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A DESCRIPTIVE STUDY OF INTERNATIONAL STUDENTS' NEEDS AND
SERVICE SATISFACTION AT SOUTH DAKOTA STATE UNIVERSITY

BY

XIAOYU GUO

A thesis submitted in partial fulfillment of the requirements for the

Master of Science

Major in Operations Management

South Dakota State University

2016

A DESCRIPTIVE STUDY OF INTERNATIONAL STUDENTS' NEEDS AND
SERVICE SATISFICATION AT SOUTH DAKOTA STATE UNIVERSITY

This thesis is approved as a creditable and independent investigation by a candidate for the Master of Science in Operations Management degree and is acceptable for meeting the thesis requirements for this degree. Acceptance of this does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ABSTRACT

A DESCRIPTIVE STUDY OF INTERNATIONAL STUDENTS' NEEDS AND
SERVICE SATISFACTION AT SOUTH DAKOTA STATE UNIVERSITY

XIAOYU GUO

2016

The growing international educational marketplace attracts students from all over the world. These students not only bring economic benefits to the host countries, but bring their cultures and languages as well. However, international students face challenges and have needs and expectations when studying abroad. They often do not know how to find services or information they need across the university to adjust smoothly in this new environment. Meanwhile, the host universities may not fully address these international students' special needs because they have limited useful information to understand these students.

This researcher conducted a study seeking to identify international students' concerns, perceptions and needs as they arrive on campus and as they progress through their studies at South Dakota State University (SDSU). With analysis of the data gathered from international students, the researcher gained a clearer understanding of their concerns regarding their personal, cultural, social, and academic expectations. This research concludes with recommendations for programs and services in order to enhance our international students' satisfaction here at SDSU.

Chapter 1

Introduction

From the latest international student data provided by the Institute of International Education (2014), there were 886,052 international students who studied at U.S. colleges and universities during the 2013-2014 academic year. The number of international students studying in the U.S. grew by 8% over the prior year with 50% of the international students coming from China, India and South Korea. Business and engineering are the most popular fields of study among international students. These two fields cover 21% and 19% of international students respectively.

The considerable numbers of international students have brought many benefits to the host country (Policy & Education, 2009). The international students not only bring cultural information (social, political, or economic), but also provide significantly financial benefits, such as the fees generated from non-resident tuition (Bradley, Noonan, Nugent, & Scales, 2008; Ladd & Ruby Jr, 1999). The U.S. Department of Commerce released the contributed value from international students in 2013 – 2014, which was over 27 billion dollars added to the U.S. economy. At the same time, international students face big challenges and experience adjustment issues when studying in new countries with unfamiliar environments(Campbell, 2011). These challenges may inversely influence the potential benefits to the host countries in the future.

Campbell (2011) states that international students have the added issues of living in an extremely strange environment and studying in a different educational

system with language barriers in addition to problems and challenges that any students may face. Previous studies have looked at the problems that international students faced when enrolled in U.S. Colleges and Universities. Researcher Araujo (2011) documents six main adjustment issues based on her literature review of international students' experiences after enrolling in the American Higher education systems. They are:

1. English language proficiency;
2. Social support;
3. Length of stay in the U.S.;
4. Perceived discrimination or prejudice;
5. Establishing relationships with Americans; and,
6. Homesickness (Antwi & Ziyati, 1993; Chen, 1996; Mallinckrodt & Leong, 1992; Surdam & Collins, 1984; Wan, Chapman, & Biggs, 1992).

Researchers Lin and Yi (1997) also studied these groups and defined four stages for their adjustment based on the period of time that international students experienced in U.S. campus.

These four stages are: Pre-Arrival Stage, Initial Stage, On-going Stage, and Leaving Stage. Given the significant monetary and diversity value that these international students contribute to the host country, the importance of studying international students in order to help them experience a positive period of time in the U.S. cannot be overstated (Roberts & Dunworth, 2012).

Zhai (2002) states that exposure to an unfamiliar environment can create problems such as racial discrimination, language issues, accommodation difficulties, dietary restrictions, financial stress, misunderstandings and loneliness. These problems

if not solved can lead to the feeling of anxiety, confusion and depression as well as the physical illness, all of which will affect their studies and lives (Lin & Yi, 1997).

While international students are enrolling in South Dakota State University (SDSU) in increasing numbers, little is known about their actual needs and their problems and issues in adjusting to a new environment at SDSU. Given the benefits that international students bring to the host institution, it is important to deliver the services that address their needs in order to improve the international students' satisfaction and to encourage international students to continue to consider SDSU.

SDSU has provided a variety of services across the university service system such as: career service provided by the Career Center, health service provided by The Wellness Center and writing services provided by the Writing Center to serve all students, including international students. The Office of International Affairs (OIA) also designed systematic services focusing on international students. The mission in delivering these services is to help students adjust to the new culture and encourage them as they strive to accomplish their academic and career goals (SDSU Office of International Affairs, 2015).

Specifically, OIA provided services for international students targeting to five stages. These stages are:

1. While Applying;
2. Post-Acceptance,
Pre-Arrival;
3. Arrival;
4. While at SDSU; and

5. Post-Graduation.

These services target each stage in order to solve specific issues and problems that international students may encounter. For instance, emailing useful information to upcoming students is provided during the stage of While Applying. Free shuttle service that picks up new international students at Sioux Falls Regional Airport is provided for the Arrival stage as well as during New Student Orientation. While at SDSU, the OIA provides a health insurance information session to inform international students about these services while in the United States. In order to address the job-needs of international students, OIA advises students about OPT (Optional Practical Training) and CPT (Curricular Practical Training), which are necessary for international students to legally work here in U.S. OIA also provides the International Diplomat program, to which they have invited international or domestic students who have successfully completed at least one semester at SDSU. These students assist new international students during orientation (Affairs, 2015).

However, the research literature covered in Chapter Two indicates that, although the university provides a range of student support services, the international students themselves still experience big challenges and often have adjustment problems. There is a large gap between the service provided by the university and the actual needs of the international students (Balzer, 2010).

Higher education for international students in the United States has become consumer- driven. Thus it is significant to listen to the customer's voice. The international office is concerned about the quality of their services (J. J. Lee & Rice, 2007). Similarly, the problem has been recognized in the literature. Bozkus (2010) has

proposed a Education Lean Improvement Model with the core principle of reducing or eliminating waste that adds no value to their services and operations. Balzer (2010) also suggested that hearing the “voice of the beneficiaries (students)” in a university is critical point when addressing the value that university delivers.

This study seeks to describe the current state of incoming and continuing international students here at SDSU and, from the results, provide a fresh perspective on the needs of and expectations from the international student population at SDSU. Since there are few studies on the relationship between international student needs and existing services and effectiveness of these services, it will be beneficial to study the current services provided by the SDSU Office of International Affairs. In this study, the other university support service will also be considered because of the complicated problems that international students met or may meet here. Doing so can offer additional useful information that will help address the unique needs of international students at SDSU.

Problem Statement

In order to help international students seamlessly adapt to this American university and therefore be successful in transition to academic life, SDSU needs to have a more in-depth understanding of the needs of international students and be able to provide a comprehensive and needs-based service specifically for international students.

The problem addressed in this study will be to describe the gap between the actual needs of international students at SDSU and contrast them with existing services

provided by SDSU. From the results of this study, the researcher will recommend a need-based service for the Office of International Affairs.

There are a variety of international student services provided across the university such

as:

- Health Insurance Information Sessions to inform students about health insurance in the United States;
- Tax Help Sessions, a joint effort between the Office of International Affairs and the Shared Employment Office, gives students free assistance in filing their taxes, and
- Orientation sections to make international students aware of the requirements of maintaining their student status, and to give them one-on-one time with both Office of International Affairs staff as well as the Student Diplomats.

However, many of services only focus on academic issues and can't satisfy the international students' social, personal, and professional needs and expectations. There is a need for a comprehensive understanding of the current situation of international students at SDSU, including their challenges, needs and expectations when services are offered to address them.

Purpose of the Study

The purpose of this study is fourfold:

- a. To acquire an in-depth understanding of the current international students' needs and expectations during their time at SDSU.

- b. To identify the support services that international students need and expect during their time at SDSU.
- c. To determine if there is a satisfaction gap between the perceived needs of international students at SDSU and the existing services provided by SDSU.
- d. To provide feedback to the Office of International Affairs (OIA) for their continuous improvement process.

Need for the Study

International students bring valuable contributions to the university including tuition dollars, diversity, and global perspectives. Previous study has already shown the necessity for studying these students (Araujo, 2011). Studying of these groups not only can bring more international students, but also will help these groups adapt better to at SDSU. This research will contribute to the body of knowledge on the management of international students (or those academically interested in such support systems) and deliver such knowledge to those who efficiently deliver the service and also to assist with international communications.

Research Questions

The research questions for the study are as follows:

1. What are the greatest concerns of international students at SDSU?
2. What are the greatest challenges international students at SDSU experience?
3. What are their satisfactions regarding to the university services?
4. How well-aligned are the current OIA services to student needs and expectations based on the perceptions of international students?

The target populations for this study will be newly arriving international students in the fall semester 2015 – the initial stage – and international students who have been at the university for more than one semester – the ongoing stage. These populations will include undergraduate, masters, and doctoral international students as well as short-term international exchange students studying at SDSU. Domestic (American) students will not be included in the study.

