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ABSTRACT

EXAMINING PERCEPTIONS OF SERVICE QUALITY
OF STUDENT SERVICES AND SATISFACTION
AMONG INTERNATIONAL STUDENTS
AT UNIVERSITIES IN INDIANA
AND MICHIGAN

by

Mordekai Ochieng Ongo

Chair: Jay Brand, Ph.D.

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: EXAMINING PERCEPTIONS OF SERVICE QUALITY OF STUDENT SERVICES AND SATISFACTION AMONG INTERNATIONAL STUDENTS AT UNIVERSITIES IN INDIANA AND MICHIGAN

Name of researcher: Mordekai Ochieng Ongo

Name and degree of faculty chair: Jay Brand, Ph.D.

Date completed: December 2018

Problem

Universities in the United States face financial constraints, intense competition for students, declining student enrollment, and constant student attrition. However, an increasing number of international students seek higher education abroad, especially in the U.S. Providing quality services to these international students might help institutions attract and retain more of them. Unfortunately, little empirical research has been done on international students' perceptions of service quality, especially of non-academic services. This study fills that gap by using a modified SERVPERF questionnaire to investigate international students perceived service quality and satisfaction at eight universities in Indiana and Michigan.

Method

The purpose of the study was to examine perceptions of service quality of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. The study also investigated the relationship between perceived service quality and satisfaction. This was an important area of research given the increased demand and competition of international students, their impact on regional and national economics, and their cross-cultural influence on social and national relations.

This quantitative, descriptive, correlational research used an online survey to collect responses to a SERVPERF questionnaire and eight demographic variables. Multiple regression analysis was used to examine the relationship between perceived overall service quality and satisfaction. Descriptive statistics (means and standard deviations) were examined to ascertain ratings of service performance and satisfaction. A multivariate analysis of variance (MANOVA) was used to determine international students' perceived service quality and satisfaction on the basis of the demographic variables gender, geographical region of origin, age, the level in the current degree program, duration of stay at the university, race/ethnicity, religion, and type of university.

Results

Based on the research design, data were collected from 376 international students from 77 different countries, attending eight public or private universities in Indiana and Michigan. Of the respondents, 196 were male and 175 were female. The majority of the respondents (185) were aged between 18-24 years. Those who attended private universities numbered 61.7% (232) while 38.3% (144) attended public universities.

A majority of the participants, 55.1% (207), were enrolled in graduate school, and 44.2% (164) in undergraduate programs. Five respondents declined to respond to the question. Fifty-two percent had been at the current university for a duration of over a year while 38.6% had been at the university for a period of less than one year, but more than six months. 9.6% did not indicate the duration of their stay at the current university.

The bulk of the participants, 165 (43.9%), were Asian. The remaining sample was made up of 72 (19.1%) Whites or Caucasians, 62 (16.5%) Blacks or African Americans, 33 (8.8%) Hispanics, and 43 (11.4%) identified as Other. A majority, 227 (60.4%), were Christian, with 51 (13.6%) Agnostic/Atheists, 43 (11.4%) Muslims, 32 (8.5%) Hindus, and 17 (4.5%) Buddhists.

The study found that, in general, international students value the nonacademic services provided by their respective institutions; specifically, the components of reliability, empathy, and tangibles within perceptions of the quality of nonacademic services predicted overall student satisfaction.

Respondents in general gave high ratings for service quality across all of the nonacademic service departments, meaning they have high positive perceptions of service quality. On a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), the results show that 81.2% of the respondents agreeing or strongly agreeing that the departments provided high quality service with a mean ranging from $M = 3.56$ to $M = 4.12$. Of the selected departments, international student services led with $M = 4.10$, $SD = 0.77$, followed by academic records $M = 3.87$, $SD = 0.69$, admissions $M = 3.84$, $SD = 0.66$, and housing $M = 3.65$, $SD = 0.75$. Respondents rated overall satisfaction at $M = 3.87$. This means that international students agreed they were

satisfied with the quality of services provided by universities in Indiana and Michigan.

Multiple regression analysis conducted for Research Question 3 in the Step 3 model demonstrated that the predictor variables reliability, empathy, and tangibility had positive significant weights, indicating international students' satisfaction with these dimensions of service quality. The model accounted for 32.1% of variance of international students' satisfaction. The remaining 67.9% of variance in student satisfaction was thus due to other factors not represented in this model. The results suggest that a higher overall satisfaction score may be explained by higher scores in reliability and empathy but lower scores in tangibility, indicating that international students were satisfied with nonacademic departments' ability to perform the services as per their promise, correctly and consistently (reliability). In other words, international students are more satisfied if the perceived reliability of service quality is high. Respondents were also satisfied with the personal caring attitude of providing individualized attention (empathy). The positive correlation between empathy and satisfaction showed that international students were satisfied with the nonacademic service department personnel's caring attitude and individual attention. The study demonstrated that as long as there was high reliability and empathy, respondents were less concerned about the appearance and neatness of physical facilities, equipment, and personnel (tangibility). Multivariate analysis of variance indicated that the demographic variables race/ethnicity, religion, geographical region of origin, level in degree program, type of university, gender, and duration of stay at a university all had statistically significant differences in service perceptions for different nonacademic service departments. In admissions, the study found that respondents who had stayed at the same university for a period of three to four years and longer, had a less positive

perception of service quality. Additionally, respondents of Hispanic descent had more positive perceptions of service reliability. In housing, respondents from Asia had a more positive perception of service reliability and differed from respondents from Europe and North America (excluding the U.S.). Respondents from North America (excluding the U.S.) had more positive perceptions of service reliability and in this regard were different from South Americans and Europeans. Respondents from Asia had more positive perceptions of service tangibility and differed from Europeans and South Americans. Respondents from North America (excluding the U.S.) had more positive perceptions of service tangibility and differed from Europeans. In academic records, male and female respondents had a positive perception of services, and those respondents who had stayed at the current university for a period of 7 to 9 years had less positive perceptions of service quality, and therefore, were less satisfied.

Conclusions and Recommendations

Respondents were very satisfied with the service quality of nonacademic departments in their Indiana and Michigan universities. This perception of higher service quality might be a function of a broader U.S. cultural emphasis on customer service quality. However, in general other researchers have found similar results (Hassan & Elhoseny, 2010; Hasan, Ilias, Rahman, & Razak, 2008; Nadiri, Kandampully and Hussain, 2009; Kerlin, 2000; Negricea, Edu, & Avram, 2014; Ruby, 1998; Sultan & Wong, 2012). In the present study, these positive results could also suggest a possible regional sensitivity to and welcoming culture for international students in Indiana and Michigan. Several institutions in this study are known to attract international applications. The service performance dimensions of reliability, tangibility and empathy explained a significant percentage of the relationship between satisfaction and service quality.

Based on these findings, a few recommendations for universities may be offered. There is need for universities to focus on continuously improving service quality. This will help to identify and eliminate any student satisfaction barriers, and to continuously deliver high quality service. Nonacademic service departments should pay special attention to hours of service. The results suggest that the current hours of service are not convenient for students. Perhaps the relevant departments can strategize more creative ways of delivering their service to students. In this regard, one example might involve inviting online service portals that students could use to schedule service appointments. Another possibility would be to conduct more training for nonacademic services staff on problem solving skills so that they can demonstrate effectiveness in general when handling international students' issues or problems. With the changing landscape in communication, there is need for nonacademic departments to find strategic ways of improving communication for timely feedback to students' inquiries or concerns. Additionally, there is need for universities to introduce a reward and appreciation system to recognize both individuals and departments that provide outstanding quality service to its customers. This has the element of influencing the attention staff and departments pay to their customers, and drive their focus to the delivery of higher level of service quality.

Andrews University

School of Education

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A Dissertation

Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by

Mordekai Ochieng Ongo

December 2018

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APPROVAL BY THE COMMITTEE:

Chair: Jay Brand

Dean, School of Education
Robson Marinho

Member: Jimmy Kijai

Member: Duane Covrig

External: R. Lee Davidson

Date approved

I dedicate this work to my family

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
DV	Dependent Variables
EMU	Eastern Mediterranean University
IIE	Institute of International Education
IRB	Institutional Review Boards
IV	Independent Variables
MANOVA	Multivariate Analysis of Variance
NASPA	Association of Student Affairs Professionals in Higher Education
OECD	Organization for Economic Co-operation and Development
SPSS	Statistical Package for the Social Sciences
SQ	Service Quality
TQM	Total Quality Management

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CHAPTER 1

INTRODUCTION

Background of the Problem

In an era of declining enrollment, growing competition within an increasingly global higher education market, and persistent budgetary constraints within higher education, student satisfaction and service quality (SQ) have begun to receive particular attention. Customer satisfaction in general may be considered a major outcome of SQ and can be linked to processes ending in customer retention, repeat purchases, loyalty, positive word-of-mouth and social media communication.

Researchers have addressed quality and customer satisfaction in many service organizations since the 1960s. However, only within the last few decades have SQ and customer satisfaction drawn careful scrutiny within higher education. In light of the many services they provide to their various constituencies, the leaders of more and more higher education institutions are beginning to realize that universities and colleges may usefully be, and perhaps even should be, considered as business service entities. Informed by this shift from solely an educational focus to an emphasis on serving their customers, these institutions have increasingly begun paying more attention to SQ and the satisfaction of their students. Private institutions of higher education that depend on tuition as an important source of revenue may have a particular need to understand the value of

keeping students satisfied with SQ, in nonacademic services as well as academic experiences.

Oliver (1997) defines customer satisfaction as “the customer’s fulfillment response. It is a judgment that a product or a service feature, or the product or service itself, provides a pleasurable level of consumption-related fulfillment” (p. 13). Likewise, Hill and Alexander (2006) define customer satisfaction as a measure of how an organization’s total product or service experience performs in relation to a set of customer requirements.

There are numerous definitions for SQ among scholars. Zeithaml, Parasuraman, and Berry (1990) define SQ in terms of a discrepancy between expectations and perceptions of customers measured along SQ dimensions—tangibles, reliability, responsiveness, assurance, and empathy. These definitions are applicable in the context of higher education. Cronin and Taylor (1992) define SQ based on their SERVPERF model—in conceptual terms, SQ is equal to the perceptions only, as measured along the SQ dimensions—tangibles, reliability, responsiveness, assurance, and empathy. The present study defines SQ much like Cronin and Taylor. That is, a customer or student perceives SQ based on the performance of the service. In other words SQ is what the international student says it is. For example, a student’s judgment might be about the promptness, personal attention, courtesy, and so on, related to a particular service or outcome of the service.

Previous research shows that organizations of all types and sizes have increasingly come to understand and appreciate the value of SQ and customer satisfaction (Kerlin, 2000; Khan & Fasih, 2014; Kheng, Mahamad, Ramaya, & Mosahab, 2010;

Zeithaml, 2000) because of the direct impact these issues have on the organization's profits, customer loyalty and retention, and repeat purchases. These values are applicable in the context of higher education. As a result, higher education institutions have begun to consider student satisfaction and SQ constructs, leading to further research examining SQ and student satisfaction in universities and colleges.

Hasan et al. (2008) conducted a study examining the relationship between SQ dimensions (tangibility, responsiveness, reliability, assurance, and empathy) and perceived SQ, and the relationship between SQ dimensions and student satisfaction. The investigation further examined the critical factors in SQ dimensions that contribute most to students' satisfaction. The researchers administered a questionnaire to students at two private institutions in Malaysia. Two hundred subjects completed the survey. Results showed that students' perception of quality affected their satisfaction, and that of the five SQ dimensions, empathy and assurance were most important as predictors of students' satisfaction. Athiyaman (1997) conducted a similar study with 1,432 student respondents and found a high correlation between perceived quality and student satisfaction.

Two other pivotal studies relating customer satisfaction and SQ are doctoral dissertations conducted in the United States. Kerlin (2000) carried out a study measuring student satisfaction with the service processes of selected student educational support services at Everett Community College. Using a cluster sampling methodology and a modified version of the SERVQUAL instrument, the researcher probed the expectations and perceptions of SQ in the following departments: registration, financial aid, counseling, career center, and library services. Nine hundred fifty-nine students returned usable surveys for a 64% response rate. The data yielded discernible patterns in student

satisfaction and dissatisfaction. In an earlier study, Ruby (1998) assessed student satisfaction with the SQ of several service departments—academic records, admissions, career services, and financial aid at several colleges and universities in the Coalition of Christian Colleges and Universities, using the SERVQUAL instrument. Ruby found that students assessed SQ differently for each department, that there is some relationship between satisfaction and SQ, and that female subjects had higher expectations and perceptions of SQ. The study sample included 748 students from ten private institutions in the United States.

Whereas these studies focused on SQ and customer satisfaction, and applied the SERVQUAL conceptual framework, no research was found that used the SERVPERF model with international students in the United States. SERVPERF has been shown to address some measurement issues more effectively and will be used in this study. This gap in literature provided the motivation and the urgency for the present research on SQ and international student satisfaction with nonacademic services. This study focused on the United States as the leading host country for international students.

Statement of the Problem

Universities in the United States face financial constraints, intense competition for students, declining student enrollment, and constant student attrition. However, an increasing number of international students seek higher education abroad, especially in the United States. Providing quality services to these international students might help institutions attract and retain more of them. Unfortunately, little empirical research has been done on international students' perceptions of SQ, especially on non-academic services. This study fills that gap by using a modified SERVPERF questionnaire to

investigate international students perceived SQ and satisfaction at eight Indiana and Michigan universities.

Purpose of the Study

The purpose of the study was to examine perceptions of SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. It further investigated the relationship between perceived SQ and satisfaction. Demographic predictor variables and the combined dependent variables (DV) of tangibility, reliability, responsiveness, assurance, and empathy, in the context of participating institutions in Indiana and Michigan were used in the investigation.

Research Questions

The main research question for this study was: Is there a significant relationship between perceived SQ and satisfaction among international students' attending universities and colleges in Indiana and Michigan?

Secondary questions the study also investigated were:

1. What are the service performance (quality) ratings given by international students for the nonacademic service departments—admissions, housing, academic records, and international student services?
2. How satisfied are international students with the overall SQ in the admissions, housing, academic records, and international student services departments?
3. What is the nature of the relationship between perceived overall SQ and satisfaction?

4. Do significant differences exist in international students' perceived SQ and satisfaction based on the following demographic variables: gender, geographical region of origin, age, level in the current degree program, duration of stay at the university, race/ethnicity, religion, and type of university (public/private)?

Research Design

This quantitative, descriptive, correlational research used an online survey to collect responses to a SERVPERF questionnaire and eight demographic variables. The survey was made available on the Class Climate website specific to each participating institution. An invitation was sent to all international students at the participating universities in Indiana and Michigan. Three hundred and seventy six respondents provided anonymous usable data. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 24.0. Descriptive statistics (means and standard deviations) were examined to ascertain ratings of service performance and satisfaction. Multiple regression analysis was used to examine the relationship between perceived SQ and overall satisfaction with service performance. A multivariate analysis of variance (MANOVA) was used to determine international students perceived SQ and satisfaction on the basis of the demographic variables gender, geographical region of origin, age, the level in current degree program, duration of stay at the university, race, religion, and type of university.

Chapter 3 addresses in detail the research questions, research design, philosophical paradigm, research methodology, method, the rationale for use of the method and methodology, strengths and weaknesses of method and methodology,

description of population and sample, sampling technique, instrument, detailed data collection procedures, data analysis, ethics and institutional review board, and summary.

Conceptual Framework

Service quality is closely related to satisfaction (Kumar, Kee, & Manshor, 2009; Wei & Ramalu, 2011; Zineldin, 2000). Its evaluation requires a model that incorporates an understanding of what constitutes quality, how it relates to satisfaction, and how to measure both constructs. Evans and Lindsay (2005) define quality as “all the aspects and characteristics of a product or service that support its capacity to satisfy certain needs” (p. 16). Over the years, there have been many definitions and understandings of SQ and models for its assessment. The unique features of service (an intangible product) make measuring its quality a challenge. You cannot touch it. To evaluate quality of service as a product, a researcher must bear in mind its characteristic of intangibility.

Two distinct models, SERVQUAL and SERVPERF, have been used in the past to measure SQ in relation to satisfaction. SERVPERF has its origins in the SERVQUAL model. However, these two models, which incorporate features of services in assessment of SQ, both look at SQ as an antecedent of satisfaction.

The conceptual framework of this study involves the application of a modified version of the SERVPERF model. SERVPERF evaluates perceptions of customers based on five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions together define the quality of service received by a customer. The resulting perceived overall quality is used to predict or indicate satisfaction.

SERVQUAL Model

The SERVQUAL model was developed by Parasuraman, Zeithaml, and Berry (1985, 1988; Zeithaml et al., 1990) for measuring SQ. It also looks at SQ in relation to satisfaction. This model suggests that customer satisfaction is a function of the perceptions of SQ relative to the customer's initial expectations. Although SERVQUAL has been used in numerous studies as a diagnostic tool to detect areas requiring improvement of SQ, scholars have often expressed questions and concerns regarding the model. Brown, Churchill, and Peter (1993) expressed psychometric concerns with the SERVQUAL's difference score ($SQ = \text{Perceptions} - \text{Expectations}$). Operationalizing the expectation component of the SERVQUAL model was controversial. Buttle (1996) argued that SERVQUAL's five dimensions of reliability, assurance, tangibility, empathy, and responsiveness are not universal—they cannot transcend different contexts—and that the model is lacking in sound economic, statistical, and psychological theory.

Fairly recently, scholars have also weighed in on the debate as well. Curry and Sinclair (2002) argued that that SERVQUAL contains ambiguity in the expectations construct. Their concern is that the use of the word *excellent* in the expectations section of the model can lead research participants to choose the highest scale score, which can cause the problem of subjects placing emphasis on the ideal expectation instead of the realistic expectation. This can lead to a greater negative gap between expectations and perceptions. The SERVPERF model was developed as a response to concerns found in the SERVQUAL model.

SERVPERF Model

Cronin and Taylor (1992, 1994), challenged by the loopholes identified in the SERVQUAL instrument, developed the SERVPERF model. This was the result of their investigation into the conceptualization and measurement of SQ and the relationships between SQ, consumer satisfaction, and purchase intentions. They argued that mere perceptions could be adequate for measuring SQ and that expectations should not be included in the measurement. In developing SERVPERF, the researchers eliminated the expectations component from the SERVQUAL model. The result was the single score perceptions-only model, a service performance-based model as a measure of the SQ construct. The SERVPERF scale has been interpreted as an improvement on the SERVQUAL instrument. The model suggests that SQ is an important antecedent of consumer satisfaction and that consumer satisfaction has a significant effect on purchase intentions.

The SERVPERF model has been widely used to measure perceived SQ in sectors such as retailing, restaurants, banking, telecommunication, airlines, catering, hotels, hospitals, automotives, and education (Landrum et al., 2009). The instrument has been described as the best fit for the assessment of SQ and satisfaction because of its high reliability and validity. It has been used to investigate SQ as well as the relationships between SQ and customer satisfaction.

According to several scholars, the SERVPERF model has the potential to measure SQ in higher education institutions. Using SERVPERF, Ham and Hayduk (2003) found that even in the higher education context, there was a positive correlation between perceptions of SQ and student satisfaction. Analysis of the correlation along the SQ

dimensions showed that reliability, one of the dimensions of SQ, had the strongest relationship with student satisfaction, followed by responsiveness, empathy, assurance, and tangibility, in that order. According to the reviewed literature, numerous empirical studies using SERVPERF have investigated the relationships between SQ and customer satisfaction and produced consistent findings, based only on the dimension of SQ (Cronin, Brady, & Hult, 2000; Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Tung, 2004)

Naik, Gantasala, and Prabhakar (2010) argued that the quality of services offered determines customer satisfaction and loyalty over a long period of time. The current study assumes that higher SQ can lead to higher student satisfaction, which in turn, may increase student retention, and loyalty, and institutional revenue, and enrollment. Nevertheless, this study did not explore the outcomes of satisfaction.

In recognition of the concerns with the SERVQUAL model, the wide application of the SERVPERF model, and to better achieve the objectives of this study, I chose the SERVPERF model. It has fewer survey items compared to the SERVQUAL, making it easy for subjects to score their perceived quality of a service based on their experiences with service performance. The model includes the five dimensions of SQ: tangibles, reliability, responsiveness, assurance, and empathy. The definitions of the SQ dimensions are contained under the definition of terms section.

Figure 1 is a graphical representation of the conceptual framework of the SERVPERF model showing the five dimensions of SQ and how overall SQ relates to satisfaction.

Figure 1. The model for SQ and satisfaction

Significance of the Study

This research study is meaningful to me personally. I came to the United States as an international student and pursued my graduate studies in the state of Michigan. As a student I utilized services provided by nonacademic service departments, during which I interacted with employees of the various departments I often visited. I often wondered if my experience was any different from other international students. My university is one of the most diverse institutions of higher learning in the United States with students coming from many different countries.

Increase in student mobility makes it reasonable for United States institutions of higher education to focus on international students' satisfaction with SQ. The study is expected to reveal data which can lead to a better understanding of international students

in an increasingly globalized higher education environment. University administrators may use the findings to better understand international student perceptions. This could then be used to better serve students which could help with recruitment and retention. This will also help administrators focus on nonacademic services needing SQ improvement.

The study also adds empirical research to the literature on international student SQ, and satisfaction. In my literature review, I did not find any empirical studies on SQ and international student satisfaction in the United States, and yet universities are expected to provide these students with appropriate nonacademic support services, such as admissions, student housing, academic records, and international student services, which may also contribute to the students' learning outcomes. This study contributes by filling a void in empirical studies in the area of international students' satisfaction with the SQ of nonacademic services. The findings directly benefit participating institutions with information needed to manage inadequacies or otherwise make improvements.

Assumptions

The basic assumption is that international students are able to understand the survey and respond truthfully. It is also assumed that all the international students attending universities in Indiana and Michigan are able to participate in the study. Universities and colleges in Indiana and Michigan have adequate provisions for nonacademic services.

Delimitations

The study focused on the relationship between SQ and the satisfaction of international students at universities in Indiana and Michigan. The study was narrowed to collect data on the following selected service departments: admissions, academic records, student housing, and international student services. Only those subjects who met the inclusion criteria were eligible to participate in the study.

The study limitations are discussed in Chapter 5.

Definitions of Terms

Nonacademic programs: Any activity or collection of activities of a university that does not directly involve formal instruction but requires staffing and resources (dollars, people, space, equipment, time). This includes but is not limited to department-specific activities that may enhance students' academic achievement, administrative services, facility management, academic records, admissions, international student services, and student housing. (Non-Academic Program Review Guidelines, p. 1, 2013).

Academic Records: The portion of the educational history of a student that is maintained by the university for recording, tracking, reporting, and sharing with other academic officials and is intended to support the academic degree progress of the student.

Admissions: The process of accepting and processing applications for entrance to a university for undergraduate or graduate programs of study. Also used to refer to the department or group that processes applications.

Assurance: Knowledge and courtesy of employees and their ability to convey trust and confidence.

Auxiliary Enterprises: A section of nonacademic units that are self-supporting and which provide non-instructional support to students in the form of goods or services upon payment of a specific charge or fee. These units are mostly in public universities and do not receive public funding.

Empathy: Caring, individualized attention provided to customers

International Student: Foreign national who does not have United States citizenship or a Permanent Resident Visa. He or she is a “non-immigrant” visitor who comes to the United States on a temporary visa status and is enrolled for credit at an accredited institution of higher education.

International Student Services: A department that offers a wide range of services and programs to international students at the university. The staff provide information and programs to international students about the university and community and provide support and assistance concerning visas and related immigration issues.

Indiana and Michigan: Are two United States states located in the Midwestern and Great Lakes Regions of North America.

Association of Student Affairs Professionals in Higher Education (NASPA): Student Affairs Administrators in Higher Education (formerly National Association of Student Personnel Administrators), a leading voice for student affairs administration, policy, and practice, which affirms the commitment of the student affairs profession to educating the whole student.

Perceived SQ: A customer’s perception of a service performance.

Reliability: Ability to perform the promised service dependably and accurately.

Responsiveness: Willingness to help customers and provide prompt service.

Satisfaction: In this study this refers to international student fulfillment response. “It is a judgment that a product or a service feature of the product or service itself provides a pleasurable level of consumption-related fulfillment” (Oliver, 1997, p. 8).

Service Quality: The perception of the delivery of services assessed in this study by SERVPERF along the SQ dimensions—tangibles, reliability, responsiveness, assurance, and empathy.

SERVPERF: Instrument for measuring SQ and satisfaction constructs (Cronin & Taylor, 1992).

Tangibles: Appearance of physical facilities, equipment, personnel, and communication material.

Summary

This introduction provided an overview of a study of international students attending institutions of higher education in Indiana and Michigan. It provided a brief background of the field of customer satisfaction and SQ, including a statement of the problem, purpose of the study, research questions, research design, the theoretical/conceptual framework, significance of the study, basic assumptions, delimitations, limitations, definition of terms, and organization of the study.

Organization of the Study

This study is organized into five chapters. This chapter introduced the study. Chapter 2 will contain a review of the literature, examining SQ as related to expectations, perceptions, and satisfaction. Chapter 3 will focus on the research methodology used in this study. Chapter 4 will present an analysis of data collected, and Chapter 5 will put

forward a discussion and interpretation of the research findings, as well as a summary of the research implications and recommendations.

CHAPTER 2

LITERATURE REVIEW

Introduction

In the past several decades, customer satisfaction and SQ have been attracting the attention of practitioners and researchers alike. As institutions of higher education endeavor to attract potential students, increase enrollment, increase revenue, fend off competition, and create and retain loyal students, assessment of student perceptions of SQ and satisfaction becomes extremely crucial. The increased globalization and internationalization of higher education has intensified competition and has resulted in numerous higher education institutions and opportunities for students to choose from.

This study focused on exploring international students' satisfaction with SQ in nonacademic service departments at selected colleges and universities in Indiana and Michigan. It also examined the relationship between satisfaction and SQ based on the international students' demographics: gender, geographical region of origin, age, level of current degree program, duration of stay at the university, race/ethnicity, religious preference, and school type.

In this chapter, I present a literature review of customer satisfaction and SQ. The chapter covers the two broad concepts, each with their own subtopics. It is organized according to the following categories: (a) Customer Satisfaction, Conceptual Theories, and Definitions; (b) Definitions of a Customer; (c) Customer Satisfaction Measurement;

(d) Student Satisfaction in the Higher Education Environment; (e) SQ; (f) Overview of Customer Satisfaction Measurement; (g) The Relationship between Satisfaction and SQ in Institutions of Higher Education; (h) The Environment of United States Higher Education; (i) International Students' Mobility and Demographics; and (j) SQ and International Students' Satisfaction in Higher Education.

The literature review revealed that a call to higher education institutions to focus on SQ and satisfaction and to treat students as customers began a couple of decades ago. Sines and Duckworth (1994) stated, "It is time for educational institutions to face two facts: they are in a competitive battle for students, and students are customers. . . . Students are increasingly seeking out those institutions offering them the treatment they believe they deserve as paying customers" (p. 2). This call has been echoed by several scholars over the years as described in the next sections of this chapter.

A comprehensive understanding of SQ and satisfaction includes distinguishing between these two concepts. The question then is how have these concepts been defined?

Customer Satisfaction

The value of customer satisfaction and its measurement cannot be overemphasized. Numerous studies (Dutka, 1995; Gerson, 1993; Customer Satisfaction Council, 1995) concur that customer satisfaction constitutes the most reliable market information for organizations to examine their position against the competition and viability as an organization. Grigoroudis and Siskos (2010) posit that customer satisfaction measurement can serve many benefits. For example, it may help organizations gather important information from customers who do not typically express their satisfaction or dissatisfaction. It can enable organizations to identify new practices

that can improve service or show new potential market opportunities. It may also reveal potential differences in SQ perceptions among customers and management. Customer satisfaction is needed by organizations in the understanding of customer behavior, especially in identifying and analyzing customer needs and desires.

Besterfield (1994), Barsky (1995), and Kanji and Moura (2002) explain that customer satisfaction is a complex construct and it has been approached in different ways. Levesque and McDougall (1996) conceptualized satisfaction as an overall customer attitude towards a service provider. Halstead, Hartman, and Schmidt (1994) describe customer satisfaction as an affective response focused on product performance and perceptions after consumption. Fornell (1992) suggests that customer satisfaction is an overall evaluation based on the total purchase and consumption experience of the perceived service performance. Building on the same line of thought, Mano and Oliver (1993) argue that satisfaction is an attitude or evaluative judgment based on expectations but evaluated after the consumption of the product or service. These studies were developed around several different theoretical approaches and have been utilized in understanding satisfaction and service paradigms.

Conceptual Theories of Customer Satisfaction

Many theoretical approaches have been used to explain and to understand the construct of customer satisfaction. In this section, I present literature from my review of several theoretical arguments and models surrounding the concept of customer satisfaction and the process through which customers form satisfaction judgements. These are presented from older to more recent theories.

One theory that has been developed and utilized in understanding how customers experience satisfaction is the assimilation theory. Assimilation theory refers to an adaptation process in which consumers take in new information and incorporate it into their existing experiences. It is a very subjective process because consumers tend to modify their experiences or information to fit in with existing or preexisting experiences. Within this theory, the focus is on what happens after the purchase of a service. The consumer assimilates the new information. Assimilation theory is premised on Festinger's (1957) dissonance theory. Festinger argued that cognitive dissonance is present when an individual holds two contradictory ideas at the same time, but then goes further to minimize the dissonance by altering beliefs, behavior and attitudes. In essence, according to dissonance theory, customers form satisfaction judgments by making a cognitive comparison between expectations and perceived performance. Assimilation theory has been criticized for assuming that a relationship between expectation and satisfaction exists. The theory fails to provide a sound argument as to how disconfirmation or an expectation leads to satisfaction or dissatisfaction.

Adaptation-level theory developed by Helson in 1964, argued that a customer perceives a stimuli only in relation to an adapted standard. The standard is considered a function of the stimuli itself, the context, and the psychological and physiological characteristics of the organism. Once it came into being, the "adaptation level" sustained subsequent evaluations.

Olashavsky and Miller (1972) and Olson and Dover (1979) developed assimilation contrast theory, which suggests that perceived quality is directly proportional to expectations. This theory indicates that assimilation effects are present when the

difference between expectations and quality is too small to be perceived. However, Anderson (1973) found the opposite. Anderson established that the assimilation effect was present when the difference between expectations and quality is too large to be perceived and that the difference is exaggerated by consumers.

The expectancy disconfirmation theory (Oliver, 1977, 1980, 1997) suggests that customers form satisfaction judgments by assessing actual products or services. The process begins with what a customer would expect before purchasing a product or service. Next comes the consumption or experience with the product or service. After the product or service has been used, outcomes are compared against expectations (Yuksel & Yuksel, 2001). When the outcome matches the expectation, confirmation is realized. When there is a difference between the expectations and outcomes, a disconfirmation occurs. A positive or a negative difference results in satisfaction or dissatisfaction, respectively. In other words, when service performance exceeds customer expectation, there is a positive disconfirmation between expectations and performance, which equals satisfaction. This is also true when service performance matches expectations.

Much like work by previous scholars (Helson, 1984; Oliver, 1977), Yi (1990) observed that customers purchase products or services with prepurchase expectations about the expected performance, and after the purchase and consumption of the products or services, the customer is able to compare or judge against these expectations.

Alternatively, customer satisfaction is determined by subjective and/or objective factors. From a subjective viewpoint, customers express satisfaction by how they react to service performance (quality), focusing on their needs or emotions. Objectively,

customer satisfaction is a response to product or service features (attributes). My analysis of the empirical studies (Cronin & Taylor, 1994) reveal that customer satisfaction has the potential to explain a relationship between what an organization does in the context of products or services it offers and how the customer reacts. Satisfaction measures that are performance-based have foundations in SQ dimensions in which customers' subjective experiences are used along with objective measures to monitor and evaluate performance. The report asserts that such measures are used to detect problems and take corrective actions, and hence satisfaction scores are turned into a management control device.

Several studies on the assessment of SQ and satisfaction have relied upon conceptual models based on the subjective and objective factors (Cronin & Taylor, 1994; Parasuraman, et al., 1985). These studies examined the attributes of SQ dimensions that may concern student customer satisfaction. For example, Knutson (1988) found that prompt service, friendliness of employees, and room cleanliness were important to customers. Atkinson (1988) also found that employee courtesy and cleanliness helped customers to form satisfaction judgments. Choi and Chu (2001) found that room qualities and staff qualities in hospitality services determined customer satisfaction.

Definitions of Customer Satisfaction

In addition to the conceptual theories of customer satisfaction, there are different approaches of defining customer satisfaction (Grigoroudis & Siskos 2010). Some definitions are based on the fulfillment of customer expectations while others are not. For example Garson (1993), Hill (1995), Oliver (1997), and Vavra (1997) argue that satisfaction is a standard of how the offered "total" product or service fulfills customer expectations. From the reviewed literature, there are two basic approaches for defining

customer satisfaction. The first approach defines satisfaction as a process (Engel & Blackwell, 1982; Hunt, 1977; Tse & Wilton, 1988), and the second approach defines it as an outcome (Churchill & Suprenant, 1982; Howard & Sheth, 1969; Westbrook & Suprenant, 1983). These two approaches are considered complementary to each other.

Process

As a process, customer satisfaction is considered a judgment between what is expected and what is perceived (O'Neill & Palmer, 2004; Oliver, 1977; Olson & Dover, 1979; Tse & Wilton, 1988). The process approach can be traced back to seminal studies on discrepancy theory. Porter (1961) argued that satisfaction is determined by the perception of a difference between an established standard and the actual performance. However, a contrasting theory was developed by Cardozo (1965) and Howard and Sheth (1969) which expressed that consumers often exaggerate any contrasts between expectations and their product evaluations.

