International Student Barometer (ISB), which is a survey of international students in higher education institutions worldwide. The ISB was first established in 2005, and according to Browne and Brett (2013) it has been refined through 14 cycles, thus improving the validity and reliability of the instrument. It has been deployed in over 1,400 institutions across 33 countries with feedback from over three million students (i-graduate, n.d.). Validity for this study was further established through utilizing only questions that directly asked how respondents rated overall satisfaction, satisfaction with learning experience,

satisfaction with living experience, satisfaction with support services, and willingness to recommend, thereby promoting accuracy of the concepts measured. Further information on validity and reliability of the instrument itself was not obtainable as secondary data was used.

My research design entailed the analysis of the relevant closed-ended survey questions and open comments. Although traditionally, very little attention had been given to open comments in student surveys (Chambers, 2010), these comments provide additional data to better understand students, and can be helpful in identifying nuanced commonalities and distinctions among comparative populations. Riiskjær et al. (2012) argued that open-ended questions have been shown to elucidate critical comments that cannot be obtained using purely quantitative surveys.

I utilized content analysis to examine data from the students' open comments. Krippendorff (2013) defined content analysis as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (p. 24). Elo and Kyngäs (2008) noted that content analysis could be used for either quantitative or qualitative data, and may be approached in a deductive or inductive manner. Hsieh and Shannon (2005) defined qualitative content analysis as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (p. 1278). Chambers and Chiang (2011) contended that content analysis may be a standard method for studying responses to open-ended questions.

Instrumentation/Data Sources

The International Student Barometer (ISB) is the largest dataset available with the information that I needed for my research questions. The survey consisted of 256 closed- and open-ended questions that were divided into sections on demographics, decision-making and

application, arrival experience, learning experience, living experience, support services, as well as recommendation and future plans.

The demographic information that was asked included age, gender, nationality, type of study (whether on campus, on an exchange program, studying abroad), level of study (undergraduate, graduate, non-degree) and at what stage (first year, final year, other). Satisfaction items were in the sections on (1) arrival experience with 11 variables that assessed students' first impressions and experiences upon arrival to campus; (2) learning experience with 27 variables focusing on aspects of teaching, studies, and learning facilities; (3) living experience with 24 variables consisting of questions on housing and living costs, social, and day-to-day life experiences; and (4) support services with 17 variables on services provided by university departments, such as the international office, student accounts, academic and career advising, health and counseling centers, and the housing office. All satisfaction responses were scored on a 4-point Likert-type scale where 1 = very dissatisfied, 2 = dissatisfied, 3 = satisfied, and 4 = very satisfied. At the end of each section, students were invited to give open comments on their experiences. The section on recommendation and future plans had one question that specifically asked how willing they were to recommend their university to other students thinking of applying. The response was scored on a 5-point Likert-type scale where 1 = actively discourage, 2 = discourage, 3 = neither encourage nor discourage, 4 = encourage, and 5 = actively encourage. This was followed by an open question where students were given the opportunity to explain why they would encourage or discourage others from applying.

For the purposes of this study, five questions that directly asked how respondents rated overall satisfaction, satisfaction with learning experience, satisfaction with living experience,

satisfaction with support services, and willingness to recommend were utilized together with the accompanying open comments, and relevant demographic information.

Population, Sample, and Data Access

The population for this study is Asian international students from U.S. institutions that participated in the International Student Barometer (ISB). The ISB is an annual online survey of international students worldwide conducted by i-graduate, an independent organization that "tracks and compares the decision-making, expectations, perceptions and intentions of your international students from application to graduation" (i-graduate, n.d.). The sample for this study is a snapshot of respondents who participated in the Fall 2017 survey.

The data was obtained through the Senior Researcher of The Observatory on Borderless Higher Education (OBHE). The OBHE was part of i-graduate having joined the organization in August 2010, with a primary purpose "to provide strategic research, data, and information for institutional/organizational leaders and policy-makers to make informed decisions relevant to their current and future transnational higher education initiatives" (OBHE, n.d.). The organization was based in the U.K. and had closed its operations as of December 2020 due to lack of funding. Due to the change in privacy laws surrounding the General Data Protection Regulation (GDPR) that was implemented in May 2018, I was not able to gain access to data that was more recent than from the ISB Fall 2017 survey.

OBHE required a research project specification with information about my research data request, research rationale, and intended outputs, as well as a signed confidentiality agreement to ensure the information remained confidential and for the stated research purpose only. They also stated that only the signatories of the confidentiality agreement comprising of my dissertation

committee and myself were approved to view the data, and that research outputs must not publicly identify specific universities. Upon completion of the requirements, I received the data via email with password protection. The raw data was presented on an Excel spreadsheet.

HSIRB Approval

As no participants were directly recruited for this study I sought exemption and was granted approval from the Human Subjects Institutional Review Board (HSIRB).

Data Analysis

A critical part of my data analysis was the assignment of region of origin to each data sample as the original data collected was for "country" and not "region." Each country was mapped to the corresponding region based on the M-49 "Standard Country or Area Codes for Statistical Use" (UNSD, 1999). Countries in the Asian continent were categorized into five geographical sub-regions: (a) Central Asia, (b) Eastern Asia, (c) Southeastern Asia, (d) Southern Asia, and (e) Western Asia. The list of countries within each geographical sub-region is as shown in Table 1.

All data were exported from Excel to SPSS for statistical analysis. In the case of overall satisfaction, responses were converted from the 4-point Likert scale into an interval scale by assigning 1 = very dissatisfied, 2 = dissatisfied, 3 = satisfied, and 4 = very satisfied. Similarly, data for willingness to recommend was converted as follows: 1 = I would actively discourage people from applying, 2 = If asked, I would discourage people from applying, 3 = I would neither encourage nor discourage people to apply, 4 = If asked, I would encourage people to apply, and 5 = I would actively encourage people to apply.

Table 1

List of Countries Within Each Asian Geographical Sub-region (UNSD, 1999)

Central Asia	Eastern Asia	Southeastern Asia	Southern Asia	Western Asia
Kazakhstan	China	Brunei Darussalam	Afghanistan	Armenia
Kyrgyzstan	Hong Kong	Cambodia	Bangladesh	Azerbaijan
Tajikistan	Macao	Indonesia	Bhutan	Bahrain
Turkmenistan	North Korea	Laos	India	Cyprus
Uzbekistan	Japan	Malaysia	Iran	Georgia
	Mongolia	Myanmar	Maldives	Iraq
	South Korea	Philippines	Nepal	Israel
		Singapore	Pakistan	Jordan
		Thailand	Sri Lanka	Kuwait
		Timor-Leste		Lebanon
		Viet Nam		Oman
				Qatar
				Saudi Arabia
				State of Palestine
				Syria
				Turkey
				UAE
				Yemen

Research Questions 1 and 3

The first and third research questions of this study called for examining the difference in overall satisfaction and willingness to recommend respectively, between students from the Asian continent and those who were not from the Asian continent. Assumptions of distribution normality and homogeneity of variances within the two sub-groups were checked. In order to verify the statistical significance of the difference in means, I performed independent sample t-tests for each sub-group using a 2-sided test at a level of significance of 0.05.

Research Question 2

Research question 2 called for examining how overall satisfaction varied among Asian international students. The first part of the question asked whether there were differences in overall satisfaction among respondents from the five Asian geographical sub-regions, and if so, which regions were different. A one-way ANOVA test was conducted, checking assumptions for normality and homogeneity of variances. This was followed by post hoc comparisons when the omnibus test revealed a statistically significant difference. Exploratory one-way ANOVA tests were conducted to check for the effects of study type as well as study level on overall satisfaction. No significant differences were found. Additionally, factorial ANOVA was conducted to check for interactions between sub-region, gender, and age. No interaction was detected.

The second part of the research question called for investigating the extent that overall satisfaction could be predicted by students' demographic characteristics and satisfaction with experiences in learning, living, and university support services. Based on findings from the literature, age and gender were selected as the demographic characteristics for this study. Gender was dummy coded as Female, with male as reference group, and the following model was generated:

$$Overall_i = \beta_0 + \beta_1 Learning_i + \beta_2 Living_i + \beta_3 Support_i + \beta_4 Age_i + \beta_5 Female_i + \epsilon_i$$

where β_0 is the mean overall satisfaction score for male students holding constant satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and age

β_1 is the relationship between satisfaction with learning experiences and overall satisfaction for all students holding constant satisfaction with living experiences, satisfaction with support services, and age

β_2 is the relationship between satisfaction with living experiences and overall satisfaction for all students holding constant satisfaction with learning experiences, satisfaction with support services, and age

β_3 is the relationship between satisfaction with support services and overall satisfaction for all students holding constant satisfaction with learning experiences, satisfaction with living experiences, and age

β_4 is the relationship between age and overall satisfaction for all students holding constant satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services

β_5 is the difference in overall satisfaction between female and male students holding constant satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and age

ϵ is the error term, with $\varepsilon \sim N(0, \sigma^2)$

Model assumptions were checked and verified. Multiple regression analysis was conducted first for overall Asian international students, and then for students in each of the five sub-regions individually.

Research Question 4

Research question 4 called for examining how willingness to recommend their institution varied among Asian international students. The first part of the question examined whether there were differences in willingness to recommend among respondents from the five Asian geographical sub-regions, and if so, which regions were different. A one-way ANOVA test was performed but no further comparison was conducted with an insignificant omnibus test result.

