

## International Journal of Applied Business and Economic Research

ISSN : 0972-7302

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

© Serials Publications Pvt. Ltd.

Volume 15 • Number 1 • 2017

### Measuring International Students' Satisfaction with Higher Education in India: Development & Validation of INHedPERF Model

Bandana Chadha\*, Vivek Singh Tomar\*\*, R.S. Rai\*\*\* and Anurag Dugar\*\*\*\*

\*Research Scholar, Amity Business School, Amity University, Noida (U.P.)

\*\*Assistant Professor - Marketing, Amity Business School, Amity University, Noida (U.P.)

\*\*\*Associate Professor – Statistics, Amity Business School & Deputy Director, Research Planning & Statistical Services, Amity University, Noida (U.P.)

\*\*\*\*Assistant Professor - Marketing, Rajiv Gandhi Indian Institute of Management

**Abstract:** Presence of international students is a prevalent and robust indicator of the success of any educational institute as it reflects the appeal and respect the institute enjoys and also echoes the success of the education policy of the country. International students in higher education not only bring cultural diversity to the institutes and society but also contribute significant revenue to the institute and economy. They play an important role in the higher education sector of many countries like U.S.A, U.K., France, Australia, Germany, Russia, Canada, China, Singapore and Malaysia. India's "Educate in India" initiative announced in May 2015 is an aspirational move by the Indian Government aiming to make India a quality higher education hub in Asia.

Student satisfaction being both the aim and the most important indicator of quality, this empirical study focuses on measuring the satisfaction level of international students studying in higher education institutes in India. The study used techniques like structured questionnaire and focus group studies to identify variables that affect satisfaction of international students studying in various higher education institutes across India. Exploratory Factor Analysis, followed by Confirmatory Factor Analysis, was used to extract and validate nine factors that most significantly affect student satisfaction. Using these nine factors, a model has been developed which measures the satisfaction level of international students in India. This model is named INHedPERF (Indian Higher Education Performance Model).

The study can particularly facilitate strategy formulation by higher education institutes in India that either attract international students or are planning to target them. The identification of key pain points will aid stakeholders address them, improve service quality and thereby help shape India as an attractive higher education destination for international students.

**Key words:** Higher education in India, international student satisfaction, international student experience, Educate in India, Foreign Student, Service quality in higher education, Higher education experience, International students in India, Cross-border higher education, International mobility in higher education

## INTRODUCTION

Higher educational institutions have to compete aggressively to create a differentiating service quality in order to secure their financial success and sustainability. Higher education caters to the expectations of students, faculty, staff, parents, employers and society. The satisfaction of all these stakeholders is predominantly dependent on the satisfaction of students because they are the consumer and also the end product of the institution. Student satisfaction being both the aim and the most important indicator of the higher education experience, it is imperative to measure satisfaction of students.

International students play an important role in the higher education sector in U.S.A, U.K., France, Australia, Germany, Russia, Canada, China, Singapore and Malaysia. Since they not only provide diversity to the academic environment and campus life but also contribute significant income to the university and revenue to the local economies via expenditure on and off campus, attracting international students to Indian campuses is an attractive business opportunity. India's "Educate in India" initiative announced in May 2015 is a bold move by the Govt. which aspires to attract overseas students and make India a quality higher education hub in Asia.

This empirical study of 291 international students conducted in India in 2016 uses a detailed literature review to identify the most pertinent variables used to measure international student satisfaction. Since pertinent research on factors affecting satisfaction of international students studying in India are far and few, focus-groups help identify and include several India-specific issues like cleanliness, hygiene, food standards, cost, value for money, infrastructure, upkeep, safety, security etc. Exploratory Factor Analysis, followed by Confirmatory Factor Analysis helped to develop and validate an instrument to measure the satisfaction of international students in higher education institutes in India.

## LITERATURE REVIEW

According to UNESCO, approximately 4 million students went to study abroad in 2015, almost double of the 2 million in 2000 (UNESCO Institute of Statistics, 2016). If students travelling abroad for pursuing language studies were to be included, *of whom roughly two-thirds study English*, then more than five million students travelled abroad in 2015 for higher education. 53% of students studying abroad are from Asia, with the highest numbers coming from China, India and South Korea respectively (ICEF Monitor, 2015).

While UNESCO's Institute of statistics 2016 data reveal that five destination countries accounted for half of total international students: U.S.A. hosted 18%, U.K 11%, France 7%, Australia 6% and Germany 5%, their share is declining as Asia is also becoming a compelling destination for international students (UNESCO Institute of Statistics, 2016).