Assumptions

1. The international students here at SDSU have similar needs as compared to other international students who study abroad.
2. Students surveyed for the purposes of this study will depict their experiences accurately.
3. There is no difference in service support needs due to the country or region of the world from which the international student originates.
4. The current international students' level of reading English is appropriate to participate in the survey.

Limitations

This is a descriptive study focusing on the perceptions of students regarding services coordinated by the Office of International Affairs for international students at SDSU.

Definitions

International student:

Undergraduate and graduate students who are not from the United States and have been admitted to undergraduate and graduate programs offered at SDSU.

International students' needs:

Personal, social, cultural, and academic concerns related to international students' need because of exposure to an unfamiliar environment (Thomas & Althen, 1989).

International students' expectations:

Satisfaction with services rendered as portrayed as meeting customer quality expectations (Cho & Yu, 2014).

University Support Services:

Student support services were defined as all services provided by the institution to support students' cognitive, affective and systemic needs (Tait, 2000). This includes legal documentation, health-care, financial, housing and transportation, and social support services provided by the university as mandated by law or offered to international students to enhance their study-abroad experience.

Newly arriving international student:

The initial stage population includes newly arriving international students. These students, will be newly arriving in the fall semester 2015, who will have an initial recognition of SDSU after studying at SDSU around one month (four weeks).

Ongoing international student:

The population in the ongoing stage includes international students who have been at SDSU more than one semester.

Chapter 2

Review of the Related Literature

This chapter reviews the related research on the topics related to: international student adjustments, university support systems, measurement of school-life service satisfaction and efficiency, and participant and procedure methods for identifying the gap between students' needs and the existing service.

These four parts are given in the following order:

1. Firstly, identify the international students' adjustment problem.
2. Second, document the current state of services from university support systems.
3. Next, describe the ways to measure the effectiveness of services provided across university environments.
4. Last, summarize the existing methods for identifying the gap between students' needs and the existing service.

Referring to this research, which focusing on the services for international students here at SDSU, this research also documents the services existing in SDSU. Following are the methods that were used to study the students' satisfaction and service based on lean philosophy in Higher Education.

International Students' Adjustment Issues

International students are characterized as a group of people who live in an unfamiliar environment and have the purpose of achieving an education goal (Mori, 2000). Although international students have diverse cultural, social, religious, and political backgrounds, these groups of students share certain characteristics, such as

living in an unfamiliar environment and the need to adjust to the new educational system and language (Thomas & Althen, 1989). Their adjustment problems vary by country of origin, race and ethnicity, English proficiency, and whether or not they come from collectivist or individualist cultures (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Wilton & Constantine, 2003). Summarily, researchers Lin and Yi (1997) stated that international students experience the following problems: pressure from academic demands, language barriers, financial concerns, performance anxiety, depression, loneliness, homesickness, relationship problem, non-assertiveness, individualism and bi-cultural conflicts, prejudice, discrimination and paranoia because of entering a new place.

Zhai (2002) also claims that exposure to an unfamiliar environment can create problems, such as racial discrimination, language problems, accommodation difficulties, dietary restrictions, financial stress, misunderstandings and loneliness. These problems if not solved can lead to the feeling of anxiety, confusion and depression as well as the physical illness, all of which will affect their studies and lives (Lin & Yi, 1997).

Another researcher, Araujo (2011), wrote a review of literature concerning the adjustment issues experienced by international students enrolled in American colleges and universities. Araujo went on to note that English fluency, social support, length of stay, perceived discrimination or prejudice, establishing relationships with Americans, and homesickness were the most significant variables related to the adjustment of international students. Unlike American students, they feel strange in local situations

and they face the need to adjust to a variety of cultural and social changes (Zhai, 2002). In particular language fluency is a significant factor that affects international students' adjustment to the new environment (Araujo, 2011). Social support is another critical factor that closely influences international student's wellbeing (Misra, Crist, & Burant, 2003). Considering the complexity of international student adjustment and increasing enrollment, there is need to enhance understanding, orientation programs and support services at U.S. College and Universities (Bentley, 2008).

University Support

International students build strong relationships with their Host University or college. Firstly, international students receive the right of residence in the U.S. because of admission from the host university or college using the student visa process (Cho & Yu, 2014). Secondly, international students financially depend on their host university. Approximately 44% of international graduate students depend on graduate assistantships or research grants (Obst & Forster, 2005). On campus jobs also act as a significant role to support international student in addition to the funds from personal savings or family support. Overall, international students rely largely on the host university. Such dependence indicates that university support heavily affects international students' lives at host university or college.

On the other hand, because international students leave their home country and enter a strange environment, they are unfamiliar with this extremely new situation and have far fewer resources for educational, social, and cultural adjustment in the host college than domestic students. Cho and Yu (2014) point out that university support is important for international students' successful outcomes at the host university with its

local and regional culture. Given these supports that international students need, host universities design and provide various services and programs to help these students (Mori, 2000; Quintrell & Westwood, 1994). These includes the academic services, such as the tax help section and insurance help section, and specific need-based programs for international students, such as the peer-pairing programs and the multicultural counseling service (Cho & Yu, 2014).

Generally, universities and colleges prepare a variety of services to assist international students. Referring to the unique problems that international students face, universities provide related activities or resources to guide this group to success in their studies and social lives as well as their psychological well-being.

Many studies pay more attention to the importance of supporting a positive social system for international students. They argue that international students lose the shared identity that comes from family and peers when they go abroad (Pedersen, 1991; Romero, 1981). Consequently, international students often feel lonely (Schram & Lauver, 1988) and, therefore, need to develop new roles and rebuild a support system using this new identity, contributing to their future wellbeing as a student in the U.S.

English proficiency has been found to be a significant factor in social interaction and adjustment (Meloni, 1986; Pedersen, 1991). Some universities have designed programs or services providing social support during their period of studying in U.S. campus. Such as a University in New Zealand, designed a “buddy project” with the purpose of having the host students be “buddies” to the international students for a semester, providing social support during the latter’s settling-in period (Campbell,

2011). Those social support service or program can enhance the relationship between host students and international students. Social support system should include the relationship with host nationals and the communication with the special ethnicities (Kang, 1972).

Zhai (2002) points out that international students cannot communicate as effectively with their professors as their domestic classmates, making them less able to engage in the classroom. Based on their research, Zhai (2002) suggested adding academic orientation in addition to the orientation that focuses on the introduction to the university and some policies and rules.

Another researcher argues the importance of learning the language used in social situations (Lacina). In her opinion, the international students have already acquired academic English so they can function successfully in their college classrooms. One researcher described a buddy project, combining international students and host students. This not only helped international students transit and adapt positively in their early stages by offering a helping hand from host students, but also help international students to understand concepts and theories covered in class during the contact with host students (Campbell, 2011).

The literature also showed the growing importance of social media for building social support networks since students use these forms of media such as Facebook and Twitter as a way to communicate and search for useful information (Cheung, Chiu, & Lee, 2011). It is inevitable that new media is considered as the extension of the existing university support system. As social media plays a significant role in building social networks, it can help international students access the support systems.

Referring to the adjustment factor of cultural difference, Lacina points the suggestion of preparing a cross-cultural counseling center and thus helping students address cultural shock and release adjustment pressure. Other researchers, Crockett and Hays also emphasized the importance of the counseling center for international students (Crockett & Hays). They stress the importance of the career-counseling center instead of the cross-cultural counseling center. International students tend to confront unique career development challenges and often experience heightened vocational difficulty (Crockett & Hays).

Lacina also notes the misunderstanding during the conversation between the local communities, students, staffs and international students because of the diverse background of cultures. Since international students do not know the local culture, they may misunderstand or misinterpret the translation of a word or a phrase. Lacina gave the suggestion of English as a second language (ESL) programs to solve these cultural difference issues. An example of a web-based ESL information source is Dave's ESL Cafe [<http://www.eslcafe.com/>]. It is a special place for international students to learn new idioms, and it is also a good place for college faculty to become familiar with ESL issues. Research by the ESL directory (<http://www.esldirectory.com/blog/esl-info/>) demonstrates that there are huge numbers of college and universities that conduct ESL programs to assist international students with language issues.

Researchers Carr, Koyama, and Thiagarajan (p. 131), describe a women's support group for international students. They launched their program at a large Midwestern university to help international students feel at ease with American university life, address homesickness, language problems, and academic and social

stressors. In this group, co-leaders created a safe and culturally sensitive atmosphere where the women could network, socialize, and address their issues. The authors think the group treatment offers many more advantages than individual counseling and can enhance the health of international students.

Researcher Zhai (2002) states that family and friends provide important support for international students. Zhai (2002) focuses on the importance of providing academic orientation, improving student counseling, and strengthening language support for international students. The same author analyzes the different themes based on the international students' issues and needs. These themes include the Office of International affairs, counseling center, student organizations, sports clubs, career services, academic orientation, cultural orientation, interaction with US students, and international perspectives added to curriculum.

On the other hand, researcher Lin and Yi (1997) recommend universities serve international students more efficiency through four adjustment stages. These four stages focus on different goals that can solve specific issues. The first stage is Pre-Arrival Adjustment Stage, which starts before students' arrival to the U.S. The goal for the first stage is to prepare the necessary information before the student's arrival. In this way, they can help to reduce international students' anxiety and possible cultural shock.

The second stage is Initial Adjustment Stage, which starts with the students' arrival and lasts for six months. The purpose of this stage is to continue guiding students and reducing cultural shock. The On-going Adjustment Stage is the third stage, which starts after the sixth month on campus and lasts until graduation. During

this stage, the focus is to help international students with bi-cultural conflicts and to, thus, achieve a balance between participating in the new culture and maintaining their own cultural identities.