The second part of the research question called for investigating the extent that willingness to recommend could be predicted by students' demographic characteristics, overall satisfaction, and satisfaction with experiences in learning, living and university support services. Similar variables as in research question 3 were used in the following model:

$$Recommend_i = \beta_0 + \beta_1 Overall_i + \beta_2 Learning_i + \beta_3 Living_i + \beta_4 Support_i + \beta_5 Age_i + \beta_6 Female_i + \epsilon_i$$

where β_0 is the mean overall recommendation score for male students holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and age

β_1 is the relationship between overall satisfaction and willingness to recommend for all students holding constant satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and age

β_2 is the relationship between satisfaction with learning experiences and willingness to recommend for all students holding constant overall satisfaction, satisfaction with living experiences, satisfaction with support services, and age

β_3 is the relationship between satisfaction with living experiences and willingness to recommend for all students holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with support services, and age

β_4 is the relationship between satisfaction with support services and willingness to recommend for all students holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and age

β_5 is the relationship between age and willingness to recommend for all students holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services

β_6 is the difference in willingness to recommend between female and male students holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and age

ϵ is the error term, with $\varepsilon \sim N(0, \sigma^2)$

Model assumptions were checked and verified. Multiple regression analysis was conducted for Asian international students overall, and for students in each of the five sub-regions individually.

Research Question 5

Research question 5 called for examining open comments and identifying themes related to the positive and negative experiences as expressed by the students, as well as differences in the prevalence of these themes among students from different sub-regions.

A new Excel workbook was created with four tabs—one each for learning experiences, living experiences, support services, and recommendation, filtering off blank rows that did not have comment data. Student ID, country of citizenship, sub-region, age, gender, overall satisfaction score, and recommendation score were included together with the relevant comment column. These were the attributes for my data when exported to NVivo, while the open comments were cases. Next, four NVivo project files were created by importing the data from each of the Excel tabs.

Within each project file, comments were coded inductively, developing a set of initial codes. The codes were refined by merging codes that had similar connotations, and noted under individual code properties. This was followed by the creation of a thematic frame for the codes into four main themes based on sentiments expressed: positive, negative, mixed, and neutral. Finally, crosstab queries were conducted checking codes against attributes. The crosstab query

feature in NVivo provided a quick way to check the spread of coding across cases and demographic variables.

For the first part of my research question, sub-region and overall satisfaction score were used as crosstab query attributes against codes to check for frequency and patterns across sub-regions. For the second part of my research question sub-region and recommendation score were used as crosstab query attributes against codes identified from recommendation comments, to check for frequency and patterns across sub-regions.

Crosswalk Table

Table 2 presents a crosswalk of how data was analyzed in addressing each research question.

Table 2

Crosswalk of Research Questions, Data Sources and Analysis

Research Question	Data Source and Variables	Analysis
1. Is there a significant difference in overall satisfaction level between Asian international students and other international students in the U.S.?	ISB dataset of all respondents Dependent variable - overall satisfaction Independent variable - continent, 2 levels, Asia, non-Asia	Descriptive statistics Independent sample t-test
2. How does overall satisfaction vary among Asian international students in the U.S.? a. Is there a difference in the average satisfaction level of students who come from different geographical sub-regions of Asia? If so, which sub-regions differ?	Subset of ISB dataset with Asian respondents Dependent variable - overall satisfaction Independent variable - region, 5 levels, Central Asia, Eastern Asia, Southeastern Asia, Southern Asia, Western Asia	Descriptive statistics Analysis of variance Post hoc comparison

Table 2—continued

Research Question	Data Source and Variables	Analysis
b. To what extent is overall satisfaction predicted by students' demographic characteristics and satisfaction with experiences in learning, living and university support services?	Dependent variable - overall satisfaction Independent variables - age - gender - learning satisfaction - living satisfaction - support satisfaction	Multiple regression
3. Is there a significant difference in willingness to recommend their institution between Asian international students and other international students in the U.S.?	ISB dataset of all respondents Dependent variable - recommendation score Independent variable - continent, 2 levels, Asia, non-Asia	Descriptive statistics Independent sample t-test
4. How does willingness to recommend their institution vary among Asian international students?	Subset of ISB dataset with Asian respondents Dependent variable - recommendation score Independent variable	Descriptive statistics Analysis of variance Post hoc comparison
a. Is there a difference among Asian students by geographical sub-region in the willingness to recommend their institution? If so, which sub-regions differ?	- region, 5 levels, Central Asia, Eastern Asia, Southeastern Asia, Southern Asia, Western Asia	
b. To what extent is willingness to recommend their institution predicted by students' demographic characteristics, overall satisfaction and satisfaction with experiences in learning, living and support services?	Dependent variable - recommendation score Independent variables - age - gender - overall satisfaction - learning satisfaction - living satisfaction - support satisfaction	Multiple regression

Table 2—continued

	Research Question	Data Source and Variables	Analysis
5.	What do Asian international students have to say about their experiences in the U.S.? a. What were the positive and negative experiences students from different sub-regions expressed in regards to learning, living, and university support services that could have an impact on overall satisfaction? b. What were the positive and negative factors that could have influenced the willingness for them to recommend their institution? c. Were there differences among students from the various Asian sub-regions?	Subset of ISB dataset with Asian respondents and open comments	Content analysis Crosstab query

Limitations and Delimitations

This study was delimited to Asian international students in U.S. higher education institutions during the Fall 2017 semester that had chosen to participate in the ISB. The main limitation of the study was that findings were based on a self-report survey that may reflect response bias from participants. The responses were also dependent on how the students understood what was asked as it would not be possible to probe further. Another limitation with secondary data analysis is with the survey instrument itself as I was not able to provide input to the questions asked nor how they were phrased.

Despite these limitations, having data on the diversity of experiences that existed among Asian international students in the U.S., how these reflected their satisfaction level and impacted

institutional recommendation are important, as no such data could be found at the current time that adequately addresses this subject matter. It is hoped that findings from this study can be used to assist international students, while they adapt to academic life in the U.S. and to inform university faculty, staff, and administrators in adopting a best-fit strategy in their efforts to strengthen recruitment and retention.

Chapter III Summary

In this chapter, I explained a quantitative methodology to address my research questions and the appropriateness of utilizing a dataset derived from a large scale international student satisfaction survey known as the ISB. In addition, I described the approaches that I used to analyze the information gathered. A detailed description of my analysis process and results is presented in the next chapter.

CHAPTER IV

RESULTS

This chapter presents the results of a study on Asian international students in the U.S., how their overall satisfaction levels and willingness to recommend their institution compare with international students in the U.S. who come from other regions of the world, to what extent satisfaction with learning experiences, satisfaction with living experiences, satisfaction with university support services, as well as age and gender could predict overall satisfaction, and institutional recommendation. More importantly, this study shows how these factors could vary among students from different geographical sub-regions of Asia.

I begin this chapter by giving an overview of the survey respondents in the study, followed by the results that address each of my research questions. First, results for research questions 1 and 3 are presented, comparing Asian international students with students from non-Asian regions in regard to their overall satisfaction and willingness to recommend their institution. Next, results for research questions 2 and 4 are presented, looking in-depth into the Asian international student population and examining the population by geographical sub-region. Results for this section incorporate how Asian international students over five geographical sub-regions compare in terms of overall satisfaction and willingness to recommend their institution as well as the extent that learning experiences, living experiences, university services, age, and gender could predict overall satisfaction and willingness to recommend. The final section of this chapter addresses research question 5 by describing what the Asian international students wrote in the open comments sections of the survey, the positive and negative aspects of their experiences,

and how these could provide clues as to the aspects that influenced their overall satisfaction and willingness to recommend their institution.

Overview of Survey Respondents

Overall Respondents

There were a total of 7,484 respondents from eight U.S. 4-year institutions that participated in the ISB Fall 2017 survey. The institutions were located in the states of California, Delaware, Illinois, Michigan, Minnesota, Nebraska, Ohio, and Texas. The majority of respondents were from the Asian continent (79.4%), followed by the Americas (9.0%), Europe (6.6%), Africa (4.6%), and Oceania (0.8%). There was a slightly higher proportion of respondents who identified themselves as male (42.6%) compared to those who identified as female (39.3%), although a rather large proportion (18.1%) did not specify their gender. Graduate students comprised 53.1% of overall respondents while undergraduate students comprised 46.1%, with the remainder 0.8% being non-degree students.

Respondents from the Asian Continent

Among survey respondents from the Asian continent, students from Eastern Asia comprised more than half (58.5%) the population. This was followed by students from Southern Asia (21.5%), Western Asia (10.1%), Southeastern Asia (9.5%), and Central Asia (0.4%). Table 3 shows details of student numbers by sub-region, age, and gender. The average age of respondents was 24 years. Respondents from Southern Asia and Western Asia were slightly older than respondents from Central Asia, Eastern Asia, and Southeastern Asia. Overall, the proportion of students who identified as male (43.1%) was slightly higher than those who

identified as female (38.1%), while nearly one-fifth did not specify their gender (18.8%). However, the reverse was true in the Eastern Asia and Southeastern Asia sub-regions, where students who identified as female outnumbered those who identified as male.