Higher educational institutions, particularly in the private sector, compete aggressively with each other to sustain. Differentiation based on competitive advantage and service quality can lead to larger market share and financial success of a higher educational institution. Higher education institutions facing high competition strategize to improve the delivery of their service quality to attain competitive advantage (Poole, M., Harman, E., Snell, W., Deden, A. & Murray, S., 2000).

According to Palmer, a service is "an intangible benefit exchanged by the producer in order to satisfy an identified need of the consumer" (Palmer, 2011). Higher education institutions are service providers. Higher education caters to the expectations of students, faculty, staff, parents, employers and society.

However, all these stakeholders can be largely satisfied if the student, who is not only a customer, consumer but also the finished product of the education institution, is satisfied. Satisfaction of students is an important component of quality assurance and important to the institutions success. Effective institutions having satisfied students support the enrolment of additional students (Thomas & Galambos, 2004).

Quality can be defined as satisfying or exceeding customer requirements and expectations, and consequently to some extent it is the customer who eventually judges the quality of a product (Shen, Tan, & Xie, 2000). The earliest meaningful research on service quality were undertaken in 1985 and published in a paper "A Conceptual Model of Service Quality and its Implications on future Research" (Parasuraman, A., Valarie Zeithaml, and Leonard Berry, 1985). According to Parasuraman et al. customers judge service quality by comparing their expectations i.e. what they feel service firms should offer with their perceptions of the actual performance provided. Service providers can enhance their image and thereby succeed only if the service expectations of their customer are exceeded.

The important assessment of the quality of the service is the client's perception of quality (Otavio J.O., 2009). The key to attaining success and higher market share among competing service providers is by creating service quality differentiation. In education, quality is defined as the ability to satisfy internal and external expectations through a combination of input, process, and output of the education system thereby meeting customer's explicit and implicit expectations (Cheng, 1995).

Under the "Educate in India" initiative launched in May 2015, the Govt. of India has ambitious plans to promote India as a hub in Asia for quality higher education and thereby increase India's export of education services (Chopra, R, 2015). According to a Financial Times report published in Oct 2014, there were around 32,000 foreign students in India in 2011-12 (Kazmin, 2014).

### **SIGNIFICANCE OF THE STUDY**

The influx of international students benefits multiple stakeholders, i.e. students, institutions, parents, faculty, Governments, nation etc. Many Governments and higher education institutions have, therefore, put in place policies and programs to attract international students in order to infuse cultural heterogeneity and globalize education. Not only do international students globalize the academic environment and campus life but also contribute significant income to the university, revenue to the local economies via expenditure on and off campus, bring precious foreign exchange into the economy, help in higher global accreditation and ranking of institutions by international agencies, strengthen diplomatic and geo-political ties with other countries, among others. Since higher education in India has to attain global excellence, student feedback on service quality is critically required.

### **THEORETICAL MODEL**

Similarity between many service industries in the business sector and higher education suggests that the business world's research on the assessment of service quality may be applicable to higher education (Delene & Bunda, 1991). Service marketing concepts borrowed from the business and industry sector may be useful (Uperaft, 1994). The three most frequently used scales to measure service quality in higher education are: SERVQUAL (Parasuraman, A., Zeithaml, V.A. and Berry, L., 1988), SERVPERF (Cronin & Taylor, 1992) and HedPERF (Firdaus, 2005).

A new model has been developed to measure satisfaction for this study, which is a hybrid of SERVPERF and HEdPERF as the peculiarity of India and Indian institutions make it essential to introduce dimensions and factors which are unique only to India. The new “Indian Higher Education Performance Model” has been named INHedPERF.

### **INHEDPERF - METHODOLOGY**

Based on literature review, an elaborate matrix was constructed and statements were framed around five dimensions of service quality on the X-axis and five aspects of the higher education experience on the Y-axis.

The five dimension of service quality considered in the INHedPERF model were:

1. Tangibles
2. Responsiveness/Empathy
3. Reliability
4. Assurance
5. Image/Reputation

The five aspects of the higher education experience considered in the INHedPERF model were:

1. Teaching aspects
2. Non-Teaching aspects
3. Infrastructural aspects
4. Cost
5. Social/Cultural aspects

A draft structured closed-ended questionnaire was designed ensuring statements were framed in a manner to cover, at least one, if not more, of each of the five dimensions of service quality and each of the five aspects of the higher education experience in the matrix.

