



International Journal of Applied Business and Economic Research

ISSN : 0972-7302

available at <http://www.serialsjournals.com>

© Serials Publications Pvt. Ltd.

Volume 15 • Number 19 (Part-II) • 2017

Development and Validation of International Students Satisfaction Scale in Indian Universities Context

Aaradhya Srivastava¹ and Anoop Beri²

¹ Research Scholar, Lovely Professional University, Punjab (India)

² Registrar, CT University, Ludhiana, Punjab (India)

Abstract: Indian Universities have increasing enrollments of international students at their campuses in recent years. It may be challenging for administrators to ensure the satisfaction of international students. The satisfaction can be ensured if students would be provided with better service quality at university. Thus, Student satisfaction from the perspective of campus diversity is of vital importance and it cannot be overlooked. The present paper reports the development and validation of student satisfaction scale. It is a 21- item self-reporting scale, based on SERVQUAL, having five dimensions of Tangibility, Reliability, Responsiveness, Assurance and Empathy. The instrument is developed and validated by collecting data from international students studying in five Indian universities. Confirmatory factor analysis supported the five dimensional structure of the tool. The overall results revealed that this scale possess adequate psychometric properties. Thus, it could be considered as appropriate self-administered measure addressing student satisfaction among diverse group of international students. The applicability of student satisfaction scale for Indian universities is discussed.

Keywords: Student satisfaction, Service quality, International students, Higher education

INTRODUCTION

Higher education is considered as service (Zeithaml and Bitner, 2002). The growing competition among universities to attract international students highlighted the importance of university services. The aim of universities is to improve the service quality for their stakeholders (students). Marketing concept of service quality and satisfaction has been used in the field of higher education in several studies (Mariani *et al*, 2015). Many universities are thus, gradually adopting the marketing approach to attract students. The extent to which Indian universities can attract prospective international students would depend on the service quality. Thus, the marketing strategy is focussing towards service quality to enhance the satisfaction of students to sustain in the competitive market.

In recent years, due to globalization of higher education, two prominent areas of researches overlap first the service quality of universities and second the student satisfaction (Mariani *et al*, 2015). The services provided by the universities become crucial for international students satisfaction, retention, successful course completion and ultimately, leading to loyalty. Although, there is lot of tools developed to explore the satisfaction of students with service quality of higher education institutions but not yet been fully explored in international students context specifically. The present study thus, aims to develop and validate a scale for exploring the satisfaction of international students.

LITERATURE REVIEW

Satisfaction conceptualizations in higher education differ according the kind of view used. For some researchers, it is viewed as a process (relating to its main causes) or as a result (relating to its nature). As a process, satisfaction is analysed in light of its nature: cognitive or emotional (Oliver, 1981; Westbrook and Reilly, 1983; Ngobo, 1999). As a result, satisfaction is analysed as the main causes of that satisfaction (Oliver, 1980; Bearden and Teel, 1983; Day, 1984; Tse and Wilton, 1988; Anderson, 1993). However, student satisfaction as a process is used widely (Alves & Raposo, 2007).

Definitions of Satisfaction used by researchers

Danielson (1998) defined satisfaction as the expression of pleasure and pride with the educational experience.

Many authors defined student satisfaction as the comparison between experience obtained in the university and expectations to that experience (Franklin, 1994, Elliot & Shin, 1999, Alves & Ropso, 2007).

Elliot & Healy (2001) defined satisfaction as short term run attitude, resulting from student's evaluation about educational evaluation.

Factors affecting student satisfaction

Academic advising comes out an important factor for student satisfaction (Khosravi *et al*, 2013). Resource measures such as staff-to-student ratios were found to have substantial impact on student satisfaction (Lenton, 2015). Factors related with quality of University infrastructure (physical appearance, classroom cleanliness, availability of computers) and academic atmosphere (responsiveness of staff to students) are found as important determinants of student satisfaction (Zineldin *et al*, 2011). Student satisfaction depends on infrastructure, education programs, lecturers, course information, application of information technology (Bui and Dao, 2013). Many studies reported, university image as the most influential construct for student satisfaction. In present era of globalization, universities are struggling to gain a good image in the competitive market to attract international students (Aroury *et al.*, 2014). By moulding the service quality as per the expectations of international students, Indian universities will gain a good image as a result of their satisfaction.

