

# AMRITA SCHOOL OF BUSINESS

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AMRITA VISHWA VIDYAPEETHAM (DEEMED UNIVERSITY)



## QUALITY ASSESSMENT OF HIGHER EDUCATION INSTITUTIONS – A CRITICAL ANALYSIS OF NAAC DATA

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## EXECUTIVE SUMMARY

**Purpose** –To understand the procedures followed by NAAC to evaluate quality of HEIs, to study the relevant literature associated with HEI quality evaluation, to study how quality dimensions of HEIs have improved across different time periods and to test the relationship between assessment criteria of NAAC and the ranking given by them to the institutions.

**Design/methodology/approach**—A modified SERVQUAL instrument with constructs: competence, tangibles, responsiveness and convenience has been experimentally proved to be a better scale to assess education quality(Koushiki Choudhury, 2014). The scores given by National Assessment Accreditation Council,India for 110 colleges across 3 cycles with an average period gap of 5 years between the cycles have been collected. The significant improvement of aggregate ranking of institutions across cycles was tested. The criteria which showed significant improvement across cycles out of 7 criteria with which NAAC evaluate quality of an institution are mapped to the 4 dimensions of modified SERVQUAL scale using the key aspects of each criterion to study the service quality in different dimensions during the course of all the cycles.

**Findings** –A significant improvement in quality of higher education institutions is seen only between cycles 1 and 3. Between cycles 1 and 3, only the following criteria out of 7 showed significant improvement: Curricular Aspects, Teaching-Learning and Evaluation, Student Support and Progression, Infrastructure and Learning Resources.

The tools used for the study are SERVQUAL and IBM SPSS.

**Keywords:**SERVQUAL; Service Quality; Higher Education; NAAC, India

## INTRODUCTION

One of the prime objectives of India is to develop an education system which can deliver quality in terms of skilled and employment ready workforce, while focusing on world-class research and innovation. Education is one of the most complex services. Hence assessing quality in higher education institutes is highly challenging as there are multiple ways to define quality in the sector. It is very difficult for higher education institutions to satisfy all stakeholders like students, their parents, employees, recruiters, the Government etc.(Van Riel et al. , 2013)Hence the easier path is to focus on the key customer.DeShields et al. (2005)mentioned thatthe higher education sector should necessarily satisfy the students by delivering high quality serviceto ensure sustainability in a competitive service environment. Morris andMorris (1999)explained the importance of voice of the customerin the sector of education.

SERVQUAL is an instrument or a scale, developed by Valarie A. Zeithaml, A. Parasuraman, and Leonard L. Berry, to measure a customer's perception of standards in the service and retail industries. The instrument includes five dimensions: reliability, responsiveness, tangibles, assurance and empathy. But according to some researchers, SERVQUAL's dimensions are specific to contexts and not universally applicable (Teas, 1993; Walker and Lester, 2009). Few studies concluded that the number and composition of the service quality dimensions are probably dependant on the service setting (Choudhury, 2008; Choudhury, 2013) and hence the instrument needs contextual adaptation (Pantouvakis, 2010). Later Koushiki Choudhury in 2014, experimented and developed a modified SERVQUAL instrument with dimensions:competence, tangibles, responsiveness and convenience

specifically for education sector. Hence in this study, these constructs are used to assess the quality in the sector during the course of past 2 decades.

## **LITERATURE REVIEW**

Harvey and Green (1993) emphasized that in higher education sector, the concept of quality is complex and there are multiple ways to define quality function and each of the many definitions has its own perspective and criteria. The quality in a sector is a subjective measure which varies for each stakeholder.

In the book, *Transforming Higher education*, Harvey and Knight says that scarcity of resource, more accountable universities and massification of higher education are the current issues faced by higher education systems across the world. They also argue that any discussions about quality enhancement in higher education should be centred not only at student learning but also, on the transformation of universities with a view of transformation of learners.