Keeping in view the uniqueness and peculiarities of India and the marginal presence of India-specific research, the questionnaire needed to be vetted with practical inputs from students. Accordingly, three focus groups consisting of five international students each were conducted in the presence of a trained group moderator and observer. The transcripts of the focus group studies were analysed to reveal meaningful insight. Finally, 45 variables were identified as having a major influence on the satisfaction of international students studying in India.

The final questionnaire consisted of a total of 55 questions, of which 45 were statements seeking a response to each variable influencing international student satisfaction on a 5 point likert scale. The remaining 10 questions were meant to capture demographics of international student and their institute.

A pilot run was conducted on 25 respondents to evaluate the questionnaire. It normally takes 12-25 pre-testing responses to reveal the weaknesses of the questionnaire (Presser, Rothgeb, Couper, Martin, & Singer, 2005). Feedback received from the pilot was duly incorporated to enrich and modify the survey

questionnaire. After removing incomplete responses, a sample size of 291 responses were considered for the final analysis, 251 of which were received online and remaining in hard copy. The questionnaire was routed through 98 public and private educational institutions, United States-India Educational Foundation (USIEF), British Council, Indian Council for Cultural Relations (ICCR), International student groups and associations etc. Social media like Facebook, Twitter and web sites of international students association were also used extensively.

The reliability of the first 43 questions was tested, as those 43 questions were considered as scale items for measuring the satisfaction of foreign students in India on various parameters. The Cronbach Alpha value for the scale with 43 items was calculated and was found to be 0.952. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0, the greater is the internal consistency of the items in the scale. The alpha value  $>.9$  was found to be an excellent measure (George & Mallery, 2003) of internal consistency in the responses of international students. Further, Table 1 below indicate a significant F value of 24.95, which confirms significant differences within people and between people for responses on the scale items used for measuring satisfaction of international students in India (Gliem & Gliem, 2003).

**Table 1**  
**ANOVA**

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig</i>
Between People	4223.713	290	14.565		
Within People					
Between Items	729.869	42	17.378	24.950	.000
Residual	8483.387	12180	.697		
Total	9213.256	12222	.754		
Total	13436.969	12512	1.074		

Grand Mean = 3.42

## ANALYSIS

Before undertaking the analysis, the data was tested for sampling adequacy. As can be seen from Table 2 below, a 0.915 Keiser-Myer-Olkin score, which is greater than 0.8 (Cerny & Kaiser, 1977) confirmed meritorious sampling adequacy and Barlett's Test p value of 0.000, confirmed that there is significant inter item correlation between the scale items and thus the 43 items used to measure the satisfaction of foreign students in India were found to be suitable for Factor Analysis.

**Table 2**  
**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.915
Bartlett's Test of Sphericity	Approx. Chi-Square	6744.730
	Df	903
	Sig.	.000

### DEMOGRAPHIC PROFILE

The demographic profile based on the sample of international students studying in India presented in Table 3 below reveals 61% are male and 39% are female. The majority of the students are in the age group of 21-25 years (61%) while the percentage of students younger than 20 years of age (20%) and more than 25 years of age (19%) are almost the same. Students pursuing a course in Sciences or Technology stream e.g. B.Sc., Engineering, IT etc. are relatively less (45%) as compared to those pursuing Non-Science courses like Humanities, Art, Management, Social Sciences, Law etc. 58% of international students are Under Graduates while 42% are doing their Post Graduation/PhD/Post-Doctorate.

The majority (79%) of international students are of foreign origin while 29% have an Indian origin i.e. they are either Non-Resident Indians (NRI) or Persons of Indian Origin (PIO). In terms of nationality, the maximum number (44%) of international students studying in India come from neighbouring Asian countries like Nepal, Bhutan, Bangladesh, Sri Lanka, Myanmar, Cambodia, Thailand etc. The second highest nationalities (33%) are from Africa/Middle East countries like Afghanistan, Nigeria, Congo, Mauritius, Iran, Iraq etc. Only 23% of international students in India are from western countries like American, Europe and Australia. 55% of the students were staying in India for less than a year, the remaining 45% had been in India for more than a year. Although, cities like Bangalore and Pune have the largest number of international students, the majority of the respondents for this study were from institutes in North India (65%). This asymmetry can be explained by the fact that physical questionnaires could only be administered in institutions in the North, whereas responses from other locations were limited to online.