Table 3

Survey Respondents from Asia by Sub-region, Age, and Gender (n = 5,941)

		Gender			
Sub-region	**Average age**	**Female**	**Male**	**Unknown**	**Total**
Central Asia	22.9 years	6	14	3	23
Eastern Asia	23.6 years	1,461	1,357	660	3,478
Southeastern Asia	22.7 years	260	228	78	566
Southern Asia	25.9 years	431	760	263	1,454
Western Asia	25.9 years	107	201	112	420
Grand Total		2,265	2,560	1,116	5,941

Research Question Results

This section presents results of statistical analyses related to research questions 1 to 4 as well as results of content analysis for research question 5. The research questions from this study focused on overall satisfaction levels and willingness among Asian international students in the U.S. to recommend their institutions.

Research Questions 1 and 3

My research questions sought to verify whether there were significant differences in overall satisfaction level, and willingness to recommend their institution between Asian and non-Asian international students in U.S. higher education. Independent sample *t*-tests for each sub-group was conducted using a 2-sided test at a level of significance of 0.05.

The respondents from Asian and non-Asian origins were independent, and there were no major violations of the normality assumption for both sub-groups. However, the assumption of homogeneity of variances was not met and the Welch *t'* test was used for interpretation of results.

Table 4 shows the results of the Welch *t'* test between Asian and non-Asian international students for overall satisfaction. The data indicated that Asian international students were significantly less satisfied with their overall experience compared to non-Asian international students.

Table 4

Welch t' Test for Overall Satisfaction by Asian and Non-Asian Respondents

Sub-group	N	Mean	Std. Deviation	t-statistic	P-value
Asian	5,941	3.12	0.670	-4.644	0.000
Non-Asian	1,542	3.22	0.763		

Table 5 shows the results of the analysis between Asian and non-Asian international students in regards to willingness to recommend their institution. The data suggests that Asian international students were less willing to recommend their institution compared to non-Asian international students.

Table 5

Welch t' Test for Willingness to Recommend by Asian and Non-Asian Respondents

Sub-group	N	Mean	Std. Deviation	t-statistic	P-value
Asian	4,951	4.13	0.812	-5.515	0.000
Non-Asian	1,328	4.27	0.825		

Research Question 2

Research question 2 sought to examine how overall satisfaction varied among Asian international students. The independent variable represented the different sub-regions with five levels: (1) Central Asia; (2) Eastern Asia; (3) Southeastern Asia; (4) Southern Asia, and (5) Western Asia. The dependent variable was overall satisfaction with a range of 1 (*very dissatisfied*) to 4 (*very satisfied*). Table 6 shows the mean and standard deviation for each of the five sub-regions.

Table 6

Means and Standard Deviations of Overall Satisfaction by Sub-region

Sub-region	n	Mean	Std. Deviation
Central Asia	23	3.35	.573
Eastern Asia	3478	3.10	.651
Southeastern Asia	566	3.11	.594
Southern Asia	1454	3.19	.693
Western Asia	420	3.02	.805
Total	5941	3.12	.670

The test for normality, examining standardized skewness and kurtosis suggested the data were statistically normal. In conducting a one-way ANOVA, the *Levene's F* test revealed that the homogeneity of variance assumption was not met ($p < .001$). As such, the *Welch's F* test was used and revealed that the student's mean overall satisfaction was statistically significant, *Welch's* $F(4,163.31) = 7.292$, $p < .001$ indicating that not all sub-regions had the same mean overall satisfaction.

Following the statistically significant finding from the omnibus test, post hoc comparisons were conducted using the Dunnett C procedure to determine which pairs of the five regions'

means differed significantly. The Dunnett C test was selected because the method was robust to non-normality and unequal group variances (Shingala & Rajyaguru, 2015). The results are as shown in Table 7 and indicate that students from Southern Asia had a significantly higher mean overall satisfaction than students from Eastern Asia and Western Asia. However, overall satisfaction did not differ significantly among students from Central Asia, Eastern Asia, Southeastern Asia, and Western Asia.

Table 7

Post Hoc Results for Overall Satisfaction by Sub-region

		Mean differences ($\bar{X}_i - \bar{X}_j$)				
Asian sub-region	**Mean**	**1**	**2**	**3**	**4**	**5**
1. Central	3.35	-				
2. Eastern	3.10	0.25	-			
3. Southeastern	3.11	0.23	-0.02	-		
4. Southern	3.19	0.16	-0.09*	-0.08	-	
5. Western	3.02	0.33	0.08	0.10	-0.17*	-

* $p < .05$

For the second part of the research question, multiple linear regression was conducted to investigate the extent that age, gender, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with university support services predicted overall satisfaction.

A histogram of standardized residuals and normal P-P plot indicated that the data contained approximately normally distributed errors. Scatterplots of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity. The Durbin-Watson statistic ($d = 1.97$) suggested that the assumption of independent errors was met. As

depicted in Table 8, the correlation values among the independent variables ranged from -.04 to 0.52. Therefore, there was no multicollinearity problem in the study.

Table 8

Descriptive Statistics and Correlations for Variables on Overall Satisfaction (n = 4,539)

Variable	Overall	Learning	Living	Support	Age	Female
Overall	1.00					
Learning	.52***	1.00				
Living	.32***	.34***	1.00			
Support	.35***	.36***	.36***	1.00		
Age	-.02	.04**	-.02	-.02	1.00	
Female	-.04**	-.05***	-.02*	-.03*	-.09	1.00
Mean	3.14	3.12	3.04	3.06	24.24	0.47
SD	0.67	0.62	0.61	0.51	4.69	0.50

*$p < .05$. **$p < .01$. ***$p < .001$.

Results of multiple linear regression (Appendix C) indicated that satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services were significant predictors for overall satisfaction at $p < .001$ level, while age was a significant predictor at $p < .05$ level. Gender did not have a significant influence in predicting overall satisfaction. The overall regression model was statistically significant ($F = 420.20$, $p < .001$) and explained 31.6% of the variance in the overall satisfaction of Asian international students.

Multiple regression of each sub-region showed that satisfaction with learning experiences was consistently the biggest influence on overall satisfaction and was the only significant predictor for students from Central Asia. Satisfaction with support services was a significant predictor for all sub-regions except Central Asia, while satisfaction with living experiences was

significant for all sub-regions except for Central Asia and Western Asia. Age was significant only for Southern Asia where a negative coefficient indicated that younger students were more satisfied overall than older students.

The resultant regression equations for Asian international students taken as a whole and for individual sub-regions is as follows, with non-significant variables in red:

All: *Overall* = 0.790 + 0.468**Learning* + 0.121**Living* + 0.204**Support* - 0.004**Age* - 0.018**Female*, adjusted R^2 = 0.316

Central: *Overall* = 1.096 + 0.626**Learning*+ 0.239**Living* + 0.173**Support* - 0.045**Age* - 0.026**Female*, adjusted R^2 = 0.554

Eastern: *Overall* = 0.875 + 0.459**Learning* + 0.122**Living* + 0.185**Support* - 0.005**Age* - 0.014**Female*, adjusted R^2 = 0.291

Southeastern: *Overall* = 0.475 + 0. 447**Learning* + 0.163**Living* + 0.214**Support* + 0.004**Age* + 0.053**Female*, adjusted R^2 = 0.330

Southern: *Overall* = 0.914 + 0.447**Learning* + 0.127**Living* + 0.220* *Support* - 0.007**Age* - 0.046**Female*, adjusted R^2 = 0.315

Western: *Overall* = 0.523 + 0.558**Learning* + 0.020**Living* + 0.282**Support* - 0.004**Age* - 0.025**Female*, adjusted R^2 = 0.424

Research Question 4

Research question 4 sought to examine how willingness to recommend their institution varied among Asian international students. The independent variable represented the different sub-regions with five levels: (1) Central Asia; (2) Eastern Asia; (3) Southeastern Asia; (4) Southern Asia, and (5) Western Asia. The dependent variable was recommendation score with a range of 1 (*actively discourage people to apply*) to 5 (*actively encourage people to apply*). Table 9 shows the mean and standard deviation for each of the five sub-regions.

Table 9

Means and Standard Deviations of Recommendation Score by Sub-region

Sub-region	n	Mean	Std. Deviation
Central Asia	20	4.30	.657
Eastern Asia	2907	4.12	.781
Southeastern Asia	495	4.10	.745
Southern Asia	1210	4.19	.850
Western Asia	319	4.10	1.018
Total	4951	4.13	.812

The test for normality, examining standardized skewness and kurtosis suggested the data were statistically normal. In conducting a one-way ANOVA, however, *Levene's F* test revealed that the homogeneity of variance assumption was not met ($p < .001$). As such, *Welch's F* test was used and it was shown that the student's mean recommendation score was not significantly different among sub-regions, *Welch's F*$(4,140.26) = 2.28$, $p = .06$.

For the second part of the research question, multiple linear regression was conducted to investigate the extent that age, gender, overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences and satisfaction with university support services predicted willingness to recommend their institution.

Histogram of standardized residuals and normal P-P plot indicated that the data contained approximately normally distributed errors. Scatterplots of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity. The Durbin-Watson statistic ($d = 1.99$) suggested that the assumption of independent errors was met. As depicted in Table 10, the correlation values among the independent variables ranged from -.09 to 0.52. Therefore, there was no multicollinearity problem in the study.

