International Journal of Education and Social Science; Vol. 6 No. 4; April 2019
ISSN 2410-5171 (Online), 2415-1246 (Print)
Published by Research Institute for Progression of Knowledge

Antecedents of International Students Satisfaction: Evidence from USA

Irene Irudayam
Anna Maria College
Dean of Institutional Research and Assessment
50 Sunset Lane, Paxton, Massachusetts – 01612, USA.

Satyanarayana Parayitam
Department of Management and Marketing
Charlton College of Business
University of Massachusetts Dartmouth
285 Old Westport Road
North Dartmouth, MA 02747. USA.

Abstract

United States has witnessed growing influx of students for higher education over the last two decades. Students from middle-east, Europe, and Asian subcontinent constantly seek admissions into US universities. The present study is aimed at unraveling the dedicated services the institutions render to the international students and their level of satisfaction with those services. We developed a conceptual model and tested by surveying 222 students and regression results support that the students are satisfied with the financial, academic, and ongoing services universities offer. The implications are discussed.

Introduction

Enrollment of international students in colleges and universities in the United States has been increasing at rapid pace over the last decade and constitutes a large portion of student body. The number of international students in US in 2013-2014 alone was 886,052, showing a growth rate of over 7.2% since 2012 (Institute of International Education, 2014). On the positive side, international students contribute over $20 billion to the U.S. economy annually, through tuition and living expenses alone. The institutions that have small endowments rely on tuition fee of foreign students, put aggressive recruitment efforts (Lyken-Segosebe & Shepherd, 2012).
In order to recruit and retain these students, institutions have established dedicated services such as specialized orientation, housing, mentorship, and ESL programming (Jackson & Bybell, 2013). It should be remembered that there are some costs associated with hosting foreign students in United States (Kelly, 2012).

International students have needs that are distinct from their domestic counterparts. They are not a homogeneous group, differ not only due to country of origin and culture, but ability and economic background. Across nationalities, international students can be characterized as high flyers, strivers, explorers, and strugglers (Choudaha et al, 2013). While recruiting the international students it is necessary to understand the relative strengths and weaknesses of each of these groups (Tinto, 1993; Swail, 2004).

Although institutions have dedicated resources to provide services to these students, research is scant with regard to measuring the efficiency of these services. The objective of the present study is to see the effectiveness of the services rendered by the institutions by fruitfully deploying resources to provide necessary support services to the international students. More specifically, the study is aimed at unravelling the antecedents of student satisfaction. The relationship between the initial, ongoing, financial, academic support services and student satisfaction are studied.

International students: Historically, foreign students were typically thought of as highly motivated individuals who sought out admission at their own accord (Kelly, 2012). By the twenty-first century, many countries are looking to recruit foreign students because they bring revenue and enhance status (Lewin, 2012). On positive side, this promotes diversity in the student population as students from different countries join universities. Since the organizational landscape is changing and most of the organizations are increasingly becoming global, it is necessary for the organizations to recruit diversified workforce. Universities thus provide a convenient platform for recruitment because they provide diversity in terms of graduating students.

This growing population of foreign students is likely to have more diverse needs. Depending on the country of origin, as many as 26% to 58% of incoming foreign students may be academically underprepared (Choudaha et al, 2013). As a result, many foreign students entering U.S. institutions may not be as prepared to succeed as their historical counterparts of a decade ago resulting in more attrition rates. Some researchers posit that institutions rarely modify the infrastructure to suit the foreign students but maintain the same structure that was intended to serve domestic students (Redden, 2013). Researchers therefore argue that today's foreign students have unique needs and need a different infrastructure with respect to their initial settlement and adjustment, and assimilation into life in the U.S., in order to reduce marginalization and increase academic success (Vasilopoulos, 2016). Recognizing this, institutions offer an increasingly wider array of services intended to assist foreign students, from immediate assistance with visa, logistics, and housing, to long-term assistance such as mentorship, international student organizations, and academic assistance such as ESL programs and tutoring. However, relatively little is studied whether these needs are actually met (Jackson & Bybell, 2013).

While institutions may study satisfaction and efficacy of services offered to international students with surveys and focus groups, there exists a dearth of data concerning the relative influence of each of these services upon student satisfaction. The literature on the satisfaction of international is sparse. Some researchers contend that a systematic investigation is necessary given that the stakes with respect to enrollment management (given that by 2025, the number of foreign students seeking study in U.S. institutions is expected to grow by 71%) (Van Der Werf & Sabatier, 2009; Jordan, 2015).

Theoretical Background and development of conceptual model and hypotheses

Theoretical background for the present study stem from sociological model of Tinto (1975) and psychological model of Bean and Eaton (2001). According to Tinto (1975), academic and social integration is important in the success of any person. Bean and Eaton (2001) described a psychological model in which a student enters an institution with personal behavioral and psychological attributes. These will, in turn, lead to interactions with the institution and resultant changes in self- assessment, attitudes, intention, and finally behavior manifest in persistence.