Outcome

Customer satisfaction has also been defined as an outcome. Many studies (Appleton-Knapp & Krentler, 2006; Gruber, Fub, Boss, & Glaser-Zikuda, 2010) have shown that students' satisfaction with their educational experiences should be a desired outcome, in addition to positive learning experiences. This definition is fairly comprehensive. It implies an experience-based assessment made by customers about whether their own expectations about the individual characteristics or the overall functionality of the services obtained from the provider have been fulfilled (Homburg & Bruhn, 1998). The fulfillment of some need, goal, or desire (Oliver, 1999) and the

emotional reaction to the difference between what customers anticipate and what they receive (Zineldin, 2000) is based on customers' estimated experience of the extent to which a provider's services fulfill their expectations (Gerpott, Rams, & Schindler, 2001).

In general, satisfaction has been defined differently by different people. For example, Kotler and Clarke (1987) defined satisfaction as a state felt by a person who has experienced performance or an outcome that fulfills his or her expectation. Gundersen, Heide, and Olsson (1996) restated it as a post-consumption evaluative judgment concerning a specific product or service. However, researchers have most often adapted Oliver's (1997) definition of customer satisfaction, and in some cases, have modified the definition to suit their studies. Oliver (1997) defines customer satisfaction as "the customer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption-related fulfillment" (p. 8). This definition is applicable in the context of higher education and may suggest that students assess nonacademic services based on their experience during delivery and consumption. The current study relied on this definition for the purposes of exploring and assessing student perceptions and satisfaction with service performance and quality of nonacademic services.

Definitions of a Customer

Discussion of customer satisfaction often raises the question *what is a customer?* Three approaches (process-oriented, classical, and quality) gleaned from the review of literature are used to define a customer.

Three Approaches

The process-oriented approach defines a customer as a person or group that receives work output (Endosomwan, 1993, as cited in Grigoroudis & Siskos, 2010). This has led to the categorization of customers as (a) self-unit customers; (b) internal unit customers—that is, employees of an organization who depend on products or services provided by the organization; and (c) external customers who usually buy the products and services produced and delivered by the organization.

The classical approach suggests that a customer is a person who buys a product or service offered by a business entity (Grigoroudis & Siskos, 2010). However, the purchaser and the user of a product or service can be different. Grigoroudis and Siskos clarify that there are instances when many individuals may be involved in the buying/purchasing process, which make for different roles and uneven contributions in the final purchase decision. This also makes it cumbersome for a researcher to decide who should be included in measuring satisfaction.

In the quality approach, Grigoroudis and Siskos (2010) define customers in terms of their role in evaluating the quality of a product or service. They state, “A customer is the person that assesses the quality of the offered products or service. Consequently, these persons have the ability to express their dissatisfaction, in case that their expectations are not fulfilled (Czarnecki, 1999; Gerson, 1993; Dutka, 1995)” (p. 9)

In a substantial amount of literature, the student is increasingly identified as a customer. As customers, students are integral in the measurement of satisfaction regarding services performed by institutions of higher education. The next section presents literature which identifies students as customers.

Student as Customer

There is plenty of literature on students as customers. Here I am merely provide an overview of the literature to support my larger focus on student customer service satisfaction.

The argument that students are customers can be traced back to both seminal and fairly recent marketing literature (Desai, Damewood, & Jones, 2001; Kotler, 1977, 2000; Kotler & Levy, 1969; Scott, 1999). There is no current agreement on the debate over whether students of higher education institutions should be considered customers or not.

In an influential study, Albanese (1999) argued that students are not customers. Indicating that such a model of the student as a customer has many failings that result in interactions that are educationally dysfunctional and that potentially lead students to believe that they know what is best for them in terms of their education. Trachtenberg, Snyder, Bejou, Vedder, and Taylor (2010), on the topic “Are They Students? Or Customers?” published in *The New York Times*, argue that a student cannot be treated as a customer. He asserts that “customers pay for services, products and experiences that are packaged and delivered to them” (Student $\neq$ Customer, para. 1) and that “students don’t view themselves as customers, and they shouldn’t be treated as such” (para. 2).

Laing and Laing (2016), in citing other scholars, argue that “academic leadership has been undermined by the emphasis placed on meeting student-as-customer demands (Hartley, 1995; Dillard & Tinker, 1996; Franz, 1998; Newby, 1999; Bay & Daniel, 2001; Beatty, 2004; Gross & Hogler, 2005; Lomas, 2007; Svensson & Wood, 2007)” (p. 47). Guilbault (2016) points out that the reluctance to treat students as customers stems from a

perception that academic rigor disappears. The perception is evidenced in the works of Franz (1998), Bay and Daniel (2001), and Albanese (1999), as cited above.

The marketing literature on students as customers, however, raises a fundamental concern that higher education institutions would lack an appreciation for customer orientation if students are not viewed as customers. A customer orientation approach determines how a university views its consumers and plans for service delivery (Guilbault, 2016; Pitman, 2000). A customer orientation would also recognize the view that students select colleges and universities based on needs and desires, and institutions of higher education compete to gain their interest. These needs and desires include but are not limited to academic and nonacademic services, which relate to support services important for their academic outcomes.

Many scholars see students as customers (Archambault, 2008; Gruber et al., 2010; Mark, 2013a; Mark 2013b; Narasimhan, 2001; Rolfe, 2002; Sherry et al., 2004; Taylor, 2010; Trachtenberg et al., 2010; Watson, 2003; William, 2002). They argue that because students pay fees/tuition, they are not mere recipients of education but are customers of institutions of higher education, that, this is not about grades or unrealistic expectations, but about a new paradigm of shared governance. Students play a greater role in campus decision-making through the evaluations they complete. And provisions of club-like facilities on campuses are indicators that universities are increasingly looking at students as customers. As a result, students expect value for their money and are increasingly behaving as consumers of higher education services.

The argument for students as customers has gained more momentum. Trachtenberg et al. (2010) contends,

Students see degrees as tickets of admission to the big show: the marketplace. Students are not customers nor are they not. They are investing time and money with a purpose in mind. The school that does not serve that purpose will not survive. . . . Schools will be judged . . . by the quality of their facilities and the availability of technology and tools used in the workplace. Likewise, by the support they provide students beyond the classroom (para. 1-4).

Thomas and Galambos (2004) emphasize the point that because students are increasingly seen as customers of higher education services, their satisfaction becomes important to institutions that desire to recruit new students. Appleton-Knapp and Krentler (2006) also argue that in addition to learning, students' satisfaction with their educational experience should be a desired outcome.

I see overwhelming support for the students-as-customers paradigm, and the value of understanding their customer satisfaction and perception of SQ. On this premise, the study seeks to measure international students' satisfaction with SQ at the selected colleges and universities in Indiana and Michigan.

Customer Satisfaction Measurement

As we view students as customers, the question is raised regarding how to measure their customer satisfaction. This section begins by providing an overview of satisfaction measurement models and approaches that have permeated the development of the customer satisfaction construct.

Evaluating Customer Satisfaction

Grigoroudis and Siskos (2010) provide an in-depth comprehensive discussion of the evaluation of customer satisfaction. They emphasize the importance of measuring customer satisfaction and present highlights of the existing models developed over the

years for evaluating customer satisfaction. Like other scholars, they recognize the value of SQ and how it fits in the measurement of customer satisfaction.

Literature suggests that the quality revolution in Japan in the 1970s instigated the manufacturing industry in the United States to focus on quality improvement as a direct response to the Japanese concept of Total Quality Management (TQM). Total Quality Management is a system of management built on the principle that every employee of the organization must be committed to maintaining high standards of work in all aspects of a company's operations. Scholars such as Grigoroudis and Siskos (2010) and Schneider and White (2004) posit that TQM is a Japanese-style management approach for continuous quality improvement through customer satisfaction. The TQM concept was taught by two Americans, W. E. Deming, and J.M. Juran, to Japanese manufacturers. The ultimate goal of TQM was to eliminate variations in the quality of products by continuously improving the internal processes, with the main goal of producing products and services that meet customer expectations (Grigoroudis & Siskos, 2010). Total Quality Management is relevant for higher education (Seymour, 1994; Seymour, 1992).

Grigoroudis and Siskos (2010) and Schneider and White (2004) assert that in the United States, manufacturers did not pay much attention to SQ or customer satisfaction until after World War II, when there was an increase in demand for products, leading to the mass production of goods in the United States. Without quality controls, United States companies spent an enormous time fixing defective products. Subsequently, in the early 1970s, while quality controls were developing in Japan as a result of the teachings by the two Americans, United States companies were forced to reevaluate their approaches to manufacturing. Schneider and White state that “increased global

competition threatened the survival of many United States companies, and drove the point that change, especially change in the way product quality was viewed, was necessary” (p. 13).

Vavra (1997), contributing to the discussion of SQ, asserts that quality improvement requires more than reliance on internal metrics and standards but also needs to include customer information and feedback, or a tool for measuring customer satisfaction. Vavra explains that measurement of customer satisfaction was first considered during the 1960s-1980s as a problem of consumer behavioral analysis. Subsequently, competing theories and models, as described by Grigoroudis and Siskos (2010), have been developed for explaining customer satisfaction.

Cardozo developed the Cardozo model (1965), one of the initial studies of customer satisfaction measurement. It focused on the social psychology theories of understanding of the impact of satisfaction related to future customer purchasing behavior. Vavra (1997) explains that to help understand the impact of satisfaction on future buying behavior, Cardozo suggested a joint application of both Helson’s “contrast effect” and Festinger’s cognitive dissonance theory. Vavra further explains that Cardozo speculated that dissonance would prevail in purchases of high involvement and substantial expended effort, which meant that customers would conceivably increase or decrease their evaluations to reduce the experienced dissonance between high expectations and poor experience. In cases requiring little involvement and less expended effort, Cardozo posited that contrast theory would operate, and in such a case, customers would be intolerant of much deviation of experienced satisfaction from their initial expectations.

Customer satisfaction increases customer loyalty, retention, and profitability, and helps organizations to establish a competitive edge. Practitioners and scholars alike consider customer satisfaction measurement to be a source of reliable feedback reflecting customers' preferences, thereby becoming an organization's baseline standard of performance and excellence (Gerson, 1993). The customers' feedback regarding the satisfaction they experience from the products or services is important for quality control in an organization, since higher levels of quality lead to higher levels of customer satisfaction (Kotler & Keller, 2009). Organizations that focus on delivering excellent or superior value to their target customers have the advantage of being attractive to customers (Kotler, Armstrong, Saunders, & Wong, 2002).

Several models have been developed for the measurement of SQ and satisfaction. Literature on this is presented later under the section SQ Models. However, I would like to mention here that different scholars have used different models in measuring SQ and satisfaction. For example, (Parasuraman et al. 1985, 1988; Zeithaml et al. 1990) developed SERVQUAL, and Cronin and Taylor (1992) developed SERVPERF. Scholars have adapted these two models in studies focusing on SQ and customer satisfaction, and the models are applicable in the higher education context.

Service Quality

Service is a product. Its unique characteristics distinguish it from tangible products. Service is intangible, inseparable, and heterogeneous. Services cannot be seen, touched, held, or stored; they cannot be packaged and put in a bag to take home when you purchase them (Schneider & White, 2004; Zeithaml & Bitner, 2003). Its quality has to be assessed by a customer on the premise of service performance.

There is consensus among scholars and practitioners concerning the value and nature of service. Scholars and service marketing theorists all agree that services have unique characteristics and that certain characteristics mark a service organization (Cavaness & Manoochehri, 1993; Congram & Friedman, 1991; Gronroos, 1993; Parasuraman et al., 1985; Zeithaml et al., 1990). Services have characteristics that uniquely differentiate them from tangible goods. Zeithaml and Parasuraman (2004) state,

Unlike goods which offer tangible measures of quality such as durability and number of defects, service performance is intangible and heterogeneous: every customer's service experience varies. Further, one cannot separate the production and consumption of service quality: a service is "produced" by the firm and "consumed" by the customer at each encounter (p. XI).

Services can only be experienced by a customer. Despite this, some services may also have a tangible component. Schneider and White (2004) give an illustration to make the point clearer:

When you go to a restaurant, you purchase a physical meal (tangible component) as well as the delivery of the meal (intangible component). The idea here was to paint the picture where services fall between the two extremes on the intangibility continuum—services with no tangible component and services with tangible component (p. 7).

Various studies (Schneider & White, 2004; Zeithaml & Bitner, 2000; Zeithaml & Parasuraman, 2004; Zeithaml et al., 1990) explain the inseparability that is characteristic of service, meaning that services once produced in a particular place cannot be stored for later use at another place. Services are produced by organizations and consumed by customers at the same time; production and consumption are simultaneous. A service provider does not have time to produce a service, check it for defects, and then deliver it to a customer.

Schneider and White (2004) explain that services also differ from physical goods in that services are relatively more heterogeneous than goods in their production and delivery. Service production and delivery, they state, “frequently involve the interaction of both service personnel and customers, and the human element in this production and delivery process can result in no two service instances being identical” (p. 8).

Defining the intangibility, inseparability, and heterogeneity characteristics of service is important, as it helps to lay the groundwork for the focus on service central to this study, especially for the production and delivery logic regarding the measurement of SQ. It also highlights the idea that there are instances where services accompany goods, and vice versa.

The service industry makes significant contributions to both local and global economies. Services encompass a variety of sectors: telecommunications, hotels, transportation, financial services, information technology, education, and many more (Zeithaml & Bitner, 2003). The service industry has grown over the last several decades to become a major part of the overall global economy. According to Zeithaml and Bitner (2003), in the United States alone, “services represented 78% of the gross domestic product (GDP) and 80% of employment as of 1999.”

Moshab, Mahamad, and Ramayah (2010) assert that “services are increasingly becoming a larger portion of many organizations, regionally, nationally, and globally and are considered as a tool of revenue streams” (p. 73). In the education sector, The Institute of International Education (IIE; n.d.) website, on the topic of the economic impact of international students, states,

In 2016, the continued growth in international students coming to the U.S. for higher education had a significant positive economic impact on the United States.

International students contributed more than \$39.4 billion to the U.S. economy, according to the U.S. Department of Commerce (para. 1).

Nonacademic Services in Higher Education

The NASPA and the handbook of Student Affairs Administration identify multiple areas of student services, namely: (a) Academic services which include academic advising, academic success skills/tutoring, assessment and research, and higher education opportunity programs; (b) Admissions, enrollment, financial aid, and orientation; (c) Alumni and advancement/development, which focus on students' interests, needs, activities, and information, as well as fundraising; (d) Campus life, which includes campus safety, community service, and student activities; (e) Residence life, which provides housing, programs, and academic and personal support, residence halls, or apartments, and dining and food services; and (f) Sports and recreation, which includes athletics, recreation, and fitness. However, the current study focuses on nonacademic student services only. Nonacademic departments may be described as departments of student affairs, support, or services at institutions of higher education that, according to Wikipedia, "enhance student growth and development," contributing to student academic outcomes.

The report of the V. A. Joint Legislative Audit and Review Commission (2013) for the state of Virginia, on the review of nonacademic services and costs at Virginia's public higher education institutions, indicated that "in contrast with academic services, these nonacademic services provided through auxiliary enterprises receive no general funding from the state. Consequently, the primary source of funding for most auxiliary enterprises is students" (p. ii). Some of the auxiliary services include but not limited to

campus housing, dining services, campus bookstores, event hosting, on-campus hotels, parking transportation services, and vending machines.

This reinforces the concept of student as customer. When students pay for the nonacademic services provided by auxiliary enterprises, it implies that student satisfaction with the nonacademic support services is important to the students as customers. The current study focuses on four areas, namely, admissions, academic records, student housing, and international student services.

Different SQ models have been used in the past for measuring SQ and customer satisfaction. The two most popularly used models are SERVQUAL and SERVPERF.

Service Quality Models

Several metrics for measuring SQ have emerged. SERVQUAL, which was developed by Parasuraman et al. (1988), operationalizes SQ by comparing perceptions with expectations of SQ. In their study, Cronin and Taylor reexamined the SERVQUAL model and, in response, developed SERVPERF. SERVPERF postulated that SQ is a performance-based concept arrived at by eliminating the expectations and maintaining only the perceptions of SQ from the SERVQUAL model. According to their research, the evaluation of SQ should be premised on perceptions of customers based on the performance of service providers.

A third approach, the evaluated performance (EP) model, was developed by Teas (1993). The EP model measures the gap between perceived performance and the excellent or ideal feature of SQ, instead of expectations. According to Abdullah (2005), numerous studies indicate

that customers' assessments of continuously provided services may depend solely on performance, thereby suggesting that performance-based measure explains more of the variance in an overall measure of service quality (Oliver et al. 1989; Bolton and Drew, 1991a, b; Cronin & Taylor, 1992; Boulding et al., 1993; Quester et al., 1995) (p. 32).

There are other models such as LibQUAL+. According to the Association of Research Libraries (Association of Library Service Notebook, 2018), LibQUAL+, is “a tool that libraries use to solicit, track, understand and act upon users’ opinions of service quality” (p. 2). These other models are specific to the service area. For example, LibQUAL is for assessing library SQ. However, the models that are used more often than not are SERVQUAL and SERVPERF. SERVPERF was developed in response to criticisms against SERVQUAL.

The criticisms against SERVQUAL can be summed up into two broad areas, namely theoretical and operational. Buttle (1996) lists the criticism under these two areas:

Theoretical:

- Paradigmatic objections: SERVQUAL is based on a disconfirmation paradigm rather than an attitudinal paradigm; and SERVQUAL fails to draw on established economic, statistical and psychological theory.
- Gaps model: there is little evidence that customers assess SQ in terms of Performance minus Expectations gaps.
- Process orientation: SERVQUAL focuses on the process of service delivery, not the outcomes of the service encounter.
- Dimensionality: SERVQUAL’s five dimensions are not universals; the number of dimensions comprising SQ is contextualized; items do not always load on to the factors which one would a priori expect; and there is a high degree of intercorrelation between the five Reliability, Assurance, Tangibles, Empathy and Responsiveness dimensions. (p. 10)

Operational:

- Expectations: the term expectation is polysemic; consumers use standards other than expectations to evaluate SQ; and SERVQUAL fails to measure absolute SQ expectations.
- Item composition: four or five items cannot capture the variability within each SQ dimension.

- Moments of truth (MOT): customers' assessments of SQ may vary from MOT to MOT.
- Polarity: the reversed polarity of items in the scale causes respondent error.
- Scale points: the seven-point Likert scale is flawed.
- Two administrations: two administrations of the instrument causes boredom and confusion.
- Variance extracted: the over SERVQUAL score accounts for a disappointing proportion of item variances. (p. 11)

The criticisms of scholars would fall under any of the broad areas above. For example, Brown et al. (1993) had psychometric concerns with SERVQUAL's difference score ($SQ = \text{Perceptions} - \text{Expectations}$). Operationalizing expectations is controversial. Cury and Sinclair (2002) argued that SERVQUAL has ambiguity in the expectations construct. The use of the word *excellent* in the expectations section of the model can lead research participants to choose the highest scale score, which can cause the problem of subjects placing an emphasis on the ideal expectation instead of the realistic expectation. This can lead to a greater negative gap between expectations and perceptions. In general, other critics have also argued that SERVQUAL's construct validity is questionable and that the survey is too long. However, in spite of all the criticisms, SERVQUAL is still widely used as evidenced in published literature. Criticism of SERVQUAL lead to another measurement that is based on measuring SQ—SERVPERF, which uses performance-only scores.

Cronin and Taylor (1992) proposed that perceptions of performance are the best criteria to measure and define SQ. They developed SERVPERF as a result of their investigation into the conceptualization and measurement of SQ and the relationships between SQ, consumer satisfaction, and purchase intentions, after scrutiny of the SERVQUAL model. They argued that perception was adequate for measuring SQ and

that expectations should not be included in the measurement. The researchers, in developing SERVPERF, eliminated the expectations component from the SERVQUAL model SQ construct *expectations minus perceptions*. The result was the single score perceptions-only model, a service performance-based model as a measure of the SQ construct.

In a study on the empirical assessment of SERVQUAL, Babakus and Boller (1992) found that there was a higher correlation between the performance-only SQ score and the overall SQ measure, compared to the correlation between the SERVQUAL score and the overall SQ measure. This meant that there was higher convergent validity for the performance-only score (SERVPERF) model.

The SERVPERF model has been widely used for measuring perceived SQ in sectors such as retailing, restaurants, banking, telecommunication, airlines, catering, hotels, hospitals, automotives, and education, among others (Ladhari, 2009). Numerous empirical studies using SERVPERF have investigated the relationships between SQ and customer satisfaction and produced consistent findings based on the dimensions of SQ (Cronin, Brady, & Hult, 2000; Fornell et al., 1996; Tung, 2004). According to several scholars, the SERVPERF model has the potential to measure SQ in higher education institutions. It has been described as a best fit with high reliability and validity. It has been used to investigate SQ and the relationships between SQ and customer satisfaction.

Bayraktaroglu and Atrek (2010) conducted a study to explore and compare the fitness of SERVQUAL and SERVPERF in higher education services. A confirmatory factor analysis was used to test the model fit. The results supported each of the five dimensions of the SQ construct, with greater support for SERVQUAL. However, the

researchers concluded that both SERVQUAL and SERVPERF scales have a good model fit and can be used in measuring SQ in higher education services.

Using SERVPERF, Ham and Hayduk (2003) found that even in a higher education context, there is a positive correlation between perceptions of SQ and student satisfaction. Analysis of the correlation along the SQ dimensions showed that reliability had the strongest relationship, followed by responsiveness and empathy, assurance, and tangibility, in that order.

Bearing in mind the criticisms leveled against the SERVQUAL model by other scholars, and the reasons for the creation and use of the SERVPERF model, I found it more reasonable to adapt SERVPERF for my study. Since SERVPERF has been found to be a good fit for SQ studies in higher education, and because it uses the same five-dimensional construct and is supported by several studies to be better than SERVQUAL, I used the SERVPERF model to evaluate perceptions of SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan.

Service Quality Definitions

The nature of service has contributed to the complexity and debate surrounding the definition and measurement of SQ. The definition of SQ as gleaned from the literature is based on the evaluation or judgment of a customer. A number of scholars (Dyson, Farr, & Hollis, 1996; Fogli, 2006; Hasan et al., 2008; Malik, Danish, & Usman, 2010; Zammuto, Keaveney, & O'Conner, 1996) defines SQ as a global judgment by a customer. This general definition has been described by these scholars in different ways. For some, SQ is what the customer says it is. For others, it is an attitude relating to a particular service or a customer's overall impression of the relative inferiority or

superiority of the organization and its services. It has been described as a judgement of an assessment by the user or consumer of a service, as well as a customer's justification about the excellence of a product or service, or a customer's perception or view of the service delivery experience. This is often based on factors that customers deem to be most important about the service, the aspects of service customers will evaluate in forming their perceptions of quality.

In seminal studies, scholars have defined SQ as a function of expectations regarding services received. In other words, SQ is defined as the outcome of a process in which consumers' expectations of the service are compared with their perceptions of service actually delivered, the result of consumers' comparison of expected service with perceived service, or the extent in which the service, the service process, and the service provider can satisfy the expectations of the user (Bojanic, 1991; Kasper, Van Helsdingen, & De Vries, 1999; Mangold & Babakus, 1991; Zeithaml & Parasuraman, 2004). The judgments that customers make about quality can thus be attributed to satisfaction. Some scholars have argued that quality service increases satisfaction, and the customer's desire to reuse the service increases (Loveman, 1998; Storbacka, Strandvik, & Gronroos, 1994).

Gronroos (1982, 1990, 2000, 2001) defines quality as both technical and functional and connects it to the outcome of the service and the manner in which it is delivered or performed. Brady and Cronin (2001), in their empirical research, depicted SQ as an outcome quality, interaction quality, and physical environment quality. These are consistent with the setting of the dimensions of SQ—reliability, responsiveness, assurance, empathy, and tangibles, as defined by Parasuraman et al. (1985). Technical

quality relates to the mechanical and procedural aspects of a product, which ensures that a product functions effectively and efficiently.

Parasuraman et al. (1988), and Zeithaml et al. (1990) developed a theoretical concept in which SQ is measured along SQ dimensions: tangibility, reliability, responsiveness, assurance, and empathy. These dimensions form the criteria by which a customer judges SQ and are defined as follows:

1. Reliability: Ability to perform the promised service dependably and accurately
2. Responsiveness: Willingness to help customers and provide prompt service
3. Assurance: Employees' knowledge and courtesy and their ability to inspire trust and confidence
4. Empathy: Caring, individualized attention to customers
5. Tangibles: Appearance of physical facilities, equipment, personnel, and written materials

Parasuraman et al. (1988), and Zeithaml et al. (1990) developed this concept within the context of four different types of industries: banking, credit card companies, motor repair shops, and long-distance telecommunication companies. These types of services were used to assess how consumers organize information about SQ in their minds, based on the defined dimensions.

From the reviewed literature, it is evident that scholars have defined SQ in several different ways. The consensus is in the fact that the definition of quality varies from person to person. For the purpose of this study, SQ is what the customer says it is, meaning that the definition of SQ is based on the customer's feelings and needs, subjective factors (service attributes) of the service offered. In other words, the

perceptions of the service offered. In this study, international students expressed their individual perceptions of SQ along the SQ (performance) dimensions—tangibility, reliability, responsiveness, assurance, and empathy. This fits with the philosophy behind the SERVPERF model, which will be reviewed in more detail in the chapter on methodology (Chapter 3). Suffice it to mention that all these definitions center on determining customer perceptions of SQ (Cronin & Taylor, 1992; Oliver, 1993).

The Environment of United States Higher Education

This literature review has discussed the main variables of the study—the five dimensions of SQ, SQ and satisfaction. Now we will review literature about university students, specifically international students.

The number of public and private higher education institutions in the United States, including virtual institutions that offer a variety of degree programs, continues to grow, fueling competition for students and the scarce resources needed to provide academic and nonacademic support services (Breneman, 2005).

According to the National Center for Education Statistics, the number of degree-granting postsecondary institutions in the United States rose from 1,851 to 4,726 between 1949 and 2013. In contrast, Norris (2014) asserts that “the number of new American high school graduates who go on to college—a figure that rose regularly for decades—now appears to be declining” (para. 1).

The United States higher education environment has been described as rapidly changing (Staley & Trinkle, 2011), meaning United States higher education has become very diversified, with “selective colleges and universities from state schools to community colleges to for-profits, all offering different choices, serving different

educational segments, and enrolling customers seeking different educational goals” (p. 18).

The Importance of International Students

Staley and Trinkle (2011) further explain that the globalization of higher education, which involves the mobility of international students, is also influencing the United States higher education environment. More and more students are going to universities abroad, many to the United States. However, some are concerned that the U.S. may soon lose its unique place in the worldwide higher education landscape, partly because international students who previously considered exclusively United States colleges and universities now have alternatives in countries such as China, Saudi Arabia, Singapore, Australia, and the European Union, all of whom intend to compete with United States institutions by offering top-tier colleges and universities of their own.

Given that many private colleges and universities in the United States depend on tuition as their main source of revenue, and that state funding for public higher education institutions has dwindled over the years due to economic fluctuations, increasing international student application and retention is crucial.

The environment of United States higher education, then, makes fee-paying international students increasingly more important to educational institutions, particularly private and public colleges and universities. Barron (2005, as cited in Pareda, Airey, and Bennet, 2005), suggests that fees generated by international students are important to the budgetary health of colleges and universities. Barron posits that although most colleges and universities have created departments for marketing to and recruitment of international students, they are not prepared to properly support these students after their

arrival on campus, suggesting that these institutions of higher learning have not always provided adequate support to international students and may be unaware if the students are satisfied or not (as cited in Pareda et al., 2007).

These dynamics have created intense competition among institutions of higher education for students and have increased pressure on the institutions to focus on international students and to pay attention to the satisfaction of international students as a means of attracting, enrolling, and retaining them, in order to provide a fresh source of revenue. Empirical evidence indicates it is cheaper to retain than to recruit students, which is why Walters (2003) asserts that institutions should be student-centered in order to succeed in today's higher education environment. This may be easily achieved by an institutional focus on student satisfaction and, in particular, a focus on international student satisfaction. Focusing on international students would be especially beneficial because they represent fresh revenue and diversity for campuses across the nation.

International Students' Mobility and Demographics

Higher education is becoming increasingly internationalized as students leave their home countries to study abroad and more countries play host to international students. According to the 2012 global migration report by the Organization for Economic Co-operation and Development (OECD), more than 4,500,000 students enrolled in higher education institutions outside their own country in 2012. Three-quarters of the international students enrolled in developed countries, and over half came from Asia, with China representing 22%, followed by India and Korea.

Mobility of international students is on the rise as indicated by recent trends (Choudaha, 2011; Hudzik et al., 2012; Choudaha et al. (2013). With fairly constant

growth, the United States has remained the top destination for international students, hosting approximately 21% of all international students worldwide (Atlas of Student Mobility, 2009). However, in analyzing the 2012 global migration report by the OECD, Kottasova (2014) found that American universities are losing their supreme position in the global education system. The analysis revealed that in 2000, nearly one in four students looking for education abroad picked a college in the United States, but twelve years later, it was just 16%. The OECD (2012) report illustrated that as the attraction to United States colleges and universities decreased, all other English-speaking developed countries, as well as Spain, registered an increased share of foreign students. The United Kingdom registered the largest growth at 12.6%. In the United Kingdom, international students pay up to three times more in tuition than students from Britain and the European Union. South Korea increased its share as a host country for international students from less than 0.2% in 2000 to 1.3% in 2012.

According to Open Doors 2012, a publication produced by the IIE and in partnership with the Bureau of Educational and Cultural Affairs of the United States Department of State, the global number of international students has grown from 800,000 in 1975 to 4,100,000 in 2010. This growth is represented in Figure 2. The figure reveals a rather steady growth from 1975 to 1995, and a noticeable growth from the year 2000 onward. This change may be attributable to several factors, such as aggressive recruitment and university reputation, among others. The Open Doors 2012 report also shows that 764,495 international students were enrolled at United States universities and colleges, representing a 6% increase in 2011-2012 from the previous year. It also showed

that new international student enrollment in the United States increased by 6.5%, representing 228,467 students.

Worldwide: A Growing Pie

Worldwide, there were over **4.1 million** international students in 2010, a 10.8% increase over the previous year.

Source: OECD *Education at a Glance*, 2012

Figure 2. Worldwide: A growing pie

According to an online publication titled *Inside Higher Ed*, the top 15 countries of origin for international students in the United States is shown in Table 1. The table represents the statistics for the 2016-2017 academic year. The details of the statistics include country of origin, number of students in 2016-2017, and percentage change from 2015-2016.

According to Open Doors (2012) report, doctorate-granting universities hosted 64% of all international students in the United States in 2011-2012; this is also represented in Figure 3.

Figure 4, reporting on academic level trends, reveals that undergraduate international students outnumbered graduate international students in 2011-2012 for the first time since 2000-2001.

Table 1

Top 15 Countries of Origin for International Students in the United States

Country of Origin	# of Students in 2016-17	% Change From 2015-16
China	350,755	+6.8%
India	186,267	+12.3%
South Korea	58,663	-3.8%
Saudi Arabia	52,611	-14.2%
Canada	27,065	+0.3%
Vietnam	22,438	+4.8%
Taiwan	21,516	+1.8%
Japan	18,780	-1.5%
Mexico	16,835	+0.6%
Brazil	13,089	-32.4%
Iran	12,643	+3%
Nigeria	11,710	+9.7%
Nepal	11,607	+20.1%
United Kingdom	11,489	-0.9%
Turkey	10,586	-1%

Types of Institutions

Doctorate-granting universities host 64% of international students.

Figure 3. Types of institutions. Open Source report, 2012

Academic Level Trends

Undergraduate international students outnumbered graduate international students in 2011/12, the first time since 2000/01.

Figure 4. Academic level trends. Open source report, 2012

Literature relating to the gender of international students in the United States (Figure 5) indicates that the gap between male and female international students has been narrowing. In 2011-2012, women comprised 44% of international students.

Gender of International Students

In 2011/12, women comprised **44%** of international students

Figure 5. Gender of international students. Open source report, 2012

According to Reinalda and Kuleza (2005), the World Trade Organization Council for Trade in Services recognizes higher education as a service and that “services can be traded just as goods and are of increasing importance in international trade” (p. 11). In light of this, it is vital to recognize that international students seeking higher education in the United States make financial contributions to the United States economy as a result of enrolling in universities and colleges. According to the United States Department of Commerce report (Siegmund, 2008), only 3.7% of all students enrolled in American higher education institutions are foreigners, yet they contributed nearly 18 billion dollars

to the United States economy in 2008. Most of this income is generated by tuition and other fees. According to Open Doors, citing the United States Department of Commerce, international students contributed about 23 billion dollars to the U.S. economy in 2011. Figure 6 represents the sources of international students' financial contributions to the

Financial Contributions

Figure 6. Financial contributions. Open source report, 2012

U.S. economy (Open Doors, 2012). The monetary contribution by international students suggests that it is important for higher education institutions to ensure that there is high quality, not only in academic programs, but also in nonacademic support services.

According to Education, Audiovisual and Culture Executive Agency (2012), the Bologna process, a product of a series of summits by the ministers of higher education from 29 European Union member countries, is influencing current international students' mobility. It has created an environment providing international students with options to choose from, thereby creating more competition in the higher education marketplace, with international students looking for institutions that can provide them with satisfying

SQ. International students at both the university and college level are considered customers of higher education institutions, and they consume services delivered by the institutions (Hasan et al. 2008; Voss, Gruber, & Szmigin, 2007).

The Bologna process deals with among others student mobility. As students travel from home country to host country seeking higher education, it behooves scholars to investigate students perceived SQ and satisfaction with services. In the following section, I present a literature review on the relationship between satisfaction and SQ.