**Table 3**  
**Demographic Profile of International Students**

	<i>Categories</i>	<i>No.</i>	<i>%</i>
<b>Gender</b>	Male	178	61
	Female	113	39
	Total	291	100
<b>Age</b>	< 20 yrs	58	20
	21-25 yrs	177	61
	> 25 yrs	56	19
	Total	291	100
<b>Stream</b>	Science/Technology	131	45
	Non-Science	160	55
	Total	291	100
<b>Course Pursuing</b>	UG	169	58
	PG or above	122	42
	Total	291	100
<b>Origin</b>	Indian origin (NRI/PIO)	60	21
	Foreign	231	79
	Total	291	100

*Contd. table 3*

	<i>Categories</i>	<i>No.</i>	<i>%</i>
<b>Nationality</b>	Asia	127	44
	Africa/Middle-East	97	33
	Americas/Europe/Australia	67	23
	Total	291	100
<b>Current stay in India</b>	< 1 year	159	55
	> 1 year	132	45
	Total	291	100
<b>Institute's location</b>	North	189	65
	South	41	14
	East	48	16
	West	13	4
	Total	291	100

The satisfaction of international students studying in India was measured through 45 statements on a 5 point Likert scale wherein 1 indicates lowest satisfaction and 5 highest level of satisfaction. The mean and standard deviation of respondents is enclosed in Table 4 below.

The average mean score of satisfaction for all the 45 variables is 3.43, which indicates international students are only somewhat satisfied with their higher education experience in India. Students are most satisfied with Classroom facilities (Mean=3.82) like tables, chairs, blackboard etc. This is followed by agreement that cost of food is reasonable (Mean=3.81). Students have shown a high level of overall happiness with their decision to study in India (Mean=3.76). Lowest mean score (M=2.76) indicates that most students are dissatisfied by the fact that regular counselling & guidance are not provided to international students during their stay. Likewise, students are least satisfied with levels of cleanliness, food hygiene and services of International Students Office. These low means highlight areas where institutes are lagging and need to improve the most.

**Table 4**  
**Mean & Standard Deviation of Individual Variables**

<i>Variables (Statement No.)</i>	<i>Mean</i>	<i>Std. Deviation</i>
1. Classroom facilities (5)	3.82	.90
2. Food cost reasonable (42)	3.81	.93
3. Overall happiness (44)	3.76	1.01
4. Recommend to others (45)	3.74	1.13
5. Classes conduct (23)	3.69	.96
6. Course relevant (31)	3.67	.91
7. Neat classrooms (7)	3.66	.94
8. Overall good value for money (39)	3.65	.98
9. Faculty academic qualification (29)	3.64	.99

*contd. table 4*



<i>Variables (Statement No.)</i>	<i>Mean</i>	<i>Std. Deviation</i>
10. Faculty teaching (38)	3.63	.99
11. Faculty presentable (1)	3.61	.83
12. Faculty syllabus adherence (21)	3.61	.89
13. Faculty access (10)	3.60	.96
14. Faculty knowledge (30)	3.59	.98
15. Faculty punctuality (20)	3.58	.94
16. Tech infrastructure (4)	3.54	1.00
17. Library resources (3)	3.54	.91
18. Sufficient faculty (28)	3.53	.98
19. Hostel reasonable (43)	3.53	1.07
20. Physical infrastructure (2)	3.52	1.04
21. English speaking faculty (32)	3.50	1.05
22. Caring faculty (12)	3.50	.97
23. Attracted by Indian culture (41)	3.49	.99
24. Attracted by course (40)	3.49	.92
25. Admin staff access (13)	3.47	.97
26. Faculty syllabus completion (22)	3.46	.98
27. Security in institute (36)	3.45	1.01
28. Admin staff helpful (14)	3.43	.99
29. Fair treatment (35)	3.42	.99
30. Correctness of pre enrolment info (17)	3.41	.94
31. Safety in India (37)	3.40	1.03
32. Faculty feedback (11)	3.35	1.05
33. Sports facilities (9)	3.34	1.11
34. Record maintenance (26)	3.29	.96
35. Promises fulfilled (27)	3.20	.98
36. Student orientation (16)	3.18	1.09
37. Medical facilities (8)	3.17	1.09
38. Transportation facilities (33)	3.17	1.08
39. Hostel facilities (34)	3.17	1.07
40. Understands student needs (15)	3.15	1.11
41. Clean bathrooms (6)	3.11	1.19
42. Int'l Students Office service (19)	3.11	1.17
43. Food standard & hygiene (25)	3.00	1.08
44. Food requirements catered (24)	2.78	1.21
45. Regular counselling (18)	2.76	1.03
<b>Total Average</b>	<b>3.43</b>	<b>1.01</b>