The process through which foreign students are marginalized or successfully integrated and retained has been previously described by a number of theoretical models. For instance, Tinto (1975) described a sociological model in which academic and social integration interact with commitment, ultimately leading to a decision whether or not to persist. Tinto (1975) postulated that an important ingredient of congenial campus environment is the successful integration of students and academic system. Such congruence results in increase in the confidence and academic competence of students. Bean and Eaton (2001) described a psychological model in which a student enters an institution with personal behavioral and psychological attributes, which in turn, lead to interactions with the institution, Anderson (1985) described another psychological model in which persistence is understood in terms of a balance of the competing forces that promote and impede towards an academic goal. Finally, Swail (2003) described a student-centered model in which cognitive, social, and institutional factors interact dynamically within the student to produce stability, which leads to persistence.

To promote retention of international students, long-standing campus departments, such as advising, student services, and residence services, engaging foreign students may require either modifying or augmenting existing services (Bista & Foster, 2011). For instance, either existing advisors will need to be trained to work with students who have studied under unfamiliar foreign curricula or might have ESL issues, or a new advising staff will need to be added. Residential life will need to accommodate programs aimed at foreign students in existing residence halls, or else dedicated space will need to be found. Either the student services office will need to be trained and expanded accordingly, else a separate foreign student life center would need to be established.

On the other hand, new departments will probably need to be creased, even if existing departments are adjusted to the maximum extent. For instance, an institution recruiting a substantial number of students who have ESL issues, would almost certainly need to create a new department to deliver these services effectively (Bista & Foster, 2011).

Currently, international student enrollment comprises over 4% of U.S. enrollment in institutions of higher education (Institute of International Education, 2014). This is expected to grow, especially as U.S. institutions increasingly turn to systematic recruitment of foreign students in order to meet enrollment and budgetary goals. While, recruitment of international students is one endeavor, retaining them and assuring their persistence to graduation is another. Many institutions may have a robust recruitment program and an office dedicated to serving international students. In such offices, services specific to international students may be offered. However, in many other critical areas, such as personal counseling, curriculum planning, and residential life, international students are expected to assimilate and utilize services designed for domestic students (Mori, 2000). Furthermore, the importance of other services, such as career counseling, is completely overlooked. Support services provided to international students are in need of redesign. In order to make the changes necessary, to recruit, retain, and ultimately assure the success of foreign students, it is necessary to understand the varied needs of the market served by an institution. Furthermore, it is also necessary to understand how the students within an institution are adjusting to campus and academic life once they have arrived.

Initial Services

Extant research has shown that satisfaction of international students is an important factor to be considered by policy makers (Asare-Nuamah, 2017). The satisfaction of international students has an impact on their retention (Bown, 2006; Chang, 2013). The most useful way to examine the efficacy of initial services offered to international students upon their arrival is to consider the gap between need and satisfaction. The efficacy of the orientation program is greater than assistance with the trivial matter of setting up a bank account. However, students felt that their greatest unfulfilled needs were with airport pickup and shopping trips, by this measure. While these may seem trivial, as well, it is these initial acculturation experiences outside of the protective shell of the college campus that may be the most daunting to a newly arrived international student.

There are instances in the literature which support this assertion. For instance, Johnson & Kumar (2010) in describing the experience of newly arrived international students from India in Australia describes the lasting memory of how unsettling the initial ride from the airport to campus can be. In that particular instance, the unease is attributed to the adjustment from a large urban to a rural environment—and the fact that the institution made no explicit mention of its distance from a large urban center. While the ride from the airport (or initial shopping trip) may have met the basic need, long uncomfortable silence on the way apparently left a lasting negative impression. It is easy to imagine that the shopping trip may have been a similar experience for some.

Financial Services, academic services, and ongoing services

In selecting a foreign institution, as a whole, foreign students place great weight upon an institution's reputation within their own countries, because students perceive that a degree earned from an institution less well-known within their own country would put them at a competitive disadvantage with other foreign educated students (Vasilakes, 2015). Another factor that influences the selection of institutions by foreign students is the availability of financial assistance (Vasilakes, 2015). Although financial assistance at the graduate level is a primary draw to the U.S., there is no parallel incentive at the undergraduate level, and very few domestically funded initiatives in the U.S. specific to foreign undergraduate students exist. As a result, the market share of the global aggregate of international students has declined from 37% in 1970 to 23% in 2000 to 16% in 2012; further, only four U.S. institutions rank within the top 20 destinations amongst international destinations (Chang, Ortiz, & Fang, 2015).

The biggest competitors to the U.S. are the United Kingdom and Australia—each of which, unlike the U.S., have formulated national strategies for recruiting foreign students (Green & Koch, 2015). Although the U.S. hosts 200,000 more foreign students than its closes competitor, the U.K. offers greater financial supports, and both Australia and Canada offer more easily accessible permanent residency programs (Batalova, 2006). Further, competition is not limited to English speaking countries; France, Germany, and the Netherlands are increasingly popular destinations, as are Malaysia and Singapore—countries that formerly sent foreign students abroad without hosting significant numbers of foreign students themselves (ICEF Monitor, 2015).

Although U.S. institutions enjoy good reputations overseas, other nations systematically offer greater incentives, including lower admissions fees and tuition, as well as promotion of fewer visa and work restrictions and lower cost of living (Chang et al., 2015). Although some colleges have redesigned curricula, upgraded facilities, and increased funding options in the form of scholarships, grants, and on-campus employment for some foreign students, on a national level, the U.S. remains non-strategic with respect to the recruitment of foreign students. It does not appear that reputation alone is maintaining the U.S. market edge.