Many studies have also been conducted on the satisfaction of international students (Fernandes, 2013, Ali *et al*, 2016). Factors such as academic and education quality, financial and economic consideration, administrative and staff support, and image and prestige of the university had significant positive influence on overall foreign students' satisfaction toward international program in Thai higher education (Ngamkamollert & Ruangkanjanases, 2015). Many factors to be directly impacting student satisfaction

with the university performance are faculty contact, relationship between students and teaching staff(Kuh *et al.*, (2005), that approachability and accessibility of the teaching staff inside and outside the class is required for effective student learning to take place.

Arambewela and Hall's (2009) study on international students' satisfaction indicates that the importance of the quality factors related to both educational and non-educational services varies among nationality groups. Their study also highlights the importance of considering the diversity of cultures, language and values in determining the level of student satisfaction. Numerous studies supported that student satisfaction is positively and significantly related to student loyalty (Seeman and O'Hara, 2006; Wang, 2010; Helgesen and Nettet, 2007; Brown and Mazzarol, 2009).

Observations from Literature

Review of literature reflected no consensus among researchers on the definition and measurement of student satisfaction. Studies on satisfaction have been done mostly from customer's perspective. The dimensional issue of satisfaction with service quality requires re-examination of SERVQUAL dimensions in the context of international students studying in Indian universities.

RESEARCH METHODOLOGY

“SERVQUAL” developed by Parasuraman *et al.*, 1991, 1994) can be considered as the most frequently used model among all models for measuring service quality by the researchers. This tool measures the satisfaction from perceived quality of the service from the perspective of the five dimensions of service quality: Tangibility, Reliability, Responsiveness, Assurance and Empathy which are generally accepted in the academic world. Some researchers stated about quality dimensions from customers' perspective that resulted into creating an opinion about the product/service and that lead to the occurrence of the satisfaction phenomenon. Thus, SERVQUAL can be seen from the perspective of two situations: (1) as a tool that measures the level of service quality and (2) in the situation in which SERVQUAL is considered as a good predictor of general satisfaction (Bitner and Hubert, 1994).

Item generation: An initial pool of 49 statements was framed from extensive review of literature. The items were shown to 10 subject experts from education and management departments of five universities for the purpose of content validation. As per the feedback from experts, 11 items were deleted and some others are modified. Thus, the preliminary draft of the student satisfaction scale had 38 items.

Scoring: Student satisfaction is a seven point likert scale, and the scores assigned 7 to 1 each statement to each response category: Strongly disagree(SD), Disagree(D), Somewhat disagree (SDA), Neither agree or disagree (NAOD), Somewhat agree (SWA), Agree (A), Strongly agree(SA). All items are positively worded statements.

Initial try-out: Preliminary draft of tool having 38 items was administered on a sample of 100 international students (50 males and 50 females) of engineering and management streams from two states (Punjab and U.P.) of India, using purposive sampling technique. Students were asked to rate the level of satisfaction with university services in each of the five dimensions. This method could generate reflection on each factor which considered being significant to the overall student satisfaction. After scoring, the scores were arranged in descending order. Upper 25% respondents with highest total score and lower 25%

respondents with lowest total score on the scales were extracted to form criterion groups so that statements can be evaluated (Garrett & Henry Edward, 1937). Data was analyzed using SPSS 21, by employing independent sample t-test. Only items having value greater than 2, which is significant at 0.05 level of significance with $df=98$ (Netemeyer *et al*, 2003). After item analysis, out of total 38 items, 13 items were rejected. Thus, the scale after item analysis was finalized with 25 items.