Table 10

Descriptive Statistics and Correlations for Variables on Recommendation (n = 4,539)

Variable	Recommend	Overall	Learning	Living	Support	Age	Female
Recommend	1.00						
Overall	.32***	1.00					
Learning	.34***	.52***	1.00				
Living	.28***	.32***	.34***	1.00			
Support	.34***	.35***	.36***	.36***	1.00		
Age	.02	-.02	.04**	-.02	-.02	1.00	
Female	-.01	-.04**	-.05***	-.02	-.03*	-.09***	1.00
Mean	4.14	3.14	3.12	3.04	3.06	24.24	0.47
SD	0.80	0.67	0.62	0.61	0.51	4.69	0.50

*$p < .05$. **$p < .01$. ***$p < .001$.

Results of multiple linear regression (Appendix D) indicate that overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services were significant predictors for willingness to recommend at $p < .001$ level. Age and gender did not have a significant influence in predicting willingness to recommend. The overall regression model was statistically significant ($F = 182.78$, $p < .001$) and explained 19.4% of the variance in Asian international students' willingness to recommend their institution.

Multiple regression for each sub-region showed that the model was significant for all except Central Asia. The results indicated that satisfaction with support services had the biggest influence on willingness to recommend for students from Eastern, Southeastern, and Southern Asia while satisfaction with living experiences had the biggest influence on students from Western Asia. Satisfaction with support services was a significant predictor for all sub-regions except Central Asia, while overall satisfaction was significant for all sub-regions except for

Central Asia and Western Asia. Age was not a significant predictor, except for Western Asia where for every year increase in age, on average recommendation score increased by 0.024, holding constant overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services.

The resultant regression equations for Asian international students taken as a whole and for individual sub-regions is as follows, with non-significant variables in red:

Asia: *Recommend* = 1.499 + 0.169**Overall* + 0.200**Learning* + 0.143**Living* + 0.314**Support* + 0.003**Age* + 0.026**Female*, adjusted R^2 = 0.194

Central: *Recommend* = 2.213 + 0.699**Overall* + 0.019**Learning* - 0.145**Living* - 0.148**Support* + 0.020**Age* + 0.449**Female*, adjusted R^2 = -0.034 (model was not significant)

Eastern: *Recommend* = 1.947 + 0.128**Overall* + 0.196**Learning* + 0.093**Living* + 0.324**Support* - 0.002**Age* - 0.014**Female*, adjusted R^2 = 0.153

Southeastern: *Recommend* = 1.576 + 0.152**Overall* + 0.123**Learning* + 0.211**Living* + 0.295**Support* + 0.005**Age* + 0.026**Female*, adjusted R^2 = 0.154

Southern: *Recommend* = 1.058 + 0.280**Overall* + 0.222**Learning* + 0.166**Living* + 0.295**Support* + 0.003**Age* + 0.090**Female*, adjusted R^2 = 0.267

Western: *Recommend* = 0.292 + 0.097**Overall* + 0.249**Learning* + 0.382**Living* + 0.316**Support* + 0.024**Age* + 0.072**Female*, adjusted R^2 = 0.315

Research Question 5

The results of coding were presented separately for each project file under learning experiences, living experiences, support services, and recommendation comments. First, a comparison was made of percentage of positive versus negative sentiments by sub-region. Then for learning experiences, living experiences, and support services, an analysis of what themes differentiated students who were overall satisfied (satisfaction = 3 or 4) and students who were overall dissatisfied (satisfaction = 1 or 2) was conducted. For recommendation comments, a similar analysis was made of themes that differentiated those who indicated that they would

encourage others to apply (recommendation = 4 or 5) versus of those who indicated that they would discourage others to apply (recommendation = 1 or 2), and those who indicated that they would neither encourage nor discourage (recommendation = 3).

Generally, there were more negative than positive sentiments in learning experiences, living experiences, and support services comments. The reverse was true for recommendation comments.

Learning Experiences

There were 419 students who wrote a comment on their learning experiences. Overall, 383 codes were generated from the comments with 52% of comments coded as negative and 30% coded as positive. Experiences differed across sub-regions. Western Asian students had the highest ratio of negative to positive comments about their learning experience while Central Asian students were the only sub-regional group that had more positive than negative comments. However, the Central Asian sub-region was also the smallest sub-group with only three students giving comments.

Central Asia. Two students expressed positive sentiments about knowledge gained that will help them pursue their goals. One student wrote about not having access to basic software.

Eastern Asia. There was a 3:5 ratio of positive to negative comments. Faculty and teaching dominated both. Positive comments mentioned that professors were kind, caring, knowledgeable, and willing to help. The negative comments were that some professors just read off slides, were not accessible, and were unfair.

Southeastern Asia. There was a 2:5 ratio of positive to negative comments. The most frequently mentioned comment was on inadequate learning facilities, such as that the library did

not have enough capacity especially during finals week, and that there was insufficient private study space.

Southern Asia. There was a 3:5 ratio of positive to negative comments. Positive comments mentioned that professors were passionate about their job, and made lessons interesting. The most frequently mentioned negative comment was about the lack of work/internship opportunities in their program.

Western Asia. There was a 2:7 ratio of positive to negative comments. The most frequently mentioned comments were about their professors' poor teaching skills, and feeling stressed over coursework.

Overall Satisfaction. Students with high satisfaction levels were very positive about their professors and the relevance of the courses they were taking towards their future goals. Students with low satisfaction levels wrote about disagreements with their professors. Some said their courses were too hard, while others said their courses lacked rigor. Financial support was another theme that was brought up by students who had low satisfaction levels. Specifically, these students talked about their department or their program being badly supported financially which affected their ability to focus on their educational goals.

Living Experiences

There were 481 students who wrote a comment on their living experiences. Overall, 386 codes were generated from the comments with 66% of comments coded as negative and 20% coded as positive. Experiences differed across sub-regions. Southern Asian students had the highest ratio of negative to positive comments about their living experience.

Central Asia. Again only three students wrote a comment but for living experiences they were split in their sentiments. The positive comment was about having met and made lifelong friends, the negative comment was about dissatisfaction with transportation. One student wrote about cost of food being low but that the cost of housing was too high.

Eastern Asia. There was a 2:7 ratio of positive to negative comments. Housing and safety concerns dominated the conversation. Students wrote about housing being expensive both on and off campus and expressed concerns over robbery and shooting cases. There were also comments on being racially discriminated against by American students.

Southeastern Asia. There was a 1:2 ratio of positive to negative comments. Housing was again the most often mentioned issue, specifically about high costs and difficulty getting information about off campus housing prior to arrival. Students also wrote about lack of prayer rooms on campus.

Southern Asia. There was a 2:7 ratio of positive to negative comments. Apart from expensive housing, students wrote about issues with leasing offices, and difficulties living within their stipend. There were also comments on lack of social activities.

Western Asia. There was a 1:3 ratio of positive to negative comments. The most frequently mentioned comments were about difficulties making friends especially with American students. There were positive comments about the beautiful environment on campus.

Comparing Overall Satisfaction. Students with high satisfaction levels had positive things to say about their study environment, the beauty of their campuses, and the kindness of people they encountered. Students with low satisfaction levels mentioned issues around cultural isolation and perceived discrimination.

Support Services

There were 320 students who wrote a comment on support services. Overall, 277 codes were generated from the comments with 68% of comments coded as negative and 23% coded as positive. The most frequently mentioned comments were on food and dining, International Student Office, Writing Center, and Recreation Center.

Central Asia. Only one student wrote a comment and he said "employees are always willing to help."

Eastern Asia. There was a 1:3 ratio of positive to negative comments. The Writing Center received the highest number of positive comments while food and dining received the most number of negative comments. On food and dining, student wrote about the need for healthier food, better variety, and more eating places. Students also expressed discontent over Advising, saying it was difficult to schedule an appointment with their academic advisors, and that career advisors did not know enough about their program to be helpful.

Southeastern Asia. There was a 1:2 ratio of positive to negative comments. The positive comments were rather general and indicated that they appreciated getting friendly service. The highest number of negative comments were on food, being expensive and lack of variety.

Southern Asia. There was a 1:3 ratio of positive to negative comments. Positive comments were again rather general, saying they were satisfied with excellent services received. The most number of negative comments was on food, followed by International Office, and Career Services. They mentioned that staff at the International Office were not responsive especially on practical training inquiries, while career advisors did not have the knowledge to assist them.

Western Asia. There was a 1:3 ratio of positive to negative comments. The most frequently mentioned comments were about staff who were rude and impatient. They also

mentioned their academic advisors as not being on the same page with them, which affected their graduation timeline, and that parking permits were too expensive.

Comparing Overall Satisfaction. Students who were overall satisfied had positive things to say about the Health Center, the Recreation Center, the Writing Center, and the International Office at their university. Although food and dining was most frequently mentioned negatively, it did not seem to affect overall satisfaction much as the students who wrote about this theme were also mostly satisfied. Students who were overall dissatisfied did not say much. There were some comments about the inability to get a Health Center appointment when they needed help.

Willingness to Recommend

There were 835 students who wrote a comment to explain their willingness to recommend their institution. Overall, 60% of comments were positive and 17% were negative. There was not much difference in terms of sentiment among the various sub-regions.