Per Swail's (2004) findings, with low-income students, resources trump all other factors. The findings of the present study with international students concur; amongst initial, ongoing, financial, and academic services, *financial services* are the greatest determinant of satisfaction. However, when considering international students, some qualification of Swail's assertion are in order. International students are most reliant on relatives back home for financial support, rather than upon scholarships, assistantships, and other campus-based aid. However, the availability of institutional financial assistance has the greatest influence upon satisfaction.

International students at the subject institution appear to make use of all available *academic services.* However, the gap between the need and satisfaction of that need is greater for all three ESL services (reading, writing, and English) than it is for the academic support center. As previously stated, coming to the U.S. to study in the English language is a daunting challenge, for non-native speakers, for proficient speakers who must grapple with the complexities of American idiom and slang, and for anyone, and for anyone with a notable accent. Likely, the gap between need and satisfaction of need with respect to ESL services will be relatively large when compared with other services provided to international students. However, this gap requires special attention.

Per Swail's (2004) perspective, *ongoing services* provide an essential role in shoring up deficits in institutional and social supports. Such supports at the subject institution are numerous, including the community service center, global citizen program, the bridge center, and organizations specific to students' national origin. However, one of the most robust findings across all analyses was that international students relied most on the cultural companion program, and that its shortcomings were the least. The reasons for its relative success are not apparent. However, per Swail's model, it may be that the cultural companion program is particularly successful at providing not only institutional support, but intensive social support.

Based on the above we hypothesize:

H1: Availability of financial services is positively related to student satisfaction.
H2: Availability of academic services is positively related to student satisfaction.
H3: Availability of ongoing services is positively related to student satisfaction.

Campus services, assistance on arrival and academic adviser

There are some unique infrastructure and programs that are required to meet the needs of international students, these may include: special academic programs, especially English as a Second Language (ESL) classes; dedicated advising; dedicated housing; visa assistance and compliance; travel assistance; and recruiting (Banjong, 2015). Often, these services will be contained or referred through a dedicated Office of International Studies, and in such instances, identification of their costs is straightforward. However, the majority of costs associated with higher education concern incremental and recurring costs associated with instruction, academic support services, and housing, and are not dissociable; these costs, the majority associated with hosting foreign students, are marginal (Kelly, 2012, McPherson, 2015).

In addition, there exist intangible costs associated with hosting foreign students that are political in nature, both inside and outside the institution. Faculty and administrators may believe that any financial benefit brought by the additional tuition dollars may create a dependency on international enrollment that may cause a decline in admission or academic standards (Hazelkorn, 2015). However, there is little evidence to support this concern. Students may perceive that foreign students may be displacing domestic students and be putting pressure on curricula, especially in areas concerning language competency; this is especially true in graduate level studies and in institutions in which foreign students comprise a significant portion of the student body (Sherry, Thomas, & Chui, 2010). Finally, politicians may raise ill-will, arguing that foreign students should pay the full cost of education based on full cost, rather than their actual marginal cost, so as not to be a burden on domestic taxpayers (Altbach & Teichler, 2001). All of these arguments, of course, are made without respect to the benefits of hosting foreign students.

When the international students arrive for the first time into any campus, they look for campus services and assistance on arrival. In general, International Students Organizations, in coordination with International Students Offices will take necessary care for the international students upon their arrival. Once the international students set in the campus, there is growing tendency to look for oncampus services to get acclimatized. A general practice is to break the ice by hosting reception for the international students by the International Student Offices wherein the students will be exposed to cultural shock and explain the differences in the system of education and what to do and what not to. Further, international students are assigned to an academic adviser who plays an important role in shaping the students' behavior, by setting goals for the students and guiding them throughout their graduation. Based on the above, we hypothesize that:

H4: Availability of campus services is positively related to student satisfaction.
H5: Availability of assistance on arrival is positively related to student satisfaction.
H6: Availability of academic adviser is positively related to student satisfaction.

Methods

Sample

The population sampled consists of all international students enrolled as undergraduate or graduate students at a medium-sized private university in New England, at the time of the data collection. The international students at this university come from 72 different countries and represent about 14% of the total student population. The top five international student populations represent China, Saudi Arabia, South Korea, Taiwan and India. All eligible students received an email invitation explaining the general purpose of the research and the possible benefits to the enhancement of services for foreign students. All participants responded voluntarily with assurance of the anonymity of their responses. In order to encourage student response, the Office of International Student Services promoted the survey before its deployment.

A structured instrument was used to collect data. The survey consists of a series of questions that queries students concerning both reliance upon services and the sufficiency of initial support services (e.g. visa and logistical support), ongoing support services (e.g. mentoring and international student organizations), and academic support (e.g. ESL classes and tutoring). Each participant was requested to indicate both the degree to which he or she ever relied upon each service, and the degree to which the service met their needs through responses on two distinct modified Likert scales for each item. Each response is based upon a Likert-type scale, as suggested by some researchers (Siegle et al, 2009). These are modified so that each of the positive end of the scale ends in a superlative. This was done to counter the negative skewness typically inherent measures of student satisfaction (Steele & Fullagar, 2009).