The Relationship Between Satisfaction and Service Quality

Antecedent

Which one comes first, satisfaction or SQ, or vice versa? The relationship between SQ and satisfaction has been a subject of considerable debate. The two constructs “are conceptually distinct yet empirically overlapping” (Schneider & White, 2004, p. 51). Two groups of thought have emerged out of the debate on the relationship between SQ and customer satisfaction. One group has considered customer satisfaction as being an antecedent to SQ (Alridge & Rowley, 2001; Carrillat, Jaramillo, & Mulki, 2007; Farrell, Souchon, & Durden, 2001; Gruber et al., 2010; Yavas, Benkenstein, & Stuhldreier, 2004; Zeithaml, Bitner, & Gremler, 2008), while the other group has maintained that SQ is a component of satisfaction, an antecedent to satisfaction (Parasuraman et al., 1998; Zeithaml & Bitner, 2003).

Customer satisfaction is a broad concept, influenced by not only SQ perceptions but also by factors such as personal and situational dynamics and price (Zeithaml et al., 2008). Schneider and White (2004) argue that SQ is only one component of a customer’s level of satisfaction. In essence, there are other factors that may affect satisfaction besides

SQ. But it is crucial to note that perception too plays an important part in the measurement of SQ and satisfaction. The conceptual framework for this study suggests that the perceived SQ of an international student is an antecedent to the student's satisfaction.

Perceptions

Customers' perceptions of service, or experienced SQ, and satisfaction with that SQ are seemingly intertwined; however, from a broader perspective, they are fundamentally different. Perceptions usually vary from customer to customer, student to student, based on a variety of things, which may include race, ethnicity, age, gender, places of origin, and so on. In measuring SQ, perceptions may influence satisfaction. According to Zeithaml and Bitner (2003), "customers perceive services in terms of the quality of the service, and how satisfied they are overall with their experiences" (p. 85). They argue that even though practitioners tend to view quality and satisfaction as similar, these two terms are fundamentally distinct, with perceived SQ being a component of customer satisfaction.

A clear distinction can be made between SQ and satisfaction. According to Zeithaml and Bitner (2003), SQ is a focused evaluation that reflects the customer's perception of elements of service, such as interaction quality and physical environment quality, based on specific SQ dimensions: reliability, assurance, responsiveness, empathy, and tangibles. Satisfaction, on the other hand, is more inclusive. It is influenced by perceptions of SQ, product quality, and price, as well as situational factors and personal factors.

In a study on SQ and its impact on customer satisfaction, Naik, Gantasala, and Prabhakar (2010) argued that the quality of services offered determines customer satisfaction and loyalty over a long period of time. It is thus feasible to propose that the order or sequence of the relationship is that SQ leads to or predicts customer satisfaction. The definitions of the two constructs can clarify the relationship. Schneider and White (2004) explain that Oliver (1997) “explicates the distinction nicely by introducing the idea that a product must be experienced to make a satisfaction judgment” (p. 51).

The current study assumed that SQ can lead to student satisfaction, which in turn, may increase student retention, loyalty, revenue, and enrollment. Nevertheless, the purpose and scope of the study did not include an investigation into post-satisfaction behavior. The intent of the relationship was to show the level of satisfaction, and to describe the relationship between SQ and satisfaction. The study has suggested that SQ is an antecedent to satisfaction.

Relationship in the Context of Higher Education

Many studies examined the relationship between SQ and satisfaction among higher education students, (Browne et al., 1998; Gruber et al., 2010; Guolla, 1999). Canic & McCarthy (2000) have argued that service quality and higher education do mix. This section review their findings.

Sureshchandar, Rajendran, and Anantharaman (2002) conducted a study that examined the relationship between SQ and customer satisfaction using a factor specific approach. The researchers were concerned that previous studies had operationalized customer satisfaction by using a single-item scale. They argued that customer satisfaction should be operationalized along the same factors (and the corresponding

items) on which SQ is operationalized. In other words, assessment of SQ should capture activities and measures that are important to the customer, as well as specifics of particular service encounters. Customer satisfaction can be determined on the same activities and measures and encounters as those of the SQ. Based on this approach, the researchers investigated the relationship and found that the two constructs are indeed independent but are closely related. They concluded that there is a positive correlation between them—that an increase in one is likely to lead to an increase in the other.

Several studies have been conducted regarding student satisfaction with nonacademic student services. Rudge (2014) asserts that examining and understanding student satisfaction with student services departments can be useful in improving services. Rudge emphasizes that researchers should focus on understanding perceptions of student services and student experiences and argues that it is imperative to know what factors contribute to student satisfaction and how the needs of students can be addressed by the services offered. Rudge also identifies services such as admissions, orientation, assessment, advising, financial aid, tutoring aid, tutoring, and support activities as those that are typically offered by colleges and universities.

Ruby (1998) conducted a study to assess student satisfaction with selected nonacademic services—admissions, academic records, career services offices, and financial aid offices—at selected colleges and universities in the Coalition of Christian Colleges and Universities.

Kelso (2008) examined undergraduate student satisfaction with college services and environment at a large southeastern doctoral/research university, with the long-term intent of minimizing detractors to providing exceptional SQ, positively influencing

customer satisfaction, and building loyalty intentions among students. The study focused on several service areas, including academics, admissions, rules and policies, facilities, and registration.

Part of the literature I reviewed related to studies focusing on overall SQ and student satisfaction. Hasan, Illias, Rahman, and Razak (2008) examined the relationship between SQ dimensions and overall SQ and student satisfaction. Subjects in the study were undergraduate students at two private higher education institutions in Malaysia. It is not stated whether study participants included international students. A survey instrument was used to collect data. The researcher concluded that there were no differences in students' satisfaction towards quality determinants and overall SQ. The demographic factors that had been tested did not have any important role in determining students' satisfaction.

At a university in Khattab and Fraij (2011) conducted an assessment of students' satisfaction with quality of service. The researchers used the SERVQUAL instrument to collect data. Findings showed that there was a positive and significant relationship between SQ rendered to students at the university and their satisfaction. Arokiasamy and Abdullah (2012) study using SERVQUAL found that all five SQ dimensions positively influenced customer satisfaction. A strong relationship exists between SQ and students' satisfaction. Archambault (2008) found that there is an indirect relationship between student expectations of SQ and student satisfaction; however, he suggested that there is a significant correlation between SQ performance and student satisfaction.

Wang and Shieh (2006) investigated the relationship between the two constructs by examining users' overall satisfaction with the Chang Jung Christian University library

SQ. The study found that the overall SQ had a significantly positive effect on overall user satisfaction. The study looked at the impact of the five dimensions (tangibles, responsiveness, reliability, empathy, and assurance) of SQ on user satisfaction. The results showed that all the dimensions had a significantly positive effect on overall user satisfaction except responsiveness.

In another study, which has been cited over 80 times, Hasan et al. (2008) examined the relationship between overall SQ and SQ dimensions (tangibility, responsiveness, reliability, assurance, and empathy) and student satisfaction. It further examined critical factors in SQ dimensions that contribute to the satisfaction of students. Two hundred undergraduate students from two private higher education institutions in Malaysia participated in the study. Within the pool of participants, 47.5% of the subjects were male, and 52.5% were female. The empirical results of the study provided support for the SERVQUAL instrument's reliability and showed that there are significant and positive relationships between tangibility, assurance, reliability, responsiveness, empathy, overall SQ, and student satisfaction. Hanaysha, Abdullah, and Warokka (2011) found that students were generally satisfied with the SQ performed by Malaysian learning institutions, in terms of tangibility, reliability, responsiveness, assurance, and empathy. Hasan et al. (2008) found a strong relationship between the five dimensions of SQ and students' satisfaction.

Huang (2010) conducted a study at Xiamen, a fairly large university in China with a total enrollment of over 37,000 full-time students on campus, including 20,466 undergraduates and over 2,000 international students. The study examined the relationship between overall SQ and student satisfaction of the undergraduate students. It

also examined the relationship between the subvariables, which they defined as nonacademic aspects, academic aspects, teaching methods, industry links, program issues, reputation, access, cost of SQ, and student satisfaction. In the study, the nonacademic aspects referred to essential services that enable students to fulfill their study obligation and relate to duties carried out by nonacademic staff. Of the 418 undergraduate students who completed the survey, 397 provided questionnaires that were valid and usable. The study found that the overall SQ and its eight subvariables were all positively related to student satisfaction. Farahmandian, Minavand, and Afshardost's (2013) study investigated the levels of student satisfaction and the relationship between student satisfaction and the quality of service provided at the International Business School at the Universiti Teknologi Malaysia in Kuala Lumpur. The study found that the majority of students were satisfied with the quality of services offered at the university. It also found that facilities, advisory services, curriculum, financial assistance, and tuition costs had positive and significant impacts on student satisfaction. Kerlin (2000) emphasized that student services have the potential of far more student contact than individual instructors and have the potential of making a large impact with a quality service experience.

The globalization and internationalization of higher education is compelling universities and colleges to understand the needs of students, and in particular, international students, yet not much research exists on international students' expectations, perceptions, or satisfaction with SQ. Universities and colleges keen on attracting students, expanding enrollment, accruing fresh revenue, and improving student retention should focus on understanding international students' expectations, perceptions,

and satisfaction with SQ. With the increasing globalization of higher education and competition for international students, the challenge facing universities and colleges is to be able to satisfy the needs of international students by meeting or exceeding their expectations for SQ rendered by the higher education institution.

Summary

In the current United States higher education environment, there is an accelerated pressure and competition for students, particularly for fee-paying international students. Compounding the problem is the issue of international students trying to choose which school can best meet their desires and needs. For a university to be able to attract, enroll, and retain the international student, it is best to ascertain how satisfied students are with how the university meets their desired needs.

On the basis of the reviewed literature, the current study examines an area of study that scholars have not explored, and that is the relationship between SQ and satisfaction among international students. International students leave their home countries to come to universities in the United States to pursue various degree programs. As they enroll in United States institutions of higher education, they believe the host institution will provide them with a satisfying service performance experience. Even though universities have institutional commitments to serve international students, they do not know if students are satisfied with quality of the services they are receiving. It is imperative that in this period of globalization and internationalization of higher education, these institutions understand international student perceptions and satisfaction with SQ.

This chapter provided a brief historical context within which the concepts of customer satisfaction and SQ developed and emerged, including a review of literature that has made significant contributions related to theories and models for customer satisfaction and SQ. Literature on the relationship between customer satisfaction and SQ was also examined, and international student mobility trends were presented.

CHAPTER 3

METHODOLOGY

Introduction

In this chapter, I restate the research questions and describe the philosophical paradigm, research design, and research method used for the study, including a rationale for using the method and methodology and their strengths and weaknesses. Descriptions of the population, sample, and sampling techniques are provided. The research instrument is discussed, including the reliability and validity of the instrument, as well as the variables being analyzed. Also included is a description of data collection procedures and ethical considerations involved in the data collection process.

In the current competitive and dynamic environment of higher education, understanding student satisfaction with SQ becomes critical as universities strategize about how to attract, enroll, and retain students and strive to achieve desired outcomes. Both constructs—SQ and satisfaction—may be linked to student loyalty, as well as increased revenue, enrollment and retention. As a result, this study purposed to measure international students' perceptions and satisfaction with SQ in selected nonacademic service departments at universities in Indiana and Michigan.

Research Questions

The main research question for the study was as follows: Is there a significant relationship between perceived SQ and satisfaction among international students attending universities and colleges in the Indiana and Michigan area?

Secondary questions the study also investigated were:

1. What are the service performance (quality) ratings given by international students for the nonacademic service departments—admissions, housing, academic records, and international student services?
2. How satisfied are international students with overall service performance in the admissions, housing, academic records, and international student services departments?
3. What is the nature of the relationship between perceived overall SQ and satisfaction with service performance?
4. Do significant differences exist in international students' perceived SQ and satisfaction based on the following demographic variables: gender, geographical region of origin, age, level in the current degree program, duration of stay at the university, race/ethnicity, religion, and type of university (public/private)?

Research Design

This study used a correlational design and a survey research methodology to collect data for the investigation of international students' perceptions of SQ and satisfaction with SQ. The SERVPERF survey was used to measure SQ dimensions, namely, assurance, reliability, responsiveness, tangibility and empathy. The design,

method and methodology used for this study is supported by a positivist philosophical paradigm.

Philosophical Paradigm

Schwandt (2001) describe a paradigm as a shared worldview representing the beliefs and values in a discipline, guiding how problems are solved. In this context research philosophy act as a foundation for effective research design. Easterby-Smith, Thorpe, and Lowe (2002) argue that failure to comply with philosophical issues can affect the quality of a research negatively. They point out that research philosophies help to clarify the research design, help a researcher to separate which design will work from those that will not work, and provide researcher with knowledge outside past experience. The topic of philosophical paradigms has often generated debate among scholars as to which approach best suits a research design. Two schools of thought have emerged—positivism and interpretivism.

Easterby-Smith, Thorpe, and Lowe (1991), contributing to research philosophy regarding the most appropriate philosophical stance between positivism and interpretivism, argue that positivism (a quantitative approach) is grounded in a research philosophy that asserts that the “social world exists externally, and that its properties should be measured through objective methods rather than being inferred subjectively through sensation, reflection or intuition”. The point is repeated in a more recent publication (Easterby-Smith et al., 2002, p. 28). The positivist paradigm involves use of existing theory to develop hypotheses that will be tested during the research.

On the other hand, the interpretivist approach (qualitative approach) focuses more on the understanding of the world from subjective experiences, using meanings instead of

measurement. This approach uses methods such as interviews and subject observation, and it relies on a subjective relationship between the researcher and participants.

Isac and Rusu (2014) reasoned that Schembri and Sandberg (2002) had pointed out that the traditional research of SQ is a dualist one that would probably adopt both interpretive and positivism. In a research study focusing on perceived SQ as an antecedent of customer's satisfaction, Isac and Rusu reasoned that attributes and dimensions are important in the assessment of perceived SQ and need to be included in a model. They acknowledge while contributing to the philosophical paradigm for the assessment of SQ and satisfaction, that the existing models for measuring these constructs, resulted from a qualitative research (interpretivism) philosophy, and later adopted the quantitative research approach (positivism) after the refinement of the instruments. The interpretivist and positivist philosophical paradigms provide a strong theoretical and conceptual foundation for the application of the SERVPERF model used in this study. In certain instances, dual application of the two philosophical paradigms is supported. Isac and Rusu (2014) reasoned that, Schembri and Sandberg (2002) had pointed out that the traditional research of SQ is a dualist one that would probably adopt both interpretivism and positivism.

However, in a seminal study, Hunt (1991) argues that positivists rely on observable things in consultation with principle, emphasizing that the positivist approach is more scientific, is objective, and discovers the "true" nature of reality by means of the universal laws governing the external world. Schembri and Sandberg (2002) argued that the positivist approach is necessary for the understanding of the complex nature of perceived SQ. In order to gauge an authentic finding, the measurement tool for perceived

SQ must rely on attributes and dimensions, an instrument that encompasses more than a single item. Such a philosophical paradigm provides consumers the opportunity to understand SQ and be able to express their experiences.

I considered the approach that would give participants the best opportunity to communicate their real experience while being able to share their knowledge based on experience of a service and possible satisfaction using a Likert scale. The positivist approach proved more reasonable, and it created an environment for the application of the conceptual framework and the SERVPERF instrument. However, it is important to note that SERVPERF has its origins in interpretivist philosophical paradigm.

Research Methodology

A survey research methodology was used to investigate international students' satisfaction with SQ, based on their perceptions of service performance. This was measured along the SQ dimensions, namely, assurance, reliability, responsiveness, tangibility and empathy.

Research Method

A correlational research method was used because it allows an investigator to examine the relationships between variables. In this study, it allowed me to examine the relationship between SQ (performance) and overall satisfaction. It also allowed me to investigate perceived SQ based on respondents' ratings of experiences on a Likert scale. This is a nonexperimental procedure, and I did not control, manipulate, or alter the predictor variables. Instead, the study relies upon my conclusions based upon analysis, interpretation, and observations.

Rationale for Use of the Method and Methodology

The research method fitted the purpose of the investigation and was well suited for answering the research questions of the study. Shaughnessy, Zechmeiser, and Zechmeiser (2005, 2011) assert that correlational research represents a general approach to research that focuses on assessing the covariation among naturally occurring variables with a goal of identifying possible predictive relationships. They argue that results from correlation have implications for decision-making.

Shaughnessy et al. (2005, 2011) further explain that survey research illustrates the principles of correlational research and provides an accurate and efficient means for describing subjects' thoughts, opinions, and feelings. The survey results obtained from the study sample were used to describe the entire population of interest—in this case, international students pursuing higher education in the United States.

Strengths and Weaknesses of Method and Methodology

The survey procedures in this study enabled me to adapt and modify a predetermined set of questions. The procedure also allowed me to choose a sample of individuals from a population and then administer the instrument as a standardized questionnaire in order to collect data. The online survey approach offered me a means to use the SERVPERF questionnaire in a systematic way and simplified the collection of data from different universities and colleges. In general, the online survey was cost-effective. I was able to reach all of the targeted potential subjects through their respective universities and colleges.

The subjects were able to express their perceptions and reflect on the service performance of the staff in selected service departments. This made it easy for

participants to self-report their perceived quality and satisfaction. As a result, a correlational research approach using survey methodology, descriptive statistics, and multivariate analysis was the preferred means to evaluate international students' satisfaction with perceived SQ.

Description of Population and Sample

The target population was comprised of international students from eight randomly selected universities and colleges in Michigan and Indiana within the so-called 'Michiana' area. These institutions of higher education were chosen simply on the basis of their willingness to participate in the study and their proximity to the researcher's location. Their willingness was evidenced by their review and approval of the research protocol and/or sending out an invitation email to their international students with a link to participate in the survey. There were three universities from the state of Michigan and five were from the state of Indiana. Of the eight institutions, three are private universities while five are public. The sample was composed of participants from six regions of the world—Asia, North America (excluding the United States), Africa, South America, Europe, and Australia. They were male and female, young and old, undergraduates and graduates, and of Asian, Black or African American, White or Caucasian, and Hispanic racial and ethnic backgrounds. Some were Christians, Muslims, or of other religious affiliations. Some lived in residential halls or university apartments, fraternity/sorority housing, off campus, or other types of living arrangements.

Through their respective institutions, on behalf of the researcher, all international students attending the selected universities and colleges received an email invitation to complete the online survey. A convenience representative sample of 408 participants

consented and completed the online survey. Out of the 408, 32 surveys were determined unusable. The unusable surveys were partially complete with major portions of the survey left blank. Three hundred seventy-six surveys were usable, resulting in a 92% response rate. Participants completed the survey between the Spring and Fall semesters of 2016.

Description of Sampling Technique

The population of international students enrolled at United States institutions of higher education is so large that it was impractical to include every single international student in the study. The most ideal sampling technique for this study would be random sampling; however, due to several mitigating constraints, convenience sampling had to suffice. This nonprobability sampling method depends on data collection from the subjects in the population who, as the name implies, are conveniently available to participate in the research study. In order to secure data from the subjects, I chose universities in the Indiana and Michigan area because of their willingness to participate, and proximity to my location. However, the data were representative because the institutions are spread across two different states, Michigan and Indiana, and also because the institutions include both private and public universities. The proximity also made it convenient to collect data from subjects without incurring additional costs. For this reason I chose Andrews University, Western Michigan University (WMU), University of Michigan (U-M), the University of Notre Dame (ND), Indiana University South Bend (IUSB), Ball State University (BSU), Indiana State University, and Bethel College (BC).

Three out of the eight selected universities are private, and the other five are public. Andrews University, Western Michigan University, and University of Michigan

are located in Michigan while IUSB, ND, BSU, ISU, and BC are located in Indiana. These universities recruit and enroll international students from various parts of the world with a desire to retain the students through graduation.

Andrews University is a small private Seventh-day Adventist institution of higher education with a total enrollment of 3,349 students (Andrews University, 2015-2016), of which 1,688 were undergraduate students, and 1,661 graduate students. Of these, approximately 600 were international students from over 90 countries.

Western Michigan University is a large public institution of higher education, located in Kalamazoo, Michigan. In 2015-2016 they had a total of 23,252 students of which about 17,935 were undergraduate students. There were 1,849 international students from 96 countries according to the university website.

The University of Michigan (U-M) is a public higher education institution with a main campus located in Ann Arbor, Michigan. Approximately 47,000 undergraduate and graduate students were enrolled at the university as of October 1, 2016.

Ball State University (BSU) is a public higher education institution located in Muncie, Indiana. In 2016 there were a total of 21,998 students, 17,011 of whom were undergraduates. There were 567 international students, 303 of whom were undergraduates.

Indiana State University (ISU) is a public university in Terre Haute, Indiana. A total of 12,484 students were enrolled at ISU in 2015-2016. Of these, 10,236 were undergraduate students and 2,248 were graduate students; 45.4% were men, while 54.6% were women. There were 1,041 international students (8.3%) in that year.

Bethel College is a private higher education institution located in Mishawaka, Indiana. There were 1,294 students enrolled at Bethel College in 2015-2016 with a gender proportion of 36% male and 64% female students. There were a total of 219 international students.

Indiana University South Bend is a small public institution of higher education with a total enrollment of 7,185 students in 2015-2016. Of the total enrollment, 39% were male, while 61% were female. Undergraduate enrollment accounted for 4,876 students, with 2,309 additional graduate students. The average age of the undergraduate students was 21. The international students constituted 2% of the enrollment. Indiana University South Bend started offering housing to students in 2008.

University of Notre Dame is a medium-sized private institution with a total enrollment of 12,393 students in 2015-2016. According to the university website, there were more than 1,000 international students from nearly 90 countries.

Subject Sampling, Selection, Inclusion and Exclusion Criteria

The sampling frame consisted of the international students enrolled at the selected institutions of higher learning in Indiana and Michigan. Although participants self-selected to participate, my functional sample was a convenience sample. There was equity in the recruitment and enrollment of research subjects—each international student at any of the selected institutions was provided with an equal chance to participate since all of the international students were invited to take part in the study.

The study involved a self-selection sampling method that allowed subjects to voluntarily take part in the study. Self-selection sampling is also suitable for correlational research designs using survey methodology. All international students

attending eight institutions of higher learning in Indiana and Michigan were invited via an email containing a recruitment cover letter. Those who voluntarily responded by completing the online survey made up the sample. These participants completed a modified SERVPERF questionnaire. Following is a description of the SERVPERF instrument.

Instrument

The SERVPERF questionnaire (Appendix B) was adapted and modified for data collection in this study. It was designed to measure dimensions of SQ performance (Cronin & Taylor 1992, 1994). This instrument includes aspects of social interactions between the staff of the service provider and the consumer (customer), which essentially can be investigated through a correlational research design. The questionnaire has been used in a variety of service industry sectors, such as healthcare (Ramez, 2012), banking (Gerdevishe et al., 2013; Ushantha, Wijeratne, & Samantha, 2014), and hospitality (Marques da Silva, 2014). Bayraktaroglu and Atrek (2010) assert that SERVPERF has a good model fit and may be used to measure SQ in higher education services.

For the purpose of this study, I modified the instrument by adding a section containing demographic predictor variables. This modification made it possible for me to investigate the differences in student satisfaction with service performance (quality) in each selected service department and to test the significance of differences among demographic variables. Here is how SERVPERF, a service performance-only instrument was developed.

Development and Description of the SERVPERF Instrument

The SERVPERF instrument can be traced back to the earlier SERVQUAL instrument. Three researchers, Parasuraman et al. (1988), developed SERVQUAL. However, in their studies, Cronin and Taylor (1992, 1994) identified several loopholes within the SERVQUAL instrument. Additionally, Brown et al. (1993) expressed psychometric concerns with the SERVQUAL's difference score ($SQ = \text{Perceptions} - \text{Expectations}$).

Cronin and Taylor (1992, 1994) subsequently came up with an alternative to SERVQUAL model—the SERVPERF model—for measuring SQ via the assessment of perceived service performance. The SERVPERF is a 22-item instrument designed to measure customer perceptions of SQ in service industries, including higher education. It has five SQ dimensions, namely tangibility, reliability, responsiveness, assurance, and empathy.

In this study, I began by adding a section on demographic variables in which subjects were asked to indicate their gender, country of origin, age bracket, level of current degree program, how long they have been at the university, race/ethnicity, religious preference, and current living arrangement.

Section Two consisted of the modified original SERVPERF instrument with 22-items for evaluating international students' perceived service performance along the five SQ dimensions for each of the four selected service departments: admissions, housing, academic records, and international student services. In this section of the questionnaire, subjects were asked about their feelings regarding the service they received and were encouraged to rate or choose their perceived SQ using a 5-point Likert scale from the

following options: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*).

The 22-items were divided into the five dimensions of SQ, namely reliability, responsiveness, assurance, empathy and tangibility. The reliability dimension of a service is the ability of the service provider to perform a promised service dependably and accurately. Responsiveness focuses on the service provider's willingness to offer customers prompt service. The assurance dimension of SQ is characterized by the knowledge, courtesy, and ability of the organization's employees to inspire trust and convey confidence among its customers. The empathy dimension demonstrates the provider's depth of caring, approachability, and giving of individual attention to the organization's customers. The tangibility dimension measures how dependable a customer views a service provider to be based on the quality of its most visible attributes, which may include physical facilities, equipment, and staff appearance.

The last section of the instrument was an added portion meant to assess customer satisfaction. Participants were asked to rate their satisfaction with the service performance quality of nonacademic services using a 5-point Likert scale—1 (*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), and 5 (*excellent*). Participants were also asked to rate their satisfaction with the overall quality of nonacademic service at their institutions using a 5-point Likert scale as follows: 1 (*very dissatisfied*), 2 (*dissatisfied*), 3 (*unsure*), 4 (*satisfied*), and 5 (*very satisfied*).

Validity and Reliability of the Instrument

Validity determines whether the instrument actually measures what it says is being measured (Blunch, 2008). On the other hand, reliability of a research instrument

refers its ability to produce stable and consistent results. In other words, it is “the property of a measurement instrument to produce consistent results if repeated measurements are made” (Malhotra, 2004, p. 8).

In order to secure a complete picture of the development of the SERVPERF model, it is equally important to understand the development of SERVQUAL, because Cronin and Taylor (1992) simply eliminated the expectations component in SERVQUAL and retained everything else in order to construct SERVPERF.

In developing SERVQUAL, Zeithaml, Parasuraman, and Berry explained in their book *Delivering Service Quality: Balancing Customer Perceptions and Expectations* (Zeithaml et al., 1990), that they followed well-established procedures for designing scales to measure constructs that were not directly observable. The researchers developed 97 items capturing the 10 potentially overlapping dimensions of SQ during the exploratory phase of their study. These dimensions were tangibility, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding/knowing the customer, and access. They then allocated each item into a pair of statements, with one to measure expectations about firms in general within the service category being investigated and the other to measure perceptions about the particular firm whose SQ was being assessed. A seven-point scale ranging from 7 (strongly agree) to 1 (strongly disagree) accompanied each statement. This process was then followed by refining and condensing the 97-item instrument through a series of repeated data collection and analysis steps, to eliminate items that failed to discriminate well among respondents with differing quality perceptions about firms.

The researchers gathered data for the initial refinement of the 97-item instrument from a quota sample of 200 customers, divided equally between males and females. Included in the sample were recent users of one of the following five services: appliance repair and maintenance, retail banking, long-distance telephone services, securities brokerage, and credit cards. They then converted the raw questionnaire data into perception-minus-expectation scores for the various items. These difference scores could range from +6 to -6, with more positive scores representing higher perceived SQ. They analyzed the difference scores using several statistical analyses. These analyses resulted in the elimination of roughly two-thirds of the original items and the consolidation of several overlapping quality dimensions into new combined dimensions.

To verify the reliability and validity of the condensed scale, they administered it to four independent samples of approximately 190 customers each. They gathered data on the SQ of four nationally known firms: a bank, a credit-card issuer, an appliance repair and maintenance firm, and a long-distance telephone company. Analysis of data from the four samples led to additional refinement of the instrument and confirmed its reliability and validity. The final instrument consists of 22 items relating to customers' expectations and perceptions that measure SQ along five dimensions: tangibility, reliability, responsiveness, assurance, and empathy.

SERVQUAL has faced a considerable amount of criticism. The concerns with the model have included but are not limited to operationalizing the expectation component of the SERVQUAL model. The model is lacking in sound economic, statistical, and psychological theory (Buttle, 1996), and the expectations construct is ambiguous (Sinclair, 2002).

Cronin and Taylor (1992), in developing SERVPERF, relied on the SERVQUAL SQ dimensions and its 22 questions. Cronin and Taylor (1992) proposed that perceptions of performance are the only criteria needed to measure and define SQ. This performance-only model includes aspects of social interactions between the service provider or employees and the consumer (customer), which essentially can be investigated through a correlational research design. It permits a researcher to investigate the relationship between satisfaction and the variables included in the SQ dimensions without creating a misfit between the method and the desired outcome. Using SERVPERF, the quality that a consumer perceives in a service is a function of the service performance and the customer's judgment. A customer's judgment of overall SQ depends on the perceptions of actual service performance. The construct of SQ is thus operationalized as a perception of the performance along the SQ dimensions.

In an empirical assessment of SERVQUAL, Babakus and Boller (1992) found that there was a higher correlation between the performance-only SQ score and overall SQ measure when compared to the correlation between the SERVQUAL score and overall SQ measure. This meant that there was a higher convergent validity for the performance-only score (SERVPERF) model.

The SERVPERF instrument has been used in several SQ studies in various service sectors, and the results have been fairly consistent. Jain and Gupta (2014) conducted a study titled "Measuring Service Quality: SERVQUAL vs SERVPERF Scales" to investigate the diagnostic power of the two SQ scales. Jain observed that "empirical studies evaluating validity, reliability, and methodological soundness of service quality scales clearly point to the superiority of the SERVPERF scale" (p. 25).

Using data collected through the survey of consumers of fast food restaurants in Delhi, India, the study found that the SERVPERF scale provided a more convergent and discriminant valid explanation of the SQ construct, but it is deficient in its diagnostic power. SERVQUAL has higher diagnostic power for pinpointing areas for managerial interventions in the event of SQ shortfalls.

Vanpariya and Ganguly (2010) conducted a descriptive study titled “SERVQUAL versus SERVPERF: An Assessment from Indian Banking on Measuring Service Quality in the Banking Sector in India.” The study found that SERVPERF has higher validity and reliability in measuring SQ constructs. The researchers measured the two most widely accepted forms of validity—convergent and discriminant validity.

Machado, Ribeiro, and Basto (2014) study, “An Empirical Assessment of Customer Satisfaction and Quality of Service: Comparing SERVQUAL and SERVPERF,” suggests a superior convergent and predictive validity of the SERVPERF scale for measuring quality of service. The researchers used confirmatory factor analysis to arrive at their findings. They found that “SERVPERF is more sensitive than SERVQUAL in describing the variations in quality, and also more effective in the operationalization of the quality of service” (p. 267). This position is supported by Jain and Gupta (2014) who argue that SERVPERF is more efficient and is able empirically to explain greater variance in the overall SQ. Machado et al. (2014) did not reach a conclusion regarding the relationship between customer satisfaction and the quality of service. Whether SQ is an antecedent to satisfaction or vice versa. However, they agreed that SERVPERF is shown to be a good instrument to support organizations in making decisions to improve SQ. They also found that service attributes were almost equally

correlated to all of the satisfaction attributes with a lower weight observed in tangibility dimension (appearance of physical facilities, equipment, personnel, and communication materials).

Researchers have used SERVPERF in the higher education context (Ho & Wearn, 1996; Kwan & Ng, 1999; Landrum, Prybutok, Kappelman, & Zang, 2009; Smith, Smith, & Clarke, 2007; Snipes & Oswald, 2006; Voon, 2006; Wright & O'Neill, 2002).

Bayraktaroglu and Atrek (2010) conducted a study to explore and compare the fitness of SERVQUAL and SERVPERF in higher education services. A confirmatory factor analysis was used to test the model fit. The results show that there was a higher convergent validity for the performance-only score—the SERVPERF instrument.

In the current study, after data collection, the modified SERVPERF questionnaire's internal reliability was tested using Cronbach's Alpha. Cronbach's Alpha is a measure of internal consistency of instrument scale, and in this test, it determined the extent to which the questionnaire provided consistent measures of the constructs. Table 2 below presents a summary of SERVPERF's reliability across the departments.

Variables

The independent variables (IV) in this study include the five dimensions of SQ (reliability, responsiveness, assurance, empathy, tangibility) and the demographic variables. Satisfaction is a DV. Table 3 represents the distribution of the variables and survey items and the individual items used to measure the variables. Table 4 represents SERVPERF independent variables and corresponding survey items.

Table 2

Summary of the Reliability of the Servperf Scale Dimensions of SQ and Performance Perceived by Participants for Each Department

Scale	Number of Items	Cronbach's Alpha
Admissions	22	.960
Housing	22	.975
Academic Records	22	.977
International Student Services	22	.981

Table 3

Description of Independent Variables and Corresponding Questionnaire Items

Demographic Variable	Survey Item(s)
Gender	1
Geographical region of origin	2
Age	3
Level of degree program	4
Duration of stay at current university	5
Race/Ethnicity	6
Religious preference	7
Type of university housing	8

Table 4

SERVPERF Independent Variables and Corresponding Survey Items

Variable	Admissions	Housing	Academic Records	Int'l Student Services
Reliability	1,2,3,4	23, 24, 25, 26	45, 46, 47, 48	67, 68, 69, 70
Responsiveness	5,6,7,8	27, 28, 29, 30	49, 50, 51, 52	71, 72, 73, 74
Assurance	9, 10, 11, 12	31, 32, 33, 34	53, 54, 55, 56	75, 76, 77, 78
Empathy	13, 14, 15, 16, 21, 22	35, 36, 37, 38, 43, 44	57, 58, 59, 60, 65, 66	79, 80, 81, 82, 87, 88
Tangibility	17, 18, 19, 20	39, 40, 41, 42	61, 62, 63, 64	83, 84, 85, 86

Detailed Data Collection Procedures

Permission was sought from the Institutional Review Boards (IRB), which gave exempt determination notification from the participating universities and colleges to conduct human subjects research. An electronic letter of invitation to participate in the survey was sent to the relevant departments as determined by each participating university or college. The departments were asked to forward the invite, which had a link to the online survey, to the email addresses of their international students. Participation was completely voluntary and anonymous. Subjects were not asked to provide personal identifiers, which may ordinarily lead to a breach of confidentiality. Maximum care was taken to ensure that subject confidentiality was maintained at all levels. Subjects were required to read and understand the research procedures contained in the informed consent form which was presented on the first page of the Class Climate survey site. Subjects who consented were able to advance to the survey questions by clicking on an ACCEPT button. Those who declined were unable to advance to the questions, as their screens turned blank.