Central Asia. Six students opted to write a comment to explain their willingness to recommend. Of the six students, five would actively encourage others to apply to their institution while one student would neither encourage nor discourage. The student who chose to neither encourage nor discourage said that "it would depend on what that person wants to study and what their interests are." Among the reasons the other five students wrote were that their program was very strong, that the university had everything a student needed to succeed in their life—from mentors, inspiring and encouraging professors, extracurricular activities, long-term projects, and opportunities for internships, and that they wanted to help others "become a global student and have this life-changing experience that will improve their future to a better."

Eastern Asia. There were 452 students who wrote a comment, and among them 159 said they would actively encourage, 186 said they would encourage if asked, 84 said they would neither encourage nor discourage, 16 said they would discourage if asked, and seven said they would actively discourage others from applying.

Among the common reasons cited by those who said they would discourage others from applying were high costs and a lack of financial support, bad experiences with faculty, and that the weather was too cold. Positive reasons cited by those who said they would encourage others to apply included (a) people were nice, friendly, and made them feel welcome; (b) they felt safe; (c) the environment was beautiful, tranquil, and conducive for study; (d) great faculty and resources; and (e) affordable tuition. Those who said they would neither encourage nor discourage explained that they did not want to impose their opinion on others, and that it was largely dependent on what others wanted.

Southeastern Asia. There were 100 students who wrote a comment, and among them 37 said they would actively encourage, 39 said they would encourage if asked, 21 said they would neither encourage nor discourage, two said they would discourage if asked, and one said they would actively discourage others from applying.

The students who said they would discourage others from applying cited that their university slipped in all major rankings, that there were better universities, and career prospects for international students was poor. Positive comments from students who said they would encourage others to apply included (a) quality of programs, (b) excellent faculty, (c) tremendous facilities and resources on campus, (d) a supportive community, and (e) low cost of attendance. A major reason cited for neither encouraging nor discouraging others to apply was that it depended

on what major the other person was seeking as they believe some majors at their university were of poor quality.

Southern Asia. There were 201 students who wrote a comment, and among them 87 said they would actively encourage, 49 said they would encourage if asked, 35 said they would neither encourage nor discourage, 20 said they would discourage if asked, and 10 said they would actively discourage others from applying.

Among the common reasons cited by those who said they would discourage others from applying were high costs, lacking job opportunities after graduation, and workplace bullying. Positive comments from students who said they would encourage others to apply included (a) good research facilities, (b) experienced professors, (c) polite and friendly people, (d) cultural diversity, and (e) beautiful campus. Two common reasons cited for neither encouraging nor discouraging others to apply were high costs, and the political climate in the U.S.

Western Asia. There were 76 students who wrote a comment, and among them 37 said they would actively encourage, 12 said they would encourage if asked, 19 said they would neither encourage nor discourage, three said they would discourage if asked, and five said they would actively discourage others from applying.

Among the common reasons cited by those who said they would discourage others from applying were perceived racial discrimination, and lack of financial support. Positive comments from students who said they would encourage others to apply included (a) they feel valued and welcomed by the community, (b) good research opportunities, (c) faculty expertise, and (d) the campus felt safe. A major theme among those who would neither encourage nor discourage was the lack of social activities.

Chapter IV Summary

This chapter presented the results of descriptive and inferential statistical analysis to the research questions on overall satisfaction of Asian international students in U.S. higher education and the willingness to recommend their institution. The results indicated that Asian international students had lower overall satisfaction levels than non-Asian international students, and were less willing to recommend their institution. The results also indicated that satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and the student's age were significant predictors of overall satisfaction. The same variables except for age, were similarly significant in predicting willingness to recommend their institution.

In addition, an analysis of students' open comments showed that faculty and teaching had the highest mentions on their learning experience, as with housing and living cost on their living experience, and food and dining on support services. As for recommendation comments, the analysis showed students who were willing to recommend their institutions mentioned that people were nice to them, they felt safe, their professors were helpful, and the cost of attendance was relatively low. On the other hand, students who were not willing to recommend their institution mentioned encounters with racism, issues with their professors, and lack of financial support.

The implications for these findings are presented in Chapter V.

CHAPTER V

DISCUSSION

In Chapters 1 and 2, I described the importance of the international student population to U.S higher education, and highlighted the threat of the U.S. losing its position as the top host destination for students seeking education outside of their country of origin. I reviewed the literature showing that although Asian international students comprise three-quarters of the total international student population in the U.S., they face tremendous challenges that could influence overall satisfaction with their higher education experience, and discourage them from recommending their institution to future students. The purpose of this study is to examine the overall satisfaction levels of Asian international students in U.S. higher education, and the willingness to recommend their institution to other students who were thinking of applying.

In Chapter 3, I explained my rationale for a quantitative research methodology using data collected through the International Student Barometer (ISB) survey. Secondary analysis of the ISB survey data was well-suited to answer my research questions and enabled me access to a large dataset comprising over 7,000 respondents from eight U.S. 4-year institutions that participated in the ISB Fall 2017 survey. The result of my analysis was presented in Chapter 4.

In this chapter, I summarize my key findings and connect them with previous research. I then discuss the implications of my findings to U.S higher education, the limitations of this study, and my recommendations going forward.

Interpretation of Key Findings

My research questions serve to guide my summary of the key findings from this study. The key findings of this study are as follows:

1. Asian international students in the U.S. had lower overall satisfaction levels and were less willing to recommend their institution compared to non-Asian students.
2. Southern Asian students had higher mean overall satisfaction levels compared to Eastern Asian and Western Asian students. Satisfaction with learning experiences, satisfaction with living experiences, satisfaction with support services, and the student's age were significant predictors of overall satisfaction and explains 31.6% of the variance for Asian international students in general. Among the four variables, satisfaction with learning experiences had the biggest influence on overall satisfaction followed by satisfaction with support services and satisfaction with living experiences. Age negatively influenced overall satisfaction.
3. There were no significant differences among the five geographical Asian sub-regions in willingness to recommend. Overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services were significant predictors of willingness to recommend and explain 19.4% of the variance for Asian international students in general. Age and gender were significant predictors for certain sub-regions. Satisfaction with support services had the biggest influence on willingness to recommend their institution for the overall Asian international student population in this study, and for the sub-regions with exception to Western Asia.

In the section that follows, I elaborate on my key findings and connect them with previous studies.

Overall Satisfaction

The finding that Asian international students had overall lower satisfaction levels than international students who come from other regions of the world is consistent with findings from previous studies (Garrett, 2014; Lee, 2010; Zhao et al., 2005). Although in Roy et al.'s (2016) study it was reported that students from India had the highest satisfaction rating from any country or region, the reality of the situation is that when taken in totality, Asian international students in general had overall lower satisfaction ratings compared to non-Asian students. Roy et al.'s findings, though, are not totally refuted as this study also found that students from Southern Asia had significantly higher levels of satisfaction than students from Eastern and Western Asia. It also reinforces Arambewela and Hall's (2009) assertion that the Asian international student population was diverse and required a highly differentiated and segmented approach in addressing issues related to student satisfaction.

Results from multiple regression analysis imply that satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services positively influenced overall satisfaction in almost all instances – the exception being Central Asia, which had a much smaller sample size, and therefore lacked statistical power to detect the significance of satisfaction with living experiences and satisfaction with support services.

Satisfaction with learning experiences had the biggest positive influence on overall satisfaction for Asian international students in general, and for students in all five sub-regions when separately considered. Age was significant when the total population was taken into consideration, and for Southern Asian students only. The negative coefficient for age indicates that younger students tended to have higher overall satisfaction than older students, controlling

for all other factors. For students from Western Asia, satisfaction with living experiences was not significant.

The impact of satisfaction with learning experiences on overall satisfaction was consistent with previous studies that reported student-faculty interaction (Zhou & Cole, 2017), teaching quality and variables directly associated with the students' program of study (Fernandes et al., 2013), as well as teaching attitude, selection of teaching materials, and teaching equipment (Guo, 2016) had significant positive influence on student satisfaction. The impact of satisfaction with living experiences supported the findings of Ammigan and Jones (2018) as well as Alemu and Cordier (2017), who reported that satisfaction in living arrangements and social activities was positively correlated with international students' overall satisfaction. The finding from this study did not support Helgesen and Nesset's (2007) finding that the social factor (incorporating interactions with other students, social activities/arrangements, and life in town) did not have significant influence on overall satisfaction. Although Ammigan and Jones reported that satisfaction with support services was a significant positive predictor of overall satisfaction, they also found that support services had the least impact. The findings from this study, however, differed in this respect as the results show satisfaction with support services to have a higher impact than satisfaction with living experiences. On demographic variables, this study corroborated the findings of Alemu and Cordier (2017) and Gibson (2009) that gender was not significantly correlated with students' overall satisfaction, while refuting Aldemir and Gülcan's (2004) finding that female students have higher satisfaction rates than male students. However, this study supported Aldemir and Gülcan's finding that age was significantly associated with student satisfaction, and that younger students tended to be more satisfied than older students, a finding that was also reported by Zhang and Goodson (2011).