The item domain was determined through examination of services offered to international students, as well as review of the Noel-Levitz Student Satisfaction Inventory (NL-SSI) (Noel-Levitz, 2014), and the National Survey of Student Engagement (NSSE) (National Survey of Student Engagement, 2014). The examination of the domain of services should assure the content validity of the domains studied. This is further assured by the similarity to the methods used in the NL-SSI and the NSSE—widely used instruments, for which reliability and validity data abound (Richardson, 2009).

Data Collection

Enlisting the cooperation of the Office of International Student Services, names and university email addresses of the currently enrolled international student population was obtained. All students in the population received an email invitation to the survey deployed online via a commercially available service, such as Qualtrics. Entry into the survey was authenticated by the link, preventing the occurrence of multiple responses from any single participant. Participants were requested to respond within two weeks. A follow-up email was sent to non-respondents. At the conclusion of the data collection, email addresses were dissociated from the data set, assuring anonymity of responses.

Of the demographic variables included in the survey instrument, gender, initial on-campus residence (initially on-campus), years living in the U.S. prior to arrival at the subject institution (years prior), years studying in the U.S. (years studying), and graduate or undergraduate student status (student status) were distributed so that they contribute a meaningful amount of variance to analyses. This can be seen through a cursory examination of the frequency distributions, shown in Table 1.

Measures

Predictor variables

Financial services. Availability of financial services was measured using four items. The sample items read as "To what extent you have relied on financial assistance from university", "to what extent you have relied on on-campus employment". The reliability coefficient Cronbach alpha for this measure was 0.845.

Academic services. Availability of academic services was measured using four items. The sample items read as: "To what extent you relied on Center for Academic Support; "To what extent you relied on ESL reading program". The reliability coefficient Cronbach alpha for this measure was 0.954.

Ongoing services. Availability of ongoing services was measured using four items. The sample items read as: "To what degree have you ever relied on friends not from my country of origin", "To what extent you have relied on local religious organizations such as church, temple, mosque etc.). The reliability coefficient Cronbach alpha for this measure was 0.871.

Campus services. Availability of campus services was measured using six items. The sample items read as "To what extent you have relied on cultural connections club", "to what extent you have relied on student counseling center". The reliability coefficient Cronbach alpha for this measure was 0.822.

Assistance on arrival. Availability of assistance on arrival measured using six items. The sample items read as "To what extent you have relied on campus tours organized by university when you arrived", "to what extent you have relied on orientation programs". The reliability coefficient Cronbach alpha for this measure was 0.894.

Academic adviser. The respondents were asked to rate the contribution of academic adviser using eight items. The sample items read as "To what extent adviser is approachable", "to what extent adviser is helpful in planning my future". The reliability coefficient Cronbach alpha for this measure was 0.967.

Dependent variables

Satisfaction with Financial services. Availability of financial services was measured using four items. The sample items read as: "To what degree you believe that university scholarship met your needs", "To what degree you believe that on campus employment met your needs". The reliability coefficient Cronbach alpha for this measure was 0.825.

Satisfaction with Academic services. Availability of academic services was measured using four items. The sample items read as: "To what degree you believe that the Center for Academic Support met your needs", "To what degree you believe that the ESL services met your needs". The reliability coefficient Cronbach alpha for this measure was 0.926.

Satisfaction with Ongoing services. Availability of ongoing services was measured using four items. The sample items read as: "To what degree you believe that local organizations met your needs", "To what degree you believe that friends not from my country of origin satisfied my needs". The reliability coefficient Cronbach alpha for this measure was 0.849.

Satisfaction with Campus services. Satisfaction of campus services was measured using six items. The sample items read as "To what extent you believe that the services such as cultural connections club were helpful", "to what extent you believe that student counseling center was helpful". The reliability coefficient Cronbach alpha for this measure was 0.842.

Satisfaction with assistance on arrival. Satisfaction with assistance on arrival measured using six items. The sample items read as "To what extent were you satisfied with campus tours organized by university when you arrived", "to what extent you were satisfied with orientation programs". The reliability coefficient Cronbach alpha for this measure was 0.859.

Satisfaction with Academic adviser. The respondents were asked to rate to what extent they were satisfied with the contribution of academic adviser using eight items. The sample items read as "To what extent you agree that the adviser is approachable", "to what extent you agree that the adviser is helpful in planning my future". The reliability coefficient Cronbach alpha for this measure was 0.946.

Control variables

The study used students 'age' and 'number of years in US' as control variables.

Results

The descriptive statistics (means, standard deviations, and correlations) are presented in Table 2.