The Final Adjustment Stage starts upon graduation and lasts for six months after returning home. The final stage includes: helping students to anticipate the returning home readjustment process, preparing for employment opportunities and reducing return home anxiety (Lin & Yi, 1997).

Methods of Assessing Students' Satisfaction and Service Quality

Roberts and Dunworth (2012) studied the perceptions of support services for international students in higher education through semi-structured interviews with staff members who were involved in the students' service section, such as the counseling service, and a focus group of four and five students. These methods were used to collect data from international students on their opinions of the quality of services. They analyzed the data from interviews and focus groups based on a process called the Interactive Model which includes content analysis: data reduction, data display and the drawing of conclusions or verification (Miles & Huberman, 1984). Their interview questions focus on four themes that help to assess the current support service: awareness (Students' poor understanding of service/ Students' uncertainty how to use service); usefulness and use (association of service with student failure or inability to cope/ fragmentation of service delivery); access (location of service, making access for students difficult); barriers to use (lack of student-centered approach to service delivery/ staff, student culture/student vulnerability from inadequate social and language skills as well as racial prejudice/lack of a campus community).

Researchers Cho and Yu (2014) used a social identity/self-categorization stress model to examine the effects of university support through online survey. All of the measurements corresponding to the questionnaire in their study were measured through a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). In this study, the researchers' identified four key variables: university identification, university support, school-life satisfaction, and psychological stress to assess the effectiveness of university support systems. Composed of these four variables, the study used a path analysis and structural equation modeling (SEM) to determine significance of the data. They found gender differences in international students' needs for social, educational, and cultural adjustment. Particularly, they found gender differences in needs with regard to academic performances, communication, psychological conditions, and so on (Cho & Yu, 2014).

Balzer (2010) pointed out the lean in higher education program, in which he outlines a method of listening to the beneficiaries' voice to measure their satisfactions. J. J. Lee and Rice (2007) also points out the importance of listening to the international students' concerns to address the services.

Liker (1997), author of the manufacturing classic *Becoming Lean: Inside Stories of US Manufacturers*, states that lean thinking is a whole-systems approach that creates a culture in which everyone is continuously improving processes and production. It is also a human system that is customer focused and customer driven. This creates a 'pull' process for the product design teams and the strategists who determine the strategic direction of the company. 'Pull' processes are driven by customer expectations and needs.

Lean in Higher Education

Lean in Higher Education (LHE) is the adaptation of lean thinking from its manufacturing roots to higher education. Balzer (2010) discusses that LHE holds great promise for helping colleges and universities do a better job of meeting the needs of those they serve, improving the efficiency and effectiveness of the critical process and services that allow them to achieve their mission and goals. For the purposes of this study, the LHE model holds promise to improve services for international students based on their needs and expectations.

The university is a unique type of organization that differs from other for profit, nonprofit and governmental organizations because it has its unique mission and stakeholder responsibilities. Thus service can be treated as a special market: current international students,

who bring significant economic benefits to universities, are the beneficiaries of higher education system (Bozkus, 2010). Hearing the “voice of the beneficiaries” in a university is critical point when considering the value that a university delivers.

In the book *Lean Higher Education*, Bozkus (2010) suggest a series of actions to improve the efficiency of university processes, which includes the service process of thoroughly understanding what value the beneficiaries expected from the process. The same author proposes the follows steps: First, identify the beneficiaries of these university support process. This means identify who benefits from process, learn what beneficiaries of service process value and expect; determine and communicate what beneficiaries of service process value and expect; establish metrics for assessing what beneficiaries’ value and expect. Second, prepare visual maps for comprehensive

understanding of university processes. Such as preparing a current state visual map and document the service steps. Thirdly, eliminate waste and improving flow, identifying waste in process; eliminating waste form process; improving flow in process, and last, implementing LHE solutions and sustaining improvements (Bozkus, 2010).

In summary, the literature review in this chapter helps this researcher understand the international students' adjustment issues. Additionally, pre-study shows related services or programs from university's perspective to support this group. Thirdly, this review of literature summarizes the methods used to analyze the student satisfaction and the quality of university's services.

Chapter 3

Methodology

This research is a case study conducted at South Dakota State University, aiming to propose a comprehensive and students-need-based service system for international students to help them smoothly adjust to SDSU. The purpose of this study is fourfold:

- a. To acquire an in-depth understanding of the current international students' needs and expectations during their time at SDSU.
- b. To identify the support services that international students need and expect during their time at SDSU.
- c. To determine if there is a satisfaction gap between the perceived needs of international students at SDSU and existing services provided by SDSU.
- d. To provide feedback to Office of International Affairs (OIA) for their continuous improvement process.

In this chapter, we focus on the methodology of this study which includes the following:

- Designing a questionnaire to gather data that will facilitate understanding of international student needs and expectations;
- Sampling the population using contact information provided by the Office of International Affairs; and,
- Analyzing the data to draw conclusions about international student needs and expectations.

Research Design Strategy

The site for investigation is South Dakota State University with enrollments of 800 International students from around the world. The first stage of this research was a survey conducted by email designed for all officially enrolled international undergraduate and graduate students. The Office of International Affairs served as a facilitator by sending emails on behalf of the researcher to the current listing of enrolled students they coordinate services for during the academic year.

The goal of this survey was to establish a comprehensive understanding of this group's current situation. In order to acquire valid (useful) data, this researcher designed the survey to focus on international students' challenges, needs, and their utilization of current services, which will reflect their perspectives of the university's current support system. The collected data from the survey will be analyzed in the second stage. Analysis will include organization of the data from the survey by respondent type and frequency for each question. Next, correlational analysis will attempt determine if there is a significant difference between initial needs and expectations of students in their first semester on campus versus students who have been at SDSU longer than one semester.

The researcher used the following research questions as the guiding principles throughout this study:

1. What are the greatest concerns of international students at SDSU?
2. What are the greatest challenges international students at SDSU experience?
3. What is their satisfaction regarding university services?

4. How well-aligned are the current OIA services to student needs and expectations based on the perceptions of international students?

Survey Questionnaire

The questionnaire was designed for undergraduate students and graduate students, exploring the same topics. The questionnaire was distributed by email to all international students at SDSU. The survey asked questions about the international students' perspectives on personal, financial, and social issues associated with study abroad.

The researcher adapted an existing instrument (survey) and modified it to increase its relevance to this study's specific goals. The questions in the survey are modified from the existing survey questions, designed and used by the University of California, Berkeley International Office (http://internationaloffice.berkeley.edu/needs_assessment), to make it more relevant to this research study. The topical themes of the questions were:

1 Demographic information:

This topic will request the international students to answer the questions including gender, age, country of origin, current level of study, time of attending SDSU, current semester, major, and future plans. We consider these factors will strongly affect their adjustments and correspondingly affect their needs and their assessments of the quality of services provided by SDSU.

2 International students' concerns:

This topic will request the international students answer the questions referring to a variety of concerns, such as personal, social, cultural, and academic concerns. These questions will help this researcher understand the international students' current situation. These concerns will reflect two adjust stages, initial and on-going adjustment stages of international students here at SDSU. The initial stage starts with students' arrival and lasts for six months, and the on-going adjustment stage starts after the sixth month on campus and lasts until their graduation.

3 Experiences with the current support system:

In this section, the researcher will request that international students identify the university-supported services they used during their time at SDSU. This section of the survey will ask students to rate services provided by 10 key departments or centers on campus and how helpful the staff are in those units. These include the Office of International Affairs, Office of the Registrar, Career Center, Writing Center, Wellness Center, University Housing (Residential Services), and Financial Aid. Questions in this section will aid the researcher in understanding the students' needs to utilize the current support system from the perspective of the beneficiaries (international students).

4 Experiences with SDSU International Office:

Given the significant role that the Office of International Affairs (OIA) at SDSU plays in serving international students, in this section, this researcher will request that international students answer several questions related to the services from the international office. These questions include: assessing the email services,

approximately times of visiting OIA, the reason of visiting OIA, and satisfactions with services of OIA.

Also, this section provides the international students an opportunity to give comments or suggestions they would like to share. The survey was designed to take no more than 20 minutes for students to answer all questions.

In summary, this questionnaire survey gathered information from the international students, the beneficiaries of this support system, as to what they need and what concerns them as well as which services are important to them. Thus this questionnaire survey will contribute useful data sets regarding the current situation of international students at SDSU and current utilization of support services. Results from the questionnaire survey will be compiled and presented in the next section.

Sampling Design

All international students, undergraduate and graduate level, at SDSU are the target population for this study. The total population of the international students at SDSU is approximately 800, as reported by the Office of International Affairs for the fall semester of 2015.

In order to assure reliability of the sample and resultant standard error of the mean, the researcher used statistical methods to determine what the sample size (the number of responses from international students) should be. In that statistical method, there were two factors on which more consideration should be put when determining the sample size: What is the confidence interval and level to measure the statistical level of international students?

This researcher uses the following formula to determine the sample size given confidence level, and margin of error.

Sample size formula:

$$S = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)} \quad (1)$$

Where S is the sample size, z is determined by confidence level, which can be found in the standard table; confidence interval e is also called margin of error. p is parameter and is set to 0.5, and N is the total population in the formula (Witte, 1989).