Content analysis of the students' open comments indicated that overall satisfaction was heavily influenced by how they viewed their professors, and the teaching of their courses. Students who were satisfied mentioned having kind and caring professors who were passionate about their job and helped them learn. On the other hand, students who were dissatisfied wrote about professors who lacked teaching skills and were not accessible. Students who were overall satisfied also wrote that people were nice, that there was a supportive, welcoming community, and that there were ample facilities and resources on campus. Those who were dissatisfied wrote about experiencing racial discrimination, as well as difficulties associated with high living costs and little financial support.

Willingness to Recommend

The finding that Asian international students were less willing to recommend their institution compared to non-Asian international students supports, in part, Lee's (2010) finding that East Asian international students were least likely to recommend their institution to future students. It does contradict, in part, Roy et al.'s (2016) finding that international students from India together with international students from sub-Saharan Africa had higher likelihood to recommend their institution compared to international students from Europe and Oceania. This is because the current study did not find significant differences among students from the various Asian sub-regions in their willingness to recommend.

Results from multiple regression analysis indicated that overall satisfaction, satisfaction with learning experiences, satisfaction with living experiences, and satisfaction with support services could significantly predict willingness to recommend. Age and gender were not significant predictors in general but were significant in some sub-regions, when analyzed

separately. The model that was run with six predictor variables was able to account for 19.4% of the variance in institutional recommendation of Asian international students in general.

There were differences among sub-regions as to the significance and magnitude of influence of the six predictors but, generally, all had positive influence over institutional recommendation. The model was not significant for Central Asia, probably due to the small sample size. Age positively influenced institutional recommendation for Western Asian students, suggesting that older students were more willing to recommend their institution compared to younger students. Gender was significant for Southern Asian students, suggesting that female students were more willing to recommend their institution compared to male students.

Satisfaction with support services had the biggest influence on willingness to recommend for Asian international students taken as a whole as well as for the sub-regions individually, except for Western Asia. This finding supports previous studies by Browne et al. (1998) and Lee (2010), who highlighted the importance of fair treatment. It does contradict Ammigan (2019) who concluded that satisfaction with learning had the strongest impact on institutional recommendation. In fact, when analyzed separately, satisfaction with learning was not significant for Southeastern Asian students.

For Western Asian students, satisfaction with living experiences had a bigger impact than satisfaction with support services in influencing willingness to recommend their institution. An analysis of their comments suggests that Western Asian students placed high importance to feeling safe, valued, and welcomed in the community where they lived. Perceptions of racial or religious discrimination were major reasons for them to discourage others from applying to their institution.

Although significant, overall satisfaction was not as strong a factor as has been reported by Clemes et al. (2008), who found that it could account for 41% of the variance in willingness

to recommend. The following comments illustrate how a 31-year-old student from Turkey who was overall "dissatisfied" (satisfaction score = 2 out of 4) would still encourage others to apply if asked (recommendation score = 4 out of 5). The student indicated that he was "very dissatisfied" (satisfaction score = 1 out of 4) with his learning experience and that could have highly influenced his overall satisfaction. On his learning experience, he wrote:

> Please pay attention to professors skill set, students get lost because of their ego and incompetency. Electrical Engineering is corrupted. Faculties are like mafias. I know lots of things, but I'm scared to disclose what I know.

On his living experiences where his satisfaction score was "very satisfied," he wrote:

> It's a beautiful environment. People are welcoming. [State] is my second home.

And on support services where his satisfaction score was "satisfied," he wrote:

> I'm especially very satisfied with the service of ISSO and Graduate Studies. They are really important for students especially when departments are biased towards faculties.

The comments indicated that his satisfaction with living and support services did overcome his overall dissatisfaction and to explain why he would recommend, he wrote:

> I would encourage prospective students based on two things: 1-) [State] is a beautiful state, and [my city] is the city that they can find everything for their future. 2-) In terms of academics, based on my experience, I will strongly discourage ECE department, however, I will mention about the quality of CSE department if they are interested in computer science. I loved the CSE department. Faculties and offered courses are top notch.

The comments section on institutional recommendation also provided indications that, in general, students who encouraged others to apply would do so because people were nice, friendly, and kind, and the environment they were in was conducive to their study. Other factors included having great faculty and resources as well as affordable cost of attendance. Among the reasons that they would discourage others from applying were high costs and a lack of financial support, bad experiences with faculty, little job opportunities after graduation, and perceived discrimination.

Implications of the Study

The lower overall satisfaction level and lesser willingness to recommend found in this study has huge implications for higher education institutions that wish to grow their international student enrollment as Asian international students comprise three quarters of international students coming to the U.S. A goal of this research is to help higher education practitioners gain a better understanding of this very diverse population in order to prioritize recruitment and outreach strategies. Based on the findings of this study, this section presents a discussion of its implications for faculty, support staff, as well recommendations for higher education practice.

Implications for Faculty

The data shows that satisfaction with learning experiences had the biggest influence on overall satisfaction. In the open comments section on learning experiences, faculty and teaching had the highest mention. Faculty play a big role in ensuring a satisfactory experience for international students who may be unfamiliar with academic expectations in the U.S., and making students feel that they are supported and cared for is important, as can be seen in the comments from a 21-year-old South Korean student.

> I was deeply impressed by professors' passion and teaching ability. Specifically, prof. [] made my school life unforgettable. He emailed me whenever there was an international festival. :-)

It is important for faculty to recognize that some international students come from a previous education system that could be very different from the U.S. system, and they may not be able to articulate clearly their needs. The following comment by a 21-year-old student from China illustrates how faculty could have helped lessen language barriers and create a more inclusive learning environment that supports international student success.

> I think there should be a rule for our professors and instructors to post lecture slides because sometimes professors don't have a slides on class and talk all the class. As a international students I sometimes cannot understand a concept and I don't know how to spell the words. After class I cannot ask my professor about a the concept or words because I forget them, so I ask for the handout. And my professor say that they don't share handouts. I feel disappointed because I go to every class still confused about the concept and there is no other way to learn them.

Asian international students in general have very high regard for their professors, and faculty can be very effective in helping to integrate them into the U.S. classroom culture. As Siczek (2015) had pointed out, integration of international students into the learning community and giving them avenues to share their experiences is a great opportunity for developing global competency in U.S. higher education.

Implications for Support Services Staff

The data also show satisfaction with support services as the biggest influence on willingness of students to recommend their institution. The importance of support services to institutional recommendation is illustrated by the following comment from a 24-year-old student from South Korea who indicated that he was overall "satisfied" (satisfaction score = 3 out of 4) and "would actively encourage others to apply" (recommendation score = 5 out of 5):

> I experienced various limitation derived from my legal status and my skin color while I was studying in the United States. However, [my university] has been consistently provided various resources and support to overcome these barriers. I keep reaching my hands to these resources to make my dream come true and it would not be possible if there was no help and support that this community has been engaged to build.

It is recommended that for institutions that wish to grow their international student population, there needs to be adequate investment in resources that support these students. This point was also highlighted by Lee (2010) and Lin (2012), who remarked that institutions should take responsibility to generate positive experiences for international students instead of placing sole

responsibility for international students to adapt. The most frequently mentioned resource in the support services comments was the International Offices, as students typically depend on this office for information (on immigration policies, CPT, OPT) and expect the office to advocate for them when unexpected issues arise.

Resourcing includes ensuring support services staff are given adequate customer service training to avoid situations where they are perceived as being rude or condescending towards international students. The following comments reflect how service impacted overall satisfaction and willingness to recommend:

> Office people are generally rude and incooperative. They never wait to listen to what you have to say.
>
> – 40-year-old student from Saudi Arabia, satisfaction = 1, recommendation = 1

> Whenever I talked to my international student advisor, I feel like he/she does not want to listen my question because he/she always cut my words and just saying answers to the question he/she guessed.
>
> – 24-year-old student from South Korea, satisfaction = 2, recommendation = 2

> OISS at [my university] is the best international student office I have ever seen. You respond to my emails very quickly. You handled issues in professional and efficient ways.
>
> – 28-year-old student from China, satisfaction = 3, recommendation = 4

Wekullo (2015) highlighted that adjustment takes time and international students need significant support from their host institutions. The efforts taken by institutions to ensure adequate support go a long way in creating a positive impression that extend to building satisfied alumni.

Recommendations for Higher Education Practice

An important factor that institutions need to consider is the transparency of recruiters in setting international students' expectations in terms of costs of attendance. Quite a number of comments indicated students as feeling let down by inadequate financial preparation to study in the U.S. Cases were especially rampant among graduate students who might have thought their

assistantships adequately covered of all their expenses. The following comments illustrate these frustrations:

> With the current stipend, the proposed increase in taxes, and rising tuition and living costs, I have started wondering if I made the wrong choice to think the United States is a destination for freedom, technology and bravery.
>
> – 26-year-old student from India, satisfaction = 3, recommendation = 1

> TA salaries are quite low. It is very difficult to survive with the amount of money they paid especially if you have a family.
>
> – 27-year-old student from Turkey, satisfaction = 2, recommendation = 3

> As an international PhD student specializing in a very niche field, it's extremely difficult to sustain educational goals without assistance from the department. Getting funding in our field is hard, and my advisor and I have been trying very hard but to no avail. What really hurt is the lack of assistance on the department's behalf. [My department]'s policy of granting only two year Teaching Assistantships have not only stunted my growth as a potential academician but has also resulted in me taking a longer time to complete my PhD because I'm having to intern at the same time to cover my tuition and other expenses. I haven't been able to gain much experience teaching and neither am I being able to give a 100% to my PhD.
>
> – 28-year-old student from India, satisfaction = 2, recommendation = 2

> Always in stress and pressure of canceling the assistantship!!! Instead of thinking about my research and study, Always I was worried of cancelling my stipend.
>
> – 34-year-old student from Iran, satisfaction = 1, recommendation = 1

Based on these comments, it is suggested that departments might want to review their current practice in budgeting for and awarding graduate assistantships. Assistantship funding could cover the students' duration of study with clear renewal criteria, which would take a lot of stress out of the students' financial situation.