All international students at the eight universities that gave permission for participation received the email invite with an online link to access a web-based survey at Class Climate. Three hundred and seventy-six subjects completed the SERVPERF questionnaire. The average response rate per university or college was 63. Data collection took place from March of 2016 to November of 2016. All of the responses were downloaded and subsequently analyzed with SPSS, an IBM-based statistical software program.

Data Analysis

Data analysis was conducted using the SPSS. The main research question for this study was: Is there a significant relationship between perceived SQ and satisfaction among international students attending universities and colleges in the Indiana and Michigan?

Secondary questions the study also investigated were:

- 1) What are the service performance (quality) ratings given by international students for the nonacademic service departments—admissions, housing, academic records, and international student services?
- 2) How satisfied are international students with overall SQ in the admission, housing, academic records, and international student services departments?
- 3) What is the nature of the relationship between perceived overall SQ and satisfaction?
- 4) Do significant differences exist in international students' perceived SQ and satisfaction based on these demographic variables: gender, geographical region of origin, age, level in the current degree program, duration of stay at the university, race/ethnicity, religion, and type of university (public/private)?

The online survey was sent to all international students at the selected universities and colleges in Indiana and Michigan. The collected data was downloaded into SPSS version 24.0 for analysis. Survey responses with two or more omitted items were excluded in the creation of a data set. As a result, 376 respondents were acceptable and were used in the analysis.

Descriptive statistics and multivariate correlational statistical methods were employed to explore the relationships between the IV and satisfaction (DV) and to analyze the collected data.

Descriptive statistics were used to examine the demographic data of respondents and to evaluate perceived department service performance quality and overall international student satisfaction. Correlation analysis was used to explore how the dimensions of perceived SQ relate to overall international student satisfaction. Specifically, correlation analysis was performed to evaluate relationships between each SQ dimension and overall international student satisfaction. In this regard, Pearson correlation coefficients were calculated. Multiple regression analysis was used to explore a combination of perceived SQ dimensions and overall international student satisfaction. According to Hair, Black, Babin, Anderson, and Tatham (2006), this technique (multiple regression) can be used to analyze the relationship between several IV and a single DV.

Ethics and Institutional Review Board

I obtained an IRB exempt determination from some of the universities and colleges, while others gave permission without the request going through the IRB since the institutions did not consider themselves engaged in the research project. I complied with all federal, state, and institutional regulations pertaining to the protection of human subjects throughout the entire duration of the study. Subjects were required to read and understand the online consent document prior to participation. Subjects were given options to reject or accept participation in the study. They were informed that participation in the study was completely voluntary, that refusal to participate involved no penalty or loss of benefits to which they may otherwise have been entitled to.

Subjects were also informed that they could discontinue participation at any time without penalty or loss of benefits to which they may otherwise have been entitled to. I also took several trainings to ensure that I conducted the study with human subjects ethically and responsibly.

Summary

This chapter presented the descriptions of the research design and procedures used for this study. The descriptions of the methodology covered population and sample, variables, the instrument, data collection, and ethical considerations. In the next chapter I analyze the results from the findings of this study.

CHAPTER 4

RESULTS AND ANALYSIS OF DATA

Introduction

In this chapter, results of the data analysis are presented. The data were collected online using a Class Climate survey and then analyzed using the SPSS version 24.0. The purpose of the study was to investigate perceptions of SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. Additionally, this data analysis carefully examined the core focus of this study, the relationship between perceived SQ and satisfaction. Analyses also examined the relationship between SQ and satisfaction on the basis of the demographic predictor variables and the combined DVs of tangibility, reliability, responsiveness, assurance, and empathy based on the students' perceptions of service performance. The fundamental purpose drove the collection of the data and subsequent data analysis.

The results and analysis of this study are organized into the following categories: (a) demographics, (b) research questions and statistical analyses, and (c) a summary of findings. The research questions were analyzed using multiple statistical procedures, including descriptive statistics, regression, and MANOVA.

Demographic Description of the Sample

Descriptive statistical analysis was used to provide a summary of the sample and to describe the basic features of the demographic IV. The variables consisted of geographical region of origin, gender, age, type of institution, level of program, duration of stay at the current university, race/ethnicity, religious preference, and type of university housing or residence.

Three hundred and seventy-six respondents provided usable data. Out of this number, 47.8% of the respondents were from Asia, 17% from North America (excluding the United States), 11.7% from Africa, 9.31% from South America, 8.78% from Europe, 1.6% from Australia, and 2.9% of respondents did not indicate their country or region of origin.

Of the 376 respondents who took part in the study, 196 (52.1%) were male and 175 (46.5%) were female. Three of the participants did not indicate their gender.

The results show that more than half of the respondents 185 (50.3%) were between the ages of 18 and 24 years old. Of the rest, 130 (35.3%) were between 25 and 34 years old, 36 (9.8%) participants were between 34 and 44 years old, and 14 (3.7%) were between 45 and 54 years old.

Respondents were enrolled at eight universities and colleges identified as public or private. A majority of the respondents 232 (61.7%) indicated that they were attending private universities, and 144 (38.3%) indicated that they were attending public universities.

Both undergraduate and graduate degree program levels were represented in the study: 164 (44.2%) of the respondents indicated that they were enrolled as undergraduate

students, while 207 (55.1%) were enrolled as graduate students. Five respondents chose not to indicate the level of their current degree program.

Regarding the length of stay at the current university, 145 (38.6%) respondents indicated they had been at the university for less than one year, but more than six months while over 52% had been at their respective university for over one year. In this category, 123 (32.7%) had been at the university for 1–2 years, 83 (22.1%) for 3–4 years, 13 (3.5%) for 5–6 years, 8 (2.1%) for 7–8 years, and two (0.5%) for 9 or more years. Two (0.5%) of the participants chose not to answer the question.

Five racial and ethnic groups were represented in the study, namely Asian, Black or African American, White or Caucasian, Hispanic, or Other. Respondents were asked to identify which racial or ethnic group they belonged to. They were also asked to clarify which group they belonged to if they chose the option *Other*. Responses from the survey show that 165 (43.9%) participants identified themselves as Asians 72 (19.1%) as White or Caucasian, 62 (16.5%) as Black or African American, 33 (8.8%) as Hispanic, while 43 (11.4%) indicated their race/ethnicity as Other. One single participant did not respond to the question.

Five religious preferences were represented in the study: Christian, Muslim, Buddhist, Hindu, and Agnostic/Atheist. A majority of the respondents, 227 (60.4%), identified themselves as Christians 51 (13.6%) as Agnostic/Atheist, 43 (11.4%) as Muslim, 32 (8.5%) as Hindu, and 17 (4.5%) as Buddhist. Six (1.6%) did not indicate their religious preference.

Five kinds of university housing accommodation were represented in the study—residence hall (dormitory), university apartment, fraternity and sorority housing, off

campus, and Other, which required subjects to specify the kind and type of accommodation. One hundred eighty-nine (50.3%) respondents indicated that they were staying off campus, 102 (27.1%) were staying in a residence hall, 79 (21%) were staying in a university apartment, two (0.5%) did not indicate their current housing, while one (.3%) was staying in fraternity/sorority housing.

Besides the geographical region, a descriptive statistical analysis was also conducted for the respondents to indicate their country of citizenship. The results show indicated that respondents came from 77 different countries. The results also showed that the top 10 sending countries were India (36, 9.5%), Canada (31, 8.3%), China (30, 8.2%), South Korea (28, 7.6%), Brazil (25, 6.7%), Malaysia (13, 3.5%), Indonesia and Saudi Arabia (12 each, 3.2%), Mexico (11, 3%), Japan (nine, 2.5%), and Kenya and Tanzania (eight each, 2.1%). When the countries of citizenship were grouped into geographical regions, the results revealed showed that 170 (45.2%) of the respondents came from Asia, 72 (19.1%) from Latin America and the Caribbean, 44 (11.7%) from Africa, 33 (8.8%) from Europe, 31 (8.2%) from Australia, and six (1.6%) from Papua New Guinea.

The descriptive statistics summary of the nine independent demographic variables (geographical region of origin, gender, age, type of university, level of degree program, race/ethnicity, religious preference, type of university housing, and duration at the current university) is presented in Tables 5-7. The demographic variables were assessed in attempt to see how they predicted the respondents' satisfaction with SQ.

Table 5

Demographic Profile of Sample (N = 376)

Variable	Group	<i>N</i>	%
Gender	Male	196	52.1
	Female	175	46.5
	Did not disclose	3	0.8
	No response	2	0.5
Age	Under 18 years	3	0.8
	18-21	185	49.2
	25-34	130	34.6
	35-44	36	9.6
	45-54	14	3.7
	55-over		
	No response	8	2.1
Type of Institution	Private	232	61.7
	Public	144	38.3
Program Level	Undergraduate	164	44.2
	Graduate	207	55.1
	No response	5	1.3
Duration at Current University	Under 1 year	145	38.6
	1-2 years	123	32.7
	3-4 years	83	22.1
	5-6 years	13	3.5
	7-8 years	8	2.1
	9 Years and over	2	0.5
	No response	2	0.5
Race/Ethnicity	Asian	165	43.9
	Black or African American	62	16.5
	White or Caucasian	72	19.5
	Hispanic	33	8.8
	Other	43	11.4
	No response	1	0.3

Table 5—*Continued.*

Variable	Group	<i>N</i>	%
Religious Preference			
	Christian	227	60.4
	Muslim	43	11.4
	Buddhist	17	4.5
	Hindu	32	8.5
	Agnostic/Atheist	51	13.6
	No response	6	1.6
Residence/Accommodation			
	Residence Hall	102	27.1
	University Apartment	79	21.0
	Fraternity/Sorority housing	1	0.3
	Off Campus	189	50.3
	Other	2	0.5

Table 6

Demographic Variable Geographical Region of Origin (N = 376)

Rank	Geographical Region of Origin	<i>N</i>	%
1	Asia	180	47.89
2	North America (excluding U.S.)	67	17.82
3	Africa	44	11.70
4	South America	35	9.31
5	Europe	33	8.78
6	Australia	6	1.60

Note: Eleven respondents (2.9%) did not indicate geographical region of origin.

Table 7

Demographic Variable Country of Citizenship (N = 376)

Rank	Country	<i>N</i>	%
15	Colombia	3	.80
	Bermuda	3	.80
	Guinea Bissau	3	.80
	Nicaragua	3	.80
	Nigeria	3	.80
	Peru	3	.80
	Rwanda	3	.80
	Sri Lanka	3	.80
	Thailand	3	.80
	Trinidad and Tobago	3	.80
16	Austria	2	.50
	Cayman Island	2	.50
	Ghana	2	.50
	Italy	2	.50
	Slovakia	2	.50
	Sweden	2	.50
	Uganda	2	.50
	Vietnam	2	.50
17	Argentina	1	.30
	Australia	1	.30
	Belarus	1	.30
	Cameroon	1	.30
	Chile	1	.30
	Czech Republic	1	.30
	Federated States Micronesia	1	.30
	Germany	1	.30
	Grenada	1	.30
	Guatemala	1	.30
	Guyana	1	.30
	Honduras	1	.30
	Ireland	1	.30
	Israel	1	.30
	Liberia	1	.30
	Madagascar	1	.30
	Malawi	1	.30
	Morocco	1	.30

Table 7—*Continued.*

Rank	Country	<i>N</i>	%
17	Nepal	1	.30
	Norway	1	.30
	Palestine	1	.30
	Poland	1	.30
	Russia	1	.30
	Saint Lucia	1	.30
	Saint Vincent	1	.30
	Singapore	1	.30
	South Africa	1	.30
	Switzerland	1	.30
	Taiwan	1	.30
	Tajikistan	1	.30
	Ukraine	1	.30
	Uruguay	1	.30
	Venezuela	1	.30

Research Questions and Statistical Analyses

The overarching research question addressed the relationship between perceived SQ and satisfaction with nonacademic services among international students attending universities in the Indiana and Michigan area. The results and analysis are organized in terms of the four numbered research questions.

Research Question 1

Research Question 1 addressed the service performance ratings by international students in the context of the selected nonacademic service areas of admissions, housing, academic records, and international student services. The ratings were categorized into five different service performance dimensions—reliability, responsiveness, assurance, empathy, and tangibility. A descriptive statistical analysis of the ratings on a five-point

Likert scale from *strongly disagree* to *strongly agree* was conducted using SPSS for the 22 survey items for each department.

Overall, the ratings by the international students suggest that they perceived high levels of SQ across all of the selected nonacademic departments and across all service dimensions. In other words respondents agreed or strongly agreed with the quality of service provided. On a five-point *Likert Scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*), the service performance ratings for individual service dimensions across the departments ranged from $M = 3.56$ to $M = 4.12$ with 53.2% to 81.15% of respondents who agreeing or strongly agreeing that the departments provided high quality service. Analysis of the descriptive statistics was conducted on each of the five service dimensions and for the selected service departments.

Means of each individual item were combined according to dimension of service performance in each department. Participant ratings of the perceived SQ ranged from a mean $M = 3.56$ for *tangibility* in housing to $M = 4.12$ for service *reliability* and service *assurance* in international student services (See Table 8). Standard deviations for the combined ratings ranged from .71 to .84. The international students perceived the highest level of SQ in the area of service *assurance* in the departments of international student services ($M = 4.12$), admissions ($M = 3.93$) and housing ($M = 3.74$). They also perceived the highest level of *reliability* in the departments of international student services ($M = 4.12$) and academic records ($M = 3.91$).

Table 8 shows the respondents' perceived SQ by department: International student services was highest ($M = 4.10$, $SD = .77$), with skewness of -1.22 ($SE = .13$). Academic records was next ($M = 3.87$, $SD = .69$), with skewness of -0.33 ($SE = .13$).

Table 8

Combined Mean Ratings of Perceived SQ Based on SERVPERF Survey Items for Each Department

Departments/Variables	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Skewness</i>		<i>% Agree + Strongly Agree</i>
				Statistic	Std. Error	
Int'l Student Services	375	4.10	.77	-1.22	.13	79.81
Reliability	375	4.12	.82	-1.15	.13	81.15
Assurance	375	4.12	.82	-1.20	.13	80.95
Responsiveness	375	4.10	.83	-1.20	.13	80.05
Tangibility	375	4.10	.80	-1.21	.13	79.13
Empathy	375	4.10	.82	-1.12	.13	77.75
Academic Records	375	3.87	.69	-.033	.13	
Reliability	375	3.91	.75	-0.52	.13	72.20
Assurance	375	3.87	.75	-0.43	.13	69.53
Empathy	375	3.86	.70	-0.20	.13	68.45
Responsiveness	375	3.85	.76	-0.42	.13	68.23
Tangibility	375	3.84	.73	-0.33	.13	67.55
Admissions	375	3.84	.66	-0.69	.13	
Assurance	374	3.93	.74	-0.82	.13	73.20
Tangibility	374	3.85	.72	-0.54	.13	68.65
Reliability	374	3.84	.77	-0.72	.13	71.73
Responsiveness	374	3.82	.76	-0.56	.13	68.28
Empathy	374	3.77	.71	-0.62	.13	66.27

Table 8—*Continued*

Departments/Variables	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Skewness</i>		<i>% Agree + Strongly Agree</i>
Housing	376	3.65	.75	-0.27	.13	
Assurance	376	3.74	.79	-0.31	.13	61.38
Reliability	376	3.67	.84	-0.42	.13	59.58
Responsiveness	376	3.66	.84	-0.37	.13	58.30
Empathy	376	3.62	.78	-0.25	.13	55.92
Tangibility	376	3.56	.84	-0.19	.13	53.20

Admissions followed ($M = 3.84$, $SD = .66$), with skewness of -0.69 ($SE = .13$), and housing ($M = 3.65$, $SD = .75$), with skewness of -0.27 ($SE = .13$).

A combination of the means of the respective dimensions of perceived SQ under each department show that international students rated service *assurance* ($M = 3.92$, $SD = .78$) highest, followed by service *reliability* ($M = 3.89$, $SD = .80$), service *responsiveness* ($M = 3.86$, $SD = .80$), service *empathy* ($M = 3.84$, $SD = .75$), and service *tangibility* ($M = 3.84$, $SD = .77$).

The following is an analysis of perceived service performance according to the dimensions within each department, ranked from highest to lowest:

- 1) International Student Services: assurance ($M = 4.12$, $SD = .82$), reliability ($M = 4.12$, $SD = .82$), responsiveness ($M = 4.10$, $SD = .83$), tangibility ($M = 4.10$, $SD = .80$), empathy ($M = 4.10$, $SD = .82$).
- 2) Academic Records: reliability ($M = 3.91$, $SD = .75$), assurance ($M = 3.87$, $SD = .75$), empathy ($M = 3.86$, $SD = .70$), responsiveness ($M = 3.85$, $SD = .76$), tangibility ($M = 3.84$, $SD = .73$).
- 3) Admissions: assurance ($M = 3.93$, $SD = .74$), tangibility ($M = 3.85$, $SD = .72$), reliability ($M = 3.84$, $SD = .77$), responsiveness ($M = 3.82$, $SD = .76$), empathy ($M = 3.77$, $SD = .71$).
- 4) Housing: assurance ($M = 3.74$, $SD = .79$), reliability ($M = 3.67$, $SD = .84$), responsiveness ($M = 3.66$, $SD = .84$), empathy ($M = 3.62$, $SD = .78$), and tangibility ($M = 3.56$, $SD = .84$).

Research Question 2

The second research question addressed international students' overall satisfaction with the SQ in the selected nonacademic service departments: admissions, housing, academic records, and international student services.

Measuring customers' overall satisfaction calls for a more comprehensive approach as opposed to the traditional approach, which relied on a single-item measurement. An ideal comprehensive approach utilizes all service attributes, taking into account each customer's varying degree of satisfaction with the attributes, the relative importance of each attribute obtained, and analysis from all customers who participated in the survey (Shin & Elliot, 2008). SERVPERF provided the opportunity for analyzing true overall customer satisfaction. In this study, international students' ratings of their perceived service satisfaction were collected using a Likert scale. Descriptive statistical analysis was conducted to obtain the mean distribution of the respondents' overall satisfaction for all the service attributes, namely reliability, responsiveness, assurance, empathy, and tangibility, for the four selected departments.

In general, the students rated overall satisfaction around $M = 3.87$, using a five-point *Likert scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*). This was interpreted to mean that students agreed that they were satisfied with the quality of service performance. Table 9 represents the Means and Standard Deviations—atisfaction with service performance of individual survey items grouped into dimensions.

Table 9

The Means and Standard Deviations of Overall Satisfaction With Service Performance of Individual Items

Survey Items	Admissions			Housing		Academic Records		Int'l Student Services	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
RELIABILITY									
Meets promised deadlines	374	3.94	.87	3.67	.93	3.92	.83	4.11	.92
Staff willing to solve problems	373	3.83	.93	3.73	.89	3.91	.83	4.11	.90
Service performed right first time	368	3.82	.88	3.64	.92	3.90	.83	4.11	.91
Service available when promised	374	3.80	.94	3.65	.95	3.90	.84	4.17	.87
RESPONSIVENESS									
Informed when services will be provided	373	3.86	.91	3.64	.97	3.84	.87	4.06	.94
Service provided promptly	370	3.96	.89	3.73	.93	3.93	.80	4.16	.89
Staff willing to help	373	3.78	.96	3.68	.95	3.80	.85	4.11	.85
Staff not too busy to help	374	3.70	.94	3.62	.91	3.83	.87	4.03	.96

Table 9—*Continued**The Means and Standard Deviations of Overall Satisfaction With Service Performance of Individual Items*

Survey Items	Admissions			Housing		Academic Records		Int'l Student Services	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ASSURANCE									
Staff who instill confidence in students	373	3.84	.91	3.70	.89	3.84	.88	4.09	.93
Safe and secure services	373	3.97	.89	3.75	.88	3.90	.85	4.16	.90
Staff are courteous	374	3.95	.86	3.76	.86	3.88	.83	4.11	.92
Staff are knowledgeable	372	3.94	.84	3.77	.84	3.88	.79	4.13	.88
EMPATHY									
Staff attentive to individual needs	372	3.81	.85	3.60	.97	3.84	.85	4.13	.89
Office hours convenient to students	373	3.73	.89	3.53	1.00	3.76	.86	4.07	.89
Staff give personal attention to students	369	3.75	.90	3.56	.92	3.80	.87	4.09	.91
Committed to students' best interest	371	3.76	.96	3.53	.99	3.83	.85	4.05	.96
Staff understand student needs	370	3.74	.89	3.74	.86	4.02	.86	4.09	.91

Table 9—*Continued**The Means and Standard Deviations of Overall Satisfaction With Service Performance of Individual Items*

Survey Items	Admissions			Housing		Academic Records		Int'l Student Services	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
TANGIBILITY									
Modern equipment	373	3.78	.88	3.44	1.01	3.82	.84	4.05	.92
Visually appealing facilities	373	3.97	.81	3.54	.97	3.86	.82	4.12	.88
Neat-appearing employees	373	3.92	.86	3.65	.91	3.86	.83	4.05	.87
Materials (printed) are appealing	373	3.74	.94	3.60	.93	3.85	.83	4.01	.94

The international students' overall satisfaction with service performance on individual survey items was analyzed according to service attributes (service dimensions). They ranged from a mean of $M = 3.64$ for service performed right the first time (Reliability/Housing) to a mean of $M = 4.17$ for service available when promised (Reliability/International Student Services). Standard deviation ranged from .83 to .92. Under service responsiveness, the overall satisfaction ranged from $M = 3.62$ for staff not too busy to help (Housing) to a mean of $M = 3.16$ for service provided promptly (International Student Services). Standard deviation ranged from .80 to .96. Under the dimension service assurance, the respondents' overall satisfaction ranged from a mean of $M = 3.70$ for staff who instill confidence in students (Housing) to a mean of $M = 4.16$ for safe and secure services (International Student Services). The standard deviation ranged from .79 to .93. Under service empathy, respondents' overall satisfaction with service performance ranged from a mean of $M = 3.53$ for office hours convenient to students (Housing) to a mean of $M = 4.13$ for staff attentive to individual needs (International Student Services). Standard deviation ranged from .85 to 1.00. Under service tangibility, the respondents' overall satisfaction ranged from a mean of $M = 3.44$ for modern equipment (Housing) to a mean of $M = 4.12$ for visually appealing facilities (International Student Services). The standard deviations ranged from .81 to 1.01.

When international students' overall satisfaction was analyzed according to departments, the mean for international student services ranged from $M = 4.01$ (materials are appealing/tangibility) to $M = 4.17$ (service available when promised/reliability). Standard deviations ranged from 0.85 (responsiveness) to 0.96 (responsiveness/empathy). The mean for academic records ranged from $M = 3.83$ (committed to students' best

interest/empathy) to a mean of $M = 4.02$ (staff understand student needs/empathy). Standard deviations ranged from 0.79 (assurance) to 0.88 (assurance). The mean for admissions ranged from $M = 3.70$ (staff not too busy to help/responsiveness) to a mean of $M = 3.97$ (safe and secure services/assurance). Standard deviations ranged from 0.87 to 0.96. The mean for housing ranged from $M = 3.53$ (convenient office hours for students/empathy) to a mean of $M = 3.77$ (staff are knowledgeable/assurance). Standard deviations ranged from 0.84 (assurance) to 1.01 (tangibility). The mean distribution of the scores shows that respondents were most satisfied with SQ in international student services ($M = 4.15$, $SD = 1.08$), followed by academic records ($M = 3.99$, $SD = 1.02$), admissions ($M = 3.94$, $SD = 1.05$), and housing ($M = 3.72$, $SD = 1.06$).

In general, the students rated overall satisfaction around $M = 3.87$, using a five-point *Likert scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*). This was interpreted to mean that students agreed that they were satisfied with the quality of service performance.

Table 9 represents the Means and Standard Deviations of overall satisfaction with service performance of individuals survey items grouped into dimensions.

Research Question 3

Question 3 required a multiple regression analysis. The question sought to address the relationship between perceived SQ and satisfaction. To analyze the relationship, I first computed the sum total ratings/scores for each determinant of SQ—assurance, responsiveness, reliability, empathy, and tangibility. Secondly, I performed standard multiple regression analysis to examine the relationship between the five IV—

assurance, responsiveness, reliability, empathy, and tangibility and the DV—satisfaction with SQ.

My approach to running statistical tests, analysis and interpretation for this question was informed by advice from my dissertation methodologist, in addition I reviewed literature from the work of Mertler and Reinhart, 2017; Johnson and Wichern, 2008; Tabachnick and Fidell, 2007; and Neter, Kutner, Nachtsheim, and Wasserman, 1996). Mertler and Reinhart (2017) has practical application and interpretation which was very useful. I became aware that there is usually challenges of multicollinearity when running and interpreting MANOVA tests for nature of relationships among numerous variables measured simultaneously. More on this is presented under discussion section. In order to find a sound relationship while minimizing multicollinearity, I had to run several steps in my analysis.

In conducting the analysis, I followed a series of three steps in developing a model that would significantly predict the DV—satisfaction. In the first step (Model 1), I entered all of the IV into the analysis simultaneously. However, the effect of each of the IVs on the DV was evaluated as if it had been entered into the equation after all other IVs had been entered. The logic behind the first step in this analysis was to examine the presence of multicollinearity among the predictor variables. I tested for tolerance, which is a measure of collinearity among the IVs. As a rule, tolerance should be $> .1$ and VIF < 10 . Whenever this rule is violated, there is multicollinearity. In my Step 1 analysis, the results showed that two of the five IV had a tolerance value of $< .1$, i.e., responsiveness with tolerance = .079, VIF = 12.661, and empathy with tolerance = .089, VIF = 11.279.

These two IVs showed high intercorrelations. I removed IV responsiveness before running the Step analysis. Table 10 represents Step 1 model coefficients.

After Step 1, I administered Step 2 (Model 2) with four of the IV—reliability, empathy, assurance, and tangibility, after removing the IV responsiveness. I conducted standard multiple regression analysis to determine the relationship between these IV, and the DV—satisfaction. The analysis produced output comprising three main categories: the model summary, analysis of variance (ANOVA), and coefficients.

The model summary consisted of the multiple correlation R , squared multiple correlation $R^2 = .321$, and the adjusted R square. The squared multiple correlation $R^2 = .321$ is important because a change in R^2 is used to determine which variables significantly contribute to the model. The ANOVA regression table showed $df(4, 369) = 43.568$ and a $p < .001$. I subsequently removed the IV variable assurance with a $p = .663$, in order to run Step 3 of the regression analysis with the aim of finding a regression model that would significantly predict the DV satisfaction. Table 11 represents the results of the Step 2 model.

Prior to running Step 3 analysis, I removed the IV assurance. I was left with three IV out of the initial five. The three IV reliability, empathy, and tangibility were entered into the analysis simultaneously. The regression results indicated that the overall model significantly predicted satisfaction with SQ [$R^2 = .320$, $R^2 \text{ adj} = .315$, $F(3, 370) = 58.155$, $p < .001$], meaning the relationship between satisfaction (DV) and dimensions of SQ (IVs) is linear, and therefore, the model significantly predicted international students' satisfaction with SQ. This model accounted for 32% of variance of international students' satisfaction. This model helped to explain 32.1% of my outcome variable. In

Table 10

Coefficient for Model Variables in Step 1

	<i>A</i>	<i>B</i>	<i>B</i>	<i>T</i>	<i>p</i>	Partial <i>r</i>	Partial <i>r</i>	Tolerance	VIF
(Constant)	.529	.279		1.894	.059				
Reliability	.732	.195	.465	3.757	.000	.192	.161	.120	8.361
Responsiveness	-.074	.242	-.074	-.307	.759	-.016	-.013	.079	12.661
Empathy	.591	.230	.371	2.573	.010	.133	.111	.089	11.279
Assurance	.109	.220	.067	.496	.620	.063	.021	.100	9.989
Tangibility	-.486	.157	-.319	-3.101	.002	-.160	-.133	.174	5.750

$R^2 = .32$, $F_{(4, 369)} = 43.57$, $p < .001$. DV: total satisfaction

Table 11

Coefficient for Model Variables in Step 2

	<i>A</i>	<i>B</i>	<i>B</i>	<i>t</i>	<i>P</i>	Partial <i>r</i>	Partial <i>r</i>
(Constant)	.529	.279		1.898	.058		
Reliability	.698	.160	.445	4.356	.000	.221	.187
Empathy	.567	.215	.356	2.630	.009	.136	.113
Assurance	.093	.214	.058	0.436	.663	.023	.019
Tangibility	-.486	.157	-.319	-3.105	.002	-.160	-.133

 $R^2 = .321$, $F_{(4, 369)} = 43.568$, $p < .001$. DV: total satisfaction

other words, the remaining 67.9% of variance in student satisfaction were due to other factors not represented in this model.

For this model, I also analyzed the corresponding descriptive statistics for the independent and DVs. A total of $N = 374$ participants responded to the question. A summary of coefficients is presented in Table 12 and indicates that only three (reliability, empathy, and tangibility) of the initial five IV significantly contributed to the model. The results suggest that a higher overall satisfaction score may be explained by higher scores in reliability and empathy but lower scores in tangibility. Table 13 presents the correlations along with the summary of the descriptive statistics—the mean for dependent and IV. The first and second columns show the *M* and *SD* for the DV and IVs (Satisfaction [$M = 3.91$, $SD = .98$], reliability [$M = 3.89$, $SD = .63$], empathy [$M = 3.82$, $SD = .62$], and tangibility [$M = 3.82$, $SD = .64$]). Table 13 also shows the Pearson correlations between satisfaction and reliability, empathy, and tangibility-- the IV.

Table 12

Coefficient for Model Variables in Step 3

	<i>A</i>	<i>B</i>	<i>B</i>	<i>t</i>	<i>P</i>	Partial <i>r</i>	Partial <i>r</i>
(Constant)	.552	.274		2.014	.045		
Reliability	.733	.139	.467	5.264	.000	.264	.226
Empathy	.610	.191	.383	3.194	.002	.164	.137
Tangibility	-.475	.154	-.312	-3.078	.002	-.158	-.132

 $R^2 = .320$, $F_{(3, 370)} = 58.155$, $p < .001$. DV: Satisfaction

Table 13

Correlations Between SQ and Satisfaction (N = 374)

	M	SD	Reliability	Empathy	Tangibility
Satisfaction	3.91	.98	0.547	0.509	0.416
Reliability	3.89	.63	1.000	0.873	0.817
Empathy	3.82	.62		1.000	0.905
Tangibility	3.82	.64			1.000

Reliability has the largest positive correlation with satisfaction at .547, followed by empathy (.509) and tangibility (.416). Positive intercorrelations amongst the IV showing the unique predictive capacity of each IV were present. The correlation between reliability and empathy was .873, reliability and tangibility was .817, and empathy and tangibility was .905.

The results of the Step 3 model suggest that international students' satisfaction with SQ can be accounted for by reliability, empathy, and tangibility.

In general, the multiple regression analysis conducted for Research Question 3 in the Step 3 model demonstrated that the predictor variables reliability, empathy and tangibility had positive significant weights, indicating international students' satisfaction with SQ.

Research Question 4

Research Question 4 sought to understand the relationship between perceived service performance (ratings) and the selected demographic predictor variables. Do differences exist in international students' perception of SQ and satisfaction on the basis of their (a) gender, (b) geographical region of origin, (c) age, (d) level in the current degree program, (e) duration of stay at the university, (f) race/ethnicity, (g) religion, and (h) type of university (public/private)?

A MANOVA was conducted to determine statistically significant differences. The procedure involved four steps: (1) testing of equality of covariance matrices, which checks the assumption of homogeneity of covariance across the groups using $p < .001$ as a criterion; (2) conducting the multivariate test; (3) examining ANOVA when necessary; and (4) pairwise comparison in the four selected nonacademic service departments: admissions, housing, academic records, and international student services.

Admissions

Eight predictor variables were examined for each nonacademic service department to establish statistically significant differences.

Gender

Table 14 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by gender category in admissions.

A MANOVA was conducted to determine the gender category differences for the combined DV. The Box's test was not significant, indicating that homogeneity of variance-covariance could be assumed, $F(15, 533357.63) = 1.425, p = .125$. Hotelling's Trace test statistic was used to interpret the MANOVA results. Multivariate tests revealed no significance, $F(5, 365) = .769, p = .572$, partial $\eta^2 = .010$. None of the main effects of gender on DVs reliability, $F(1, 369) = .973, p = .324$, partial $\eta^2 = .003$; responsiveness, $F(1, 369) = 1.615, p = .205$, partial $\eta^2 = .004$; assurance, $F(1, 369) = 2.295, p = .131$, partial $\eta^2 = .006$; empathy, $F(1, 369) = 1.740, p = .188$, partial $\eta^2 = .006$; or tangibility, $F(1, 369) = .771, p = .381$, partial $\eta^2 = .002$, were significant, indicating that gender did not significantly affect international students' perceptions of service

Table 14

Means and Standard Deviations for SQ in Admission for Gender Category

Variables	N	Male		N	Female	
		M	SD		M	SD
Reliability	196	3.91	0.67	175	3.85	0.57
Responsiveness	196	3.89	0.67	175	3.81	0.56
Empathy	196	3.86	0.68	175	3.78	0.55
Assurance	196	3.96	0.64	175	3.86	0.55
Tangibility	196	3.85	0.70	175	3.79	0.58

performance, quality, or satisfaction. All of the effect sizes in this case were small with 0.02 being small, 0.08 being moderate, and 0.14 being large.