## EXTRACTION OF FACTORS

A Principal Component Analysis (PCA) with Orthogonal rotation (Varimax) was conducted with the aim to minimize the number of variables. Through Rotated Extraction the 43 dependent variables (statement 1-43) were reduced to 9 clear factors which were identified and labeled as follows:

**Table 5**  
**Factors Labels, Rotated Component Factor Loading & Reliability**

<i>Factor/ Variables (Statement No.)</i>	<i>Factor Loading</i>	<i>Reliability Coefficient (Cronbach <math>\alpha</math>)</i>
<b>Factor 1: Faculty</b>		
Caring faculty (12)	0.722	
Faculty knowledge (30)	0.682	
Faculty feedback (11)	0.665	
Faculty access (10)	0.623	0.892
English speaking faculty (32)	0.609	
Faculty presentable (1)	0.597	
Faculty academic qualification (29)	0.585	
Faculty teaching (38)	0.536	
<b>Factor 2 : Admin Staff Support</b>		
Admin staff helpful (14)	0.682	
Int'l Students Office service (19)	0.677	
Understands student needs (15)	0.645	
Regular counselling (18)	0.599	0.873
Admin staff access (13)	0.589	
Food requirements catered (24)	0.548	
Promises fulfilled (27)	0.505	
Student orientation (16)	0.499	
<b>Factor 3 : Campus Facilities &amp; Upkeep</b>		
Neat classrooms (7)	0.665	
Clean bathrooms (6)	0.663	0.754
Tech infrastructure (4)	0.576	
Classroom facilities (5)	0.572	
<b>Factor 4: Understanding</b>		
Correctness of pre enrolment info (17)	0.592	
Course relevant (31)	0.518	0.726
Hostel facilities (34)	0.47	
Fair treatment (35)	0.467	
<b>Factor 5: Cost</b>		
Hostel reasonable (43)	0.735	
Food cost reasonable (42)	0.707	0.687
Overall good value for money (39)	0.527	

*contd. table 5*

<i>Factor/ Variables (Statement No.)</i>	<i>Factor Loading</i>	<i>Reliability Coefficient (Cronbach <math>\alpha</math>)</i>
<b>Factor 6 : Course Conduct</b>		
Faculty syllabus adherence (21)	0.682	0.761
Faculty punctuality (20)	0.663	
Faculty syllabus completion (22)	0.566	
Classes conduct (23)	0.49	
<b>Factor 7: Resource Adequacy</b>		
Physical infrastructure(2)	0.641	0.734
Sufficient faculty (28)	0.544	
Sports facilities (9)	0.515	
Library resources (3)	0.441	
Record maintenance (26)	0.43	
<b>Factor 8: Utilities Support</b>		
Medical facilities (8)	0.723	0.647
Food standard & hygiene (25)	0.594	
Transportation facilities (33)	0.41	
<b>Factor 9: Safety &amp; Security</b>		
Safety in India (37)	0.757	0.596
Security in institute (36)	0.456	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 22 iterations.

Based on the “Total variance explained” output of Factor Extraction and Table 5 above, it can be observed that satisfaction level of international students studying in India depends on the following factors:

- 1. Faculty** – 12.77% of the satisfaction level of international students is accounted for by the quality of faculty which is reflected by whether faculty is caring, courteous, knowledgeable, gives students valuable feedback, easily accessible, communicates in English, presentable, academically qualified and good in teaching.
- 2. Administrative Support** – 10.58% of the satisfaction level of international students studying in India is accounted for by the level of Non-Academic and Administrative support students receive from the institution including how courteous, helping, accessible the administrative staff is, whether the Int’l Students office renders prompt service, how well the institute understands and caters to international student’s needs, whether regular counselling, guidance, information, orientation is provided on joining and during their stay, if food requirements are taken care of and whether the institute delivered what it promised.
- 3. Campus Facilities & Upkeep** – accounts for 7.63% of the level of satisfaction of international students which is determined by factors like upkeep of the campus, neatness of classrooms and bathrooms, how well campus and classrooms are technologically equipped with labs, computers, teaching infrastructure like tables, chairs and blackboards etc.