Table 1: Frequency Distributions for Demographic Variables

Item	International Students Frequency	Percent
Gender		
Male	111	50
Female	111	50
When you first came to the University, did you live on campus? (Initially On-Campus)		
No	156	70
Yes	66	30
Prior to beginning your studies in the U.S., how long did you reside in the U.S.? (Years Prior)		
Less than a year	30	13
1 - 2 years	17	8
2 - 3 years	17	8
More than 3 years	18	8
Not at all	140	63
About how many years have you been studying in the U.S.? (Years Studying)		
Less than a year	82	37
1 - 2 years	51	23
2 - 3 years	43	19
More than 3 years	46	21
Are you currently an undergraduate or graduate student? (Student Status)		
Undergraduate	116	52
Graduate	106	48

The preliminary analysis of the descriptive statistics reveals that there is some problem of multicollinearity as correlations between the variables exceeded 0.75 (Kennedy, 1998). The highest correlation was 0.824 between satisfaction with ongoing services and satisfaction with academic advisers and the smallest correlation was 0.172 between academic services and student satisfaction with academic services. Except that one correlation, all other correlations were within the acceptable limit. However, we also calculated the Variance Inflation Factor (VIF) and the value is less than 2, representing that there is no problem of multicollinearity.

To test the hypotheses, we performed hierarchical regression. First, we entered the control variables gender, and number of years the students are in US. Column 1, Column 3, Column 5 show the regression coefficients of control variables in Table 2.

Table 2. Descriptive Statistics: Means, standard deviations and correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Gender	1.50	.501	1													
2.Years studying in US	2.24	1.15	.090	1												
3.Assistance on arrival	3.58	1.34	.064	-.026	1											
4.Campus services	3.56	1.28	.104	-.078	.595**	1										
5.Financial Services	3.51	1.33	.002	.031	.448**	.460**	1									
6.Academic Services	3.82	1.65	.142	.050	.390**	.508**	.612**	1								
7.Ongoing Assistance	3.48	1.29	.053	.037	.368**	.464**	.609**	.547**	1							
8.Academic Adviser	3.20	.87	.015	.179*	.183*	.232**	.216**	.188*	.269**	1						
9..Satisfaction with assistance on arrival	2.98	1.05	060	.139	.380**	.275**	.253**	.204*	.228**	.319**	1					
10.Satisfaction with Campus services	3.13	1.16	.073	-.081	.260**	.275**	.204*	.211*	.180*	.385**	.629**	1				
11.Satisfaction with financial services	2.87	1.11	.121	.041	.219**	.126	.276**	.112	.181*	.246**	.476**	.601**	1			
12.Satisfaction with Academic services	2.73	1.32	.121	.206*	.134	.115	.160	.172*	.175*	.222**	.540**	.429**	.504**	1		
13.Satisfaction with ongoing services	2.96	1.07	.114	.011	.227**	.122	.217**	.194*	.308**	.229**	.557**	.643**	.663**	.495**	1	
14.Satisfaction with academic adviser	3.01	.85	.111	.075	.392**	.324**	.391**	.316**	.410**	.350**	.763**	.786**	.776**	.738**	.824**	1

** Correlation is significant at the 0.01 level (2-tailed).

When student satisfaction with financial services as dependent variable, first the control variables are entered regression equation. The regression coefficients of gender and number of years of students stay in US were not significant. The control variable model explained only 1.7% of variance in the satisfaction with financial services. The model is not significant (R^2= 0.017; Adj R2= 0.003; F= 1.237). When main variable was entered into equation (column 2), the regression coefficient of gender was not significant (β= 0.123; n.s) and number of years of students satisfaction was also not significant (β= 0.041; n.s). The regression coefficient for the main variable 'financial services' was significant and (β = 0.274; $p < .001$). The model was significant and explained 9.2% of variance due to financial services (R^2= 0.092; Adj R^2= 0.073; F= 4.774; Δ F =11.663; Δ R^2= 0.075) and the model explained additional 7.5% variance in the satisfaction of student with financial services. These results support H1.

When student satisfaction with academic services as dependent variable, the control variables were entered first (Column 3). The regression coefficient of gender was not significant whereas the regression coefficient of students stay in US was significant (β = 0.215; $p < .05$). The model was significant and explained 6.1 % in dependent variable because of the control variables (R^2= 0.061; Adj R^2= 0.041; F= 4.6). Column 4 shows the regression results of academic services as independent variable and the beta coefficient of gender was not significant. The beta coefficient of number of years of students stay in US was significant (β = 0.207; $p < .05$). The regression coefficient of the main variable 'academic services' was significant (β = 0.145; $p < .05$). The model was significant and explained 8.2% variance in the dependent variable 'student satisfaction with academic services' (R^2= 0.082; Adj R^2= 0.062; F= 4.17; Δ F =3.173; Δ R^2= 0.021). The model explained additional 2.1% variance in the dependent variable. The results support H2.

The results of student satisfaction with ongoing assistance services are shown in columns 5 and column 6. The control variable model was not significant and beta coefficients of none of the control variables was significant (R^2= 0.013; Adj R^2= 0.001; F= 0.958). The regression coefficient of main variable ongoing assistance was significant (β = 0.303; p < .001) and the model was significant explaining 10.5% in variance in dependent variable (R^2= 0.105; Adj R^2= 0.088; F= 5.488; Δ F =14.36; Δ R^2= 0.091). The moderated model explained additional 9.1% variance in dependent variable 'satisfaction with ongoing services'. These results support H3.