Geographical Region of Origin

A MANOVA was conducted to determine the geographical region category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(60, 32264.18) = 1.606, p = .002$. The MANOVA was not significant. Wilks' Λ was utilized to interpret the MANOVA results, Wilks' $\Lambda = .885, F(25, 952.50) = 1.274, p = .167, \eta^2 = .024$, indicating that the geographical region of the respondents' origin did not significantly affect perceptions of SQ in admissions. Table 15 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by geographical region category in admissions.

Age

A MANOVA was conducted to determine the age category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was assumed, $F(45, 7993.89) = 1.414$. The MANOVA was not significant. Wilk's Lambda was utilized to interpret the MANOVA results. Wilks' $\Lambda = .956, F(20, 1184.99) = .806, p = .708$ and a partial $\eta^2 = .011$ small to moderate effect size indicate that age did not significantly differ for the combined DV. Table 16 represent the means and standard deviation for age category.

Table 15

The Means and Standard Deviations for SQ in Admissions Based on Geographical Region of Category

Geographical	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Africa	30	3.82	.70	3.77	.63	3.93	.67	3.75	.66	3.91	.65
Asia	129	3.96	.74	3.92	.73	3.99	.75	3.86	.72	3.91	.68
Australia	4	3.94	.24	3.56	.83	3.69	.94	3.54	1.23	4.19	.59
Europe	23	3.74	.79	3.70	.81	3.96	.64	3.75	.59	3.67	.66
North America (excluding U.S.)	51	3.98	.67	3.85	.74	3.98	.66	3.81	.69	4.03	.70
South America	29	3.73	.83	3.81	.74	4.01	.75	3.81	.56	3.79	.75

Table 16

The Means and Standard Deviations for SQ in Admissions Based on Age Category

Age	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 18 years	3	4.08	1.01	4.17	1.04	4.33	1.15	4.12	1.00	4.25	1.08
18 to 24 years	185	3.90	.71	3.82	.72	3.86	.71	3.82	.67	3.84	.69
25 to 34 years	130	3.92	.77	3.87	.80	3.89	.80	3.90	.72	3.86	.77
35 to 44 years	36	3.90	.84	3.87	.85	3.90	.84	3.93	.84	3.88	.85
45 to 54 years	14	3.73	.77	3.71	.74	3.73	.62	3.79	.54	3.68	.64

Level of Degree Program

A MANOVA was conducted to determine the level of degree program category differences for the combined DV. Table 17 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by level of degree program category in admissions.

The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(15, 484079.28) = 1.173, p = .284$. The MANOVA test was not significant. Wilks' Lambda was utilized to interpret the MANOVA results, Wilks' $\Lambda = .979, F(5, 363) = 1.564, p = .169$, and partial $\eta^2 = .021$, indicating a small effect size. The results indicated that the level of degree program category did not significantly differ for the combined DV.

Table 17

Means and Standard Deviations for SQ in Admissions Based on Degree Level Category

Variables	Undergraduate			Graduate		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reliability	164	3.79	.73	207	3.88	.80
Responsiveness	164	3.77	.73	207	3.86	.78
Assurance	164	3.84	.74	207	3.98	.74
Empathy	164	3.72	.72	207	3.81	.70
Tangibility	164	3.86	.72	207	3.84	.72

Duration of Stay at Current University

Table 18 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by duration of stay at the university category in admissions—descriptive statistics results from a multivariate analysis.

A MANOVA was conducted to determine the duration of stay at the current university category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(60, 3016.40) = 1.455, p = .013$, indicating that the duration of stay at the current university category did not significantly differ for the combined DV. Wilk's Lambda was utilized to interpret the MANOVA results. The MANOVA was significant, Wilks' $\Lambda = .898, F(25, 1346.3) = 1.587, p = .033$, partial $\eta^2 = .021$. ANOVA was conducted on each DV as a follow-up to the MANOVA. The duration of stay at the current university category differences were significant for empathy, $F(5, 366) = 2.540, p = .028$, partial $\eta^2 = .034$; tangibility, $F(5, 366) = 2.652, p = .023$, partial $\eta^2 = .035$; reliability, $F(5, 366) = 1.337, p = .248$, partial $\eta^2 = .018$; responsiveness, $F(5, 366) = .798, p = .552$, partial $\eta^2 = .011$; and assurance, $F(5, 366) = 2.043, p = .072$, partial $\eta^2 = .027$, indicating that duration of stay at the current university significantly affected respondents' perceptions of service. All of the effect sizes were small. Pairwise comparison post hoc analysis revealed significant differences among each IV, meaning the length of stay at the university impacted international students' perceptions of service reliability, responsiveness, assurance, empathy, and tangibility.

Table 18

The Means and Standard Deviations for SQ in Admissions Based on Duration of Stay (Yearatuni) Category

Yearatuni	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 1 year	145	3.94	.73	3.86	.72	4.03	.70	3.86	.67	3.90	.68
1 to 2 years	123	3.81	.74	3.84	.77	3.90	.71	3.81	.71	3.91	.71
3 to 4 years	83	3.79	.82	3.73	.78	3.80	.78	3.58	.71	3.64	.76
5 to 64 years	13	3.81	.84	4.03	.83	4.13	.81	3.96	.72	4.12	.68
7 to 8 years	8	3.31	1.12	3.50	1.08	3.41	1.14	3.35	.99	3.59	.73
9 years and over	2	3.63	.88	3.75	0.00	4.00	0.00	3.92	.12	4.50	.71

Race and Ethnicity

Table 19 represents the means and standard deviations for service dimensions in admissions by the race/ethnicity category.

A MANOVA was conducted to determine if there were statistically significant group differences among the combined DV. The Box's test was significant, meaning the assumption of the homogeneity of covariance for the groups was not equal, $F(60, 75686.18) = 2.247, p < .001$. Pillai's Trace was used to evaluate the group differences based on race/ethnicity, Pillai's Trace = .137, $F(20, 1468) = 2.610, p < .001$, partial $\eta^2 = .034$, indicating that the race/ethnicity category significantly differs for the combined DV.

Tests of between subjects effects revealed significant differences for service reliability, $F(4, 368) = 2.649, p = .033$, partial $\eta^2 = .028$; responsiveness, $F(4, 368) = 5.257, p < .001$, partial $\eta^2 = .054$; assurance, $F(4, 368) = 3.1735, p = .014$, partial $\eta^2 = .033$; and empathy, $F(4, 368) = 2.690, p = .031$, partial $\eta^2 = .031$. This indicated that the race/ethnicity category significantly affected perceptions of service reliability, responsiveness, assurance, and empathy, but not tangibility, $F(4, 368) = 1.938, p = .104$, partial $\eta^2 = .021$. All of the effect sizes were small to moderate.

A pairwise comparison analysis was conducted as a follow-up test for each DV to further examine significant differences for race/ethnicity. The pairwise results for Hispanics differed from that of Blacks or African Americans and Whites or Caucasians for service reliability. Respondents of Hispanic descent had more positive perceptions of service reliability. Hispanics also differed from Asians, Blacks or African Americans, and Whites or Caucasians in their analysis of service responsiveness. Respondents of Hispanic descent had more positive perceptions of service responsiveness. Asians also

Table 19

The Means and Standard Deviations for SQ in Admissions Based on Race/Ethnicity Category

Race/Ethnicity	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Asian	165	3.91	.65	3.87	.63	3.93	.64	3.83	.64	3.85	.66
Black or African American	62	3.90	.64	3.89	.60	3.96	.57	3.83	.60	3.88	.64
White/Caucasian	72	3.75	.57	3.65	.58	3.78	.50	3.69	.52	3.60	.58
Hispanic	33	4.05	.49	4.08	.53	4.15	.49	4.03	.56	4.00	.65
Other	43	3.70	.69	3.85	.67	3.79	.72	3.80	.71	3.85	.65

differed from Whites or Caucasians in terms of service responsiveness. Respondents of Asian descent had more positive perceptions of service responsiveness. Hispanics also differed from Blacks or African Americans and Whites or Caucasians in their perceptions of service assurance. Respondents of Hispanic descent had more positive perceptions of service assurance. Hispanics also differed from Asians, Blacks or African Americans, and Whites or Caucasians in their perceptions of service empathy. Respondents of Hispanic descent had more positive perceptions of service empathy. Hispanics differed from Whites or Caucasians in perceptions of service tangibility. Hispanics had higher positive perceptions of service tangibility.

Religious Preference

Table 20 represents the means and standard deviations for religious preference category in admissions. A MANOVA was performed to examine the statistically significant differences between the combined DVs within the category of religious preference. The Box's test was significant, meaning that the assumption of homogeneity of covariance was not met, $F(60, 20483.67) = 1.690, p = .001$. Pillai's Trace was used to interpret the MANOVA, Pillai's Trace = .085, $F(20, 1448) = 1.573, p = .051, \eta^2 = .021$. This indicated that the religious preference category significantly differed for the combined DV. With an alpha $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. Religious preference category differences were significant for assurance, $F(4, 363) = 2.816, p = .025, \eta^2 = .030$, indicating that the religious preference category significantly affected perceptions of service assurance, but not reliability, $F(4, 363) = 1.515, p = .197, \eta^2 = .016$; responsiveness, $F(4, 363) = 1.196, p = .312, \eta^2 = .013$;

Table 20

The Means and Standard Deviations for SQ in Admissions Based on Religious Preference Category

Religious Pref.	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Christian	225	3.86	.78	3.84	.77	3.96	.72	3.81	.70	3.90	.72
Muslim	43	3.58	.87	3.59	.89	3.58	.91	3.61	.81	3.65	.78
Buddhist	17	3.94	.35	3.82	.29	3.90	.42	3.77	.48	3.65	.35
Hindu	32	3.95	.73	3.91	.66	3.94	.71	3.73	.81	3.91	.64
Agnostic/Atheist	51	3.86	.78	3.87	.75	4.03	.74	3.78	.68	3.80	.77

empathy, $F(4, 363) = .721, p = .578, \eta^2 = .008$; and tangibility, $F(4, 363) = 1.634, p = .165, \eta^2 = .018$. All the effect sizes were small.

Pairwise analysis revealed that Christians differ from Muslims in their analysis of service reliability. Respondents who were Christians had more positive perceptions of service reliability. Respondents who were Hindu differed from Muslims in their perceptions of service reliability. Respondents who were Hindu had more positive perceptions of service reliability. Muslims differed from Christians, Hindus, and Agnostics/Atheists in their perceptions of service assurance. Respondents who were Muslim had less positive perceptions of service assurance. Christian differed from Muslim in their perceptions of service tangibility. Respondents who were Christian had more positive perceptions of service tangibility. There were no other significant differences.

School Type

Table 21 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by school type category.

A MANOVA was conducted to determine the school type category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance was met, $F(15, 371055.88) = 1.138, p = .315$. This indicated that the school type category did not significantly differ for the combined DV. The MANOVA was not significant, and Wilks' Lambda was used to interpret the MANOVA results, Wilks' $\Lambda = .982, F(5, 368) = 1.360, p = .239, \text{partial } \eta^2 = .018$. This indicated that the school type category did not significantly affect respondents' perception of SQ. ANOVA was conducted on each DV as a follow-up to the MANOVA. School type category

Table 21

Means and Standard Deviations for SQ in Admissions Based on School Type Category

Variables	<i>N</i>	Private		<i>N</i>	Public	
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Reliability	230	3.88	.78	144	3.78	.75
Responsiveness	230	3.86	.76	144	3.77	.76
Empathy	230	3.81	.70	144	3.72	.72
Assurance	230	3.97	.73	144	3.86	.75
Tangibility	230	3.92	.73	144	3.74	.69

differences were significant for tangibility, $F(1, 372) = 5.512, p = .019$, partial $\eta^2 = .015$, but were not significant for perceptions of service reliability, $F(1, 372) = 1.491, p = .223$, partial $\eta^2 = .004$; responsiveness, $F(1, 372) = 1.238, p = .267$, partial $\eta^2 = .003$; assurance, $F(1, 372) = 1.802, p = .180$, partial $\eta^2 = .005$; or empathy, $F(1, 372) = 1.445, p = .230$, partial $\eta^2 = .004$. All of the effect sizes were small. Pairwise comparisons revealed that private schools significantly differed from public schools in perceptions of service tangibility, meaning international students attending private universities had more positive perceptions of service tangibility while those attending public universities had less positive perceptions of service tangibility.

Housing

Gender

Table 22 presents means and standard deviations for reliability, responsiveness, assurance, empathy and tangibility by gender category.

A MANOVA was conducted to determine the gender category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(15, 533357.63) = 1.374, p = .150$. Wilk's Lambda was used to interpret the multivariate test, Wilks' $\Lambda = .952, F(10, 734) = 1.813, p = .055$, and partial $\eta^2 = .018$ small effect size. The MANOVA was not significant, indicating that gender does not significantly differ for the combined DV.

Geographical Region of Origin

Table 23 presents means and standard deviations for the geographical region of origin category.

Table 22

Means and Standard Deviations for SQ in Housing Based on Gender Category

Variables	N	Male			Female			Didn't Disclose		
		M	SD		N	M	SD	N	M	SD
Reliability	196	3.69	.90		175	3.66	.77	3	2.67	.38
Responsiveness	196	3.69	.87		175	3.66	.79	3	2.50	.00
Empathy	196	3.65	.83		175	3.60	.72	3	2.60	.59
Assurance	196	3.77	.82		175	3.74	.73	3	2.25	.25
Tangibility	196	3.54	.88		175	3.59	.79	3	2.42	.95

Table 23

The Means and Standard Deviations for SQ in Housing Based on Geographical Region of Category

Geographical	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Africa	30	3.70	.84	3.63	.80	3.77	.76	3.64	.69	3.55	.71
Asia	129	3.74	.77	3.78	.81	3.79	.74	3.70	.75	3.71	.81
Australia	4	3.63	.78	3.88	.14	3.88	.14	3.04	.84	3.25	.20
Europe	23	3.27	.87	3.30	.76	3.34	.63	3.32	.48	3.13	.52
North America (excluding U.S.)	51	3.81	.80	3.85	.80	3.86	.81	3.80	.76	3.70	.85
South America	30	3.41	.89	3.49	.88	3.74	.81	3.80	.76	3.36	.97

A MANOVA was conducted to determine the geographical region category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 32223.75) = 2.461, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace $F(25, 1305) = 2.007, p = .002, \eta^2 = .037$. The MANOVA was significant for geographical region, which indicated that geographical region significantly differs for the combined DV. With an alpha of $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. The main effects of the geographical region category on the DVs revealed that differences were significant for perception of service reliability, $F(5, 261) = 2.252, p = .050, \text{partial } \eta^2 = .041$; responsiveness, $F(2, 371) = 2.239, p = .051, \text{partial } \eta^2 = .041$; and tangibility, $F(5, 261) = 2.927, p = .014, \text{partial } \eta^2 = .053$. There were no significant differences in perceptions of service assurance, $F(2, 371) = 1.696, p = .136, \text{partial } \eta^2 = .031$, or empathy. The effect sizes were moderate. These indicated that geographical region significantly affected perceptions of service reliability, responsiveness, and tangibility, but not assurance or empathy.

The pairwise comparison analysis revealed significant differences. Respondents from Asia had a more positive perception of service reliability and differed from respondents from Europe and North America (excluding the United States). Respondents from North America (excluding the United States) had a more positive perception of service reliability and were different from South Americans and Europeans. Respondents from Asia had more positive perceptions of service responsiveness and differed from Europeans. Respondents from Africa had more positive perceptions of service assurance and differed from Europeans. Respondents from North America (excluding the United

States) had more positive perceptions of service assurance and differed from Europeans. Respondents from Asia had more positive perceptions of service empathy and differed from Europeans. Respondents from Asia had more positive perceptions of service tangibility and differed from Europeans and South Americans. Respondents from North America (excluding the United States) had more positive perceptions of service tangibility and differed from Europeans.

Age

Table 24 presents means and standard deviations for the age category. A MANOVA was conducted to determine the age category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(45, 7988.11) = 1.946, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results. The MANOVA was not significant for the age category, Pillai's Trace = .052, $F(20, 1448) = .959, p = .511, \eta^2 = .013$, small effect size. This indicated that age did not significantly differ for the DVs.

Level of Degree Program

Table 25 presents means and standard deviations for the degree level category.

A MANOVA test was conducted to determine the degree level category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(15, 489951.45) = 3.178, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results. The MANOVA was significant for degree level, Pillai's Trace = .041, $F(5, 365) = 3.129, p = .009$, partial $\eta^2 = .041$. This indicated that the degree program level significantly differed for the combined

Table 24

The Means and Standard Deviations for SQ in Admissions Based on Age Category

Age	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 18 years	3	3.50	1.50	4.00	1.73	3.83	1.61	3.83	1.48	3.83	1.61
18 to 24 years	185	3.70	.74	3.69	.78	3.75	.74	3.60	.74	3.60	.83
25 to 34 years	130	3.67	.92	3.66	.88	3.76	.83	3.66	.81	3.57	.84
35 to 44 years	36	3.45	.93	3.44	.91	3.59	.85	3.50	.88	3.35	.92
45 to 54 years	14	3.67	.90	3.71	.81	3.75	.77	3.62	.63	3.32	.64

Table 25

Means and Standard Deviations for SQ in Housing by Degree Level Category

Variables	<i>N</i>	Undergraduate		<i>N</i>	Graduate	
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Reliability	164	3.76	.80	207	3.60	.86
Responsiveness	164	3.75	.83	207	3.59	.84
Empathy	164	3.65	.80	207	3.58	.76
Assurance	164	3.82	.81	207	3.68	.76
Tangibility	164	3.68	.87	207	3.46	.81

DV. With an alpha $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. Degree program level category differences were significant for tangibility, $F(1, 369) = 6.544, p = .011$, partial $\eta^2 = .017$, indicating that degree program level significantly affects perceptions of service tangibility. Degree program level category differences were not significant for reliability, $F(1, 369) = 3.423, p = .065$, partial $\eta^2 = .009$; responsiveness, $F(1, 369) = 3.501, p = .062$, partial $\eta^2 = .009$; assurance, $F(1, 369) = 2.841, p = .093$, partial $\eta^2 = .008$; or empathy, $F(1, 369) = .730, p = .393$, partial $\eta^2 = .002$, indicating that degree program level did not significantly affect perceptions of service reliability, responsiveness, assurance, or empathy. All of the effect sizes were small. The pairwise analysis did not reveal significant differences among categories for reliability, responsiveness, assurance, or empathy.

Duration of Stay at Current University (Yearatuni)

Table 26 presents means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by the duration of stay (Yearatuni) category.

A MANOVA was conducted to determine the duration of stay at university category differences for the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(60, 3133.55) = 1.467, p = .012$. Wilk's Lambda was used to interpret the multivariate test, Wilks' $\Lambda = .913, F(23, 1353.70) = 1.346, p = .119$, and partial $\eta^2 = .018$ small effect size, indicating that duration of stay at the university did not significantly differ for the combined DV.

Race and Ethnicity

A MANOVA test was conducted to determine the race/ethnicity category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 75770.43) = 1.652, p = .001$. Pillai's Trace was utilized to interpret the MANOVA results. The MANOVA results revealed that there were no significant differences for the race/ethnicity category in terms of the DVs, Pillai's Trace = .065, $F(20, 1476) = 1.227, p = .222$, partial $\eta^2 = .016$ small effect size, indicating that race/ethnicity did not significantly differ for the combined DV. Table 27 presents means and standard deviations for the race/ethnicity category in housing.

Religious Preference

Table 28 presents means and standard deviations for the religious preference category.

Table 26

The Means and Standard Deviations for SQ in Housing Based on Duration of Stay (Yearatuni) Category

Yearatuni	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 1 year	145	3.76	.79	3.74	.79	3.79	.79	3.70	.74	3.66	.80
1 to 2 years	123	3.69	.87	3.92	.75	3.76	.80	3.17	.84	3.59	.89
3 to 4 years	83	3.65	.81	3.67	.87	3.76	.77	3.56	.76	3.47	.83
5 to 64 years	13	3.15	.76	3.04	.72	3.40	.60	3.34	.48	3.23	.74
7 to 8 years	8	2.91	.96	3.03	.89	3.22	.71	3.17	.89	2.78	.74
9 years and over	2	3.63	1.59	3.63	.88	3.88	.53	3.83	.24	3.38	1.24

Table 27

The Means and Standard Deviations for SQ in Housing Based on Race/Ethnicity Category

Race/Ethnicity	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Asian	165	3.70	.82	3.68	.85	3.76	.79	3.63	.79	3.62	.87
Black or African American	62	3.76	.89	3.73	.86	3.81	.80	3.68	.79	3.63	.86
White/Caucasian	72	3.48	.81	3.46	.81	3.54	.73	3.45	.65	3.30	.75
Hispanic	33	3.83	.80	3.89	.75	4.09	.69	3.88	.78	3.80	.82
Other	43	3.64	.88	3.67	.83	3.66	.85	3.52	.87	3.49	.81

Table 28

The Means and Standard Deviations for SQ in Housing Based on Religious Preference Category

Religious Pref.	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Christian	227	3.69	.88	3.69	.87	3.81	.81	3.65	.81	3.55	.88
Muslim	43	3.72	.68	3.66	.74	3.60	.75	3.57	.70	3.55	.75
Buddhist	17	3.65	.74	3.69	.50	3.71	.62	3.55	.62	3.66	.77
Hindu	32	3.66	.90	3.66	.90	3.64	.82	3.61	.87	3.63	.85
Agnostic/Atheist	51	3.61	.78	3.59	.85	3.71	.74	3.56	.70	3.61	.78

A MANOVA was conducted to determine the religious preference category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 20476.64) = 2.966, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results. The MANOVA was not significant for religious preference, Pillai's Trace = .063, $F(20, 1456) = 1.169, p = .272$, partial $\eta^2 = .016$, small effect size. The Pillai's Trace result indicated that the religious preference category did not significantly differ for the combined DV.

School Type

A MANOVA was conducted to determine the school type category differences for the combined DV. Table 29 represents the means and standard deviations for the school type category.

Table 29

Means and Standard Deviations for SQ in Housing Based on School type Category

Variables	N	Private		Public		
		M	SD	N	M	SD
Reliability	230	3.73	.87	144	3.57	.76
Responsiveness	230	3.74	.86	144	3.53	.78
Empathy	230	3.69	.79	144	3.50	.75
Assurance	230	3.84	.81	144	3.60	.72
Tangibility	230	3.58	.89	144	3.56	.84

The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(15, 370182.2) = 2.341, p = .002$. Hotelling's Trace was used to interpret the multivariate test, Hotelling's Trace = .046, $F(5, 370) = 3.406, p = .005$, partial $\eta^2 = .044$, indicating that the school type category significantly differed for the combined DV. ANOVA was conducted on each DV as a follow-up to the MANOVA. The school type category was significant for perceptions of service responsiveness, $F(1, 374) = 5.654, p = .018$, partial $\eta^2 = .015$; assurance, $F(1, 374) = 7.933, p = .005$, partial $\eta^2 = .021$; and empathy, $F(1, 374) = 5.374, p = .021$, partial $\eta^2 = .014$. The effect sizes were small. This indicated while the differences were statistically significant, the magnitude was small. Meaning that the magnitude for the school type category significantly affected how international students perceived service responsiveness, assurance, and empathy, but not for reliability, $F(1, 374) = 3.054, p = .081$, partial $\eta^2 = .008$, or tangibility, $F(1, 374) = .341, p = .560$, partial $\eta^2 = .001$. In general, all of the effect sizes were small. The pairwise analysis revealed that for school type, there were significant differences among reliability, responsiveness, assurance, empathy, and tangibility.

Academic Records

Gender

A MANOVA was conducted to determine the gender category differences for the combined DV. Table 30 presents means and standard deviations for the gender category in academic records.

The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(15, 528977.19) = 3.737, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .096, $F(10, 734) = 3.699, p < .001, \eta^2$

Table 30

Means and Standard Deviations for SQ in Academic Records Based on Gender Category

Variables	N	Male		N	Female	
		M	SD		M	SD
Reliability	196	3.97	.79	174	3.84	.70
Responsiveness	196	3.94	.78	174	3.76	.72
Empathy	196	3.95	.75	174	3.75	.66
Assurance	196	3.98	.76	174	3.77	.72
Tangibility	196	3.92	.78	174	3.76	.67

= .048. The MANOVA was significant, and this indicated that the gender category significantly differed for the combined DV. With an alpha $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. The results revealed that the gender category significantly affected respondents' perceptions of service responsiveness, $F(2, 370) = 5.484, p = .004$, partial $\eta^2 = .0299$ (small effect size); assurance, $F(2, 370) = 6.472, p = .002$, partial $\eta^2 = .034$ (small effect size); and empathy, $F(2, 370) = 3.790, p = .023$, partial $\eta^2 = .020$ (small effect size), but it did not affect service reliability, $F(2, 370) = 2.009, p = .136$, partial $\eta^2 = .011$ (small effect size) or tangibility $F(2, 370) = 2.554, p = .079$, partial $\eta^2 = .014$ (small effect size). In general, male respondents had more positive perceptions of SQ than female respondents did. But in actual sense, there are no clear-cut differences. Pairwise comparison analysis did not reveal any significant differences between male and female responses.

Geographical Region of Origin

A MANOVA was conducted to determine the geographical region category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 31665.20) = 3.044, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .126, $F(25, 1300) = 1.342, p = .121$, with a small effect size of $\eta^2 = .025$. The MANOVA was not significant for geographical region, which indicated that geographical region did not significantly differ for the combined DV. Table 31 presents means and standard deviations for the geographical region category in academic records.

Age

Table 32 presents means and standard deviations for perceptions of SQ based on age category. A MANOVA was conducted to determine the age category differences in relation to the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(45, 7992.01) = 2.437, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .024, $F(20, 1444) = .370, p = .995$, partial $\eta^2 = .005$ (small effect size). The MANOVA was not significant, which indicated that the age category did not significantly differ for the combined DV.

Level of Degree Program

A MANOVA was conducted to determine the degree level category differences for the combined DV. Table 33 presents means and standard deviations for the degree level category.

Table 31

The Means and Standard Deviations for SQ in Academic Records Based on Geographical Region of Category

Geographical	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Africa	30	3.99	.89	3.98	.83	4.01	.84	3.87	.96	3.95	.71
Asia	129	4.10	.65	3.98	.71	3.97	.71	3.77	.66	3.98	.81
Australia	4	3.94	.52	3.81	.24	3.69	.38	3.71	.34	3.88	.20
Europe	23	3.70	.66	3.65	.59	3.72	.62	3.70	.63	3.51	.52
North America (excluding U.S.)	51	4.00	.66	3.95	.67	4.00	.69	3.99	.66	3.91	.85
South America	29	3.77	.76	3.63	.78	3.76	.77	3.66	.64	3.76	.97

Table 32

The Means and Standard Deviations for SQ in Academic Records Based on Age Category

Age	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 18 years	3	4.08	1.01	4.17	1.04	4.33	1.15	4.12	1.00	4.25	1.09
18 to 24 years	185	3.90	.71	3.83	.72	3.86	.71	3.82	.67	3.83	.69
25 to 34 years	130	3.93	.77	3.87	.80	3.89	.80	3.90	.72	3.86	.77
35 to 44 years	36	3.90	.84	3.87	.85	3.90	.84	3.93	.84	3.88	.85
45 to 54 years	14	3.73	.77	3.71	.74	3.73	.62	3.79	.54	3.68	.64

Table 33

Means and Standard Deviations for SQ in Academic Records Based on Degree Level Category

Variables	<i>N</i>	Undergraduate		<i>N</i>	Graduate	
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Reliability	164	3.87	.75	206	3.93	.75
Responsiveness	164	3.79	.76	206	3.88	.77
Empathy	164	3.82	.76	206	3.91	.74
Assurance	164	3.81	.72	206	3.88	.71
Tangibility	164	3.84	.73	206	3.84	.74

The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(15, 489467.94) = 3.156, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .015, $F(5, 364) = 1.131, p = .343$, with a small effect size of $\eta^2 = .015$. The MANOVA was not significant for degree level, indicating that the level of degree program did not significantly differ for the combined DV.

Duration of Stay at Current University

A MANOVA was conducted to determine the duration at university category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 3134.08) = 2.548, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .108, $F(25, 1835) = 1.613, p = .028$, partial $\eta^2 = .022$ (small effect size). The MANOVA was significant for the duration of stay at the university, indicating that the duration of stay at the current

university did significantly differ for the combined DV. With an alpha $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. The results revealed that the duration of stay at the university category significantly affected respondents' perceptions of service responsiveness, $F(5, 367) = 2.534, p = .028, \eta^2 = .033$; empathy, $F(5, 367) = 3.742, p = .003, \eta^2 = .049$; and tangibility, $F(5, 367) = 2.915, p = .014, \eta^2 = .038$. Effect sizes were moderate. Meaning that duration of stay at the current university did significantly affect respondents' perceptions of service reliability, $F(5, 367) = 2.058, p = .070, \eta^2 = .027$, or assurance, $F(5, 367) = 1.847, p = .103, \eta^2 = .025$.

The pairwise comparison analysis results revealed that respondents who had been at the university for seven to eight years had a less positive perception of service reliability in academic records. They differed from respondents who had been at the university for less than one year, one to two years, and three to four years. All of these last three categories had positive perceptions of service reliability within the department. Respondents who had been at the university for seven to eight years had a less positive perception of service responsiveness and were significantly different from those who had stayed for a duration of under one year, one to two years, and nine years and over. Respondents who had stayed at the university for a period of seven to eight years had a less positive perception of service assurance and were significantly different from those who had been at the university for less than one year, one to two years, and nine years and over. Respondents who had been at the university for a duration of under one year had a more positive perception of service empathy and were significantly different from those who had attended three to four years or seven to eight years. Respondents who had been at the university for a duration of one to two years had a more positive perception of

service empathy than those who had stayed at the university for a period of three to four years. Respondents who had been at the university for a period of seven to eight years had a less positive perception of service empathy and significantly differed from those attending less than one year, one to two years, three to four years, and nine years and over. Differences were also revealed for perceptions of service tangibility. Respondents who had been at the university for a duration of less than one year had a more positive perception of service tangibility and differed from those who had attended three to four years. International students who had been at the university for one to two years had a more positive perception for service tangibility than students who had attended three to four years. Respondents who had been at the university for a duration of seven to eight years had a less positive perception of service tangibility for academic records and differed from respondents who had been at the university for a duration of less than one year, one to two years, five to six years, and nine years and over. Table 34 presents means and standard deviations for duration of stay at the university.

Race and Ethnicity

Table 35 presents means and standard deviations for the race/ethnicity category. A MANOVA was conducted to determine the race/ethnicity category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 72299.19) = 2.410, p < .001$. The MANOVA test was significant for the race/ethnicity category. Pillai's Trace was used to interpret the MANOVA results, Pillai's Trace = .115, $F(20, 1472) = 2.183, p = .002, \eta^2 = .074$, indicating that the race/ethnicity category significantly differed for the combined DV.

Table 34

The Means and Standard Deviations for SQ in Academic Records Based on Duration of Stay (Yearatuni) Category

Yearatuni	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 1 year	144	3.94	.73	3.89	.75	3.91	.74	3.95	.68	3.93	.72
1 to 2 years	123	3.98	.74	3.92	.75	3.93	.74	3.92	.71	3.89	.71
3 to 4 years	83	3.83	.77	3.74	.76	3.78	.72	3.67	.70	3.67	.75
5 to 64 years	13	3.67	.73	3.54	.88	3.77	.97	3.73	.68	3.87	.77
7 to 8 years	8	3.25	.89	3.25	.63	3.31	.88	3.12	.87	3.22	.82
9 years and over	2	4.25	.35	4.63	.53	4.62	.53	4.25	.12	4.38	.74

Table 35

The Means and Standard Deviations for SQ in Academic Records Based on Race/Ethnicity Category

Race/Ethnicity	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Asian	165	3.96	.72	3.88	.75	3.90	.73	3.88	.68	3.89	.71
Black or African American	62	3.89	.88	3.89	.86	3.92	.86	3.83	.89	3.93	.83
White/Caucasian	72	3.73	.71	3.66	.71	3.74	.69	3.71	.65	3.57	.71
Hispanic	33	4.05	.65	4.02	.65	4.10	.67	4.00	.66	3.98	.68
Other	43	3.91	.77	3.86	.81	3.77	.81	3.92	.69	3.92	.69

An ANOVA was conducted on each DV as a follow-up to the MANOVA. The results revealed that the race/ethnicity category did significantly affect all of the DVs except for tangibility, $F(4, 369) = 3.554, p = .007$, partial $\eta^2 = .035$ (small effect size). The race/ethnicity category did significantly affect reliability, $F(4, 369) = 1.415, p = .228, \eta^2 = .015$; responsiveness, $F(4, 369) = 1.621, p = .168, \eta^2 = .017$; assurance, $F(4, 369) = 1.553, p = .186, \eta^2 = .017$; and empathy, $F(4, 369) = 1.273, p = .280, \eta^2 = .014$. All of the effect sizes were small. The pairwise comparison analysis was conducted, and it revealed that respondents of both Asian and Black or African descent significantly differed from Whites or Caucasians in respect to perceptions of service tangibility. White or Caucasian respondents had more positive perceptions. Table 33 presents means and standard deviations for the race/ethnicity category.

Religious Preference

A MANOVA was conducted to determine the religious preference category differences for the combined DV. Table 36 presents means and standard deviations for the religious preference category.