Data Collection Procedure

In this research, this researcher collected the data mainly from an online survey (link) sent to all international students at SDSU. With the help of the Office of International Affairs, the researcher sent out the first survey link on 30th September 2015. All international students were expected to receive the survey link, as the International Office of Affairs sent this survey via their internal listserv which contains the current SDSU international student email list.

However, the researcher determined not all of the international students received the survey. Some survey invitations went to the students' campus email, which many did not access until the spring of 2016. The researcher randomly checked whether international students had received the survey. However, three African students, four Chinese students and one Indian student didn't receive it in the first invitation to participate in the study.

Later, it was determined some international students at SDSU received the survey invitation five times in the fall semester of 2015 and ultimately all the international students received the survey at the end of January 2016. When the survey was sent out in January 2016, this also included 145 new students as they joined SDSU for the spring 2016 semester.

Regardless of the issues with the OIA's email list, the researcher is confident the target population remained fairly stable. Therefore, the researcher assumes the average of target population is 800, as some international students graduated in the end of 2015. For these reasons the population sample is assumed to be representative and that all international students had opportunity to respond.

In this conducted research, this researcher used the Question Pro online survey tool (<https://www.questionpro.com>) which provides the services of creating online survey and collect response to maintain all survey data during the period of this research.

Ethical Consideration

As this research involves human subject and the survey gathers data about the international students' current situation. In order to protect the participants' identity and minimize any harm this survey may cause, this researcher carefully investigated the ethical principles and modified the survey content to reduce the risk of taking this survey. There was low risk for the participants. Additionally, this researcher took online collaborative institutional training initiative program and completed the required human subjects review test. This research was approved as 'exempt from human subject review' as there was low or no risk to the participants as determined by the

Office of Research/Human Subjects Committee at SDSU. An executive summary of the results of the study will be shared with OIA.

Data Analysis Procedures

Basic statistical analysis technique:

The response to almost every question in the online survey was a rating 1, 2, 3, and 4 corresponding to the degree of the satisfaction to some service or the frequency of thinking about personal, social and cultural issues. This allows us to use statistical methods to quantify the responses in some organized fashion: the first moment (mean) and the second moment (variance) information in statistics. Further, this researcher interpreted those statistical results back to the related research question. For example, for the question “how often do you think about getting credit card?” 1 is corresponding to never, 2 to sometimes, 3 to frequently, and 4 to always think. This researcher computed the mean and variance based on all responses. If the mean of all answers for that question is 2, then this researcher can interpret that in average, the international students sometimes think about getting a credit card. This is an example to show how it works and it is not intended to be the same as the final results.

First of all, this researcher will obtain the general information of the data collected such as: what the average answer value is and how much the variance of the answer is. Statistically, this researcher will compute the mean and variance based on all responses received for each question using the following formula:

$$\mu_j = \frac{1}{S} \sum_{i=1}^S x_{i,j} \quad (2)$$

$$\delta_j^2 = \sum_{i=1}^S (x_{i,j} - \mu_j)^2 \quad (3)$$

Where S is the number of sample in this survey, that is, the number of participants (international students), $x_{i,j}$ is value from the i^{th} participants to j^{th} question. $i \in \{1, 2, \dots, 97\}$ and $j \in \{1, 2, \dots, 32\}$ since in this research, there are total 97 international students who completed the survey and there are 32 questions. μ_j is the average answer value for j^{th} question. δ_j gives us how much fluctuation about the answer for that j^{th} question. The small δ_j is, the more concentrate the answers from the participants. And l_j and b_j are the minimum and maximum value in all answer for j^{th} question (Witte, 1989). This researcher will compute this for each question and report the mean, variance of the answer, and give a summarization.

Using the resultant mean of the cluster of responses to each area, the deviation from the mean was calculated as a way to determine whether there were significant differences in responses on an item. Using the Z score, or standard score, to identify how many standard deviations the responses by students on an individual element were above or below the calculated mean for the individual element, it was hoped to identify significant differences.

The methodology of the study also provided a way for the respondents to give open ended comments which would be used to enrich the quantitative analysis. Each section of the survey included a place to add comments. The survey results are presented in the next chapter.

Chapter 4

Results

This research is a descriptive study, designed to learn about the experiences of international students at South Dakota State University (SDSU). This study seeks to describe the perspectives of incoming and continuing international students here at SDSU and, from the results, provide a factual account of the needs and expectations from the international student population at SDSU. As discussed in Chapter 3, this researcher used formula (1) to determine the sample size:

$$S = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)} \quad (1.0)$$

Where z is z value (e.g. 1.96 for 95% confidence level). P is percentage picking a choice, expressed as decimal. Here we use 0.5 for P . For determining the sample size, this researcher firstly needed to specify the confidence level, confidence interval (the error of margin) e as well as the total number of population N , then compute the sample size based on Formula 1 ((Witte, 1989). This researcher computed the sample size under the different confidence level and confidence interval setting. Note that the total population is specified (this number is reported from the Office of International Affairs at SDSU, about 800 international students).

Note: A confidence interval gives an estimated range of values which is likely to include an unknown population parameter, the estimated range being calculated from a given set

of sample data (Yale, nd). A confidence level refers to the percentage of all possible samples that can be expected to include the true population (Stattek, nd).

Table 1 Calculation of confidence level based on sample size

Confidence level	Confidence interval	Total population	Sample size
0.95	5%	800	260
0.99	10%	800	138
0.95	10%	800	86
0.95	15%	800	41

In this study, this researcher selects 95% confidence level and wants the result to be accurate within 10 percentage points. This is because there are few analogs to this research study for contrast. After the calculation, the sample size of the international student should be 86.

The researcher emailed a link to a Question Pro questionnaire to an estimated 800 international students at SDSU. A total of 97 (12%) surveys were completed and returned as shown in Table 1. Summary of Participant Activity. 359 students viewed the questionnaire, 160 students started it, and 97 students completed it.

The average taken time to complete the online survey instrument was 11 minutes. The researcher randomly interviewed international students during the data collection procedure to determine if the emails were received and if the student had responded to the request to participate. Based on the interviews, some international students did not participate the survey, because they considered their English reading comprehension is not sufficient to complete within a short time. The instruction indicated the survey would take approximately 10 minutes, but the interviewed students believed they may need at least 20 minutes to complete this. Additionally, some international students didn't pay

attention to the emails from the Office of International Affairs which facilitated the survey by sending out the participation invitation.

Table 2 Summary of Participant Activity

Action	Count
Viewed (Reset)	359
Started	160
Completed	97
Completion	60.62%
Drop outs (After starting)	63
Avg. Time Taken	11 minutes

The researcher received 97 responses, which indicates the population sample is adequate for the purposes of this study.

In the following part this researcher would like to emphasize that the participants were found to be more diverse in expected the countries they are from and the major they are in. The participants reported they are from 32 different countries.

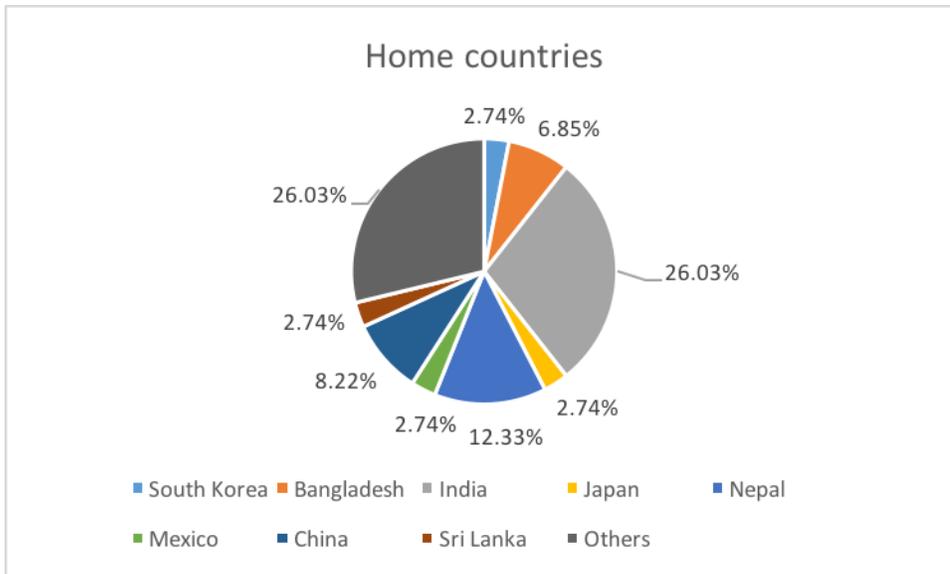


Figure 1: Respondents' Home Countries

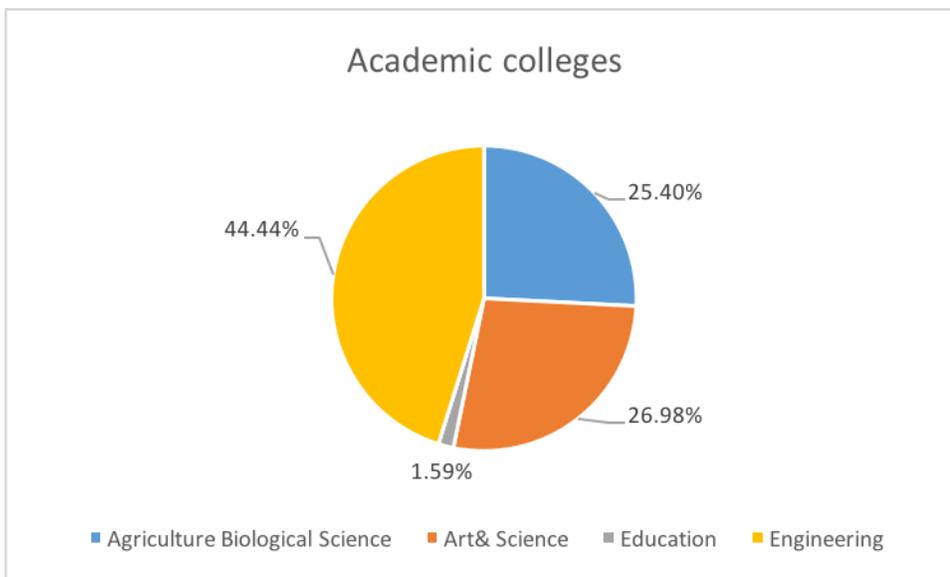


Figure 2: Respondents Academic College

Organization of the Survey and Results

A questionnaire was sent via email to 800 international students at SDSU with items that included the following sections:

- a. International students' concerns
- b. Experiences with the current support system
- c. Experiences with SDSU international office, and
- d. Demographic information

For each question, this researcher produced the following tables based on analyzing our raw data collected by questionnaire. The survey responses used a Likert-type scale where, in most cases, one (1) was low and four (4) was high. This individual number (1, 2, 3 and 4) corresponds to the frequency of thinking about personal, social and cultural issues, or degree of the satisfaction to university service.

This researcher used basic statistics methods to calculate mean and standard deviation for each item using the Likert-type scale and give a summarization of result. By ranking the data from highest or most frequent to lowest or least frequent, the results were ordered based on the average of each question/item on the survey.

Personal concerns

Question: How often do you think about these issues? 1 = never, 4 = always

Table 3 International Student Personal Concerns

Survey Item	Mean	SD
Being successful in my studies.	3.64	0.69
Maintaining contact with my family at home.	3.17	0.92
Managing my money	3.11	0.85
Having enough money	2.97	1.02
Getting a job in the US after graduation.	2.94	1.06
Keeping up with news or current events from home.	2.93	0.92
Having financial support.	2.92	1.02
Obtaining a driver's license.	2.85	1.02
Finding an on-campus job.	2.82	1.05

Finding good housing.	2.74	0.91
Getting a job in my home country after graduation.	2.69	0.97
Understanding health insurance.	2.58	0.98
Understanding U.S. taxes.	2.50	0.99
The conflict between my personal goals and my family's goals for me.	2.45	1.11
Finding a community of faith.	2.44	1.12
Getting a credit card.	2.40	1.04

We use one specific example to analyze the data in Table 3. Let the 'being successful in my studies' as example, based on our results, the mean and Standard Deviation (SD) are 3.64 and 0.698 respectively. The mean 3.64 is close to 4 (always thinking) and the SD 0.69 is small, which tells us that almost every international student always thinks about being successful in their studies.

The mean of "getting a credit card" is 2.40, which is smaller than the mean of "being successful in my studies". In this case, we would like to test whether the difference of means is significant in statistic. In other words, we would like to see whether the population of our international students has different level concerns regarding to these two personal concerns.

(Note: all our statistics tests' confident level is 95%.)

The following is the procedure of our hypothesis test:

- (1) Null hypothesis: There is no significant difference in the calculated mean of respondent scores on the Personal Concerns section of the survey.

Alternative hypothesis: There is a significant difference in the calculated mean of respondent scores on the Personal Concerns section of the survey.

$$H_0: \mu_1 = \mu_2 \quad H_1: \mu_1 > \mu_2$$

- (2) Compute the Z-value:

$\mu_1 =$ the mean of being successful in my studies, and $\mu_2 =$ the mean of getting a credit

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 12.2262$$

Using the highest score and the lowest score in the Personal Concerns section, we determined the Z score, which is 12.23, much larger than 1.65, the critical value. Therefore, we reject the null hypothesis and accept the alternative hypothesis: there is a significant difference in the level of concern of the respondents regarding academic success versus getting a credit card.

Since we reject the null hypothesis, we are 95% confident that the difference between being successful in my studies and getting a credit card is significant in statistics. Specifically, our international students' concern level of being successful in their studies is stronger than getting a credit card.

These are the open ended comments in this section:

- I am the only international student in my department, I feel alienated
- I think that I'm good at a sport, especially soccer, and I'd really register in a team in my university in order to have some advantages (financial support) from it, but I can't because the university doesn't promote or support that sport.
- Much pressure for internationals
- I am not much of an international student, and I feel that my input may skew this data. I really do hope my submission does not skew the data...
- Thinking about internship after graduation and thinking about maintaining. Your status
- International students can hard find friends here

- Please note that I used to have a scholarship from my government and now I do not. Also note that I live on campus, however since I am a non-traditional student and my high school graduation date is so early this puts me at a disadvantage for being placed in a dorm. I believe international students should be given higher priority for dorm assignment regardless of their graduation date. I also have a job on campus.
- Transportation from and to Sioux Falls regional airport.
- I wonder how international students are treated at other universities. I am very happy with the service I have received from [names] They are great!
- I have been depression sometimes.
- It is currently really difficult to receive money from my parents from Nigeria because of some issues within the country and this on its own has affected the situation of things for me. Also the economy is not what it used to be before I left the country and all the plans my father had in place to be able to pay for my fees have been affected.
-

Social and Cultural Concerns

Question: How often do you think about these issues? 1 = never, 4 = always

Table 4 International Student culture and social Concerns

Survey Item	Mean	SD
Finding a good balance between school work and free time.	2.99	0.94
Communicating so that I am understood.	2.90	0.91
Learning how to understand and respond to American behavior	2.79	1.02
Making friends with Americans.	2.74	0.95
Understanding spoken American English.	2.72	1.03
Understanding American values (independence, privacy, etc.).	2.62	0.98
Coping with missing home country/family	2.53	0.87

Learning how to understand and respond to Americans of the opposite sex.	2.26	1.01
Having enough friends from my home country.	2.24	0.89
Being discriminated against by Americans.	2.01	0.95

In this section, Table 4, International Student culture and social Concerns, shows that the top concern (the largest expectation) from international students is how to find a good balance between schoolwork and free time, which is understandable.

Communicating, fitting in and making friends follow closely

The lowest ranked item, “being discriminated against by Americans.” had a mean of 2.01, which is lower than the mean of “finding a good balance between school work and free time.” at 2.99. In this case, we would test whether the difference of means is significant. In other words, we would like to see whether the population of our international students had different levels of concerns regarding to these two culture and social issues.

Null Hypothesis: There is no significant difference in the calculated mean of respondent scores on the Social and Cultural Concerns section of the survey.

Alternative Hypothesis: There is a significant difference in the calculated mean of respondent scores on the Social & Cultural Concerns section of the survey. Here:

$H_0: \mu_1 = \mu_2$ $H_1: \mu_1 > \mu_2$

(1) Compute the Z-value:

$\mu_1 =$ *the mean of* finding a good balance between schoolwork and free time,

and $\mu_2 =$ *the mean of* being discriminated against by Americans.

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 8.3864$$

(2) Check whether to reject or accept the null hypothesis

Here, we got the Z score, which is 8.3864 bigger than 1.65, the level of rejection.

Thus we reject our null hypothesis and favor our alternative hypothesis. Since we reject the null hypothesis, we are 95% confident that the difference is significant between the two extremes in this section of the survey. In other words, the difference between finding a good balance between schoolwork and free time and being discriminated against by Americans is statistically significant. Specifically, our international students more think about finding a good balance is stronger than getting a credit card. The discrimination may not be a problem for them here at SDSU.

Here is the only open ended comment for this section of the survey:

- It takes a while for me to understand some of the American culture or relate to it even.

Academic Concerns

Question: Please indicate your level of agreement with the statement:

I find it challenging to... (Disagree 1, Agree 4)

Table 5 International Student Academic Concerns

Survey Item	Mean	SD
Relate to American students in my classes.	2.63	1.12
Find the information I need across the university.	2.48	1.15
Participate in academic discussions.	2.47	1.12
Access academic support services (proof-reading, editing).	2.46	1.11
Keep up with my writing assignments.	2.45	1.12
Engage in group work with my classmates.	2.45	1.12
Participate in study groups.	2.42	1.09
Keep up with my reading assignments.	2.37	1.11
Understand degree requirements.	2.34	1.18
Understand academic rules and regulations.	2.33	1.11
Relate to other international students in my classes.	2.28	1.08
Understand classroom lectures.	2.21	1.08

We use one example to analyze the results in Table 5. Let the ‘Relate to American students in my classes’ as example, based on our results, the mean and Standard Deviation (SD) are 2.63 and 1.12 respectively. The mean 2.63 is close to 3 (always thinking) and the standard deviation of 1.12 is small, which tells us that some international students think about relate to American students in their class.

The mean of the lowest rated item in this section “Understanding classroom lecture” is 2.20, which is smaller than the mean of “relate to my American classmates”. In this case, we would like to test whether the difference of means is significant in statistic. In other words, we would like to determine whether the population of international students has different level challenges regarding to these two academic concerns.

The following is the procedure of our hypothesis test:

Null Hypothesis: There is no significant difference in the calculated mean of respondent scores on the Academic Concerns section of the survey.

Alternative Hypothesis: There is a significant difference in the calculated mean of respondent scores on the Academic Concerns section of the survey.