4. **Understanding** – 6.19% of the level of satisfaction of international students depends on their perception of how understanding the institute is in terms of providing pre-enrolment information, relevance and usefulness of the course, and on ensuring fair and unbiased treatment.
5. **Cost** – accounts for 5.72% of the level of satisfaction of international students based on advantage of economy and value for money because of low cost of hostel/accommodation, food etc.
6. **Course conduct** – international students give 5.72% weightage to timely conduct of classes, exams, syllabus, result etc.
7. **Resource Adequacy** – 5.32% of the level of satisfaction of international students is dependent on adequacy of resources like auditoriums, conference halls, canteens, faculty, sports and recreation facilities, well equipped library and proper maintenance of records.
8. **Utilities Support** – which accounts for 5.15% of students satisfaction due to facilities like medical, food standards and hygiene and transportation support on campus.
9. **Safety & Security** – International students give 4.25% weightage to how safe and secure they feel in their institute and in India.

The value of Cronbach Alpha  $> 0.7$  was found within most factors for all the items except for Cost, Utility Support and Safety & Security, which indicates internal consistency of item responses within them, except the three factors owing to low numbers of items loaded onto them. Overall the values of Cronbach Alpha are a good indicator of convergent validity of the scale used for measuring satisfaction.

Based on the average mean of each of the nine factors, it can be seen from Table 6 below that international students rank their satisfaction with the various factors as follows:

### **Satisfactory Aspects**

1. **Cost** (Mean 3.66) – The cost aspect of studying in India seems to be the biggest reason for satisfaction. International students find the cost of food and accommodation to be extremely economical and view India as a “value for money” destination.
2. **Course Conduct** (Mean=3.59) – Students find class conduct, faculty punctuality, syllabus adherence and completion to be satisfactory.
3. **Faculty** (Mean=3.55) – Students feel faculty is caring, courteous, knowledgeable, gives students valuable feedback, easily accessible, communicates in English, presentable, academically qualified and good in teaching.
4. **Resource Adequacy** (Mean=3.44) - Students seem to be moderately satisfied with overall adequacy of resources like auditoriums, conference halls, canteens, faculty, sports and recreation facilities, library facilities and maintenance of records at their institutes.

### **Dissatisfactory Aspects**

5. **Understanding, and Safety & Security** (Mean=3.42) – Students rate both these factors (Factor 4 and Factor 9) equally and seem to be just averagely satisfied. They perceive the institute to be just

average in understanding in terms of providing them adequate pre-enrolment information, course relevance and usefulness as well as getting fair and unbiased treatment. Safety in the institute and safety in India is also viewed as being average.

6. **Administrative Staff Support** (Mean=3.13) - In terms of providing Non-Academic and Administrative support, students do not find the administrative staff courteous, helping and accessible. They feel the International Students Office does not render prompt service and fails to understand and cater to their specific needs. They find the institute’s administrative staff grossly deficient in service in terms of providing regular counselling, guidance, information and student-orientation, food requirements not taken care of and the institute failing to deliver what it promised.
7. **Utilities Support** (Mean=3.11) – Students seems dissatisfied with the medical and transport facilities in the institute. They find food standard and hygiene to be much below expectation.
8. **Campus Facilities & Upkeep** (Mean=2.58) – International students rank this factor the lowest and are most dissatisfied with the upkeep and maintenance of the campus and its facilities. The major problem seems to be the lack of cleanliness in classrooms and bathrooms and the poor maintenance of classroom and technical facilities.

**Table 6**  
**Factor Mean & Standard Deviation**

<i>Factor/ Variable (Statement No.)</i>	<i>Mean</i>	<i>Std. Deviation</i>
Factor 1 – Faculty		
Factor Average	3.55	0.98
Factor 2 - Admin Staff Support		
Factor Average	3.13	1.07
Factor 3 - Campus Facilities & Upkeep		
Factor Average	2.58	0.78
Factor 4 – Understanding		
Factor Average	3.42	0.98
Factor 5 – Cost		
Factor Average	3.66	0.99
Factor 6 - Course Conduct		
Factor Average	3.59	0.94
Factor 7 - Resource Adequacy		
Factor Average	3.44	1.00
Factor 8: Utilities Support		
Factor Average	3.11	1.08
Factor 9: Safety & Security		
Factor Average	3.42	1.02

Confirmatory Factor Analysis (CFA) was conducted on the data after Exploratory Factor Analysis (EFA) to confirm if the nine factors extracted were good enough to explain the satisfaction of foreign students in India. AMOS 16 software was used for calculating the factor loading and R<sup>2</sup> values of the nine extracted factors on the latent variable “Satisfaction” and the results are presented below in Figure 1