Lastly, it is recommended that institutions promote an awareness of international student contributions and achievements to the wider university community. Sherry et al. (2010) highlighted that often times international students felt misunderstood and ignored. International students should not be made to feel deficient because they are different (Heng, 2018). The following comments illustrate this sentiment:

> There is always this tension of people looking down on me. Even though I do my best to express myself, some people already build their wall and does not even try to understand me. I wish i had more oportunity to engage with follow students, but they are just so racist. I'm so dissapointed.
>
> – 28-year-old student from Mongolia, satisfaction = 2, recommendation = 5

> Working in groups with American peers was discouraging, as international students are regarded as least-experienced and non-aware of the nuances of the project topic.
>
> – 27-year-old student from Bahrain, satisfaction = 2, recommendation = 3

Another comment provides insight into how perceived discrimination could arise:

> Students are genuinely nice towards me as an international student speaking fluent English, but not very much so to my peers whose English fluency needs improvement. It could due to the misunderstandings between the two parties when communicating, but sometimes the local side try to involve in racially discriminant verbal or physical activities which often quickly escalated situations. I understand that the U has been and will be the vanguard for equality, thus I feel sad that such activities is still present on campus. Both the U and us international student shall work harder, and probably work together to promote true equality in the community.
>
> – 23-year-old student from China, satisfaction = 3, recommendation = 4

Many international students have impressive achievements academically and contributed back to society. By promoting awareness of international student achievements and contributions to the university community, institutions can help to instill pride and boost self-confidence in these students, which helps build a more satisfactory experience. It can also encourage domestic students to befriend international students and stimulate their interest in learning about other cultures.

Limitations of the Study

Although this study has revealed important insights into the overall satisfaction level and institutional recommendation of Asian international students in U.S. higher education, there are inherent limitations that are associated with survey studies. One major limitation is the absence of an opportunity for the researcher to follow up with respondents on their answers. Therefore, it

is highly dependent on the respondents' understanding of what was asked. The advantage of using the ISB is that it is an established survey that had been periodically tested for validity and reliability, and had refined through many cycles since its inception in 2005 (Browne & Brett, 2013). Another limitation with survey studies is with response bias. The ISB, however, was conducted through a third party which increases anonymity, thereby promoting students' trust that they were able to provide candid feedback without fear of reprisals. One limitation with using the ISB is that since it is a secondary data source, there is no readily available information on the conceptual framework that guided the development of the survey nor data on validity and reliability measurement.

Another limitation of this study was the relatively small sample size of respondents from Central Asia compared to other sub-regions, which limits statistical power. There were in total only 23 respondents from this sub-region representing 0.4% of the overall Asian international students in this study. The proportion of students from Central Asia, however, is consistent with data from the *International Students by Place of Origin, Selected Years, 1949/50 - 2019/20* (IIE, 2020a). Although inferential statistics could not be used to generalize the population of Central Asian students, nevertheless descriptive statistics and open comments from the sample did provide some initial insight to these students' experience.

Suggestions for Future Research

The key findings from this study suggest several opportunities for future research. Firstly, this research was based on a snapshot of the students' experiences during the Fall 2017 semester. It would be beneficial to find out how their experiences evolved over time by conducting a longitudinal study of a cohort from entrance to graduation. This could provide additional information

about their level of satisfaction at different stages of their educational experience, and whether or not the importance of contributing factors will change.

With the limitations associated with quantitative research, a qualitative study to follow up on the findings of this study is suggested. A focus group study of international students by sub-region will enable the researcher to take a deeper dive into the factors that influence overall satisfaction and willingness to recommend their institution.

Although the model for predicting institutional recommendation was valid, there was a lot of variability in the adjusted R^2 value, as well as what were significant factors for the separate sub-regions. The highest adjusted R^2 value was 0.315 for Western Asian students while the lowest was 0.153 for Eastern Asian students. The values indicate the presence of other important factors that had not been taken into account. Analysis of comments data suggests that financial status and affordability could be a key factor. Future studies could also look into the effects of length of stay, and program of study. Hierarchical linear modeling might also prove useful to check for variation occurring between institutions.

Another area that would benefit from future research is in the experiences of students from Central Asia. The sample of Central Asian students in this study suggests that they are well-adjusted, overall satisfied, and were happy to recommend their institution to future students. Although the proportion of international students originating from this sub-region is small, the number of students from Central Asia studying at U.S. higher education had grown steadily over the last decade.

Concluding Thoughts

This study added to the literature on our understanding of Asian international students in U.S. higher education, how their overall satisfaction levels and willingness to recommend their institution compared to non-Asian international students, as well as what positive and negative sentiments were reflected in the comments on their various experiences.

I began this journey as an international student in Summer II 2012 and had thought of quitting after the first two weeks. I was fortunate to have met my department chair who gave me hope and the desire to continue. I considered myself a non-traditional student having worked professionally in a college environment for 10 years before starting my program and with sufficient English proficiency. Therefore, I did not anticipate the difficulties I encountered trying to interpret course assignments as these were very different from my previous educational experience. I can empathize with participants in this study who commented on their frustration with faculty and staff who did not respond to their emails. My experience has led me to be responsive to international student inquiries no matter how trivial it may seem. I also advise new international students to not start their program in a Summer II session where support is minimal.

Lin (2012) talked about bridging the gap between institutions and international students that limit the success of international students in the U.S. It is hoped that the key findings and recommendations from this study proves useful in narrowing this gap, and that it helps bring about a more satisfactory experience for Asian international students and improve the enrollment trend of international students in U.S. higher education.

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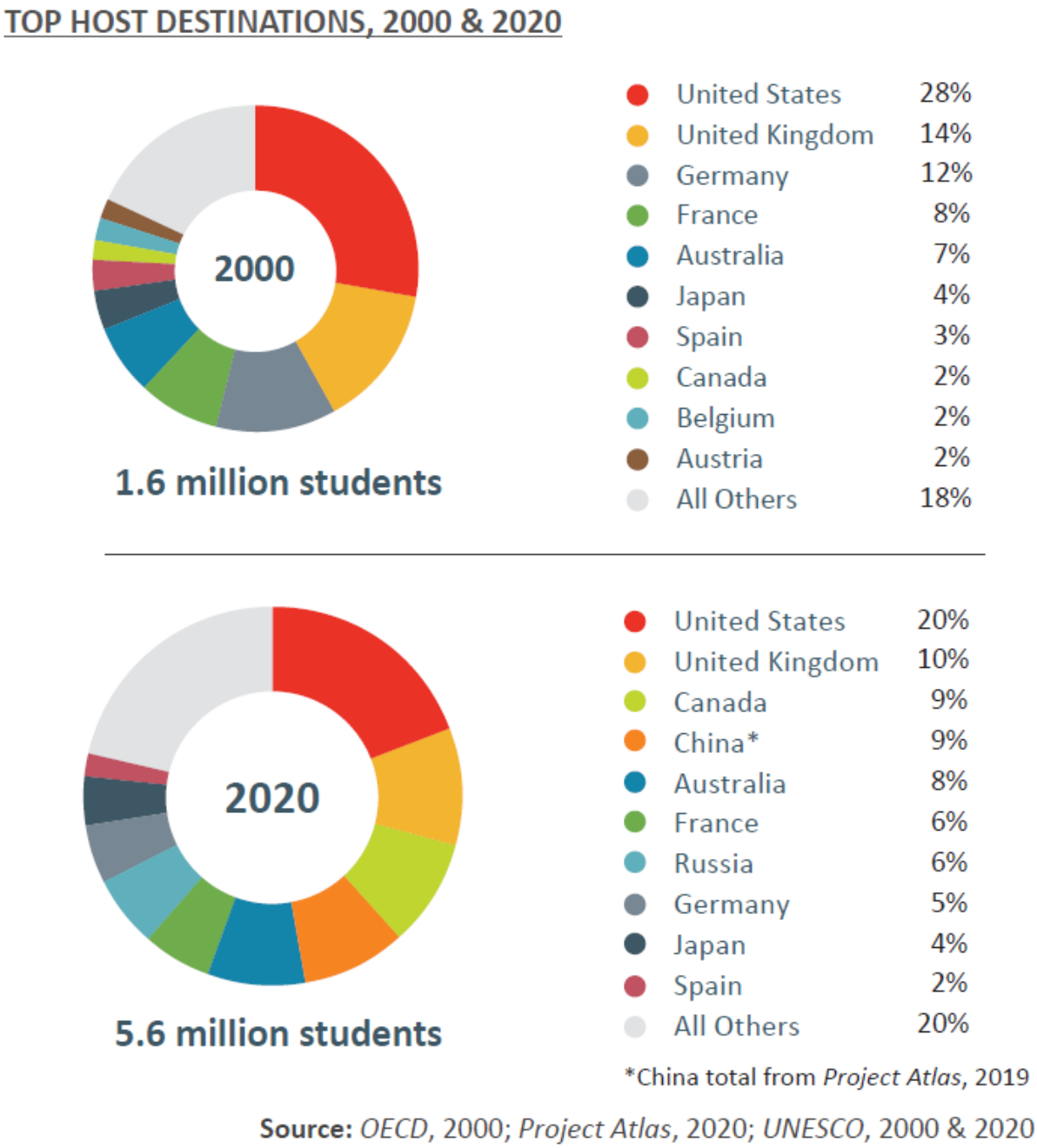
Appendix A

Top 10 Host Destinations for International Students: Comparing 2000 and 2020



Note: Adapted from *Project Atlas Infographics 2020* (https://iie.widen.net/s/rfw2c7rrbd/project-atlas-infographics-2020). In the public domain.