Assessment of content validity

Content validity is established by using expert opinion and feedback regarding the relevance of items in the concerned area. Only those statements retained which had 80% or more unanimity by 10 experts of five different universities (Garrett & Henry Edward, 1937).

Exploratory factor analysis (EFA)

After establishing content validity of the tool, the initial draft of the tool having 25 items is administered on 500 international students of five Indian Universities, out of which only 388 sheets were found valid for further analysis. For EFA, 388 samples (196 males and 192 females) of average age 21.8 were selected. EFA was performed to check sampling adequacy. The results of EFA indicated Kaiser-Meyer-Olkin (KMO) measure of sample adequacy was found to be .872, Bartlett's Test of Sphericity showed significant correlation among variables $\chi^2 = 714.422$ with $df= 186$ and $sig=0.000$. Hence, the sample passed the basic data adequacy check for EFA.

Table 1
KMO and Bartlett's Test Results for student satisfaction
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	714.422
	df	186
	Sig.	.000

Confirmatory factor analysis (CFA)

Confirmatory Factor Analysis (CFA) is useful when researchers have clarity about a scale – the number of factors or dimensions underlying items, the links between specific items and specific factors, and the association between factors. Confirmatory factor analysis (CFA) using AMOS 20.0 was carried out to test the five factor structure. Four items have been deleted as they were not able to explain the construct upto the acceptable range. Finally, 21-items scale was finalized with CFA. The fit indices (CMIN/DF=3.840, GFI=0.912, AGFI=.805, CFI=.954, RMSEA=0.082) were found in the acceptable range. Also, the convergent and discriminant validity have been established for the scale.

Convergent validity

Any measure is said to possess convergent validity if items within same construct are highly correlated (Netemeyer *et al*, 2003). There are following three conditions reported for establishing convergent