The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 20497.19) = 1.672, p = .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .043, $F(20, 1452) = .790, p = .728, \eta^2 = .011$, indicating that the religious preference category did not significantly differ for the combined DV. In other words, the MANOVA did not reveal significant differences among the religious preference categories in terms of the DV.

Table 36

The Means and Standard Deviations for SQ in Academic Records Based on Religious Preference Category

Religious Pref.	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Christian	227	3.90	.77	3.85	.80	3.87	.79	3.85	.73	3.83	.74
Muslim	43	3.91	.69	3.86	.72	3.86	.72	3.85	.69	3.86	.74
Buddhist	17	3.76	.48	3.84	.39	3.79	.49	3.91	.48	3.96	.48
Hindu	32	3.96	.67	3.93	.69	3.88	.67	3.92	.70	3.85	.66
Agnostic/Atheist	51	3.94	.85	3.78	.81	3.91	.78	3.83	.69	3.87	.85

School Type

A MANOVA was conducted to determine the school type category differences for the combined DV. Table 37 present means and standard deviations for the combined DVs by school type category.

Table 37

Means and Standard Deviations for SQ in Academic Records Based on School Type Category

Variables	<i>N</i>	Private		<i>N</i>	Public	
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Reliability	230	3.90	.80	144	3.91	.67
Responsiveness	230	3.84	.80	144	3.85	.69
Empathy	230	3.85	.74	144	3.85	.67
Assurance	230	3.88	.79	144	3.86	.68
Tangibility	230	3.86	.77	144	3.82	.67

The Box's test was significant, revealing that equal variances-covariance was violated, meaning the assumption of homogeneity of covariance was not assumed $F(15, 370621.77) = 3.417, p < .001$. The MANOVA was not significant, and Pillai's Trace was used to interpret the MANOVA, Pillai's Trace $F(5, 369) = .250, p = .940$, partial $\eta^2 = .003$ (a small effect size). This indicated that the school type category did not significantly differ for the combined DV.

International Student Services

Gender

A MANOVA was conducted for the variable gender to evaluate group differences for the combined DV. Table 38 presents means and standard deviations for the gender category in international student services.

Table 38

Means and Standard Deviations for SQ in International Student Services Based on Gender Category

Variables	<i>N</i>	Male		<i>N</i>	Female	
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Reliability	196	4.14	.84	175	4.10	.79
Responsiveness	196	4.13	.85	175	4.05	.82
Empathy	196	4.08	.82	175	4.03	.75
Assurance	196	4.16	.85	175	4.08	.80
Tangibility	196	4.10	.85	175	4.00	.79

The Box's test was not significant and indicates that equal variances could be assumed, $F(15, 533357.6) = 1.62, p = 1.62$. Hotelling's Trace was utilized to interpret the MANOVA results, Hotelling's Trace $F(10, 732) = .794, p = .635$, partial $\eta^2 = .011$. The results suggest that the male and female participants did not significantly differ in terms of a combined DV. Gender did not affect how international students perceived service performance or quality in international student services.

Geographical Region of Origin

A MANOVA was conducted to determine the geographical region category differences for the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 32223.75) = 2.717, p < .00$. Pillai's Trace was used to assess the MANOVA, Pillai's Trace = .142, $F(25, 1305) = 1.521, p = .048$, partial $\eta^2 = .028$ (a small effect size) revealing that the geographical region of origin did not significantly affect the combined DV, meaning that geographical region did not significantly affect international students' perception of service performance or quality. Table 39 presents means and standard deviations for the geographical region category in international student services.

Age

A multivariate analysis of variance (MANOVA) was conducted to determine the age category differences on the combined DV. Table 40 presents means and standard deviations for the age category.

The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(45, 7988.11) = 2.498, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .046, $F(20, 1448) = .834, p = .673$, partial $\eta^2 = .011$ (a small effect size), and was not significant, indicating that the age category does not significantly differ for the DVs.

Level of Degree Program

Table 41 represents the means and standard deviations for the level of degree program category. A MANOVA was conducted to determine the level of degree

Table 39

The Means and Standard Deviations for SQ in International Student Services by Geographical Region of Category

Geographical	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Africa	30	4.23	.64	4.25	.67	4.26	.67	4.17	.69	4.02	.79
Asia	129	4.13	.80	4.08	.78	4.11	.79	4.06	.74	4.07	.78
Australia	4	4.56	.52	4.31	.55	4.31	.94	3.92	1.34	4.63	.60
Europe	23	4.29	.65	4.26	.56	4.32	.67	4.12	.70	4.01	.85
North America (excluding U.S.)	51	4.24	.74	4.27	.74	4.30	.69	4.25	.64	4.27	.72
South America	30	4.00	.84	3.85	.07	3.90	1.00	3.90	.79	3.90	.81

Table 40

The Means and Standard Deviations for SQ in International Student Services Based on Age Category

Age	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 18 years	3	4.25	1.10	4.33	1.15	4.33	1.15	4.21	1.22	4.25	1.09
18 to 24 years	185	4.10	.73	4.02	.75	4.06	.74	3.98	.71	3.98	.73
25 to 34 years	130	4.13	.96	4.07	.98	4.11	.95	4.07	.90	4.07	.95
35 to 44 years	36	4.40	.70	4.40	.63	4.42	.63	4.37	.64	4.33	.72
45 to 54 years	14	4.20	.80	4.33	.83	4.21	.90	4.15	.79	4.30	.72

Table 41

Means and Standard Deviations for SQ in International Student Services Base on Degree Level Category

Variables	Undergraduate			Graduate		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reliability	164	4.08	.78	207	4.14	.85
Responsiveness	164	4.05	.78	207	4.11	.88
Empathy	164	3.98	.75	207	4.10	.82
Assurance	164	4.08	.77	207	4.14	.87
Tangibility	164	4.00	.78	207	4.08	.85

program category differences on the combined DV. The Box's test was not significant, revealing that equal variances-covariance assumption was met, $F(15, 48995.45) = .899, p = .565$. Wilk's Lambda was utilized to interpret the MANOVA results, Wilks' $\Lambda = .990, F(5, 365) = .738, p = .598$, partial $\eta^2 = .010$ (a small effect size), indicating that the level of degree program category did not significantly differ for the combined DV.

Duration of Stay at Current University (Yearatuni)

A MANOVA was conducted to determine the duration at university category differences in terms of the combined DV. The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 3133.55) = 2.105, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .105, $F(25, 1840) = 1.572, p = .36$, partial $\eta^2 = .021$ (a small effect size). Table 42 represents the means and standard deviations for the duration of stay at the university category.

Table 42

The Means and Standard Deviations for SQ in International Student Services Based on Duration of Stay (Yearatuni)

Yearatuni	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Under 1 year	145	4.13	.77	4.12	.80	4.11	.80	4.05	.76	4.07	.79
1 to 2 years	123	4.19	.76	4.14	.75	4.20	.79	4.12	.76	4.12	.77
3 to 4 years	83	4.04	.93	3.96	.93	4.04	.88	3.94	.86	3.90	.90
5 to 6 years	13	4.19	.86	4.50	.60	4.37	.66	4.45	.54	4.40	.67
7 to 8 years	8	3.53	1.29	3.54	1.54	3.63	1.41	3.54	1.20	3.59	1.22
9 years and over	2	4.25	0.00	4.46	.29	4.13	.18	3.75	.59	4.50	.35

Race and Ethnicity

Table 43 presents means and standard deviations for the race/ethnicity category.

A MANOVA was conducted to determine the race/ethnicity category differences in terms of a combined DV. The Box's test was significant, indicating that equal variances-covariance assumption was violated, $F(60, 75770.43) = 2.319, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .051, $F(20, 1476) = 957, p = .514$, partial $\eta^2 = .013$ (a small effect size). This indicated that the groups were not significantly different.

Religious Preference

A MANOVA was conducted to determine the religious preference differences in terms of the combined DV. Table 44 presents means and standard deviations for the religious preference category for international student services.

The Box's test was significant, revealing that equal variances-covariance assumption was violated, $F(60, 20476.64) = 1.586, p < .001$. Pillai's Trace was utilized to interpret the MANOVA results, Pillai's Trace = .068, $F(20, 1456) = 1.259, p = .197$, partial $\eta^2 = .017$ (a small effect size). The results indicated that there were no significant differences between the groups.

School Type

Table 45 present means and standard deviations for reliability, responsiveness, assurance, empathy, and tangibility by school type category. A MANOVA was conducted to determine the school type category differences for private and public universities. The Box's test was not significant, revealing that equal variances

Table 43

The Means and Standard Deviations for SQ in International Student Services Based on Race/Ethnicity Category

Race/Ethnicity	N	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		M	SD	M	SD	M	SD	M	SD	M	SD
Asian	165	4.08	.83	4.02	.82	4.08	.84	3.99	.81	4.02	.82
Black or African American	62	4.25	.74	4.26	.75	4.27	.70	4.19	.77	4.15	.80
White/Caucasian	72	4.05	.87	3.99	.91	4.06	.82	3.98	.75	3.94	.85
Hispanic	33	4.33	.55	4.33	.71	4.31	.71	4.28	.71	4.27	.70
Other	43	4.05	.94	4.10	.94	4.04	1.01	4.06	.86	4.10	.86

Table 44

The Means and Standard Deviations for SQ in International Student Services Based on Religious Preference Category

Religious Pref.	<i>N</i>	Reliability		Responsiveness		Assurance		Empathy		Tangibility	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Christian	227	4.21	.77	4.19	.82	4.22	.79	4.15	.75	4.13	.79
Muslim	43	3.84	.92	3.87	.89	3.80	.85	3.83	.82	3.80	.86
Buddhist	17	4.03	.98	3.79	.94	3.88	.93	3.81	.93	3.83	.99
Hindu	32	4.06	.85	4.02	.88	4.07	.90	3.96	.91	4.05	.84
Agnostic/Atheist	51	4.00	.85	3.96	.79	4.06	.84	3.95	.81	3.96	.84

Table 45

Means and Standard Deviations for SQ in International Student Services Based on School Type Category

Variables	N	Private		N	Public	
		M	SD		M	SD
Reliability	230	4.24	.76	144	3.93	.86
Responsiveness	230	4.25	.78	144	3.85	.87
Empathy	230	4.17	.74	144	3.86	.83
Assurance	230	4.26	.76	144	3.90	.76
Tangibility	230	4.18	.77	144	3.85	.85

covariance was assumed, $F(15, 370) = 1.276, p = .208$. Hotelling's Trace was utilized to interpret the MANOVA results, Hotelling's Trace = .059, $F(5, 370) = 4.363, p = .001, \eta^2 = .056$, indicating that school type significantly affected the combined DV.

With an alpha $\alpha = .05$, ANOVA was conducted on each DV as a follow-up to the MANOVA. The results indicated that school type significantly affected perceptions of service reliability, $F(1, 374) = 13.681, p < .001, \eta^2 = .035$; responsiveness, $F(1, 374) = 20.316, p < .001, \eta^2 = .052$; assurance, $F(1, 374) = 18.183, p < .001, \eta^2 = .046$; empathy, $F(1, 374) = 14.526, p < .001, \eta^2 = .037$; and tangibility, $F(1, 374) = 14.535, p < .001, \eta^2 = .037$. Effect sizes were small to moderate. Indicating a fairly moderate magnitude of difference. Pairwise comparison tests were conducted as a follow-up. The results indicated that respondents' perceptions of service performance at private universities significantly differ from those at public universities. More so than respondents from public universities, those from private universities had higher positive perceptions of

service reliability in international student services in the areas of service responsiveness, assurance, empathy, and tangibility than respondents from public universities.

Summary

The purpose of the study was to investigate perceptions of SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. It further examined the relationship between perceived SQ and satisfaction. Demographic predictor variables and the combined IV of tangibility, reliability, responsiveness, assurance, and empathy were used. A modified version of the SERVPERF questionnaire, a service performance-only instrument, was administered to international students, and 376 responded with usable data. Of the respondents, 196 were male and 175 female. The majority of the respondents (185) were aged between 18-24 years. Those who attended private universities numbered 61.7% (232) while 38.3% (144) came from public universities.

A majority of the participants, 55.1% (207), were enrolled in graduate programs, and 44.2% (164) in undergraduate. Fifty-two percent had been at the current university for a duration of over a year while 38.8% had been at the university for a period of more than six months but less than a year.

The bulk of the participants, 165 (43.9%), were Asian. The remaining sample was made up of 72 (19.1%) Whites or Caucasians, 62 (16.5%) Blacks or African Americans, 33 (8.8%) Hispanics, and 43 (11.4%) identified as Other. A majority, 227 (60.4%), were Christians, with 51 (13.6%) Agnostic/Atheists, 43 (11.4%) Muslims, 32 (8.5%) Hindus, and 17 (4.5%) Buddhists.

Descriptive statistics and multivariate correlational statistical methods were used for analysis of the four research questions. Descriptive statistics showed that respondents' ratings of perceived service performance ranked highest in international student services ($M = 4.10$, $SD = 0.77$), followed by academic records ($M = 3.87$, $SD = 0.69$), admissions ($M = 3.84$, $SD = 0.66$), and housing ($M = 3.65$, $SD = 0.75$), in that order. Participants rated the determinants of perceived service performance, quality, and satisfaction—assurance ($M = 3.91$, $SD = 0.60$), reliability ($M = 3.89$, $SD = 0.62$), responsiveness ($M = 3.85$, $SD = 0.64$). The participants also rated their overall satisfaction with SQ based on department. They rated international student services ($M = 4.15$, $SD = 1.08$), followed by academic records ($M = 4.00$, $SD = 1.02$), admissions ($M = 3.94$, $SD = 1.06$), and housing ($M = 3.72$, $SD = 1.06$), in that order.

Multivariate Analysis of Variance tests were completed for all of the eight demographic variables for each of the departments—admissions, housing, academic records, and international student services. Results for each department regarding statistical differences is as follows.

Admissions

Statistically significant differences were revealed for the duration of stay at the university, race/ethnicity, and religious preferences categories. The differences are explained in detail below.

(a) Duration of stay category differences were significant for

- (i) Empathy, $F(5, 366) = 2.540$, $p = .028$, partial $\eta^2 = .034$;
- (ii) Tangibility, $F(5, 366) = 2.652$, $p = .023$, partial $\eta^2 = .035$;
- (iii) Reliability, $F(5, 366) = 1.337$, $p = .248$, partial $\eta^2 = .018$;

- (iv) Responsiveness, $F(5, 366) = .798, p = .552$, partial $\eta^2 = .011$; and
- (v) Assurance, $F(5, 366) = 2.043, p = .072$, partial $\eta^2 = .027$.

Respondents who had stayed at the same university for a period of 3 to 4 years and over, in general, had a less positive perception of service performance (quality). Table 18 indicated that the duration of stay at the current university significantly affected respondents' perceptions of service, meaning the length of stay at the university impacted international students' perceptions of SQ.

- (b) Race/ethnicity category. Pillai's Trace = .137, $F(20, 1468) = 2.610, p < .001$, partial $\eta^2 = .034$ indicated that the race/ethnicity category significantly differed for the combined DV. Differences were significant for

- (i) Reliability, $F(4, 368) = 2.649, p = .033$, partial $\eta^2 = .028$;
- (ii) Responsiveness, $F(4, 368) = 5.257, p < .001$, partial $\eta^2 = .054$;
- (iii) Assurance, $F(4, 368) = 3.1735, p = .014$, partial $\eta^2 = .033$.

Pairwise results revealed that for the perceptions of service reliability, Hispanics differed from Blacks or African Americans and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service reliability.

For service responsiveness, Hispanics also differed from Asians, Blacks or African Americans, and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service responsiveness. Asians also differed from Whites or Caucasians in their perceptions of service responsiveness. Respondents of Asian descent had more positive perceptions of service responsiveness.

For service assurance, Hispanics also differed from Blacks or African Americans and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service assurance.

(c) The religious preference category significant differences were as follows:

Assurance, $F(4, 363) = 2.816, p = .025$, partial $\eta^2 = .030$. Muslims significantly differed from Christians, Hindus, Buddhists, and Agnostics/Atheists. This indicated that the religious preference category significantly affected perceptions of service assurance. No other combined DV was impacted by the religious preference category.

Housing

Multivariate Analysis of Variance tests revealed significant differences for the combined DV in the geographical region of origin and degree program level categories. The differences are explained in detail below:

(a) Geographical region of origin category differences were significant for

(i) Reliability, - $F(5, 261) = 2.25, p = .050$, partial $\eta^2 = .041$, and

(ii) Tangibility, $F(5, 261) = 2.93, p = .014$, partial $\eta^2 = .053$

There were no other significant differences, meaning the geographical region of origin affected perceptions of SQ for service reliability and tangibility only. Respondents from Asia had a more positive perception of service reliability and differed from respondents from Europe and North America (excluding the United States). Respondents from North America (excluding the United States) had more positive perceptions of service reliability and were different from South Americans and Europeans. Respondents from Asia had more positive perceptions of service tangibility and differed from

Europeans and South Americans. Respondents from North America (excluding the United States) had more positive perceptions of service tangibility and differed from Europeans.

Academic Records

Multivariate Analysis of Variance tests revealed significant differences for the categories of gender, duration of stay, and race/ethnicity in terms of the combined DV in academic records. The differences were as follows:

(a) Gender-affected respondent perceptions of service included

- (i) Responsiveness, $F(2, 370) = 5.484, p = .004$, partial $\eta^2 = .0299$.
- (ii) Assurance, $F(2, 370) = 6.472, p = .002$, partial $\eta^2 = .034$ (small effect size); and
- (iii) Empathy, $F(2, 370) = 3.790, p = .023$, partial $\eta^2 = .020$ (small effect size).

In general, male respondents had more positive perceptions of SQ than female. Nevertheless, pairwise comparison analysis did not reveal any significant differences between male and female respondents. Both male and female respondents had a positive perception of services.

(b) Under the duration of stay at current university category, respondents who had stayed at the current university for a period of 7 to 9 years had less positive perceptions for all of the combined DVs. This was significantly different from perceptions of students who had attended for the rest of the studied durations.

- (c) The results revealed that the race/ethnicity category did significantly affect all of the DVs except for tangibility, $F(4, 369) = 3.554, p = .007$, partial $\eta^2 = .035$ with a large effect size.

International Student Services

Multivariate Analysis of Variance tests did not reveal any significant differences for all of the combined DVs based on the demographic variables.

Chapter 5 provides an interpretation of the findings and their implications for international students' perceived service performance, quality, and satisfaction in higher education in the United States. Based on the findings, recommendations for further empirical studies and improvement of service performance, quality, and satisfaction in nonacademic service departments at institutions of higher education are also presented in Chapter 5.

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of the study was to investigate perceived SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. Stated more precisely, the study examined its core focus – the relationship between perceived SQ and satisfaction. It also examined the relationship between SQ and satisfaction as a function of the demographic predictor variables using the SERVPERF scale.

Perceptions of international students have salient implications for higher education institutions—in planning and implementing the delivery of services and in identifying areas requiring improvement. The key to unlocking these implications in this context is examining perceptions of SQ of student services and satisfaction among international students. This study concluded that satisfaction of students is important to the success of institutions of higher education. As in the business world, satisfied customers become loyal repeat customers and recommend the services to others, which in higher education context, subsequently leads to increased enrollment, increased revenue, and competitive edge. More specifically, it is important to assess international students’

perceptions of SQ and satisfaction as a way of strategizing to improve SQ, attract and retain international students.

In this chapter, I present a summary of the methodology and the findings for each of the four research questions, provide interpretation and discussion, recommendations for higher education, limitations, suggestions for future research, and conclusion.

Summary of Methodology

A quantitative, descriptive, and correlational survey method was used to investigate international students' perceived SQ of nonacademic services, and satisfaction. It further examined the relationship between satisfaction and SQ.

The first section of the survey instrument was an added section comprised of demographic variables in which subjects were asked to indicate their gender, country of origin, age bracket, level of current degree program, duration of stay at the university, race/ethnicity, religious preference, and current living arrangement.

Section two consisted of the modified original SERVPERF instrument (Cronin & Taylor, 1994), with 22 items for evaluating international students' perceived SQ for each of the four selected service departments, namely admissions, housing, student records, and international student services. In this section of the questionnaire, subjects were asked about their feelings regarding the service and to rate or choose perceived service performance using a 5-point Likert scale from the following options: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*). The 22 items were divided into the five dimensions of SQ, specifically reliability, responsiveness, assurance, empathy and tangibility. Each set of 22 questions was applicable to a single department. The SERVPERF was thus comprised of a total of 88 survey items. The SERVPERF

questionnaire's internal reliability was tested using Cronbach's Alpha. According to Tavakol and Dennick (2011), Cronbach's Alpha is a measure of internal consistency of instrument scale, and determines the extent to which an instrument consistently measured features of the constructs. In this study the instrument was determined reliable.

Admissions Department had 22 survey items and a Cronbach's alpha of .960. Housing department had 22 survey items with a reliability of .975. Academic records had 22 survey items with a reliability of .977. International student services department had 22 survey items and a reliability of .981. The survey items were very reliable.

The target population was international students attending universities and colleges in the Indiana and Michigan area, a region of northern Indiana and southwest Michigan. SERVPERF survey was administered online to the international students at eight randomly-selected institutions, five public universities and three private universities. The anonymous data from the respondents was downloaded and analyzed using the SPSS version 24.0. Descriptive, correlational, and multivariate analyses were conducted.

Summary of Major Findings

The purpose of the study was to investigate perceptions of SQ of nonacademic services and satisfaction among international students at universities in Indiana and Michigan. It further examined the relationship between perceived SQ and satisfaction using demographic predictor variables and the combined IV of tangibility, reliability, responsiveness, assurance, and empathy. A modified version of the SERVPERF questionnaire, a service performance-only instrument, was administered to international students, and 376 responded with usable data. Of the respondents, 196 were male and 175

female. The majority of the respondents (185) were aged between 18-24 years. Those who attended private universities numbered 61.7% (232) while 38.3% (144) came from public universities.

A majority of the participants, 55.1% (207), were enrolled in graduate programs, and 44.2% (164) in undergraduate. Fifty-two percent had been at the current university for a duration of over a year while 38.8% had been at the university for a period of more than six months but less than a year.

The bulk of the participants, 165 (43.9%), were Asian. The remaining sample was made up of 72 (19.1%) Whites or Caucasians, 62 (16.5%) Blacks or African Americans, 33 (8.8%) Hispanics, and 43 (11.4%) identified as Other. A majority, 227 (60.4%), were Christians, with 51 (13.6%) Agnostic/Atheists, 43 (11.4%) Muslims, 32 (8.5%) Hindus, and 17 (4.5%) Buddhists.

Descriptive statistics and multivariate correlational statistical methods were used for analysis of the four research questions. Descriptive statistics found that overall, the ratings by the international students suggest that they perceived high levels of SQ across all of the selected nonacademic departments and across all service dimensions. In other words respondents agreed or strongly agreed with the quality of service provided. Respondents were happy, and pleased with the quality of services provided by the nonacademic service departments. The study also found that in general, the students rated overall satisfaction around $M = 4$, using a five-point *Likert scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*). This was interpreted to mean that students agreed that they were satisfied with the quality of service performance.

Using multivariate correlational statistical methods, the study found that a higher overall satisfaction score may be explained by higher scores in reliability and empathy but lower scores in tangibility. Meaning that that international students' satisfaction with SQ can be accounted for by reliability, empathy, and tangibility. In general, the multiple regression analysis conducted for Research Question 3 in the Step 3 model demonstrated that the predictor variables reliability, and empathy had positive while tangibility had negative significant weights, all three indicating international students' satisfaction with SQ. The model accounted for 32.1% of variance of international students' satisfaction. The study also found that satisfaction of international students in housing department could be attributed to gender. In academic records, satisfaction could be attributed to predictor variables -- geographical region of origin, level in degree program, and type of university. In admissions department satisfaction could be attributed to race/ethnicity. These findings are discussed later in this chapter.

Further findings from using descriptive statistics based departmental rankings showed that respondents' ratings of perceived service performance ranked highest in international student services ($M = 4.10$, $SD = 0.77$), followed by academic records ($M = 3.87$, $SD = 0.69$), admissions ($M = 3.84$, $SD = 0.66$), and housing ($M = 3.65$, $SD = 0.75$), in that order. Participants rated the determinants of perceived service performance, quality, and satisfaction—assurance ($M = 3.91$, $SD = 0.60$), reliability ($M = 3.89$, $SD = 0.62$), responsiveness ($M = 3.85$, $SD = 0.64$). The participants also rated their overall satisfaction with SQ based on department. They rated international student services ($M = 4.15$, $SD = 1.08$), followed by academic records ($M = 4.00$, $SD = 1.02$), admissions ($M = 3.94$, $SD = 1.06$), and housing ($M = 3.72$, $SD = 1.06$), in that order.

Multivariate Analysis of Variance tests were completed for all of the eight demographic variables for each of the departments—admissions, housing, academic records, and international student services. Results for each department regarding statistical differences is as follows.

Admissions

Statistically significant differences were revealed for the duration of stay at the university, race/ethnicity, and religious preferences categories. The differences are explained in detail below.

(a) Duration of stay category differences were significant for

- (i) Empathy, $F(5, 366) = 2.540, p = .028$, partial $\eta^2 = .034$;
- (ii) Tangibility, $F(5, 366) = 2.652, p = .023$, partial $\eta^2 = .035$;
- (iii) Reliability, $F(5, 366) = 1.337, p = .248$, partial $\eta^2 = .018$;
- (iv) Responsiveness, $F(5, 366) = .798, p = .552$, partial $\eta^2 = .011$; and
- (v) Assurance, $F(5, 366) = 2.043, p = .072$, partial $\eta^2 = .027$.

Respondents who had stayed at the same university for a period of three to four years and over, in general, had a less positive perception of service performance (quality). Table 18 indicated that the duration of stay at the current university significantly affected respondents' perceptions of service, meaning the length of stay at the university impacted international students' perceptions of SQ.

(b) Race/ethnicity category. Pillai's Trace = .137, $F(20, 1468) = 2.610, p < .001$, partial $\eta^2 = .034$ indicated that the race/ethnicity category significantly differed for the combined DV. Differences were significant for

- (iv) Reliability, $F(4, 368) = 2.649, p = .033$, partial $\eta^2 = .028$;

- (v) Responsiveness, $F(4, 368) = 5.257, p < .001$, partial $\eta^2 = .054$;
- (vi) Assurance, $F(4, 368) = 3.1735, p = .014$, partial $\eta^2 = .033$.

Pairwise results revealed that for the perceptions of service reliability, Hispanics differed from Blacks or African Americans and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service reliability.

For service responsiveness, Hispanics also differed from Asians, Blacks or African Americans, and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service responsiveness. Asians also differed from Whites or Caucasians in their perceptions of service responsiveness. Respondents of Asian descent had more positive perceptions of service responsiveness.

For service assurance, Hispanics also differed from Blacks or African Americans and Whites or Caucasians. Respondents of Hispanic descent had more positive perceptions of service assurance.

(c) The religious preference category significant differences were as follows:

Assurance, $F(4, 363) = 2.816, p = .025$, partial $\eta^2 = .030$. Muslims significantly differed from Christians, Hindus, Buddhists, and Agnostics/Atheists. This indicated that the religious preference category significantly affected perceptions of service assurance. No other combined DV was impacted by the religious preference category.

Housing

Multivariate Analysis of Variance tests revealed significant differences for the combined DV in the geographical region of origin and degree program level categories.

The differences are explained in detail below:

(a) Geographical region of origin category differences were significant for

(i) Reliability, - $F(5, 261) = 2.25, p = .050$, partial $\eta^2 = .041$, and

(iii) Tangibility, $F(5, 261) = 2.93, p = .014$, partial $\eta^2 = .053$

There were no other significant differences, meaning the geographical region of origin affected perceptions of SQ for service reliability and tangibility only. Respondents from Asia had a more positive perception of service reliability and differed from respondents from Europe and North America (excluding the United States). Respondents from North America (excluding the United States) had more positive perceptions of service reliability and were different from South Americans and Europeans. Respondents from Asia had more positive perceptions of service tangibility and differed from Europeans and South Americans. Respondents from North America (excluding the United States) had more positive perceptions of service tangibility and differed from Europeans.

Academic Records

Multivariate Analysis of Variance tests revealed significant differences for the categories of gender, duration of stay, and race/ethnicity in terms of the combined DV in academic records. The differences were as follows:

(b) Gender-affected respondent perceptions of service included

(i) Responsiveness, $F(2, 370) = 5.484, p = .004$, partial $\eta^2 = .0299$.

(ii) Assurance, $F(2, 370) = 6.472, p = .002$, partial $\eta^2 = .034$ (small effect size); and

(iv) Empathy, $F(2, 370) = 3.790, p = .023$, partial $\eta^2 = .020$ (small effect size).

In general, male respondents had more positive perceptions of SQ than female. Nevertheless, pairwise comparison analysis did not reveal any significant differences between male and female respondents. Both male and female respondents had a positive perception of services.

- (c) Under the duration of stay at current university category, respondents who had stayed at the current university for a period of seven to nine years had less positive perceptions for all of the combined DVs. This was significantly different from perceptions of students who had attended for the rest of the studied durations.
- (d) The results revealed that the race/ethnicity category did significantly affect all of the DVs except for tangibility, $F(4, 369) = 3.554, p = .007$, partial $\eta^2 = .035$ with a large effect size.

International Student Services

Multivariate Analysis of Variance tests did not reveal any significant differences for all of the combined DVs based on the demographic variables.

Chapter 5 provides an interpretation of the findings and their implications for international students' perceived service performance, quality, and satisfaction in higher education in the United States. Based on the findings, recommendations for further empirical studies and improvement of service performance, quality, and satisfaction in nonacademic service departments at institutions of higher education are also presented in Chapter 5.

In response to the four research questions, respondent's ratings of SQ, correlations between predictor variables and satisfaction, and the statistical significance

of demographic variables were reviewed. With 88 items in addition to demographic questions, all spread across the four nonacademic services and along the five dimensions, the findings were numerous. Each research question is presented, followed by a discussion of the findings.

Research Question 1

What are the service performance (quality) ratings given by international students for the nonacademic service departments—admissions, housing, academic records, and international student services?

The findings reveal that, overall, international students have high ratings for SQ across all of the nonacademic service departments. This is translated to mean that they have high positive perceptions of SQ.

I used descriptive statistics to answer the question about ratings of perceived SQ. Often descriptive statistics are used to define analyze a variety of features of the data. They provide information about the distribution of variables, exploring data prior to conducting statistical tests for data analysis and interpretation. I concentrated on the mean and standard deviation, in order to uncover the average and the spread of data across the mean value. The mean is used to measure the central tendency of data, giving the average value of a specific variable. Standard deviation on the other hand, gives the measure of dispersion. In other words, standard deviation provides information concerning the distribution of the values of a variable. Standard deviation shows how the values are spread around the measure of central tendency. When the data is normally distributed, the distribution lies between one standard deviation above and one standard deviation below (+1 and -1) the mean. This translates to about 68% of the mean. The

standard deviation in this case tells how diverse the ratings are or how much they spread out around the mean.

Using descriptive statistics, I computed means and standard deviations to answer this question. The results for Research Question 1 revealed that international students in general have a positive perception of SQ across all of the nonacademic service departments. International student services had the highest ratings of all of the service areas ($M = 4.10$, $SD = .77$), followed by academic records ($M = 3.87$, $SD = .69$), admissions ($M = 3.84$, $SD = .66$), and housing ($M = 3.65$, $SD = .75$), in that order. Whereas the overall ratings were overwhelmingly high, the results revealed that they were slightly different for each of the four departments.

The findings also revealed the ratings for the dimensions of service performance (quality). Reliability, tangibility, and empathy dimensions attracted the majority of the highest ratings across all service areas. In international student services, the reliability dimension ($M = 4.12$, $SD = .82$) and the assurance dimension ($M = 4.12$, $SD = .82$) had the highest ratings followed by responsiveness ($M = 4.10$, $SD = .83$), tangibility ($M = 4.10$, $SD = .80$), and empathy ($M = 4.10$, $SD = .82$).

In academic records, the SQ dimension of reliability was rated highest ($M = 3.91$, $SD = .75$), followed by assurance ($M = 3.87$, $SD = .75$), empathy ($M = 3.86$, $SD = .70$), responsiveness ($M = 3.85$, $SD = .76$), and tangibility ($M = 3.85$, $SD = .72$). The admissions results revealed the highest perception for assurance ($M = 3.93$, $SD = .74$), followed by tangibility ($M = 3.85$, $SD = .72$), reliability ($M = 3.84$, $SD = .77$), responsiveness ($M = 3.82$, $SD = .76$), and empathy ($M = 3.77$, $SD = .71$).

In housing, the ratings were slightly lower compared to the other departments. In this department, the highest perception was in the assurance dimension ($M = 3.74$, $SD = .79$), followed by reliability ($M = 3.67$, $SD = .84$), responsiveness ($M = 3.66$, $SD = .84$), empathy ($M = 3.62$, $SD = .78$), and tangibility ($M = 3.56$, $SD = .84$).

In all cases, the standard deviation was less than 1, which indicates that the values are clustered around the mean. There was very little dispersion, with all of the values residing near the mean value.

Kontic (2014) conducted a study titled “Measuring SQ in higher education: The case of Serbia”. The main aim of the study was to investigate the potential to apply the SERVPERF scale assessing SQ during the Bologna Process and higher education reform in Serbia. The study was designed based upon the SERVPERF survey. Modifications were made for the higher education context. The study found out that “students showed high levels of perceived quality in four of the five dimensions” (p. 650).

Malik et al. (2010), conducted a study to analyze the impact of different quality services on student satisfaction in higher educational institutes of a big division of Punjab province of Pakistan. Both public and private sector institutes were included in the study. Data was collected from 240 students from universities of the Gujranwala region. Sample comprised of both male and female students in equal ratio. The results showed that students are overall satisfied with services of Tangibility, Assurance, Reliability and Empathy but not much satisfied with parking facilities, computer labs, cafeteria services, complaint handling system.