Appendix B

International Student and U.S. Higher Education Enrollment, 1948/49 - 2019/20

Academic year	Enrolled students	Optional Practical Training (OPT)	Total international students
1948/49	-	-	25,464
1949/50	-	-	26,433
1950/51	-	-	29,813
1951/52	-	-	30,462
1952/53	-	-	33,675
1953/54	-	-	33,833
1954/55	-	-	34,232
1955/56	-	-	36,494
1956/57	-	-	40,666
1957/58	-	-	43,391
1958/59	-	-	47,245
1959/60	-	-	48,486
1960/61	-	-	53,107
1961/62	-	-	58,086
1962/63	-	-	64,705
1963/64	-	-	74,814
1964/65	-	-	82,045
1965/66	-	-	82,709
1966/67	-	-	100,262
1967/68	-	-	110,315
1968/69	-	-	121,362
1969/70	-	-	134,959
1970/71	-	-	144,708
1971/72	-	-	140,126
1972/73	-	-	146,097
1973/74	-	-	151,066
1974/75*	-	-	154,580
1975/76	-	-	179,344
1976/77	-	-	203,068
1977/78	-	-	235,509
1978/79	-	-	263,938
1979/80**	283,503	2,840	286,343
1980/81	308,432	3,450	311,882
1981/82	323,419	2,880	326,299
1982/83	333,365	3,620	336,985
1983/84	335,494	3,400	338,894
1984/85	337,803	4,310	342,113
1985/86	339,627	4,150	343,777

Academic year	Enrolled students	Optional Practical Training (OPT)	Total international students
1986/87	344,879	4,730	349,609
1987/88	351,387	4,800	356,187
1988/89	359,334	7,020	366,354
1989/90	379,139	7,712	386,851
1990/91	398,759	8,770	407,529
1991/92	411,355	8,230	419,585
1992/93	427,608	11,010	438,618
1993/94	438,319	11,430	449,749
1994/95	439,427	13,208	452,635
1995/96	438,337	15,450	453,787
1996/97	439,859	18,125	457,984
1997/98	464,698	16,582	481,280
1998/99	474,091	16,842	490,933
1999/00	489,866	24,857	514,723
2000/01	526,809	21,058	547,867
2001/02	560,251	22,745	582,996
2002/03	558,530	27,793	586,323
2003/04	543,169	29,340	572,509
2004/05	532,040	32,999	565,039
2005/06	526,670	38,096	564,766
2006/07	541,324	41,660	582,984
2007/08	567,039	56,766	623,805
2008/09	605,015	66,601	671,616
2009/10	623,119	67,804	690,923
2010/11	647,246	76,031	723,277
2011/12	679,338	85,157	764,495
2012/13	724,725	94,919	819,644
2013/14	780,055	105,997	886,052
2014/15	854,639	120,287	974,926
2015/16	896,341	147,498	1,043,839
2016/17	903,127	175,695	1,078,822
2017/18	891,330	203,462	1,094,792
2018/19	872,214	223,085	1,095,299
2019/20	851,957	223,539	1,075,496

Note: * The data collection process was changed in 1974/75. Refugees were counted from 1975/76 to 1990/91. ** OPT was first reported separately for the 1979/80 academic year.
Source: Institute of International Education. (2020a).

Appendix C

Multiple Regression Predicting Overall Satisfaction

Variable	*B*	SE (*B*)	*t*	*p*
Asia all				
Intercept	.790	.074	10.607	.000
Learning	.468	.015	31.794	.000
Living	.121	.015	8.130	.000
Support	.204	.018	11.401	.000
Age	-.004	.002	-2.250	.024
Female	-.018	.017	-1.114	.265
Model summary: $F(5, 4533) = 420.20$, $p < .001$, adjusted $R^2 = .316$				
Central Asia				
Intercept	1.096	1.020	1.075	.301
Learning	.626	.200	3.138	.007
Living	.239	.144	1.662	.119
Support	.173	.200	.861	.404
Age	-.045	.025	-1.809	.092
Female	-.026	.203	-.130	.899
Model summary: $F(5, 14) = 5.71$, $p = .004$, adjusted $R^2 = .554$				
Eastern Asia				
Intercept	.875	.101	8.672	.000
Learning	.459	.020	23.028	.000
Living	.122	.020	6.118	.000
Support	.185	.024	7.800	.000
Age	-.005	.003	-1.797	.072
Female	-.014	.022	-.651	.515
Model summary: $F(5, 2629) = 217.10$, $p < .001$, adjusted $R^2 = .291$				
Southeastern Asia				
Intercept	.475	.218	2.184	.029
Learning	.447	.044	10.117	.000
Living	.163	.040	4.082	.000
Support	.214	.055	3.909	.000
Age	.004	.005	.807	.420
Female	.053	.045	1.180	.238
Model summary: $F(5, 455) = 46.29$, $p < .001$, adjusted $R^2 = .330$				

Variable	*B*	SE (*B*)	*t*	*p*
Southern Asia				
Intercept	.914	.158	5.792	.000
Learning	.447	.030	15.120	.000
Living	.127	.030	4.160	.000
Support	.220	.036	6.066	.000
Age	-.007	.004	-2.013	.044
Female	-.046	.035	-1.305	.192
Model summary: $F(5, 1131) = 105.66$, $p < .001$, adjusted $R^2 = .315$				
Western Asia				
Intercept	.523	.262	1.995	.047
Learning	.558	.052	10.749	.000
Living	.020	.057	.348	.728
Support	.282	.070	4.059	.000
Age	-.004	.006	-.621	.535
Female	-.025	.078	-.324	.746
Model summary: $F(5, 280) = 42.97$, $p < .001$, adjusted $R^2 = .424$				

Appendix D

Multiple Regression Predicting Willingness to Recommend

Variable	*B*	SE (*B*)	*t*	*p*
Asia all				
Intercept	1.499	.099	15.220	.000
Overall satisfaction	.169	.019	8.716	.000
Learning	.200	.021	9.421	.000
Living	.143	.020	7.342	.000
Support	.314	.024	13.238	.000
Age	.003	.002	1.423	.155
Female	.026	.022	1.214	.225
Model summary: $F(6, 4532) = 182.78$, $p < .001$, adjusted $R^2 = .194$				
Central Asia				
Intercept	2.213	1.807	1.225	.242
Learning	.019	.444	.044	.966
Living	-.145	.268	-.539	.599
Support	-.148	.350	-.422	.680
Overall satisfaction	.699	.455	1.537	.148
Age	.020	.047	.433	.672
Female	.449	.347	1.295	.218
Model summary: $F(6, 13) = 0.90$, $p = .527$, adjusted $R^2 = -.034$				
Eastern Asia				
Intercept	1.947	.133	14.684	.000
Learning	.196	.028	6.909	.000
Living	.079	.026	3.036	.002
Support	.324	.031	10.450	.000
Overall satisfaction	.128	.025	5.067	.000
Age	-.002	.003	-.594	.552
Female	-.014	.028	-.489	.625
Model summary: $F(6, 2628) = 80.14$, $p < .001$, adjusted $R^2 = .153$				
Southeastern Asia				
Intercept	1.576	.306	5.155	.000
Learning	.123	.068	1.807	.071
Living	.211	.057	3.710	.000
Support	.295	.078	3.797	.000

Variable	*B*	SE (*B*)	*t*	*p*
Overall satisfaction	.152	.066	2.327	.020
Age	.005	.007	.738	.461
Female	.026	.063	.406	.685
Model summary: $F(6, 454) = 14.95$, $p < .001$, adjusted $R^2 = .154$				
Southern Asia				
Intercept	1.058	.203	5.224	.000
Learning	.222	.041	5.416	.000
Living	.166	.039	4.256	.000
Support	.295	.047	6.330	.000
Overall satisfaction	.280	.038	7.446	.000
Age	.003	.004	.674	.500
Female	.090	.045	2.014	.044
Model summary: $F(6, 1130) = 70.11$, $p < .001$, adjusted $R^2 = .267$				
Western Asia				
Intercept	.292	.358	.817	.415
Learning	.249	.084	2.985	.003
Living	.382	.078	4.920	.000
Support	.316	.097	3.256	.001
Overall satisfaction	.097	.081	1.200	.231
Age	.024	.008	2.934	.004
Female	.072	.106	.678	.498
Model summary: $F(6, 279) = 22.85$, $p < .001$, adjusted $R^2 = .315$				