Here:

$H_0: \mu_1 = \mu_2$ $H_1: \mu_1 > \mu_2$

(1) Compute the Z-value:

μ_1 = the mean of relating to American students in classroom, and μ_2 = the mean of understanding my classroom lecture

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 2.9666$$

(2) Check whether to reject or accept the null hypothesis

Here, we got the Z score, which is 2.9666 bigger than 1.65. Thus we reject our null hypothesis and favor our alternative hypothesis. Since we reject the null hypothesis, we are 95% confident that the difference is statistically significant. In other words, the difference between relating to American students in my classes and free time and understanding classroom lectures is significant in statics. Specifically, the challenge of relating to American students in my classes is significantly greater than understanding classroom lectures in international students' academic concerns.

(1) For the purpose of a closer relative comparison, the research also tested whether the differences between the calculated mean of “relating to American students in my classes.” and the mean of “relating to other international students in my classes”. In this case, we tested whether the difference of means is statistically significant. Compute the Z -value:

$\mu_1 =$ *the mean of* relating to American students in my classes
, and $\mu_2 =$ *the mean of* relating to other international students in my classes

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 2.4759$$

(2) Check whether to reject or accept the null hypothesis

Here, we got the Z score, which is 2.4759 bigger than 1.65. Thus we reject our null hypothesis and favor our alternative hypothesis. Since we reject the null hypothesis, we are 95% confident that the difference is significant. In other words, the difference between relating to American students in my classes and relating to other international students in my classes is also statistically significant. Specifically, the

challenge of relating to American students in my classes is greater than relating to other international students in my classes.

Open ended comments for this section of the survey:

- Korean professor not understandable? Even what they say don't understandable.
- Communicate with professor.
- Finding it difficult to understand you
- Schedule my time to work between assignments and reviews
- The graduate school needs to up its game. They can be difficult to deal with.

Interacting with SDSU Faculty, Instructors, and Staff

Question: Please indicate your level of agreement with the following statement:

I find it challenging to... (1 = disagree, 4 = agree)

Table 6 International Student Challenges

Survey Item	Mean	SD
Deal with people who are insensitive to my needs as an international student.	2.30	1.08
Deal with university staff who are insensitive to my needs as an international student.	2.17	1.11
Access one-on-one academic advising services that meet my needs in my Department.	2.08	1.06
Understand my professors.	2.07	1.06
Understand my graduate student instructors.	2.06	1.01
Seek help from my professors.	2.06	1.16
Seek help from my graduate student instructors.	2.04	1.00
Access one-on-one academic advising services that meet my needs in my College.	2.01	1.05

As seen in Table 6, International Student Challenges, the most agree item from international students in this category is dealing with people who are insensitive to my needs as an international student.

(Z test results: 2.0136 Reject Null Hypothesis)

Open comments from this section of the survey

- Instructor or specially adviser in computer science department. They don't have time. When we go, ask about any issue related study or problem. They say you have only 1 or 3 minutes to say. Then advisor don't have time. He is busy.
- Get used to the study style in USA.
- Some staff discriminate when they find out you aren't American. Most are great though.

Safety Issues

Question: Indicate your level of agreement with the following statements. (1 is agree, 4 is disagree). For this section of the survey, a high number is a negative experience.

Table 7 International Student Safety

Survey Item	Mean	SD
I feel safe leaving my belongings unattended on campus	1.95	0.98
I know how to contact emergency services for help	1.63	0.90
I walk alone at night in Brookings	1.62	0.87
I feel safe walking on campus at night	1.24	0.56
I feel safe in my neighborhood	1.19	0.58

Based on our results in Table7, we could say that overall our international students feel safe in our university. All the means are between 1 and 2. They indicated that their high level feelings of safety at SDSU. (Z test results: 6.8401 Reject Null Hypothesis)

University-wide Services Question: Please rate the services provided by the following:

(Excellent –1, poor –4)

For this section of the survey, a high number is a negative experience.

Table 8 International Student Satisfaction with University Services

Survey Item	Mean	SD
-------------	------	----

Financial Aid	2.67	1.01
University Housing (Residential Services)	2.37	0.89
Parking Services	2.37	1.03
Student Success Center	2.36	0.90
Career Center	2.35	0.82
Academic Success Programs	2.25	0.87
First Year Advising Center	2.24	0.94
Writing Center	2.20	0.81
Office of the Registrar	2.14	0.84
Payroll	2.09	0.89
Office of Graduate School	2.08	0.82
Wellness center (Counseling Psychological Services)	1.76	0.86

As shown in Table 8, international student satisfaction with University campus-services tells us that international students rank the Wellness Center, Graduate School office, and Payroll are the top service providers as perceived by international students.

Directly look at our result, we note the satisfaction differences between Financial Aid Office with the highest mean score and Wellness Center with the lowest mean. We would test whether this difference is statistically significant.

The following is the procedure of our hypothesis test:

(1) Construct the null and the alternative hypotheses

Null Hypothesis: There is no significant difference in the calculated mean of respondent ratings of satisfaction with campus services. The population mean of “satisfaction with financial aid.” is the same as the mean of “satisfaction with wellness center”.

Alternative Hypothesis: There is a significant difference in the calculated mean of respondent ratings of satisfaction with campus services.

$$H_0: \mu_1 = \mu_2 \quad H_1: \mu_1 > \mu_2$$

(2) Compute the Z-value:

$\mu_1 =$ the mean of satisfaction with financial aid
 , and $\mu_2 =$ the mean of satisfaction with wellness center

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 6.8513$$

(3) Check whether to reject or accept the null hypothesis

Here, we got the Z score, which is 6.8513 bigger than 1.65, the level to accept the null. Thus we reject our null hypothesis and accept our alternative hypothesis.

Since we reject the null hypothesis, we are 95% confident that the difference is statistically significant. In other words, the difference between the mean of satisfaction with financial aid and the mean of satisfaction with wellness center is significant.

Specifically, the services at the Wellness Center is a positive experience that affects the international students experience here at SDSU.

The open ended comments in this section of the survey:

- I tried finding the financial aids and am trying to apply for scholarship but I have no idea how to apply for it.
- The financial aid for teaching assistants' international students is not enough all. The money received from the department as an assistant-ship is almost used for tuition here, which is really pathetic...So I think there is no more motivation for the assistant-ship bearing students in engineering faculty!! Thus, most of the talent international students didn't prefer coming here because of its irrelevant policy, I believe. The university should work out on various aspects to make it one of the best schools in the state...

- I don't see anyone helping in the maintenance of the parking lots. Then why do we have to pay for parking. The idea of restricted parking is bad. If we buy a parking card, we should be allowed to park anywhere on campus.
- People in the grad school office are mostly nice. [Name] needs to be friendlier as her responses have discouraged me from asking them for information

University-wide Services

Question: The staff understands my needs as an international student. (1 = always, 4 = never). For this part of the survey, a high number is a negative response.

Table 9 International Student satisfaction with University Service

Survey Item	Mean	SD
Financial Aid	2.18	1.07
University Housing (Residential Services)	2.04	0.96
Student Success Center	2.02	0.91
Career Center	1.98	0.84
Parking Service	1.97	0.98
Academic Success Programs	1.95	1.00
First Year Advising Center	1.80	0.87
Writing Center	1.78	0.77
Office of the Registrar	1.70	0.86
Payroll	1.67	0.81
Office of Graduate School	1.58	0.87
Wellness center (Counseling Psychological Services)	1.49	0.73

Table 9, International Student Satisfaction with University-service, tells us that international students rank wellness center, office of graduate school and payroll are the top good service provider. (Z test results: 4.8812 Reject Null Hypothesis. There is a statistically significant difference.)

Office of International Affairs (OIA) Services

Question: Based on your experience, how satisfied are you with OIA services: :(Agree – 1, disagree -- 4). For this part of the survey, a high number is a negative response.

Table 10 International Student Satisfaction with OIA

Survey Item	Mean	SD
Academic Writing	1.96	0.88
Starfish Notifications	1.96	0.94
Friendship Family Program	1.96	0.85
free shuttle service	1.96	1.24
Resume & Cover Letter Writing	1.93	0.83
Health Insurance Sessions	1.91	0.83
Summer of Fun	1.89	0.79
Work Authorizations(CPT & OPT)	1.88	0.82
Tax Help Sessions	1.80	0.72
Open Dialogue	1.79	0.88
Orientation	1.72	0.87

Table 10 International Student satisfactions with OIA, the results indicate international students are generally satisfied with the services provided from OIA office such as orientation, open dialogue and so on. The international students rank orientation, open dialogue, tax help session are the top satisfied services provided from OIA office.

Directly considering the results, we could see the satisfactions almost the same. But we would like to test whether there is significant difference regarding to these services from OIA. We take the difference of services of academic writing and orientation as our example to test a hypothesis. We would like to test whether the difference is significant.

The following is the procedure of our hypothesis test:

(1) Construct the null and the alternative hypotheses

Null Hypothesis: There is no significant difference in the calculated mean of respondent ratings of satisfaction with OIA services.

Alternative Hypothesis: There is no significant difference in the calculated mean of respondent ratings of satisfaction with OIA services.

$H_0: \mu_1 = \mu_2$ $H_1: \mu_1 > \mu_2$

(2) Compute the Z-value:

$\mu_1 =$ the mean of satisfaction with academic writing
 , and $\mu_2 =$ the mean of satisfaction with orientation

$$Z = \frac{(\bar{x}_1 - \bar{x}_2) - (u_1 - u_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} = 1.0587$$

(3)

Here, we calculated the Z score, which is 1.0587 smaller than our critical value, which is 1.65. Thus we fail to reject the null hypothesis.