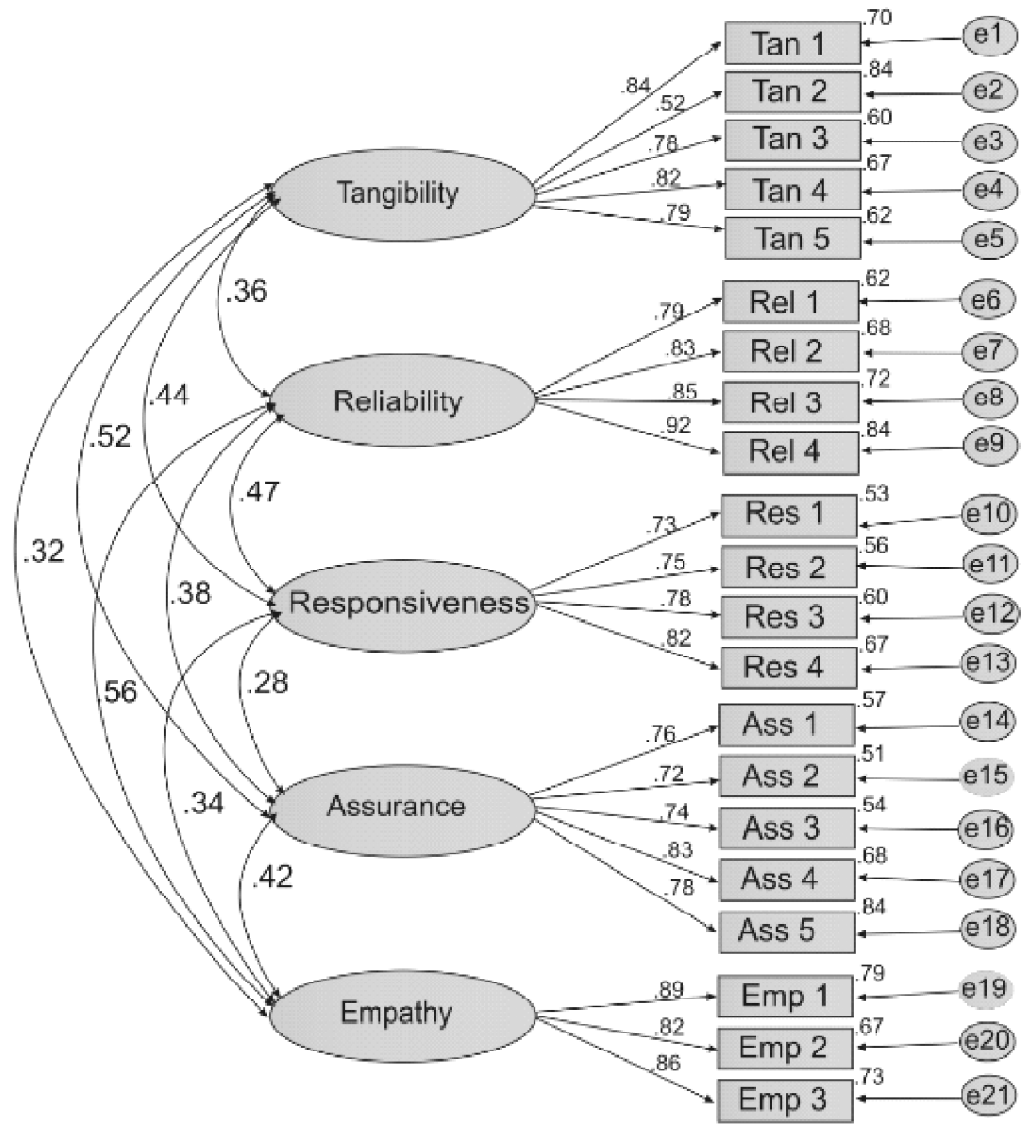


Figure 1: Measurement Model

Table 2
Values of Composite reliability (CR), Average variance extracted (AVE), Maximum shared variance (MSV) and Average shared variance (AVE)

S.No.	Constructs	CR	AVE	MSV	ASV
1.	Tangibility	.91	.69	.27	.17
2.	Reliability	.91	.71	.31	.19
3.	Responsiveness	.85	.59	.22	.14
4.	Assurance	.88	.63	.27	.07
5.	Empathy	.89	.73	.31	.09

validity : a. CR should be greater than 0.7 b. AVE should be greater than .05 and c. CR should be greater than AVE (Hair *et al*, 1998). Table 4 shows all the conditions are met to qualify the convergent validity (Hair *et al*, 1998).

Discriminant validity

Discriminant validity refers to the extent to which measures of theoretically unrelated constructs do not correlate highly with one another (Brown *et al*, 1998). The discriminant validity of the measures in the present study was established by comparing the average variances extracted with the squared correlation between constructs (Fornell & Larcker, 1981). From Table 4, it can be seen that all AVEs are higher than squared inter-construct correlations. This result provides evidence of discriminant validity.

CONCLUSION

Earlier studies revealed that there is no consensus among researchers on the definition and measurement of student satisfaction. Studies on satisfaction have been done mostly from customer's perspective. The purpose of this study was to conceptualize student satisfaction and the development and refinement of a scale for measuring international student satisfaction exclusively in Indian universities context. First, a 49-item measure was developed and purified for measuring student satisfaction based on SERVQUAL using standard scale development procedures. Then, confirmatory factor analysis was applied on data collected from international students. CFA results confirmed five dimensions of student satisfaction: Tangibility, Reliability, Responsiveness, Assurance and Empathy dimensions. Finally, the scale has 21-items for measuring student satisfaction. All the items have accepted range of item reliability. The values of coefficient alpha, composite reliability and average variance extracted (AVE) were above the recommended range, thus, establishing the reliability of the constructs. Convergent and discriminant validity was established for all the five constructs.