When student satisfaction with campus services as dependent variable, first the control variables are entered regression equation (column 7). The regression coefficients of gender and number of years of students stay in US were not significant. The control variable model explained only 1.1 % of variance in the satisfaction with campus services. The model is not significant (R^2= 0.011; Adj R^2= 0.001; F= 0.928). When main variable was entered into equation (column 8), the regression coefficient of gender was not significant (β= 0.39; n.s) and number of years of students satisfaction was also not significant (β= 0.56; n.s). The regression coefficient for the main variable 'campus services' was significant and (β = 0.266; p < .001). The model was significant and explained 8.1% of variance due to campus services (R^2= 0.081; Adj R^2= 0.064; F= 4.996; Δ F =13.005; Δ R^2= 0.070) and the model explained additional 6.4% variance in the satisfaction of student with campus services. These results support H4.

When student satisfaction with assistance on arrival as dependent variable, the control variables were entered first (Column 9). The regression coefficient of gender was not significant whereas the regression coefficient of students stay in US was significant (β = 0.148; p < .05). The model was not significant and explained 2.5 % in dependent variable because of the control variables (R^2= 0.025; Adj R^2= 0.014; F= 2.221). Column 10 shows the regression results of assistance on arrival as independent variable and the beta coefficient of gender was not significant. The beta coefficient of number of years of students stay in US was significant (β = 0.155; p < .05). The regression coefficient of the main variable 'assistance on arrival' was significant (β = 0.380; p < .05). The model was significant and explained 16.9 % variance in the dependent variable 'student satisfaction with assistance on arrival' (R^2= 0.169; Adj R^2= 0.155; F= 11.617; Δ F =29.67; Δ R^2= 0.144). The model explained additional 14.4 % variance in the dependent variable. The results support H5.

The results of student satisfaction with academic adviser are shown in columns 11 and 12. The control variable model was not significant and beta coefficients of none of the control variables was significant (R^2= 0.023; Adj R^2= 0.091; F= 1.619). When main variables were entered in step 2, the regression coefficient of students stay in US was significant (β = 0.177; p < .05). The regression coefficient of academic adviser was significant (β = 0.321; p < .001). The model was significant explaining 17.3 % in variance in dependent variable (R^2= 0.173; Adj R^2= 0.148; F= 7.145; Δ F =12.406; Δ R^2= 0.150). The moderated model explained additional 15 % variance in dependent variable 'satisfaction with academic adviser'. These results support H6.

Discussion

As a result of this study, institutions of higher learning should have greater guidance when it comes to expending resources on programs and services intended to increase their retention and persistence, as well as their attractiveness to foreign students. Institutions with sizable foreign populations are likely to support a number of initiatives, including ESL programs; clubs, organizations, and residence halls specific to foreign student populations; scholarships; advising, mentoring, and recruitment. Each of these are expensive endeavors, and it is vital to both mission and the fiscal health of the institution to understand their role in student satisfaction. As a result, institutions should be better positioned to deploy scarce resources to maximal effect.

Although U.S. institutions are increasingly admitting foreign students to meet enrollment and revenue goals, in many cases, they do so with the same or similar services and infrastructure intended to serve domestic students (Redden, 2013). While institutions may study satisfaction and efficacy of services offered to international students with surveys and focus groups, not many studies systematically analyzed the efficiency of these services. In the present study a conceptual model was developed and the antecedents to student satisfaction were tested empirically. The results indicated the importance of initial, ongoing, financial, and academic services in determining the satisfaction of international students. The study also supported the importance of institutional financial assistance, albeit brief off-campus initial services such as airport pickup, and the importance of dedicated international advisors. Finally, it suggested that students are satisfied with the ongoing support services. This study renders additional support for the theory that international students perceive these services as very important.

The findings from the study acknowledge that international students have unique needs with respect to what is required to help them with their initial adjustment and assimilation into U.S. institutions of higher learning (Vasilopoulos, 2016). In order to promote retention of international students, existing campus departments, such as advising, student services, and residence services require either structural change or enhancement (Bista & Foster, 2011). Advisors need to be trained to work with students who have studied under unfamiliar foreign curricula or might have ESL issues, a new advising staff will need to be added, or both. Residential life need to accommodate programs aimed at foreign students in existing residence halls, new dedicated space needs to be created, or both. Student services personnel need to be trained, offices need to expanded accordingly, a separate foreign student life center needs to be established, or perhaps all of these. New departments need to be created to provide ESL services (Bista & Foster, 2011). It is not enough to commit to providing these new and expanded services; effort must be expended toward assessing the efficacy of these services and monitoring changing student needs.

Contributions, limitations, and future research

The present study contributes to the literature on higher education concerning the international students in several ways. First, the importance of various services such as financial, academic, campus services, and assistance on arrival is emphasized. Secondly, academic adviser plays an important role in enhancing satisfaction of international students. The study contributes to the educational institutions to expand the services by recruiting the qualified and trained people to provide these services to the international students on arrival.

The study is not without any limitations. First, as with any survey research, the common method variance is a problem. When the data for dependent and independent variables was collected from the same respondents, common method bias exists. Common method variance introduces systematic bias into any study by artificially inflating or deflating correlations which threaten the validity of constructs (Reio, 2010). To reduce it, if not eliminate completely, used Harman's single factor test and we found that when all the items are loaded into one common factor the total variance is less than 50% which suggests that common method variance does not affect data and results (Podsakoff et al, 2003).