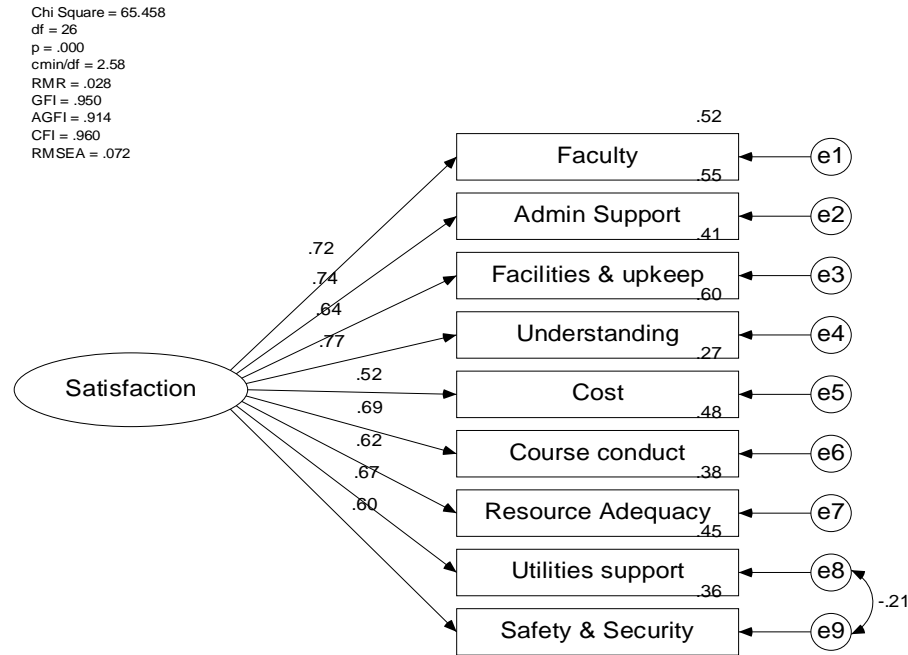


Figure 1: Confirmatory Factor Analysis Result

The figure 1 above reflects high factor loading above 0.5 for all the observed variables on the latent variable which is satisfaction of international students in India. The squared multiple correlation coefficients ( $R^2$ ) describe the amount of variance the common factor accounts for in the observed variables. The highest  $R^2$  value of 60% of variance in the factor “Understanding” is explained by satisfaction, followed by “Admin Support” (55%), “Faculty” (52%), “Course Conduct” (48%), “Utility Support” (45%), “Facilities & Upkeep” (41%), “Resource Adequacy” (38%), “Safety & Security” (36%) and the lastly “Cost” (27%). The model fit values for the above confirmatory factor analysis was also found adequate to sanction model fit as corroborated below in Table 7.

Table 7  
 Model Fit Summery

Model Fit Parameter	Fit Criterion	Estimated Value
Chi-square/df	5.0 (Wheaton <i>et al</i> , 1977) to 2.0 (Tabachnick and Fidell, 2007)	2.518
Root mean square error of approximation (RMSEA)	below 0.08 shows a good fit (MacCallum et al, 1996)	0.072
Goodness-of-fit statistic (GFI)	Above 0.95 (Miles and Shevlin, 1998)	0.95
adjusted goodness-of-fit statistic (AGFI)	0.90 or greater (Tabachnick and Fidell, 2007)	0.914
Root mean square residual (RMR)	Less than .05 (Byrne, 1998; Diamantopoulos and Siguaw, 2000),	0.028
Normed-fit index (NFI)	Recommendations as low as 0.80 as a cutoff have been preferred however Bentler and Hu (1999) have suggested NNFI $\geq$ 0.95 as the threshold.	0.936
CFI (Comparative fit index)	Greater than 0.95 (Hu and Bentler, 1999).	0.96

## CONCLUSION AND RECOMMENDATIONS

Exploratory Factor Analysis enabled the reduction of various variables into nine meaningful factors which measure international student's satisfaction with the higher education service quality and experience in India. The nine factors were validated through a Confirmatory Variable Analysis.

International students are the most satisfied with respect to the cost and economy of studying in India. In addition to being satisfied with the low cost of studying and living in India, students seem to be fairly satisfied with the academic aspects like faculty, conduct of courses and adequacy of resources. While, this "value for money" destination tag can be used effectively to target cost-sensitive students, it is not sufficient to compete with other Asian destinations in order to make India a preferred higher education hub. The non-academic service aspects which international students are not satisfied with are equally important in the higher education experience. Indian institutes are particularly deficient in providing quality service in non-academic aspects like administrative support, food standard and hygiene, understanding international student's needs and catering to their specific needs, ensuring safety and security and particularly in the upkeep and maintenance of the campus and its facilities. Indian institutions do not continuously engage with and help resolve student problems which is why most international students are highly dissatisfied by the fact that regular counselling and guidance are not provided to them during their stay. Likewise, very low student satisfaction with levels of cleanliness, food hygiene and services of International Students Office highlight areas where institutes need to improve the most.