In this case, we could say that there is no significant difference in the averages of scores representing satisfaction of these two services from OIA in statistics. In other words, we could say that overall our international students are satisfied with the range and quality of services from OIA. (This researcher did not ask the open comments in this section.)

Perceptions of the OIA and Its Staff

Question: Based on your experience, how satisfied are you with OIA services? (Agree – 1, disagree -4). For this part of the survey, a high number is a negative response.

Table 11 International Student Satisfaction with OIA Staff

Survey Item	Mean	SD
I view OIA as an advocate for international students	1.35	0.68
OIA staff is interested in my needs as an international student	1.34	0.68
I find OIA's location to be accessible	1.25	0.63

The results indicate that overall the international students were satisfied with the OIA. Z test results: 0.9779 which is fail to reject the null, no significant difference.

Office of international reception staff

Question: How satisfied are you with the OIA reception staff? (Agree –1, disagree—4).

For this part of the survey, a high number is a negative response.

Table 12 International Student Satisfaction with OIA Front Desk Staff

Survey Item	Mean	SD
Staff at the front desk are knowledgeable	1.30	0.58
Staff at the front desk are friendly	1.16	0.43
Staff at the front desk are helpful	1.16	0.43
Staff at the front desk are respectful	1.15	0.49

The results indicate students find the staff are serving the needs of international students and are friendly and knowledgeable.

Z test results: 1.9026 Reject Null Hypothesis.

Office of International Affairs Advising

Question: How satisfied are you with the OIA *advising* staffs? (Agree –1, Disagree—4).

For this part of the survey, a high number is a negative response

Table 13 International Student Satisfaction with OIA Advising staff.

Survey Item	Mean	SD
Advising staff is sensitive to my needs as an international student	1.29	0.60
I view OIA advisors as advocates for international students	1.28	0.62
I find OIA advising staff to be accessible to me	1.26	0.62
Time provided to discuss my concerns is adequate	1.22	0.56
Advisors are knowledgeable	1.22	0.47
Advisors are helpful	1.21	0.49
Advisors provide useful information	1.21	0.49
Advisors are courteous	1.18	0.45

As seen in Table 13, International Student satisfaction with OIA advising staff, overall, the international students agree the advising staff in did a good job advising the international students when needed. The most international students agree that advisors from OIA office are courteous, proved useful information and helpful.

Z test results: 1.2199, Fail to reject the null, no significant difference.

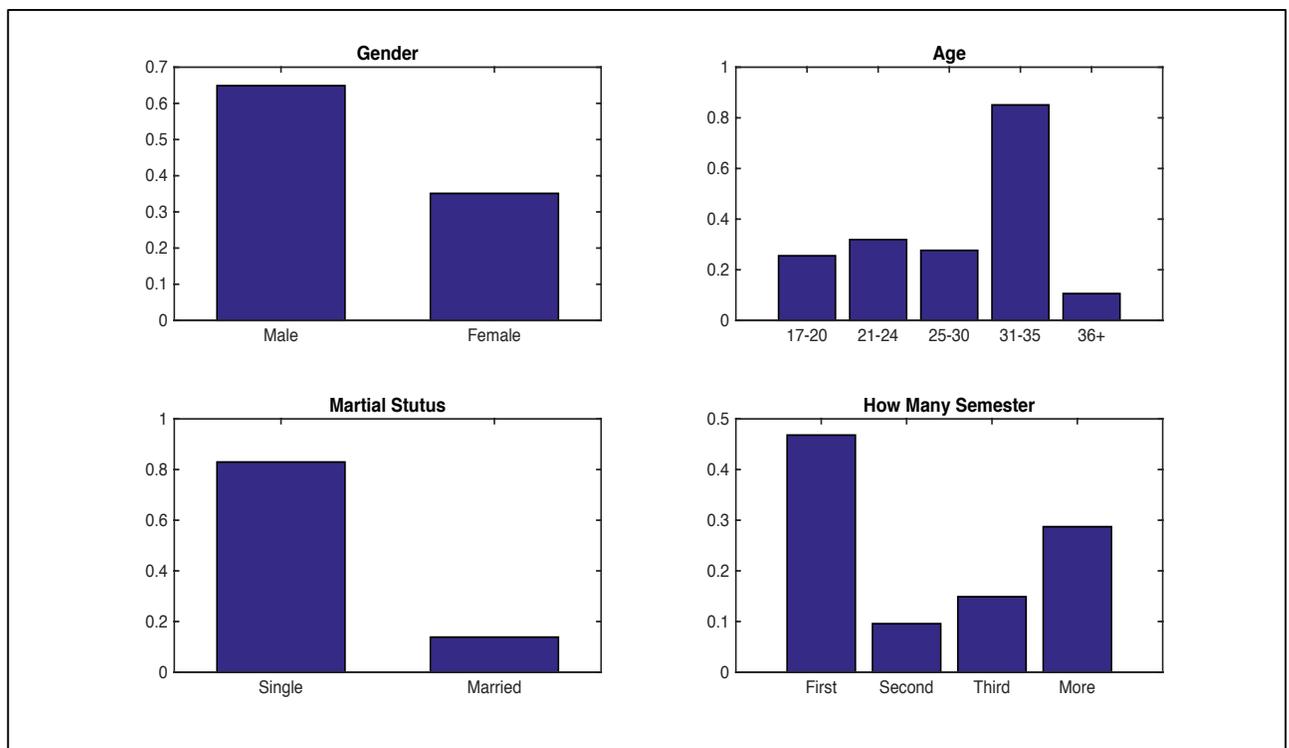
Survey respondents were provided an opportunity to make comments on additional programs or services. The following are the comments received:

- I hope that OIA would make same chance to international undergraduate students to communicate with American students as same as ESL students of this semester take
- In my computer science department rude advisor.
- Please change computer science department staff they are rude and don't understand International student. Students are fear a lot.

Demographic Information

The survey respondents were asked to provide general information about age, gender, marital status and time on campus. Figure 3 shows the results in percentages as reported by the respondents.

Figure 3: Gender, Age, Marital Status and Semester



It was important to determine how the SDSU international students perceived their communication skills, specifically English. The respondents perceived their skills were above average as shown in Table 14 and graphically in Figure 4.

Table 14 English Skills

(1, Excellent, 4-Poor). A high number indicates a negative response.

Survey item	Average	Variance
How would you rate your English skills?	2.09	0.79

The mean (2.09) and variance (0.79) indicates that the international students who responded, as a whole, believe their English skills are close to average, but not excellent. But, still there is a portion of students who think their English skill should be improved as seen in Figure 4.

How would you rate your english skill

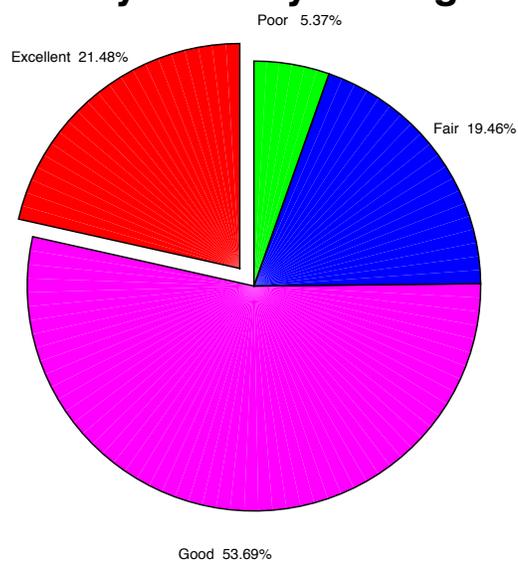


Figure 4: Respondent Rating of English Skills

In this chapter, we used statistical methods to quantify the international student perceptions, concerns and satisfaction with services across the university. Most of the international students came from India (26.03%) and Nepal (12.33%). Most of the international students' study Engineering (44.44%) or Arts & Science (26.98%) here at SDSU.

Their top concerns regarding to their experience here at SDSU are: Being successful in my studies ($M=3.64$, $SD=0.69$), Maintaining contact with my family at home ($M=3.17$, $SD=0.92$), Finding a good balance between school work and free time ($M=2.99$, $SD=0.94$), Communicating so that I am understood ($M=2.90$, $SD=0.91$), Relate to American students in my classes ($M=2.63$, $SD=1.12$), Find the information I need across the university ($M=2.48$, $SD=1.15$).

They also identified their satisfaction with current services across SDSU. Referring to University services, the international students rank the Wellness Center ($M=1.49$, $SD=0.73$), Graduate School ($M=1.58$, $SD=0.87$) and Payroll ($M=1.67$, $SD=0.81$) as the top good service providers. They rank Orientation ($M=1.72$, $SD=0.87$), open dialogue ($M=1.79$, $SD=0.88$), and tax help session ($M=1.80$, $SD=0.72$) are the top satisfied services provided from OIA office

We will discuss these results in next chapter, in which we will investigate several main factors that affect or result in their current situation. Besides, we will give recommendations regarding to our international students' current situation.

Chapter 5

Discussion and Recommendation

This research aims to identify SDSU international students' concerns, perceptions and needs as they arrive on campus and as they progress through their studies. In the previous chapter, we presented our results of SDSU international students' general concerns and satisfaction with university services. In this chapter we will discuss the results and provide recommendations in order to address their current concerns and meanwhile, enhance international student satisfaction with services at SDSU in the future.