Another potential limitation is social desirability bias (also called response bias). Sometimes noise stems from the respondents who are biased in answering the questions in the survey. Respondents sometimes tend to report socially desirable and acceptable answers t project a favorable image of themselves. This kind of response bias may contaminate the results from the research. To reduce the bias, we maintained anonymity as researchers suggest (Nederhof, 1985).

The study provides many avenues for future research. In addition to the variables studied in the present research, the other variables that need to be studied include the administration, interaction of students with instructors (Chen et al, 2008). Further, the course delivery by instructors in the beginning of the semesters when international students join makes unforgettable impact on student satisfaction (Chang, 2013; Wilson et al, 2004). Some researchers argue that when academic institutions fail to perform their duties effectively students get dissatisfied and leave the institution (Darlaston-Jones et al, 2003; Gerdes & Malinckrodt, 1994).

In sum, the present study tested a conceptual model and the results showed that universities need to provide services effectively so that international students are satisfied and continue their education. This will help attract and retain the international students.

References

Altbach, P. G., & Teichler, U. (2001). Internationalization and exchanges in a globalized university. *Journal of Studies in International Education, 5*(1), 5-25.

Anderson, E. (1985). Forces influencing student persistence and achievement. In Noel, L., Levitz, R., Saluri, D., & Associates, Increasing student retention: Effective programs and practices for reducing the dropout rate. San Francisco, CA: Jossey-Bass Publishing.

Asare-Nuamah, P. (2017). International Students' Satisfaction: Assessing the Determinants of Satisfaction. *Higher Education for the Future*, 4(1): 44-59.

Banjong, D. N. (2015). International students' enhanced academic performance: Effects of campus resources. *Journal of International Students, 5*(1), 132-142.

Batalova, J. (2006). *Spotlight on limited English proficient students in the United States.* Washington, DC: Migration Policy Institute.

Bean, J. P., & Eaton S. B. (2000). A psychological model of student retention. In J.M. Braxton (Ed.), *Rethinking the departure puzzle: New theory and research of college student retention* (pp48-61). Nashville, TN: University of Vanderbilt Press.

Bean, J., & Eaton, S. B. (2001). The psychology underlying successful retention practices. *Journal of College Student Retention: Research, Theory & Practice, 3*(1):73-89.

Bista, K. K., & Foster, C. (2011). Issues of international student retention in American higher education. *The International Journal of Research and Review, 7*(2), 1-10.

Bown, J. (2006). Locus of learning and affective strategy use: Two factors affecting success in self-instructed language learning. *Foreign Language Annals*, 39(4), 640–659.

Chen, N., Lin, K., & Kinshuk. (2008). Analyzing users' satisfaction with e-learning using a negative critical incidents approach. *Innovations in Education and Teaching International*, 45(2), 115–126.

Chang, K. (2013). *Factors affecting student satisfaction in different learning deliveries*. Theses and Dissertations. Paper 26. Illinois, US: Illinois State University

Chang, L., Ortiz, A., & Fang, Y. R. (2015). International student mobility trends 2015: An economic perspective. *World Education Services*. Retrieved from http://wenr.wes.org/2015/02/international-student-mobility-trends-2015-an-economic-perspective/

Choudaha, R., Chang, L., & Schulmann, P. (2013). Student segmentation for an effective international enrollment strategy. *World Education News & Reviews, 26*(8).

Darlaston-Jones, D., Pike, L., Cohen, L., Young, A., Haunold, S., & Drew, N. (2003). Are they being served? Student expectations of higher education. *Issues in Educational Research*, 13(1), 31–52.

Educational Testing Service. (2012). *The official guide to the TOEFL test (4th Ed.).* New York City, NY: McGraw-Hill Education.

Green, M., & Koch, K. (2015). *The future of international postsecondary student enrollments.* Boston, MA: The Boston Center for International Higher Education.

Hazelkorn, E. (2015). *Rankings and the reshaping of higher education: The battle for world-class excellence*. Basingstoke, EN: Palgrave Macmillan Publishing.

ICEF Monitor. (2015). The state of international student mobility in 2015. Retrieved from http://monitor.icef.com/2015/11/the-state-of-international-student-mobility-in-2015/

Institute of International Education. (2012). Open Doors Report on International Educational Exchange. *Institute of International Education.* Retrieved from: http://www.iie.org/Research-and-Publications/Open-Doors/Data

Institute of International Education. (2014). New international student enrollment, 2005/06 - 2013/14. Open Doors Report on International Educational Exchange. *Institute of International Education.* Retrieved from http://www.iie.org/opendoors

Jackson, M., & Bybell, D. (2013). International students in the US: Social and psychological adjustment. *Journal of International Students, 3*(1), 17-28.

Johnson, R., & Kumar, M. (2010). The monsoon wedding phenomenon: Understanding Indian students studying in Australian universities. *Higher Education Research & Development, 29*(3), 215-227.

Jordan, M. (2015). International students stream into U.S. colleges. The Wall Street Journal. Retrieved from http://www.wsj.com/articles/international-students-stream-into-u-s-colleges-1427248801 .