CFA established that the satisfaction of international students in India is a secondary construct defined by the nine primary dimensions explored through factor analysis. It also established model fit for the factor analysis based INHedPERF model. The scale used for measuring satisfaction was also tested and found reliable and valid. Apart from face and content validity, the convergent and discriminant validity of the scale along with unidimensionality was also ascertained. Thus the same questionnaire could be replicated in future researches without worry of reliability and validity of the construct.

Due to India's unique demographics, the current priorities of Indian higher education are domestic, not international. Global competitiveness requires India to focus more on quality than quantity. Taking cue from other Asian countries, particularly Singapore and China, institutions and Govt. policy-makers will have to design, implement, review, and adjust themselves to cater to providing a satisfactory experience to international students studying in higher education institutes in India.

## BIBLIOGRAPHY

- Cerny, C. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate Behavioral Research*, 12(1), 43-47.
- Cheng, Y. (1995). School education quality: conceptualization, monitoring, and enhancement. *Quality in Education: Insights from Different Perspectives*.
- Chopra, R. (2015, May 25). Educate in India: Narendra Modi government to tout India as Asia's education hub. *The Economic Times*.
- Cronin, J. J., & Taylor, S. (1992). Measuring service quality: re-examination and extension. *Journal of Marketing*, 56(3), 56-68.
- Delene, L., & Bunda, M. (1991). *The assessment of service quality in higher education*. Kalamazoo, MI: Western Michigan University.

- Firdaus, A. (2005). HEDPERF versus SERVPERF The quest for ideal measuring instrument of service quality in higher education sector. *Quality Assurance in Education*, 13 (4), 305-28.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (4 ed.). Boston: Allyn & Bacon.
- Gliem, J. A., & Gliem, R. R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *Midwest Research to Practice Conference in Adult, Continuing, and Community Education* (pp. 82-88). Columbus, OH: The Ohio State University.
- ICEF Monitor. (2015, Nov 5). *The state of international student mobility in 2015*. Retrieved Jan 9, 2017, from monitor.icef.com: <http://monitor.icef.com/2015/11/the-state-of-international-student-mobility-in-2015/>
- Kazmin, A. (2014, Oct 7). *India's private universities are a draw for overseas students*. Retrieved Feb 28, 2015, from FT.com: <http://www.ft.com/intl/cms/s/2/8850b550-283b-11e4-9ea9-00144feabdc0.html#axzz3T9N6BzTL>
- Otavio J.O., E. C. (2009). Adaptation and application of the SERVQUAL scale in higher education. *POMS 20th Annual Conference*. Orlando, Florida.
- Palmer, A. (2011). *Principles of Services Marketing* (Vol. 6th). McGraw-Hill Education.
- Parasuraman, A., Zeithaml, V.A. and Berry, L. (1988). SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*.
- Parsuraman, A., Valarie Zeithaml, and Leonard Berry. (1985). A conceptual Model of Service Quality and its Implications for Future Research. *Journal of Marketing (Fall)*, 41-50.
- Poole, M., Harman, E., Snell, W., Deden, A. & Murray, S. (2000). *A client-centred transformation of corporate services, 00/16*. Canberra: Evaluations and Investigations Programme - Higher Education Division, Department of Education, Training and Youth Affairs.
- Presser, S., Rothgeb, J., Couper, M. I., Martin, E. M., & Singer, E. (2005). Methods for testing and evaluating survey questions. *Public Opinion Quarterly*, 333-336.
- Shen, X., Tan, K., & Xie, M. (2000). An integrated approach to innovative product development using Kano's model and QFD. *European Journal of Innovation Management*, 91-99.
- Thomas, E. H., & Galambos, N. (2004). What Satisfies Students?: Mining Student-Opinion Data with Regression and Decision Tree Analysis. *Research In Higher Education*, 45(3), 251-269.
- UNESCO Institute of Statistics. (2016, Dec 5). Retrieved Jan 09, 2017, from Education : Outbound internationally mobile students by host region: <http://data.uis.unesco.org/#>
- Uperaft, M. L. (1994). The dilemmas of translating theory to practice. *Journal of College Student Development*, 35 (Nov), 439-443.