MANAGERIAL IMPLICATIONS

In current era, many universities incorporated student satisfaction in their marketing strategy. It is a benchmark of good universities, providing quality education. Evaluation of student satisfaction with service quality of universities is a prerequisite for the survival of universities. It helps higher education institutions to identify areas that makes them distinctive and also, helps them to explore critical areas that need improvements. From academic point of view, the study provides conceptual understanding of student satisfaction and a measure of satisfaction based on SERVQUAL model having Tangibility, Reliability, Responsiveness, Assurance and Empathy dimensions. This newly developed and validated tool can be used in future studies to explore the international student satisfaction. The administrators as well as policy makers may be benefitted and can draw meaningful information from satisfaction exhibited by the international students. Thus, it would help in formulating strategies to enhance student satisfaction and thus, ultimately, enhancing the competitive advantage for Indian universities for attracting more international students.

REFERENCES

- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016), Does higher education service quality effect student satisfaction, image and loyalty? A study of international students in Malaysian public universities. *Quality Assurance in Education*, 24(1), 70-94.

- Alves, H., & Raposo, M. (2007), The influence of university image in student's expectations, Satisfaction and loyalty. In *29th annual cair forum* (pp. 26-29).
- Anderson, E. W., & Sullivan, M. W. (1993), The antecedents and consequences of customer satisfaction for firms. *Marketing science*, 12(2), 125-143.
- Arambewela, R., & Hall, J. (2009), An empirical model of international student satisfaction. *Asia Pacific journal of marketing and logistics*, 21(4), 555-569.
- Arouri, M. E. H., Nguyen, D. K., & Pukthuanthong, K. (2012), An international CAPM for partially integrated markets: Theory and empirical evidence. *Journal of Banking & Finance*, 36(9), 2473-2493.
- Bearden, W. O., & Teel, J. E. (1983), Selected determinants of consumer satisfaction and complaint reports. *Journal of marketing Research*, 21-28.
- Brown, T. J., Churchill, G. A., & Peter, J. P. (1993), Improving the measurement of service quality. *Journal of retailing*, 69(1), 127-139.
- Brown, R. M., & Mazzarol, T. W. (2009), The importance of institutional image to student satisfaction and loyalty within higher education. *Higher Education*, 58(1), 81-95.
- Danielson, C. (1998), Is Satisfying College Students the Same as Decreasing Their Dissatisfaction? AIR 1998 Annual Forum Paper.
- Day, R. L. (1984), Modeling choices among alternative responses to dissatisfaction. *ACR North American Advances*.
- Edwards, A. L. (1983), *Techniques of attitude scale construction*. Ardent Media.
- Elliott, K. M., & Healy, M. A. (2001), Key factors influencing student satisfaction related to recruitment and retention. *Journal of marketing for higher education*, 10(4), 1-11.
- Elliott, K., & Shin, D. (1999), Assessing student satisfaction: an approach to help in the development of marketing strategy for a university. In *Marketing Management Association (Ed.), Proceedings of the 1999 Midwest Business Administration Conference, March* (pp. 45-49).
- Fernandes, C., Ross, K., and Meraj, M. (2013), Understanding student satisfaction and loyalty in the UAE HE sector, *International Journal of Educational Management*, 27(6), 613-630.
- Franklin, K. K. (1994), Multivariate Correlation Analysis of a Student Satisfaction Survey.
- Fornell, C., & Larcker, D. F. (1981), Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 382-388.
- Garrett, H. E. (1937), *Statistics in psychology and education*.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998), *Multivariate data analysis* (Vol. 5, No. 3, pp. 207-219). Upper Saddle River, NJ: Prentice hall.
- Helgesen, Ø., & Nettet, E. (2007), What accounts for students' loyalty? Some field study evidence. *International Journal of Educational Management*, 21(2), 126-143.
- Khosravi, A. A., Poushaneh, K., Roozegar, A., & Sohrabifard, N. (2013), Determination of factors affecting student satisfaction of Islamic Azad University. *Procedia-Social and Behavioral Sciences*, 84, 579-583.
- Lenton, P. (2015), "Determining Student Satisfaction: An Economic Analysis of the National Student Survey", *Economics of Education Review*, vol. 47, pp. 118-127.
- Mariani, P., Rancati, E., & Gordini, N. (2015), Student Satisfaction In Higher Education: Empirical Evidence from University of Milano-Bicocca. In *Toulon-Verona Conference "Excellence in Services"*.
- Ngamkamollert, T., & Ruangkanjanases, A. (2015), Factors Influencing Foreign Students' Satisfaction toward International Program in Thai Universities. *International Journal of Information and Education Technology*, 5(3), 170.
- Ngobo, P. V. (1999), Decreasing returns in customer loyalty: Does it really matter to delight the customers?. *ACR North American Advances*.

- Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003), *Scaling procedures: Issues and applications*. Sage Publications.
- Oliver, R. L. (1980), A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of marketing research*, 460-469.
- Oliver, R. L. (1981), Measurement and evaluation of satisfaction processes in retail settings. *Journal of retailing*.
- Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991), Refinement and reassessment of the SERVQUAL scale. *Journal of retailing*, 67(4), 420.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994), Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria. *Journal of retailing*, 70(3), 201-230.
- Seeman, E. D., & O'Hara, M. (2006), Customer relationship management in higher education: Using information systems to improve the student-school relationship. *Campus-Wide Information Systems*, 23(1), 24-34.
- Tse, D. K., & Wilton, P. C. (1988), Models of consumer satisfaction formation: An extension. *Journal of marketing research*, 204-212.
- Wang, Q., Taplin, R., and M. Brown, T. (2011), Chinese students' satisfaction of the study abroad experience. *International Journal of Educational Management*, 25(3), 265-277.
- Westbrook, R. A., & Reilly, M. D. (1983), Value-percept disparity: an alternative to the disconfirmation of expectations theory of consumer satisfaction. *ACR North American Advances*.
- Wilkins, S. and Stehens Balkrishnan, M. (2013), Assessing student Satisfaction In Transnational Higher Education. *International Journal of Educational Management*, 27(2), 143-156.
- Zeithaml, V. A., Bitner, M. J., de Lara Choy, M. I. P., Hirschfeld, A. L., & Becerril, S. P. (2002), *Marketing de servicios: Un enfoque de integración del cliente a la empresa*. México: McGraw-Hill.
- Zhao, C. M., Kuh, G. D., & Carini, R. M. (2005), A comparison of international student and American student engagement in effective educational practices. *The Journal of Higher Education*, 76(2), 209-231.
- Zineldin, M., Akdag, H. C., & Vasicheva, V. (2011), Assessing quality in higher education: New criteria for evaluating students' satisfaction. *Quality in Higher Education*, 17(2), 231-243.

Appendix 1: Student Satisfaction Scale

I. Tangibility (5 items)

University infrastructure is modern and visually likeable.
University service delivery is aligned with the international higher education standards.
Library has the latest literature in students area of interest.
Classrooms have modern/contemporary equipments(PCs,LCDs) for facilitating teaching-learning process.
University offers a good opportunity for recreational activities.

II. Reliability (4 items)

The degree of university is prestigious.
University has precise records of students progress.
Study programmes are as per the contemporary needs.
University management has promising service delivery procedures.

III. Responsiveness (4 items)

University management considers the feedback from international students to improve the services.
University has reasonable fee structure, considering the services offered by it.
The teaching staff of the university is able to answer students' query in a satisfactory way.
University organizes programs for the personal development of students.

IV. Assurance (5 items)

Teaching staff are highly educated and experts in their field.
International students feel secure in their dealings with university administration.
University administration is competent in handling students problems.
Fair and unbiased treatment is given to students within university.
Teaching staff have good communication skills in order to interact with international students.

V. Empathy (3 items)

University has an effective international student cell/office to handle issues.
University is concerned with the personal development of each student.
Teaching staff is supportive to the students academic problems.