Kelly, S. (2012). *Economic impact of international students attending an institution of higher education in the United States* (Doctoral dissertation). Louisiana State University, LA. Retrieved from:http://etd.lsu.edu/docs/available/etd01202012124540/unrestricted/Economic_Impact_of_International_Students_S_Kelly.pdf

Kennedy, P (1998). *A guide to econometrics*, MIT Press.

Lewin, T. (2012). Illegal in U.S., Paid agents overages help American colleges recruit students. *The New York Times*. Retrieved from http://www.nytimes.com/2012/02/05/education/smaller-colleges-rely-on-paid-student-recruiters-overseas.html?_r=0

Lyken-Segosebe, D., & Shepherd, J. C. (2012). Securing Tennessee's future. *The Economist*. Retrieved from: http://www.ticua.org/public_policy/sm_files/Learning%20from%20Closed%20Institutions.pdf

McPherson, P.E. (2015). *Leading and developing a first year learning community for opportunity program students* (Doctoral dissertation). Retrieved from ProQuest LLC (ED3735151).

Mori, S. (2000). Addressing the mental health issues of international student. *Journal of Counseling & Development, 78*(2), 137-144.

National Survey of Student Engagement. (2014). *Promoting student learning and institutional improvement: Lessons from NSSE at 13*. Bloomington, IN: Indiana University Center for Postsecondary Research.

Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. European Journal of Social Psychology, Vol 15(3): 263-280.

Noel-Levitz. (2014). The Noel-Levitz student satisfaction inventory.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879-903.

Redden, E. (2013). Strangers in a strange land. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/news/2013/03/04/international- educators-consider-challenges-integrating-students-abroad

Reio, T.G. (2010).The Threat of Common Method Variance Bias to Theory Building, Human Resource Development Review, Vol. 9(4): 405-411.

Richardson, J. T. (2009). What can students' perceptions of academic quality tell us? *The Routledge international handbook of higher education,* 199.

Sherry, M., Thomas, P., & Chui, W. H. (2010). International students: A vulnerable student population. *Higher education, 60*(1), 33-46.

Siegle, D., Rubenstein, L. D., Pollard, E., & Romey, E. (2009). Exploring the relationship of college freshmen honors students' effort and ability attribution, interest, and implicit theory of intelligence with perceived ability. *Gifted Child Quarterly, 54*, 92-101.

Steele, J. P., & Fullagar, C. J. (2009). Facilitators and outcomes of student engagement in a college setting. *The Journal of psychology*, *143*(1), 5-27.

Swail, W. S. (2004). The art of student retention: A handbook for practitioners and administrators. In *Educational Policy Institute. Texas Higher Education Coordinating Board 20th Annual Recruitment and Retention Conference Austin, TX*. Retrieved from http://www.educationalpolicy.org/pdf/ART.pdf

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research, 89-125.

Van Der Werf, M., & Sabatier, G. (2009). *The college of 2020: Students.* North Hollywood, CA: Chronicle Research Services.

Vasilakes, J. (2015). Towards a personalized international student recruitment strategy. *LinkedIn*. Retrieved from https://www.linkedin.com/pulse/towards-personalized-international-student-strategy-jake-vasilakes

Vasilopoulos, G. (2016). A critical review of international students' adjustment research from a Deleuzian perspective. *Journal of International Students, 6*(1), 283-307.

Wilson, J.D., Cordry, S.A., & King, N. (2004). Building learning communities with distance learning instruction. TechTrends: Linking Research and Practice to Improve Learning, 48(6), 20–23.

Table 3: Regression results of the effects of services available on student satisfaction with services

	Student satisfaction with financial Services		Student Satisfaction with Academic Services		Student Satisfaction with Ongoing assistance		Satisfaction with Campus services		Satisfaction with assistance on arrival		Satisfaction with on academic adviser	
	Column 1 Step1	Column 2 Step 2	Column 3 Step 1	Column 4 Step 2	Column 5 Step 1	Column 6 Step 2	Column 7 Step 1	Column 8 Step 2	Column 9 Step 1	Column 10 Step 2	Column 11 Step 1	Column 12 Step 2
Control variables												
Gender	.125	.123	1.35	0.114	.115	.098	.064	.039	.077	.054	.111	.119
Number of years of study in US	.049	.041	0.215**	.207**	0.018	.006	.074	.056	.148	.155**	.109	.177**
Main Variables												
Financial Services		.274***										
Academic Services				.145**								
Ongoing assistance						.303***						
Campus services								.266***				
Assistance on arrival										.380***		
Academic Adviser												.321***
R^2	.017	.092	0.061	0.082	0.013	.105	.011	.081	.025	.169	.023	.173
Adj R^2	.003	.073	0.041	0.062	0.001	.088	.001	.064	.014	.155	.009	.148
F	1.237	4.774***	4.6**	4.17**	0.958	5.488***	.928	4.996**	2.221	11.617***	1.619	7.145***
Δ F		11.663***		3.173**		14.36***		13.005***		29.670***		12.406***
Δ R^2		0.075		0.021		0.091		.070		.144		.150
df	2,142	3,141	2,142	3,141	2,142	3,141	2,172	3,171	2,172	3,171	2,139	4,137

*** p < .001; ** p < .05

Figure 1: Conceptual Model