Nadiri, Kandampully and Hussain (2009) in a study titled students’ perceptions of SQ in higher education, administered at Eastern Mediterranean University (EMU) located

in Famagusta, North Cyprus, to 600 students, found that in general “students have relatively high perception score (mean ≥ 4.20) related to EMU, ‘neat appearing employees’ (4.20), ‘safe transactions’ (4.27) and ‘convenient operating hours’ (4.29)” (p. 527). Their finding is strikingly similar to mine especially when you look at the mean scores for the various dimensions of SQ, as described herein above.

Kerlin (2000), using the SERVQUAL model examined student satisfaction with service processes. The study was conducted at a suburban community college. It focused on students in college transfer and professional/technical courses. It examined their expectations and perceptions of SQ in Registration, Financial Aid, Counseling, Career Center and Library services were probed. The study found patterns in student satisfaction and dissatisfaction. For example, students placed less emphasis on the tangible aspects of SQ, such as the appearance of facilities and brochures, and more emphasis on aspects that provide them with reliable services and demonstrate attention to their personal needs. The quality of some Financial Aid services, as well as office hours among all five services, were identified as needing further examination. What is lacking in this study is no information on how students rated their services.

Ruby (1998) used the SERVQUAL model in a study examining student perception with SQ, surveyed students at private Christian baccalaureate institutions and at a community college, regarding perceptions of SQ in terms of the dimensions of service. Ruby found that students expected different levels of SQ based on the departments considered. The study found difference between departments along each dimension of SQ was statistically significant at the .001 level of probability. It further found that female students expected significantly higher levels of SQ than men in the

areas of assurance, reliability, responsiveness, and empathy, and that differences in expected SQ among individual institutions studied was not found. Regarding perceptions of SQ, the study found significant differences in perceived SQ existed between departments along dimensions of SQ. When ratings of perceived SQ for all departments were combined, significant differences were found between two of the five dimensions of SQ. The study, however, did not mention anything about how students ranked services on a scale. In other words it is not clear if students perceived low or high SQ.

The overarching theme from these studies cited herein, studies which were conducted in different parts of the world, is that students generally perceived high SQ, and in some cases missing information on how students rated perceived SQ. There is no empirical study that has investigated this phenomena. In the absence of such a study, I discuss plausible reasons under the section *ratings of service quality*, in support of the respondents' perception of SQ found in my research.

Research Question 2

How satisfied are international students with the overall service performance in the admissions, housing, academic records, and international student services departments?

The results revealed an overall positive satisfaction with SQ in all of the departments. It revealed that respondents are most satisfied with SQ in international student services ($M = 4.15$, $SD = 1.08$), followed by academic records ($M = 3.99$, $SD = 1.02$), admissions ($M = 3.94$, $SD = 1.05$), and housing ($M = 3.72$, $SD = 1.06$). Again, when comparing satisfaction across the departments, satisfaction with SQ was lowest in the housing department.

Research Question 3

What is the nature of the relationship between perceived SQ and overall satisfaction with service performance?

The regression findings revealed that the overall model significantly predicted satisfaction with SQ [$R^2 = .320$, $R^2 \text{ adj} = .315$, $F(3, 370) = 58.155$, $p < .001$], meaning the relationship between satisfaction (DV) and dimensions of SQ (IVs) is linear, and therefore, the model significantly predicted international students' satisfaction with SQ. This model accounted for 32.1% of variance of international students' satisfaction.

For this model, I also analyzed the corresponding descriptive statistics for the independent and DVs. A total of $N = 374$ participants responded to question three. A summary of coefficients revealed that only three of the initial five IV (reliability, empathy, and tangibility) significantly contributed to the model. This was demonstrated in Table 13, including the correlations, along with the summary of the descriptive statistics—the mean and the standard deviation for dependent and IV, the M and SD for the DV and IVs (satisfaction [$M = 3.91$, $SD = .98$], reliability [$M = 3.89$, $SD = .63$], empathy [$M = 3.82$, $SD = .62$], and tangibility [$M = 3.82$, $SD = .64$]).

The results showed the Pearson correlations between satisfaction and reliability, empathy, and tangibility. In this relationship, reliability has the largest positive correlation with satisfaction at .547, followed by empathy (.509) and tangibility (.416). These three variables were statistically significant reliability $p < .001$, empathy $p < .002$, tangibility $p < .002$. Reliability and empathy had positive correlation with small to moderate effect size. Tangibility had a negative correlation and very small effect size $r = -.132$. But since it was statistically significant it would still explain the relationship. Positive intercorrelations amongst the IV showing the unique predictive capacity of each

IV were present. The correlation between reliability and empathy was .873, reliability and tangibility was .817, and empathy and tangibility was .905.

Reliability in this context is defined as the ability to perform the promised service dependably and accurately, meaning international students were satisfied with nonacademic departments' ability to perform the services as per their promise, correctly and consistently. Empathy refers to the personal caring attitude of providing individualized attention to international students. The positive correlation between empathy and satisfaction show that international students were satisfied with the nonacademic services department personnel's caring attitude and individual attention. Tangibility is defined as the appearance and neatness of physical facilities, equipment, and personnel. In general, international students' satisfaction with SQ can be accounted for by reliability, empathy, and tangibility. The correlations and the coefficient model confirmed that the higher overall satisfaction score could be explained by higher scores in reliability and empathy but lower scores in tangibility. The lower scores in tangibility mean that as long as there was high reliability and empathy, respondents were less concerned with the appearance and neatness of physical facilities, equipment, and personnel (tangibility).

To arrive at this finding, I had to conduct multiple regression analysis. Usually, multiple regression analysis produces output that can be summed up into three main categories: a model summary, ANOVA, and coefficients. In this process, I observed the multiple correlation (R), squared multiple correlation (R^2), and then the coefficients. For example, the coefficients with actual beta weights and statistical significance associated with the beta weights revealed that reliability has unstandardized beta weights of .86, an

intercept of .59, standardized beta weights of .55, and t value and $sig.$ value of .000, meaning that reliability was significant. This demonstrates the relationship with international students' satisfaction because it has a $p < .05$ and a confidence interval of 95%.

Research Question 4

Do significant differences exist in international students' perceived SQ and satisfaction based on the following demographic variables: gender, geographical region of origin, age, level in the current degree program, duration of stay at the university, race/ethnicity, religion, and type of university (public/private)?

The study found that the satisfaction of international students could be attributed to the predictor variables gender, geographical region of origin, level in degree program, duration of stay at the university, race/ethnicity, religion, and type of university. The statistically significant differences in perceived SQ, are presented under each nonacademic service department below.

Admissions

In the admissions department, international student satisfaction could be attributed to only a single variable--race/ethnicity.

Race/Ethnicity

The study found that race/ethnicity was a predictor of international students' satisfaction with admissions, where significant differences in perceived SQ and satisfaction were observed depending on the respondents' race/ethnicity, $F(20, 1468) = 2.610$, $p < .001$, and $\eta^2 = .034$. The effect size of 0.034 indicated that less than 4%

(3.4%) of the variation could be attributed to the respondents' race/ethnicity. The results revealed that the significant differences were in service reliability, $F(4, 368) = 2.649, p = .033$, partial $\eta^2 = .028$; responsiveness, $F(4, 368) = 5.257, p = .001, \eta^2 = .054$; assurance, $F(4, 368) = 3.1735, p = .014, \eta^2 = .033$; and empathy, $F(4, 368) = 2.690, p = .031, \eta^2 = .031$. The effect sizes indicated less than 3% (2.8%), 6% (5.4%), 4% (3.3%), and 4% (3.1%) of the variation could be attributed to race/ethnicity. Post hoc analysis revealed that respondents of Hispanic descent had higher positive perceptions of service reliability and responsiveness than other racial and ethnic groups. Asians had higher positive perceptions of service responsiveness than Whites or Caucasians. In general, respondents of Hispanic backgrounds had higher positive perceptions for all service dimensions than respondents of other racial/ethnic backgrounds.

On the whole, international students of Hispanic descent, when compared to international students from other racial backgrounds, were more satisfied with admissions employees' ability to perform the promised service dependably and accurately, their willingness to help students and provide prompt service, their knowledge and courtesy, their ability to convey trust and confidence in students, and their caring attitude and individualized attention.

Housing

In the housing department, international student satisfaction could be attributed to two variables--gender and duration of stay at the current university.

Gender

The study found gender as a satisfaction predictor variable after examining the significant differences between male and female's perceived SQ and satisfaction in housing, $F(10, 734) = 3.699, p < .001$. The effect size of 0.048 indicated that less than 5% (4.8%) of the variation in male and female responses can be attributed to gender difference.

When the results were analyzed further, gender revealed significant differences in SQ responsiveness, $F(2, 370) = 5.484, p = .004$, partial $\eta^2 = .0299$. The effect size of 0.0299 indicated that less than 3% (2.99%) of the variation in male and female outcomes related to service responsiveness could be attributed to gender. Significant differences were observed in service assurance, $F(2, 370) = 6.472, p = .002$, partial $\eta^2 = .034$. The effect size of 0.034 indicated that less than 4% (3.4%) of the variation in male and female responses regarding service assurance could be attributed to gender. Significant differences were also observed in service empathy, $F(2, 370) = 3.790, p = .023$, partial $\eta^2 = .020$. The effect size of 0.023 indicated that less than 3% (2.3%) of the variation in male and female outcomes regarding service empathy could be attributed to gender.

In general, male respondents were impressed more than female respondents by the department's ability to perform the promised service dependably and accurately and the willingness by employees to help a student, provide prompt service, and provide caring, individualized attention. On the other hand, female respondents were impressed more than male respondents by employees' knowledge, courtesy, and ability to convey trust and confidence. They were also impressed more than male counterparts by the appearance of physical facilities, equipment, personnel, and communication material.

Duration of Stay at Current University

The study found that duration of stay at the university was a predictor of international students' satisfaction in housing, where depending on the respondent's length of stay at the university, there were significant differences in perceived SQ and satisfaction, $F(25, 1835) = 1.613, p < .028$. The effect size of 0.028 indicated that less than 3% (2.8%) of the variation in the various scales could be attributed to duration of stay at the current university.

Post hoc analysis revealed that respondents who had been at the university for less than a year and up to two years, as well as students who had attended for three to four years, had a more positive perception and greater satisfaction with services than respondents who had stayed at the university for seven to eight years: responsiveness, $F(5, 367) = 2.534, p = .028, \eta^2 = .033$; empathy, $F(5, 367) = 3.742, p = .003, \eta^2 = .049$; and tangibility, $F(5, 367) = 2.915, p = .014, \eta^2 = .038$. In all these cases, the effect size indicated that less than 5% (4.9%), or less than 4% (3.8%), of variations in the service responsiveness, empathy, or tangibility, could be attributed to duration of stay at the current university. The results seemed to suggest that the longer an international student stayed at a university, the less positive were their reports of SQ and satisfaction.

Academic Records

In the academic records department, international student satisfaction could be attributed to three variables--geographical region of origin of respondent, level of degree program, and the type of university (public/private).

Geographical Region of Origin

The study also found that geographical region of origin was a predictor of satisfaction, wherein depending on the respondent's geographical region of origin, there were significant differences in perceived SQ and satisfaction, $F(25, 1305) = 2.007, p < .002$. The effect size of 0.002 indicated that less than 1% (0.02%) of the variation in the various scales could be attributed to the geographical region of origin the international student came from.

A greater significant difference was noticed in tangibility, $F(5, 261) = 2.927, p = .014, \eta^2 = .053$. Respondents from Asia had more positive perceptions of service tangibility than those from Europe and South America. The effect size indicated that less than 6% (5.3%) of variations in the service tangibility could be attributed to the respondent's geographical region of origin. International students from Asia found the appearance of facilities, equipment, personnel, and communication material in housing more appealing than students from other geographical regions.

Level of Degree Program

The study also found that undergraduate students found the appearance of facilities, equipment, personnel, and communication material more appealing than graduate students.

Depending on the respondent's level of degree program, significant differences were observed in perceived SQ and satisfaction, $F(5, 365) = 3.129, p < .009$. The effect size of 0.041 indicated that less than 5% (4.1%) of the variation in the various scales could be attributed to the level of degree program. The results revealed that the significant difference was in service tangibility, $F(1, 369) = 6.544, p = .011, \eta^2 = .017$.

The post hoc analysis uncovered more positive perceptions of service tangibility among undergraduate students than graduate students. The effect size of 0.011 indicated that less than 2% (1.1%) of the variation in service tangibility could be attributed level of degree program.

Type of University

The study found that international students at private universities found the housing employees' knowledge and courtesy and their ability to convey trust and confidence more appealing. More so that students at public universities, those attending private universities found the employees' willingness to help students and provide prompt service, a caring attitude, and individualized attention more appealing than students at public universities.

Depending on the respondent's type of university attended (public or private) significant differences in perceived SQ and satisfaction were observed, $F(5, 370) = 3.406$, $p < .005$, and $\eta^2 = .044$. The effect size of 0.044 indicated that less than 5% (4.4%) of the variation could be attributed to the type of university the respondent attended. The results revealed that the significant differences were in service responsiveness, $F(1, 374) = 5.654$, $p = .018$, $\eta^2 = .015$; assurance, $F(1, 374) = 7.933$, $p = .005$, $\eta^2 = .021$; and empathy, $F(1, 374) = 5.374$, $p = .021$, $\eta^2 = .014$. The post hoc analysis revealed that significant differences in all of the service dimensions—reliability, responsiveness, assurance, empathy and tangibility. The descriptive statistics (Table 29) indicate that respondents in private institutions of higher education had more positive perceptions of SQ and satisfaction than those in public universities. The effect sizes for responsiveness ($\eta^2 = .015$), assurance ($\eta^2 = .021$), and empathy ($\eta^2 = .014$), indicated that less than 2%

(1.5%), 3% (2.1%), and 2%(1.4%) of the variation in service responsiveness, assurance, and empathy, respectively, based on the type of university.

Interpretation and Discussion

This study utilized the SERVPERF model to examine if there is a significant relationship between international students' perceptions of SQ and their satisfaction. It also investigated how the students ranked the quality of service performance at their institutions. It further considered student satisfaction with overall service performance across nonacademic service departments, the nature of the relationship between SQ and satisfaction, and differences in perceived quality based on demographic variables. These areas are discussed together in accordance with each research question.

Ratings of Service Quality

The findings in this study show that overall, international students perceived high levels of service performance across all of the selected departments and across all service dimensions. On a five point Likert scale ranging from 5 (*strongly agree*) to 1 (*strongly disagree*), the service performance ratings for individual service dimensions across the departments ranged from $M = 3.56$ to $M = 4.12$, with 53.2% to 81.15% of respondents agreeing or strongly agreeing that the departments provided high quality.

This high ranking of SQ may be as a result of several factors. International students from countries or geographical regions of origin with less customer service than is common in the U.S. may perceive positive SQ and be more satisfied in the United States. A majority of international students were from the top 10 sending countries, which are not among the top 10 countries which offer the best customer service, except Canada. It follows, thus, that when international students come to the United States, a

country that provides better customer service than their countries of origin, the perceived SQ in general would tend to be positive. Since the ranking of their perceived SQ experience is based on actual experience, the end result would suggest that the students' perceived SQ in the United States would be better than the countries they came from. In other words, when you are used to receiving poor customer service, any superior customer service would be perceived positively. One among many may be the geographical region or country of origin. The results show that respondents came from 77 different countries, with the top 10 sending countries being India (36, 9.5%), Canada (31, 8.3%), China (30, 8.2%), South Korea (28, 7.6%), Brazil (25, 6.7%), Malaysia (13, 3.5%), Indonesia and Saudi Arabia (12, 3.2% each), Mexico (11, 3%), Japan (nine, 2.5%), and Kenya and Tanzania (eight, 2.1% each). When the countries of citizenship were grouped into geographical regions, the results showed that 180 (47.89%) of the respondents came from Asia, 67 (17.82%) from Latin America and the Caribbean, 44 (11.7%) were from Africa, 35 (9.31%) were from Europe, and six (1.6%) were from Australia and Papua New Guinea.

Toister (2015), described the countries which offer the best customer service. The write up provided rankings “based on customers’ responses to actual surveys from more than 25,000 organizations in 140 countries” (“World Rankings”, para 1). Zendesk, the organization that conducted the study, analyzed the data to identify where customers are happiest with the service they receive. Here are the top 10 countries that offer the best customer service, along with the average customer satisfaction ratings from companies in each country: Belgium (97.8%), Norway (96.6%), New Zealand (96.3%), United Kingdom (96.2%), Canada (95.6%), United States (95.6%), Australia (95.5%), Italy

(95.2%), South Africa (95.2%), and Finland (95%). From the foregoing, it would appear that a majority of international students were from the top 10 sending countries, which are not among the top 10 countries which offer the best customer service, except Canada. It follows, thus, that when international students come to the United States, a country that provides better customer service than their countries of origin, the perceived SQ in general would tend to be positive. Since the ranking of their perceived SQ experience is based on actual experience, the end result would suggest that the students' perceived SQ in the U would be better than the countries they came from. In other words, when you are used to receiving poor customer service, any superior customer service would be perceived positively. This might explain why international students in general had a positive perception of SQ and satisfaction.

Research Question 1 was investigated to enable universities and colleges to consider SQ issues in several of their nonacademic support services, in particular with international students. Whereas many universities use survey research methods to assess student satisfaction with educational programs, using SERVPERF to evaluate nonacademic services is an additional effort in assessing perceptions and satisfaction.

One feature the study would have benefitted from is an additional section on the survey for international students to provide written comments. Such an addition may have provided insights into the study which currently SERVPERF is currently unable to capture. Written comments may have provided information relating to why the students rated services so highly, but differently.

The universities and institutions of higher learning cannot relax the current attention they are giving to customer service simply because students rated services high.

Service quality requires continuous improvement and attention to changing customer needs and demographics in order to create a competitive edge. Meaning the universities must have sound focus on students, enhance quality of service delivery, simplify processes and procedures, and monitor students' attitudinal change. Scholars such as Grigoroudis and Siskos (2010) and Schneider and White (2004) posit that TQM a Japanese-style management approach for continuous quality improvement through customer satisfaction is necessary. The ultimate goal of TQM was to eliminate variations in the quality of products by continuously improving the internal processes, with the main goal of producing products and services that meet customer expectations. This concept would ensure that institutions stay on top of their game to deliver high SQ to students. According to Kontic (2014) in a study titled measuring SQ in higher education: The case of Serbia, "the students' perceptions of SQ elements change over a period of study" (p. 651). So it is imperative that institutions of higher learning keep up with a continuous SQ improvement.

Overall Satisfaction with Service Quality Across the Departments

Research Question 2 sought to investigate international students' perceptions of service performance (SQ) in the various service departments. In addition Research Question 2 was meant to evaluate the relationships between perceived SQ and overall satisfaction. Measuring overall satisfaction depends on an examination of several service attributes, an opportunity that the SERVPERF instrument provides. The five attributes (dimensions of SQ) made it possible to examine SQ and to establish the relationship with satisfaction. Cronin and Taylor (1992) consider satisfaction to be based on a customer's experience of a service, meaning SQ is an antecedent or a determinant of satisfaction.

Oliver (1993), considering the relationships suggests that SQ is an antecedent to satisfaction.

For this research, participants responded to 22 items for each of the four departments--admissions, housing, academic records, and international student services. The 22 items were divided into five dimensions (attributes). Findings indicate that the mean of the service experience along the reliability dimension in housing and international student services ranged from $M = 3.44$ to $M = 4.17$, respectively, on a Likert scale ranging from 5 (*strongly agree*) to 1 (*strongly disagree*). When all the attributes (dimensions) were examined in combination, the students overall satisfaction was $M = 4.00$. This overall perceived SQ indicated that students agree they are satisfied with their service experience from the selected nonacademic service departments. This finding is consistent with findings from some previous studies. Using SERVPERF, Ham and Hayduk (2003) found that even in a higher education context, there is a positive correlation between perceptions of SQ and student satisfaction. Analysis of the correlation along the SQ dimensions showed that reliability had the strongest relationship, followed by responsiveness and empathy, assurance, and tangibility, in that order. In an empirical assessment of SERVQUAL, Babakus and Boller (1992) found that there was a higher correlation between the performance-only SQ score and overall SQ measure.

Relationship Between Overall Service Quality and Satisfaction

Research Question 3 sought to uncover the nature of the relationship between perceived SQ and overall satisfaction. In order to determine the relationship, I used multiple regression and correlation analysis to determine the relationship between the

variables. The attempt was to analyze the impact of SQ dimensions on international student satisfaction and to establish whether there is a positive or negative relationship between the SQ dimensions—reliability, responsiveness, empathy, assurance, and tangibility—and international students' satisfaction.

Using SERVPERF, Ham and Hayduk (2003) found that even in a higher education context, there is a positive correlation between perceptions of SQ and student satisfaction. Analysis of the correlation along the SQ dimensions showed that reliability had the strongest relationship, followed by responsiveness and empathy, assurance, and tangibility, in that order.

From the review of literature, I became aware that there are challenges involved in running and interpreting MANOVA tests for the nature of relationships among numerous variables measured simultaneously. Mertler and Reinhart (2017), while referencing other scholars, state:

The need to understand the nature of relationships among numerous variables measured simultaneously makes multivariate analysis an inherently difficult subject (Johnson & Wichern, 2008). One of the major difficulties in using multivariate statistical analyses is that it is sometimes nearly impossible to get a firm statistical answer to your research questions (Tabachnick & Fidell, 2007). This is largely due to the increased complexity of the techniques. Often, results are ambiguous. Two or more statistical indices resulting from one computer run may contradict each other. The researcher must then determine the most appropriate way to interpret the results of the analysis (p. 7).

Another problem that often emerges is the issue of multicollinearity.

Multicollinearity is said to exist when predictor variables are thought to be correlated among themselves and with other variables that are related to the response variable but are not included in the model. Neter et al. (1996) argue that “in practice, we seldom find

predictor variables that are perfectly related or data that do not contain some random error component” (p. 289). As a remedy to the problem Neter et al. posit,

The presence of serious multicollinearity often does not affect the usefulness of the fitted model for estimating mean responses or making predictions, provided that the values of the predictor variables for which inferences are to be made follow the same multicollinearity pattern as the data on which the regression model is based (p. 41).

In order to address the issue of multicollinearity, I removed the highly correlated predictor variables from the model until I was left with three that offered a perfect fit. There were no problems with multicollinearity. Also, in my determination of the relationship between the SQ dimensions and satisfaction, I focused on the associated statistics R^2 , F ratios and p values. Baguley (2012) argues, albeit loosely, in his book *Serious Stats* that multicollinearity has no impact on the overall regression model and associated statistics ratios as named above.

The regression results indicated that the overall model significantly predicted satisfaction with SQ [$R^2 = .320$, $R^2 \text{ adj} = .315$, $F(3, 370) = 58.155$, $p < .001$], meaning the relationship between satisfaction (DV) and dimensions of SQ (IVs) is linear, and therefore, the model significantly predicted international students’ satisfaction with SQ. This model accounted for 32% of variance of international students’ satisfaction. The results suggest that a higher overall satisfaction score may be explained by higher scores in reliability and empathy but lower scores in tangibility. This is because reliability and empathy variables both had positive correlation with satisfaction while tangibility had negative correlation. Meaning while the tangibility is statistically significant the magnitude of the relationship is small. The negative correlation may also be attributed to extraneous and confounding variables. An extraneous variable in this context is a variable that I did not intend to study but which might have affected the results. An

extraneous variable becomes a confounding variable when the extraneous variable changes systematically along with the tangibility variable which was studied. In general, researchers reluctantly accept the possibility that quantitative research designs involving multiple variables, might encounter the effect of extraneous and confounding variables. A variable is considered to be confounding if it can provide an alternative explanation for one's results; that is, an alternative explanation for the relationship or differences between the variables and/or groups being measured (e.g., the 'independent' and 'dependent' variables). Although speculative, such a possibility might explain why tangibility was somewhat negatively correlated with satisfaction. However, attempts were made to minimize the intercorrelations between variables as explained in steps of the analysis in chapter 4. These efforts may have served to preserve the result indicating that a portion of student satisfaction was accounted for by tangibility. Overall, students are satisfied with service reliability, empathy, and tangibility.

Reliability was conceptualized as the ability to perform the promised service dependably and accurately (Parasuraman et al., 1988). In the context of higher education, it means that the nonacademic service departments deliver on the promises regarding outcome and the core service attributes (Zeithaml et al., 2006). To the international student, reliability perception relates to university nonacademic department promised to deliver a service, and whether it actually delivers the service as was promised. The promised services relates to housing, academic records, admissions and international student services. Researchers have concluded that reliability is a predictor of student satisfaction (Hasan et al., 2008; Negricea, Edu, & Avram, 2014; Sultan & Wong, 2011). It also means that if an international student has a problem, the nonacademic service

employees showed sincere interest in solving it, and that employees performed services right the first time. The positive significant correlation between reliability and overall satisfaction can thus be explained in this way: The higher the perception scores given by international students for services performed as promised, dependably, and accurately, the higher the scores for satisfaction. In other words, international students are more satisfied if perceived reliability of SQ is high.

Empathy is defined as caring, individualized attention provided to students. It also means that employees show have respondents interest at heart, that they employees understand students specific needs, have convenient office hours, and have policies which demonstrate an understanding of the specific needs of respondents. Parasuraman et al. (1988) explain empathy as “caring, individualized attention given to customers” (p. 23). Usually individuals customers or students in this context, forms perceptions of actual services based on how the treatment experienced during service delivery make them feel special, unique, and that his/her needs are understood (Zeithaml et al., 2006) Pollack (2008) relates empathy to the interactional quality. Researchers have concluded that empathy has an influence on students’ satisfaction (Kundi et al., 2014; Rezaei et al., 2011; Wei & Ramalu, 2011). The positive correlation between empathy and satisfaction show that international students were satisfied with the nonacademic services department personnel’s caring attitude and individual attention. Thus, the higher the scores for perceived service delivery bearing empathy, the more students are satisfied. In other words, the higher the perceived empathy, the more satisfied the international student will be and vice versa.

Parasuraman et al., (1988) defined tangibles as “the appearance of physical facilities, equipment, personnel, and communication material” (p. 23). This means that nonacademic services had modern-looking equipment, facilities were visually appealing, employees appeared neat, and that materials associated with the services were visually appealing. Because services are intangible by nature, the tangible elements allow customers to form perceptions of service based on what they see. In the context of this study, it is the things that international students see to make a judgement on a service. Like in the previous two dimensions, researchers have concluded that tangibility has influence on international student satisfaction (Kundi et al., 2014; Minavand, & Afshardost, 2013; Twaissi & Al-Kilani, 2015). Customers usually prefer these to be attractive and orderly. The results seem to suggest that in spite of the appearance of the physical facilities, equipment, personnel, and communication material, international students are still satisfied with the service. Thus, even though there was a weak correlation between tangibles and satisfaction, international students found tangibles appealing enough to predict their satisfaction with nonacademic services. This would mean that overall satisfaction is experienced by international students as long as service delivery includes reliability and empathy.

In a study titled *Effects of SERVPERF dimensions on students' loyalty – Do you know what is being the scene?* Ganic, Babic-Hoovic, and Arslanagic-Kalajdzic (2018) found that each SQ dimension is directly, positively and significantly related to satisfaction even though the strength of their influence varied. They stated “in most of the previous studies in different areas, reliability turned out to be the most important variable (Cronin & Taylor, 1994; Parasuraman, et al., 1985). In Agbor's (2011) study,

reliability, responsiveness and assurance had significant relationships with both customer satisfaction and SQ... Ismail, Abdullah, and Francis (2009) researched only responsiveness, assurance and empathy, and confirmed statistical significance of all three variables in terms of perceived value and student satisfaction at university, as did Jiao (2013)” (p. 220). Firdaus (2005) stated that nonacademic services are a good indicator of SQ. The study found that a strong relationship exists between nonacademic SQ and satisfaction. It is apparent that most of the studies found reliability, empathy and in some cases tangibles as predictors of satisfaction.

Demographic Variables and Satisfaction

The study found that the satisfaction of international students could be attributed to the predictor variables of gender, geographical region of origin, level in degree program, duration of stay at the university, race/ethnicity, religion, and type of university. These variables were determined on the basis of statistically significant differences in perceived SQ.

In discussing the findings of Research Question 4, I consider two statistical measures: first the statistical significance p -value, and second, the effect size in determining which demographic variables predict respondents’ perceived quality and satisfaction. In this study a $p < .001$ is significant and is used to identify a variable as a predictor of satisfaction. However, I look at the effect size to identify the size of the significant difference. Coe (2002) has suggested that effect size quantifies the size of the difference between the two groups and is said to be a true measure of the significance of the difference. In essence, effect size is the standardized mean between the two groups. According to Cohen (1969) an effect size = .02 is considered a small effect size, 0.5

represents a medium effect size, and 0.8, a large effect size. This means that if two groups' means do not differ by 0.2 standard deviations or more, the difference is trivial, even if it is statistically significant. With this background, I discuss my findings.

This study found gender to be a satisfaction predictor variable after examining the significant differences between male and female perceived SQ and satisfaction, $F(10, 734) = 3.699, p < .001, \eta^2 = .048$. The effect size of 0.048 indicated that less than 5% (4.8%) of the variation in male and female responses, was large enough to the gender difference. Effect size measures either the size of associations or the sizes of differences. In this case, the size of the significant differences between male and female perceived SQ and satisfaction. On average male respondents are 4.8% more positive about SQ and satisfaction than female. In other words, in assessing SQ in academic records, the study found that male respondents were 4.8% more impressed than female respondents by the employee's ability to perform the promised service dependably and accurately and by the willingness of employees to help a student, provide prompt service, and offer caring, individualized attention. Academic records may need to improve their services across all areas of service dimensions in order to appeal to female students.

Again in academic records, the study found that duration of stay at the university was a predictor of international students' satisfaction in the department. $F(25, 1835) = 1.613, p < .028$, and $\eta^2 = .022$. The effect size of 0.022 indicated that less than 3% (2.2%) of the variation in the duration of stay at the university by the respondents, was large enough to be attributed to the difference in the duration of stay at the university. Respondents who had been at the university for less than a year and up to three years had a more positive perception of service and had greater satisfaction with services than

respondents who had stayed at the university for seven to eight years. It can be argued that students who have stayed the university for a shorter period may have, in general, had fewer interactions with service providers than seniors and graduate students who may be more focused on graduation, dealing with nonacademic services more regularly than other years, and are likely to perceive services negatively. This may be as a result of lapses in service delivery. The results suggested that the longer an international student stayed at a university, the less positive they were in their reviews of SQ and satisfaction.

The study found that in housing, geographical region of origin was a predictor of SQ and satisfaction, wherein significant differences between the respondents' geographical region of origin appeared to influence perceived SQ and satisfaction $F(25, 1305) = 2.007, p < .002$, and $\eta^2 = .037$. The effect size of 0.037 indicated that less than 4% (3.7%) of the variation was large enough to be attributed to the geographical region of origin. International students from Asia found the appearance of facilities, equipment, personnel, and communication material in housing to be more appealing than students from other geographical regions.

Again in housing, the level of degree program was also a predictor $F(5, 365) = 3.129, p < .009$, and $\eta^2 = .041$. The effect size of 0.041 indicated that less than 5% (4.1%) of the variation is large enough to be attributed to the level in degree program differences. The study found that undergraduate students found the appearance of facilities, equipment, personnel, and communication material more appealing than graduate students. It might be that graduate students are looking for more upmarket accommodations to suit their housing needs. This could explain why the undergraduate students had more positive perceptions of service tangibility than graduate students.

Type of university was another predictor of SQ and satisfaction in housing $F(5, 370) = 3.406$, $p < .005$, and $\eta^2 = .044$. The effect size of 0.044 indicated that less than 5% (4.4%) of the variation is large enough to be attributed to the differences in type of university. The study revealed that international students at private universities found the housing employees' knowledge and courtesy and their ability to convey trust and confidence more appealing. Similarly, when compared to students at public universities, those at private institutions are more pleased with the employees' willingness to help students and provide prompt service, a caring attitude, and individualized attention. In admission, the study found that race/ethnicity was a predictor of international students' satisfaction, with significant differences in perceived SQ and satisfaction, $F(20, 1468) = 2.610$, $p < .001$, and $\eta^2 = .034$. The effect size of 0.034 indicated that less than 4% (3.4%) of the variation is large enough to be attributed to the differences in race and ethnicity. When compared with international students from other racial/ethnic backgrounds, Hispanic international students are more satisfied with admissions' employees' ability to perform the promised service dependably and accurately, their willingness to help students and provide prompt service, their knowledge and courtesy, their ability to convey trust and confidence in students, and their caring attitude of individualized attention.

Religion was evidenced in admissions as a predictor of satisfaction. However, $F(20, 1448) = 1.573$, $p < .051$, and $\eta^2 = .021$, the effect size suggests that the difference is trivial. The small effect size is associated with a single SQ dimension—assurance, the knowledge and courtesy of employees and their ability to convey trust and confidence in respondents. Muslim students had less positive perceptions of service assurance.

Recommendations for Higher Education

Schreiner (2009) argues that:

student satisfaction is of compelling interest to colleges and universities as they seek to continually improve the learning environment for students. . . . Higher education tends to care about student satisfaction because of its potential impact on student motivation, retention, recruitment efforts, and fundraising (p. 1).

Higher education institutions ought to be more concerned about international students' satisfaction. International students are a source of fresh revenue, global diversity, and innovative skills. And these same students face expanding enrollment opportunities, leading to increasing competition in higher education.