Research related to international students' populations have reported the main factors affected their experience in U.S., which are tightly related to their concerns. These factors were identified by previous study mainly from Yeh and Inose (2003) Cho and Yu (2014), including 1. English language proficiency, 2. Roles of university support, 3. Social support satisfaction and social connectedness, 4. Homesickness. Additionally, we will discuss our students' special adjustment needs and expectations such as Other adjustment issues, based on the results We will discuss the international students' experience at SDSU by framing the results against the research questions. They are:

1. What are the greatest concerns of international students at SDSU?
2. What are the greatest challenges international students at SDSU experience?
3. What are their satisfactions regarding to the university services?

4. How well-aligned are the current OIA services to student needs and expectations based on the perceptions of international students?

The following discussion of the SDSU study are presented in order of importance or significance based on the survey data results.

1. What are the greatest concerns of international students at SDSU?

Based on the results the ranked concerns, we could see that language difficulties appear to be the most important concern for SDSU international students. These two top concerns are tightly related to the level of their English proficiency:

- Being successful in my studies
- Getting a job in the U. S. after graduation

Mori (2000) pointed out that the limited English skills might negatively affect international students' academic performances. We could see that the high level of English is significantly important if they would like to communicate, keep up assignment, and participate in academic discussions. Thus we suggest continuous English learning and practice opportunities for these international students in order to address their concerns above. In this situation, they may keep improving their language and they may "find the information that they need across the university". The limitation of communication skills in turn drive international students from social connections with domestic students.

2. What are the greatest challenges international students at SDSU experience?

Social support and social connectedness

The social support is another factor that was a concern for the international students' experience at SDSU. International students face challenges when they try to establish comparable social support systems in the US (Mallinckrodt & Leong, 1992). We could see that SDSU international students identified the following concerns related to the social support and social connectedness.

- Learning how to understand and respond to American behavior
- Making friends with Americans

The social connectedness is an aspect to reflect whether the individual is in a close relationship within the social world (R. M. Lee & Robbins, 1995). Considering most of the international students' culture and values differ from students at SDSU, it was reasonable to expect these international students to experience social adjustment issues. cross-cultural differences in social interaction hinder international students from acclimation more than American students (Mallinckrodt & Leong, 1992). Most of the SDSU international students come from Asian or South Africa countries and it could be stated they share collective culture values. American students value individualism more and they tend to emphasize independence, assertiveness, and self-reliance (Cross, 1995). SDSU international students indicated that they face small challenges with other countries international students when building relationships as compared to American students. Thus internationals international students tend to remain themselves in a limited group of their fellow nationals(Furnham & Alibhai, 1985) instead of building a close relationship with America students.

Homesickness

- Maintaining contact with my family at home (percentage of responses)

The international students identified being depressed in the open ended comments. Coming to the US, these students feel loss when leaving their families and friends(Sandhu, 1994). We can also see these international students indicated their high expectations to maintain contact with their family at home.

Other adjustment issues

- Managing my money
- Having enough money

Our students at SDSU identified their financial concerns. While it was not clear why there were financial issues, it was a commonly identified concern. It is suggested future researchers study specific requirements about financial issues. For example, how much money is enough to not worry or how can they learn to manage their money better.

Moreover, the relationship between international students and local America students tend to be superficial(Bulthuis, 1986; Cross, 1995). The individuals who come from collectivistic cultures will encounter much more pressure in this cross-cultural experiences (Cho & Yu, 2014). Thus this researcher sought a deeper understanding of the culture differences for international students at SDSU. If we could find differences and/or similarities of cultural values as defined by individual nation, university service providers may help these international students by acknowledging their cultural differences and adjust their needs.

SDSU should also consider a mentoring and acclimation program. Researchers have noted the value of matching international students with American students in promoting international students' indications with American students(Abe, Talbot, & Gellhoed, 1998; Poyrazli, Arbona, Nora, McPherson, & Pisecco, 2002). We suggest

multicultural counselors, as they may be sensitive to the students with diverse backgrounds. Jacob and Greggo (2001) suggested a cultural exchange program between international students and graduate counselling practicum students. In this program, the counsellors may learn cultural sensitivity, which will benefit their own study and in turn, the international students may bring their culture but also learn and understand the new culture in this process.

Counsellors should also realize the importance of feeling socially connected and satisfied with existing social support networks (Yeh & Inose, 2003). Pedersen (1991) suggests that international students may bring their friend or significant other in their counselling. Currently, most counselling centers only focus on individual goals and present needs (Yeh & Inose, 2003).

3. What are their satisfactions regarding university services?

Roles of university support

Previous studies have addressed the significant and positive roles of organizational support (Gillet, Fouquereau, Forest, Brunault, & Colombat, 2012; Ohana, 2012; Rutherford, Wei, Park, & Hur, 2012). Mallinckrodt and Leong (1992) claimed that social support from one's own academic program will positively affect the welfare of international students. Our international students at SDSU presented the following challenges from university support.

- Challenges of dealing with university staff who are insensitive to my needs as an international student
- Challenges of understanding my professors

In American societal systems, people value their self-concept and self-esteem (Mallinckrodt & Leong, 1992; Pedersen, 1991; Sandhu, 1994). Our international students at SDSU identified the challenges from interactions with insensitive staff or other people from the university. In this situation, international students will easily feel overwhelmed in an unfamiliar and hostile environment (Pedersen, 1991). As we noted in Chapter 4, it is suggested hiring the officers with knowledge of studying abroad is a positive. The international students also identified their challenges with international professors. In this case, we consider it caused by these international professors who did not adapt well during their adjustment process. These professors more than likely were international students and may become another academic pressure for SDSU international students.

Positive experiences

On the next section, we will discuss the “positive aspects of international students’ sojourn experiences”. We also discuss the services that students found the most helpful. The previous studies showed that their satisfied feeling with current services will help them deal with adjustment issues, as they may have confidence in this situation.

- Wellness Center
- New Student Orientation

The international student’s expressed high satisfaction with the SDSU Wellness Center which suggests a possible benchmarking unit for other service providers on campus to consider in the future. The orientation section also received a high satisfaction from students. We may suggest not only continue to provide the orientation but also add more information which may address students’ other needs and expectations based on our

results. However, we should also take care of these low satisfaction services.

Investigating these services, we may find the parts that we need to improve in the future.

- Financial Aid
- Academic writing

The international students reported small satisfaction level when identify the services from Financial Aid and Academic writing. Considering the high concerns of having enough money and keeping up writing assignment, we suggest staffs, who provide these two services, to create their own survey and find out the reasons. Since international students have special financial needs and academic writing needs, we suggest the staff from these offices learn about the international students' special needs and update their service to address the new needs of the foreign students.

4. How well-aligned are the current OIA services to student needs and expectations based on the perceptions of international students?

Our result in Chapter 4 showed that our international students are satisfied with the quality of services from OIA. However, we should note that SDSU international students have more needs and expectations beyond the current services from OIA. Their comments indicate experiencing sets of challenges when studying at SDSU. For example, they hope that the staff, across the university, could be more sensitive to their needs. Here, we may suggest the OIA not only focus on the needs of international students but function as the representative of all international students to communicate with other offices across the university. In this way, service providers across the university may have a close-understanding about our international students and in turn, staff members

are able to be sensitive when facing our international students and meet our international students' needs.

Additionally, the international students stated their top concerns of relating to American students in class, finding the information they need across the university, and communicating so they were understood. Although we found that OIA provided some chances for international students to immerse themselves in the local community, we suggest that OIA provide more systematical, needed-based services to address our international students' concerns. Enhancing the relation between international students and local students, in this case, could also benefit our local students in this international marketplace.

In summary, we suggest that our OIA serves as a bridge, not the wall, to build a connection between our international students and our university, including our local students.

Future Considerations

This researcher recommends future study to identify international students' self-learning capability to adjust in a new environment. Ward, Bochner, and Furnham (2005) pointed that research activities were directed towards the problems experienced by overseas students when foreign exchange programs gained momentum in the 1950s. While these studies have been conducted across several decades, international students nowadays still face challenges of studying in a new environment. Mori (2000) pointed out that international students lack information about available campus resources to

address their special needs. We have found that international students generally underuse university services and ignore the services which increases negative attitudes towards seeking professional help (Sandhu, 1994). For example, SDSU international students identified their needs and challenges with writing assignments. However, we could see that they didn't use the Writing Center on a regular basis. Thus, it is necessary to inspire them to find proper services to address their needs. In this way, they may experience an even better experience of studying abroad and alleviate their concern of "being successful in my studies." Besides, we also recommend to survey international students' reasons to choose our university, such as why they think it's valuable to study at our university. This will also help us to understand their expectations.

In conclusion, this study sought to learn more about the challenges and perceptions of international students at South Dakota State University. Based on the responses, we found that international students today still face sets of challenges, mainly from language barriers and culture differences. Because of these challenges, the international students easily lose their identity and feel lonely in this new environment. For example, they do not have social connection with local community and cannot value themselves here. However, they also stated their high satisfaction with some services here at SDSU. As we already know that the high satisfaction of services will positively affect their whole experiences, we may suggest to enhance these high satisfaction services and meanwhile, improve other services. Enhance these high satisfaction services may help us target our students' needs and leave us more space to improve our services on other aspects. In this situation, our university might improve the capability to cultivate more

successful students; in turn, attract more students. Our university will achieve more potentials in this growing international educational marketplace.

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