Using descriptive statistics, this study confirmed that international students generally *agreed* or *strongly agreed* that their institutions provided high quality service. This was also true regarding their satisfaction with SQ. Additionally, the study found that international students ranked international student services as the leading provider of high SQ. This was followed by academic records, admissions, and housing, in that order. The study found that a correlation existed between only three SQ dimensions—reliability, empathy, and tangibility—and overall satisfaction. The correlations and the coefficient model confirmed that the higher overall satisfaction score could be explained by higher scores in reliability and empathy but lower scores in tangibility. Finally, the study found statistically significant differences for predictor variables—race/ethnicity and religion for admissions; geographical region of origin, level of degree program, and type of university for housing; and gender and duration of stay at the university for academic records.

Differences in Service Performance of Nonacademic Service Department

It can be concluded that ratings of service performance (quality) are useful for developing an understanding of how international students evaluate the SQ of various types of nonacademic service departments. The examination could be extended to include more nonacademic service departments as well as the entire higher education student population. academic records. With this knowledge universities can identify priority areas of service to act upon and improve student satisfaction.

Satisfaction with Overall Service Quality

In general international students are satisfied with overall SQ. In examining what contributed to this, I looked at the top three issues that are most appealing, based on the mean and standard deviation from each department. The study found that in admissions, students are pleased with safe and secure services, services that are provided promptly, service provision meeting promised deadlines, and physical facilities, equipment, personnel, and communication materials that are visually appealing. Areas that may need improvement include office hours—to make the office more accessible and convenient for international students. Staff also need to understand international students better, and the appearance of printed materials needs to be more appealing.

In housing, factors that contribute to international students' overall satisfaction with SQ include staff knowledge. Staff should be knowledgeable about housing issues, but they should also be courteous, willing to solve problems, and understanding of international student needs. Areas requiring improvement in housing include upgrading housing equipment, convenient office hours, and making housing facilities more visually appealing.

In academic records, international students overall SQ satisfaction comes from staff who understand their needs, services that are provided promptly, deadlines that are met as promised, and staff who are willing to solve student problems. Areas needing improvement include more convenient office hours, staff who do not look too busy to help, and more modern looking equipment.

International student services stands out in provision of services as reflecting perceptions of high quality. This department appears to please international students in all areas of services examined, with all participating students either agreeing or strongly agreeing that they are satisfied with its overall SQ.

One implication of these findings suggests that no one standard of service fits every service department. Instead the unique characteristics of every nonacademic service department should be taken into account. University administrators and leaders ought to be cautious when comparing overall SQ satisfaction between the nonacademic service departments offering different services. Varying satisfaction from one nonacademic department to another may reflect differences in the type or nature of the service provided rather than the quality of service performance by staff.

While ranking their perceived services, students agreed or strongly agreed that overall high SQ was being provided by all departments; nevertheless, housing was rated lowest, and international student services was rated as the best SQ provider. It is possible that international students may evaluate some departments more critically than others due to the level of importance they attach to the department.

The Relationship Between Service Quality and Overall Satisfaction

The nature of the relationship between SQ and overall satisfaction may represent the core of the dissertation project. The study found that a correlation exists between three dimensions of SQ—reliability, empathy, and tangibility—and satisfaction. Reliability, a dimension of SQ, is defined as the ability of the nonacademic service departments to perform the promised service dependably and accurately. This dimension was found important and may be associated with respondents' satisfaction. International students were satisfied as long as services were delivered dependably and accurately. Empathy was defined as caring, individualized attention provided to students. When respondents perceived staff as caring, and as paying individual attention to them, the respondents would be satisfied. Tangibility was defined as appearance of physical facilities, equipment, personnel, and communication material. The study demonstrated that as long as there was high reliability and empathy, respondents were less concerned about the appearance and neatness of physical facilities, equipment, and personnel (tangibility). These three predictor variables appeared to be the most influential in influencing international students' overall satisfaction. In a study titled *Relationship between service quality and customer satisfaction of commercial bank customers*, Aliata and Ojera (2016), found a positive correlation between tangibility and customer satisfaction ($r = 0.407, p < .05$). The study also found a significant positive correlation between empathy and satisfaction ($r = .396, p < .05$), as well as between reliability and satisfaction ($r = 0.145, p < .05$).

The study concluded that there is a relationship between SQ and satisfaction, and that this relationship can be explained adequately by the three dimensions of SQ,

reliability, empathy and tangibility. This finding provide a strong justification for the assessment of perceived SQ and satisfaction.

The role of assessment of perceived SQ and satisfaction of international students may be understated, misunderstood or often disregarded in universities. However, there is greater need than before for staff and university administrators to begin to appreciate it, and to effectively satisfy the need of international students. It is imperative that I reiterate why it is necessary to measure student satisfaction in higher education.

Why Student Satisfaction Measurement in Higher Education Matters

Student satisfaction should be understood as another important student assessment measure, similar to grades and course evaluations, to indicate levels and quality of student interaction with the university. Grigoroudis and Siskos (2010; citing Dutka, 1995; Customer Satisfaction Council, 1995) present the main reasons for measuring customer satisfaction, which I have paraphrased below within the context of higher education with some specific links to international students.

1. Student satisfaction constitutes the most reliable market information for universities and colleges to assess their position against competition and as a way to strategically position themselves for the future.
2. Student satisfaction measurement may help universities and colleges to gather critical information from students who may traditionally avoid expressing their complaints or dissatisfaction verbally or directly.
3. Student satisfaction reports enable universities and colleges to identify potential higher education market opportunities, including new international

student markets, international student mobility trends and other relevant census information.

4. Meaningful, continuous improvement in higher education ought to be based on student satisfaction, taking into account customer perceptions and needs.
5. International students' satisfaction measurement is needed for universities and colleges to understand their behavior, especially as relevant to identifying and analyzing student needs and desires.
6. Measuring international students' levels of customer satisfaction may also reveal potential differences in the SQ perceptions among students, faculty, staff, and university administrators.

Based on the foregoing information, it can be said that measuring international students' satisfaction in general is important and could provide higher education institutions a competitive advantage in the marketplace. In a fluid, competitive globalized and internationalized higher education environment, satisfaction of students represents an urgent concern. As Kerlin (2000) posits out in her dissertation project by citing other scholars, student satisfaction is often linked to enrollment behavior (Chadwick & Ward, 1987; Cooper & Bradshaw, 1984; Liu & Jung, 1980; Wince & Borden, 1995). Dissatisfied students are more likely to drop out or transfer (Hayes, 1977), leading to a decline in student enrollment. Such students may also misrepresent the university to other potential students (Wince & Borden, 1995). Students who are satisfied with the services they receive are more likely to return for more education and to recommend the school to others. This may be the case where graduating undergraduates return for graduate work. In this regard there is consensus in the reviewed literature that

satisfaction generates a positive impact on student motivation and retention (Elliott & Shin, 2002; Ham & Hayduk, 2003; Hasan et al., 2008; Kerlin, 2000; Malik et al., 2010; Zeithaml, 2000; Zeithaml et al., 1996).

The reviewed literature suggests that student satisfaction covers the students' perception and experiences during the college years (Carey, Cambiano, & De Vore, 2002; Hasan et al., 2008), further suggesting that it is the student's repeated daily experiences on campus that likely determine the student's satisfaction. Elliot and Shin (2002) state, "Focusing on student satisfaction not only enables universities to re-engineer their organizations to adapt to student needs, but also allows them to develop a system for continuously monitoring how effectively they meet or exceed student needs" (p. 197). Their position is that student satisfaction is being shaped continually by repeated experiences in campus life. They cite a seminal study by Kotler and Fox (1995) who observe that the majority of students are satisfied with their academic programs but less satisfied with support services such as academic advising and career counseling services, which are critical to the success of students in higher education.

In the reviewed literature, no studies were found to have focused on the assessment of international students' satisfaction with SQ in United States universities. However, there are studies of student satisfaction with SQ conducted outside the United States, but not with international students. A study focusing on higher education in the United States is extremely important because it is the leading host country for international students. Exploring international students' perceptions of service performance in nonacademic service is consequently a significant contribution in understanding the needs of this populations and enables institutions to establish whether

or not they are truly meeting those needs and desires. International students are important to universities because they bring in fresh revenue and add cultural, linguistic, and ethnic diversity to campuses across the nation.

Recommendations

From the present study it is evident that students form perceptions of their service experience every time they come into contact with university service provider. The results of these perceptions form the basis of my recommendations. These recommendations ought to drive further research and operations at the institutions of higher learning in the United States:

1. There is need for universities to focus on continuously improving SQ. This will help the institutions to identify and eliminate any student satisfaction barriers, and provide a customer-focused service. Unnecessary bureaucratic policies and procedures should be eliminated in attempt to provide efficient and responsive customer service. The departments should spend time listening to students' concerns even if a survey is not used to collect data regularly. All such tools can be embedded in the universities effort to continuously deliver quality service.
2. Nonacademic service departments should pay attention to hours of service. The results indicate that the current hours of service is not convenient to students. Typical office hours are 9am to 5pm. However, institutions can also serve students during lunch hours or evening hours when students are not in class. Besides, the departments may strategize more creative ways of delivering the service to students. For example, creative online service

portals. Have students schedule appointments for service online.

Alternatively provide options for chat rooms, or the institutions can create departmental service app. The app would permit a student to create a profile, and be able to post questions, concerns and issues that need departmental response. In turn the department is able to reply through the app to the issue raised by a student.

3. There is need for universities to conduct more SQ training for nonacademic services staff. The training may cover areas such knowledge of office procedures and customer, so that staff can demonstrate effectiveness when handling international students' issues or problems in general. In this context, the institutions' limited professional development funds for staff may be directed to critical customer service areas such as service reliability, empathy, and tangibility, that often impact student satisfaction. Training should also include service assurance and responsiveness.
4. With the changing landscape in communication, the departments should find strategic ways that would ensure safe ways for students receive timely feedback. These may include departmental Facebook accounts specific to relaying information to things issues deal with, snap chat et cetera.
5. There is need for universities to introduce a reward and appreciation system to recognize both individuals and departments that provide outstanding quality service to its customers. This has the element of

influencing the attention staff and departments pay to their customers, and drive their focus to the delivery of higher level of SQ.

Limitations

The data for this study was collected using online, self-reported questionnaire. Even though the intention was to enroll in the study all international students attending higher education institutions in Indiana and Michigan, not all of the intended population were able to participate. Only 376 respondents participated in the study. Online survey return rate is usually lower than survey that are handed out and completed as you wait. Lack of funding limited data collection to online and to institutions of higher education in Indiana and Michigan only. Some of the institutions were unwilling to send survey participation reminders to their students. Participation was voluntary, and subjects were not compelled to respond to the survey. It is unclear if the findings would have been different with a larger sample size. And although I had intended to have all universities and colleges in Indiana and Michigan participate in the study, only those that furnished institutional consent letters and whose IRB reviewed and approved the study participated. More participants would have given greater statistical significance to the results. However, there was good diversity of schools in the institutions that participated. academic services.

Suggestions for Future Research

According to Reinalda and Kuleza (2005), the World Trade Organization Council for Trade in Services recognizes higher education as a service and that “services can be traded just as goods and are of increasing importance in international trade” (p. 11). In

light of this, it is vital to recognize that international students seeking higher education in the United States make financial contributions to the United States economy as a result of enrolling in universities and colleges. According to the United States Department of Commerce (Siegmund, 2008), only 3.7% of all students enrolled in American higher education institutions are foreigners, yet they contributed nearly 18 billion dollars to the United States economy in 2008. Most of this income is generated by tuition and other fees. According to Open Doors, citing the United States Department of Commerce, international students contributed about 23 billion dollars to the United States economy in 2011. Figure 6 represents the sources of international students' financial contributions to the United States economy (Open Doors, 2012). The monetary contribution by international students suggests that it is important for higher education institutions to ensure that there is high quality, not only in academic programs, but also in nonacademic support services.

For future research include interviews as part of the method for data collection when using SERVPERF. Interviews will enrich the data. In addition, expand the scope or the number of universities selected for the study to cover several states.

Conclusion

The purpose of the study was to investigate the relationship between perceived SQ and satisfaction in the context of nonacademic services among international students at universities in Indiana and Michigan. The best indicator of international student satisfaction is one that translates into loyalty after students have graduated. Would these students choose the institution they graduated from if they could experience their college

and graduate school all over again? This study has provided some findings that are beneficial to higher education institutions for improving service delivery and securing student satisfaction. Ultimately, the hope is that institutions can use this information to competitively attract, enroll, educate/serve, and graduate students in fulfillment of what higher education intuitions are established to do.

Broadly, this research provided an introduction to the study, a literature reviewed on the subject, methodology for the investigation, data analysis and results, discussions and recommendations. It is my hope that the addition of this study in terms of findings, literature, and recommendations will enhance service and scholarship in the area of student services in higher education.

APPENDIX A

SURVEY

SURVEY INSTRUMENT

Your response will be completely anonymous and kept confidential. Only aggregate figures and general trends will be organized by schools. Your participation is important for the successful outcome of this research. Please answer all the questions in each of the three sections (A, B, & C) as candidly and completely as possible.

Screening Question:

Are you an international student at this university?

- ☐ Yes
- ☐ No

(If, No. Thank you, the survey is for international students only. Have a nice day).

SECTION A: DEMOGRAPHIC QUESTIONS

All the responses will be kept confidential. Your cooperation in providing the demographic information will be greatly appreciated.

1. What is your gender: Male (0) Female (1)
2. What is your geographical region of origin based on continent? Please chose one.
 - 5) Africa
 - 6) Antarctica
 - 7) Asia
 - 8) Australia
 - 9) Europe
 - 10) North America (excluding USA)
 - 11) South America
3. What is your age?
 - 1) Under 18 years

- 2) 18 to 24 years
 - 3) 25 to 34 years
 - 4) 35 to 44 years
 - 5) 45 to 54 years
 - 6) Age 65 or older
4. What is the level of your current degree program?
- (0) Undergraduate
 - (1) Graduate
5. How long have you been at this university?
- 1) Under 1 year
 - 2) 1-2 years
 - 3) 3-4 years
 - 4) 5-6 years
 - 5) 7-8 years
 - 6) 9 years and over
6. What is your race? Please check one.
- 1) Asian;
 - 2) Black or African American;
 - 3) White or Caucasian;
 - 4) Hispanic;
 - 5) Other
7. What is your religious preference?
- (1) Christian
 - (2) Muslim
 - (3) Other

8. Which best describes where you currently live?

5) Residence hall (Dormitory)

6) University apartment

3) Fraternity/Sorority housing

4) Off-campus

5) Other ____ (Specify)

SECTION B. THE PERCEPTIONS OF SERVICE QUALITY

The survey in this section is on your perceptions of service quality

Please read the instructions carefully:

The following statements under admissions, housing, ask for your feelings about service performance from each department. Rate your perceived service quality using five point *Likert Scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*) to the extent you believe the department performed while you received service.

ADMISSIONS		RATING				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1.	When employees in admissions promises to provide a service by a certain time, they do so.	1	2	3	4	5
2.	When you have a problem, the employees in admissions department shows sincere interest in solving it.	1	2	3	4	5
3.	Employees in admissions department performs the service right the first time.	1	2	3	4	5
4.	Employees in admissions department provide services at the time they promise to do so.	1	2	3	4	5
5.	Employees in admissions department keeps you informed about when services will be performed.	1	2	3	4	5
6.	Employees in admissions provide prompt service.	1	2	3	4	5

7.	Employees in admissions are always willing to help me.	1	2	3	4	5
8.	Employees in admissions are never too busy to respond to your request.	1	2	3	4	5
9.	Employees in admissions instill confidence in me.	1	2	3	4	5
10.	I feel safe in my transactions with the employees in admissions	1	2	3	4	5
11.	Employees in admissions are consistently courteous with me	1	2	3	4	5
12.	Employees in admissions have the knowledge to answer my questions.	1	2	3	4	5
13.	Employees in admissions give me individual attention	1	2	3	4	5
14.	Employees in admissions give international students individual attention	1	2	3	4	5
15.	Employees in admissions have my interest at heart	1	2	3	4	5
16.	Employees in admissions understand my specific needs	1	2	3	4	5
17.	Admissions department has modern-looking equipment.	1	2	3	4	5
18.	Admissions department's physical facilities are visually appealing.	1	2	3	4	5
19.	Admissions department employees appear neat	1	2	3	4	5
20.	At the admissions department, materials associated with the service (such as brochures, pamphlets, statements) are visually appealing.	1	2	3	4	5
21.	Admissions department has convenient business hours.	1	2	3	4	5
22.	Admissions department has offices and policies which demonstrate an understanding of the specific needs of international students	1	2	3	4	5

HOUSING		RATING				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
23.	When employees in housing promise to provide a service by a certain time, they does so.	1	2	3	4	5
24.	When you have a problem, the employees in housing department show sincere interest in solving it.	1	2	3	4	5
25.	Employees in housing department perform the services right the first time.	1	2	3	4	5
26.	Employees in housing department provide services at the time it promises to do so.	1	2	3	4	5
27.	Employees in housing department keep you informed about when services will be performed.	1	2	3	4	5
28.	Employees in housing provide prompt service.	1	2	3	4	5
29.	Employees in housing are always willing to help you.	1	2	3	4	5
30.	Employees in housing are never too busy to respond to your request.	1	2	3	4	5
31.	Employees in housing instill confidence in me.	1	2	3	4	5
32.	I feel safe in my transactions with the employees in housing.	1	2	3	4	5
33.	Employees in housing are consistently courteous with me.	1	2	3	4	5
34.	Employees in housing have the knowledge to answer my questions.	1	2	3	4	5
35.	Employees in housing gives me individual attention.	1	2	3	4	5
36.	Employees in housing give international students individual attention.	1	2	3	4	5
37.	Employees in housing have my interest at heart.	1	2	3	4	5
38.	Employees in housing understand my specific needs.	1	2	3	4	5
39.	Housing department has modern-looking equipment.	1	2	3	4	5
40.	Housing department's physical facilities are visually appealing.	1	2	3	4	5
41.	Housing department employees appear neat.	1	2	3	4	5

42.	At the housing department, materials associated with the service (such as brochures, pamphlets, statements) are visually appealing.	1	2	3	4	5
43.	Housing department has convenient business hours.	1	2	3	4	5
44.	Housing department has offices and policies which demonstrate an understanding of the specific needs of international students.	1	2	3	4	5

ACADEMIC RECORDS

		RATING				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
45.	When employees in academic records promise to provide a service by a certain time, they do so.	1	2	3	4	5
46.	When you have a problem, the employees in academic records department show sincere interest in solving it.	1	2	3	4	5
47.	Employees in academic records department perform the service right the first time.	1	2	3	4	5
48.	Employees in academic records department provide services at the time it promises to do so.	1	2	3	4	5
49.	Employees in academic records department keep you informed about when services will be performed.	1	2	3	4	5
50.	Employees in academic records provide prompt service.	1	2	3	4	5
51.	Employees in admissions are always willing to help you.	1	2	3	4	5
52.	Employees in academic records are never too busy to respond to your request.	1	2	3	4	5
53.	Employees in academic records instill confidence in me.	1	2	3	4	5
54.	I feel safe in my transactions with the employees in academic records.	1	2	3	4	5
55.	Employees in academic records are consistently courteous with me.	1	2	3	4	5
56.	Employees in academic records have the knowledge to answer my questions.	1	2	3	4	5

57.	Employees in academic records gives me individual attention.	1	2	3	4	5
58.	Employees in academic records give international students individual attention.	1	2	3	4	5
59.	Employees in academic records have my interest at heart.	1	2	3	4	5
60.	Employees in academic records understand my specific needs.	1	2	3	4	5
61.	Academic records department has modern-looking equipment.	1	2	3	4	5
62.	Academic records department's physical facilities are visually appealing.	1	2	3	4	5
63.	Academic records department employees appear neat.	1	2	3	4	5
64.	At the academic records department, materials associated with the service (such as brochures, pamphlets, statements) are visually appealing.	1	2	3	4	5
65.	Academic records department has convenient business hours.	1	2	3	4	5
66.	Academic records department has offices and policies which demonstrate an understanding of the specific needs of international students.	1	2	3	4	5

INTERNATIONAL STUDENT SERVICES		RATING				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
67.	When employees in international student services promise to provide a service by a certain time, they do so.	1	2	3	4	5
68.	When you have a problem, the employees in international student services show sincere interest in solving it.	1	2	3	4	5
69.	Employees in international student services perform the service right the first time.	1	2	3	4	5
70.	Employees in international student services provide services at the time it promises to do so.	1	2	3	4	5
71.	Employees in international student services keep you informed about when services will be performed.	1	2	3	4	5
72.	Employees in international student services provide prompt service.	1	2	3	4	5
73.	Employees in international student services are always willing to help you.	1	2	3	4	5

74.	Employees in international student services are never too busy to respond to your request.	1	2	3	4	5
75.	Employees in international student services instill confidence in me.	1	2	3	4	5
76.	I feel safe in my transactions with the employees in international student services.	1	2	3	4	5
77.	Employees in international student services are consistently courteous with me.	1	2	3	4	5
78.	Employees in international student services have the knowledge to answer my questions.	1	2	3	4	5
79.	Employees in international student services give me individual attention.	1	2	3	4	5
80.	Employees in international student services give international students individual attention.	1	2	3	4	5
81.	Employees in international student services have my interest at heart.	1	2	3	4	5
82.	Employees in international student services understand my specific needs.	1	2	3	4	5
83.	International student services department has modern-looking equipment.	1	2	3	4	5
84.	International student services department's physical facilities are visually appealing.	1	2	3	4	5
85.	International student services department employees appear neat.	1	2	3	4	5
86.	At the international student services department, materials associated with the service (such as brochures, pamphlets, statements) are visually appealing.	1	2	3	4	5
87.	International student services department has convenient business hours.	1	2	3	4	5
88.	International student services department has offices and policies which demonstrate an understanding of the specific needs of international students.	1	2	3	4	5

SECTION C: SATISFACTION

Please read the instructions carefully:

The following statements relate to your feelings about the overall service performance by the non-academic service departments (admission, housing, academic records and international student services) at your university. For each statement, rate your perceived service quality and satisfaction using five point *Likert Scale* ranging from 5 (*strongly agree*) to 1 (*strongly disagree*) to the extent you believe the department performed while you received service, that best reflects your own perceptions.

1. Overall, I would rate the quality of non-academic services at my university as:

Poor	Fair	Good	Very Good	Excellent
1	2	3	4	5

2. How satisfied are you with the overall quality of non-academic services at your university?

Very Dissatisfied	Dissatisfied	Unsure	Satisfied	Very Satisfied
1	2	3	4	5

3. How satisfied are you with the overall quality of services in the following departments at your university?

Admission	1	2	3	4	5
Housing	1	2	3	4	5
Academic Records	1	2	3	4	5
International students services	1	2	3	4	5

APPENDIX B
IRB APPROVAL

January 28, 2016

Mordekai Ongo
Tel: 269-471-6361
Email: ongo@andrews.edu

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

IRB Protocol #:16-010 **Application Type:** Original **Dept.:** Leadership
Review Category: Exempt **Action Taken:** Approved **Advisor:** Jay Brand
Title: Evaluating perceptions of service quality and satisfaction of nonacademic Services among international students at universities in Indiana and Michigan.

Your IRB application for approval of research involving human subjects entitled: *“Evaluating perceptions of service quality and satisfaction of nonacademic Services among international students at universities in Indiana and Michigan”* IRB protocol # 16-010 has been evaluated and determined Exempt from IRB review. You may now proceed with your research.

Please note that any future changes (see IRB Handbook pages 11-12) made to the study design and/or informed consent form require prior approval from the IRB before such changes can be implemented. In case you need to make changes please use the attached report form.

While there appears to be no more than minimum risks with your study, should an incidence occur that results in a research-related adverse reaction and/or physical injury, (see IRB Handbook pages 12) this must be reported immediately in writing to the IRB. Any research-related physical injury must also be reported immediately to the University Physician, Dr. Reichert, by calling (269) 473-2222.

We ask that you reference the protocol number in any future correspondence regarding this study for easy retrieval of information.

Best wishes in your research.

Sincerely,

Jerome Thayer, PhD.
Chair, Institutional Review Board

BALL STATE UNIVERSITY

Mon 2/29/2016 4:28 PM

Mulcahy, John jmulcahy@bsu.edu

RE: International Students Satisfaction with Service Quality Survey

Hello Mordekai,

Thank you for your email. Based on your letter of approval from your institution's IRB and Application, you may proceed with you contacting our international student organization for your project. Let them know that you have contacted the BSU IRB office and is approved to proceed with your recruitment. Make sure you send them your approval letter for their records.

Thanks,
John

***John M. Mulcahy, Jr.
Associate Director
Office of Research Integrity
Ball State University
765-285-5106***

NOTRE DAME

Fri 10/7/2016 8:32 AM

Rosemary Max <rmax@nd.edu>

Re: International Students Satisfaction Survey fall 2016

Mordekai,

We would like to participate in the study. I am copying my colleague Leah Zimmer who can take it from here. Leah we would want to send this out to all international students, we can talk more about how to do this. I would suggest sending it out next week.

Mon 10/17/2016 11:09 AM

ISSA ISSA@ND.EDU

OPTIONAL: International Student Survey for Andrews University Graduate Research Project

At the request of a graduate student at Andrews University, ISSA is offering students an opportunity to contribute to his research. See below for more details.

This is an invitation to you to participate in a research project focusing on International students attending universities in the United States. Several universities are included in this anonymous study. The purpose of the study is to assess international students' satisfaction with non-academic services. The study has adopted SERVPERF instrument with a minor modification-- a demographics section added by the investigator. The survey will take you about 15 minutes to complete. Your participation is greatly appreciated.

There are no known risks involved in the study. It is completely anonymous. On top of this your responses will be handled confidentially. Only aggregated data and results will be presented in the research report. Only the researcher will have access to the data. Participation is completely voluntary. The research can benefit you by helping your university to identify those non-academic areas requiring improvement in service delivery.

You will be able to enter into a drawing to win one of the 25, \$20.00 gift cards. A screen will pop up where you can enter into the drawing.

If you have any questions or concerns regarding this research, please feel free to contact the researcher Mordekai Ongo, at [269-921-1151](tel:269-921-1151) or email ongo@andrews.edu , or Andrews University IRB at irb@andrews.edu or Tel. [269-471-6361](tel:269-471-6361)

Here is the link to the survey

<https://www.andrews.edu/surveys/online.php?p=ISSQ1603>

Thank you for participating in this important research project.

Sincerely yours,

Mordekai Ongo International Graduate Student

Indiana University South Bend

Sat 2/27/2016 5:52 PM

Peterson-Miller, Constance copmille@iusb.edu

Re: International Students Satisfaction with Service Quality Survey

Hi Mordekai,

I got the survey out very late, but it has since gone out to the F and J students. I am hopeful that some will respond to you!

Best regards,

Connie

Constance O. Peterson-Miller, Director

Office of Admissions

Office of International Student Services

Indiana University South Bend

Mon 2/8/2016 10:21 PM

Peterson-Miller, Constance copmille@iusb.edu

Re: International Students Satisfaction with Service Quality Survey

Dear Mr. Ongo,

Thank you for sending this along to me. I will make the survey available in the next few weeks to our students. To be frank, there are several who are interested in having our students participate in surveys, so I am trying to space them out.

I will be away for a family funeral until Thursday but will check in with you upon my return.

Regards,

Constance O. Peterson-Miller, Director

Office of Admissions

Office of International Student Services

Indiana University South Bend

1700 Mishawaka Ave.

Box 7111

South Bend IN 46634

Phone: 574.520.4419

Fax: 574.520.4590

Bethel College

Mon 2/29/2016 4:54 PM

Matteson, Sue sue.matteson@bethelcollege.edu

Re: International Students Satisfaction with Service Quality Survey

Mordekai,

I will forward it to the students.

Sue

Campus Visit & Event Coordinator

Phone: [574.807.7233](tel:574.807.7233)

1001 Bethel Cir, Mishawaka, IN 46545

UNIVERSITY OF MICHIGAN

Mon 7/25/2016 11:13 AM

vcbotek@umich.edu ; on behalf of; IRB - Health and Behavioral Sciences
irbhsbs@umich.edu

Hello, Mordekai,

From the description of your research, it appears that no University of Michigan (UM) researchers are engaged in the research as your collaborators. "Engaged" is defined as consenting subjects, interacting/intervening with subjects, or having access to identifiable data. If no UM researchers are engaged, then UM IRB review and approval isn't necessary.

As a courtesy, consider contacting the UM organization/unit/department in question -- such as the International Institute or specific academic departments -- to alert them to the fact that you will be recruiting participants from among their members and that you have IRB approval through your institution. Please note that each organization, unit, or department will determine whether they will be able to assist you and what form that assistance will take

Lastly, you might also check the umich.edu website for international student group public emails as another means of reaching your targeted sample.

Best of luck in your research.

--

Institutional Review Board – Health Sciences and Behavioral Sciences
University of Michigan
NCRC
Building 520, Suite 1169
2800 Plymouth Road
Ann Arbor, MI 48109-2800
Phone: 734-936-0933
Fax: 734-936-1852
E-mail: irbhsbs@umich.edu

WESTERN MICHIGAN UNIVERSITY

Tue 2/23/2016 1:30 PM

To Wayne Lee Bond wayne.l.bond@wmich.edu
Cc Mordekai Ongo

Julia Ann Mays julia.mays@wmich.edu
Re: Survey for International Students

Thanks Wayne!

Mordekai's HSIRB Protocol Number 16-00-01 was been reviewed and approved on February 5, 2016

Best,
Julia

Julia A. Mays
Associate Director Research Compliance Office of the Vice President for Research
1903 W. Michigan Avenue MS 5456
251W Walwood Hall
Kalamazoo, MI 49008-5456
ph: 269-387-8293
fx: 269-387-8276

WESTERN MICHIGAN UNIVERSITY

Wayne Lee Bond wayne.l.bond@wmich.edu

To Mordekai Ongo

Cc Julia Mays

RE: Survey for International Students

Greetings Mordekai,

My name is Wayne Bond and I will be assisting with your survey at WMU. We have reviewed the survey and our colleagues in International Student Admissions feel the only concern is that students will be confused on differing between admissions services and International Admissions services. Unlike the other schools in your project, WMU has a separate admissions services process for International students.

If you do not think this will be an issue, please let me know your timeline for this.

Best,

--

Wayne Lee Bond II, MA

Co-chair, LSUR&P Project Management Team International Student Activities Program Specialist

Haenicke Institute for Global Education Western Michigan University

<http://international.wmich.edu>

269-387-4853

February 12, 2016

Dear Mordekai,

Dr. Willie Banks has delegated to me, in my role as IRB Administrator, the authority to grant permission for ISU students to participate in exempt and expedited level studies.

I have reviewed your request for involving ISU students in your study entitled *Measuring International Students' Satisfaction with Service Quality of Non-academic Services using the SERVPERF Model*. This low-risk study was deemed exempt by the IRB at Andrews University. It is understood that no ISU personnel or students are actively engaged in the research project per the federal definition of engaged (see guidance at <http://www.hhs.gov/ohrp/policy/engage08.html>, section B(4)). Therefore, your request to survey ISU students is hereby approved.

If you have questions about this letter, I can be reached by email at Dawn.Underwood@indstate.edu or by phone at 812-237-3088. Good luck with your research.

Sincerely,

Dawn F. Underwood, Ph.D.
IRB Administrator
Associate Dean for Sponsored Programs

EC: Dr. Willie Banks
CC: OSP General Files

APPENDIX C
PARTICIPANT RECRUITMENT &
CONSENT COVER LETTER

Dear Participant,

I am an international student at Andrews University. I am conducting a research study titled: *Measuring International Students' Satisfaction with Service Quality of Non-academic Services using the SERVPERF Model*. The purpose of the research is to explore international students' satisfaction with service quality in non-academic service departments at institutions of higher education in the Indiana and Michigan area. It also investigates the relationship between satisfaction and demographic variables, and satisfaction with service quality along five dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy, based on perceptions of service.

A survey has been designed to collect information on this topic. And I am inviting you to participate in this study.

There are no costs for your participation. Participation is completely free and voluntary. You may decline altogether, or leave blank any questions you don't wish to answer. There are no known risks to participation beyond those encountered in everyday life. The study is completely anonymous. Your responses will be handled confidentially. Only aggregated data and results will be presented in the research report, and may be shared with a participating institution upon request, but, no data or result will identify you individually. Collected data will be kept in a password protected computer folder. None other than the researcher and project committee will have access to the data.

If you agree to participate, and complete at least 90% of the survey, you will be able to enter into a drawing to win one of the 25, \$20.00 gift cards. A screen will pop up where you can enter into the drawing.

If you have any questions or concerns regarding this research, please feel free to contact the researcher Mordekai Ongo, at 269-471-6361 or email ongo@andrews.edu or you may contact the supervisor Dr. Jay Brand at 269-471-3784, brand@andrews.edu for answers related to this study.

Please click on the link below to complete the survey. By clicking on the survey link you acknowledge that you have given your implied consent to participate in the study.

Thank you for your assistance in this important endeavor.

Here is the link [LINK PROVIDED IS SPECIFIC TO THE INSTITUTION]

Sincerely yours,

Mordekai Ongo

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VITA

Mordekai Ochieng Ongo

8827 Meadowview Ct
Berrien Springs, MI 49103
Email: ongo@andrews.edu

EDUCATION

PhD.	Andrews University Higher Education Administration	December 2018
M.Sc.	Andrews University Software Engineering	August 2004
MSA	Andrews University Engineering Management	June 1998
BBA	University of Eastern Africa, Baraton Business Administration	June 1991

EXPERIENCE

Research Integrity & Compliance Officer Andrews University	2013-Current
Lead Mental Health Technician Oaklawn Health	2012-2013
Behavioral Mental Health Technician Family Children Center, Inc. Mishawaka IN	2009-2012
Production Manager Journal of Research in Christian Education (JRCE)	1997-2007
Loan Officer Thabiti Finance Company Ltd.	1991-1996
Teacher Teachers Service Commission, Kenya	1985-1986