In higher education teaching, the European qualification framework provides legitimacy to the to-be developed models which are oriented to critical thinking but it is too difficult to be implemented. In the study, students estimate development level of their critical thinking as high, but it is also found that it had not been executed in the situations which demand for the practical application of the same aspects. Hence this can be considered as a significant indicator of quality in higher education sector (Gojkov, G., Stojanović, A., & Rajić, A. G., 2015)

A study about Quality Management in the Turkish Higher Education Institutions revealed the importance of Quality certifications in education industry. As per the study, providing standardization, Prestige, publicity and recognition of the faculty, Increased service quality for all stakeholders, Improvements in processes were the major benefits of the certifications (Eryılmaz, M. E., Kara, E., Aydoğan, E., Bektaş, O., & Erdur, D. A., 2016)

The researches in European education quality reveals that the European convergence promotes teaching practises and assessment processes which provide personalized attention to the student, by creating mechanisms for learning processes improvement and ultimately “developing formative assessment systems and instruments and incorporating teaching methodologies that stimulate the university student’s autonomous learning” (López-Pastor et al., 2007, p. 1)

It is also found that participation in formal sport activities is related to grades of students. The analysis reinforces that apart from health benefits for practitioners, sports lead to the achievement of the performance goals to which all higher education institutions aspire. (Muñoz-Bullón, F., Sanchez-Bueno, M. J., & Vos-Saz, A., 2017)

Along with other management means like Total Quality Management (TQM), benchmarking is suggested as a key instrument for HEIs aspiring for qualitative changes and higher performance results. Rather than enforcing externally, benchmarking is perceived as means for continuous learning. It is more effective under networking circumstances. Benchmarking can aid HEIs to meet challenges of globalisation by meeting satisfy stakeholder needs (Labanuskis, R., & Paliulis, N. K., 2015)

Walder, A. M. (2016) in his study, examines the professors’ perceptions about the impact of innovative teaching through a semi-structured interview based qualitative study where the interviews were conducted with assistant, associate and full professors of a Canadian university. Background theory analysis showed that pedagogical innovations support professionalization,

learning and graduation, and access to courses for students, and changes their behaviours and attitudes. In addition, pedagogical innovations reinvent teaching practices and satisfy professors.

During the training, the medical and dental postgraduates are exposed to different ethical issues, but they are not adequately equipped to resolve the every-day ethical dilemmas which they encounter in their career (Janakiram, C., & Gardens, S. J. ,2014).This draws our attention to ethics as a dimension of quality in education.

The newly joined students' success rate in academics is challenging and the performance affects the quality of institution. But using the student's academic history and Naïve Bayesian algorithm, the performance can be predicted and analysed to improve the success graph (Devasia, T., Vinushree, T. P., & Hegde, V. ,2016)

The SERVQUAL is known to be the most effective, valid and reliable instrument for quality assessment across various service contexts and it is proved to have high diagnostic power for strategic decision-making (Parasuraman et al., 1994; Walker and Lester, 2009; Pantouvakis, 2010).

There are numerous studies from a decade back to recent years which have used the SERVQUAL methodology to identify the variation between customer expectations and perceptions in service quality of educational institutes in India like Sahney et al. (2004) and de Araújo, J. A. R.et al.(2016) and the studies which showed the benefits of enhanced SERVQUAL approaches considering the context in determining student satisfaction like Tan and Kek (2004) and Koushiki Choudhury (2014). Hence, though the SERVQUAL instrument has been proven to be very effective and reliable across a wide range of service contexts, there are still controversies about the universality of the five dimensions.

The five key dimensions of service quality tested by Parasuraman, Zeithaml, and Berry (1988) are identified as follows:

1. Reliability – refers to the ability to perform the promised service dependably and accurately.
2. Responsiveness – refers to the willingness to help customers and to provide prompt service.
3. Assurance – refers to the knowledge, courtesy of employees and ability to convey trust and confidence in the customer towards the service provider.
4. Empathy - refers to the provision of caring, individualized attention provided to customers.
5. Tangibles – refers to the appearance of physical facilities, equipment, personnel and communication materials.

The four key dimensions of service quality in education sector tested by Koushiki Choudhury, 2014 are identified as follows:

1. Competence –the kind of instructing that develops interest in the subjects, the qualifications, knowledge and research productivity of the instructors. The variety of courses offered and their relevance as well as the provision for guest faculty who are experts in specific academic subjects so that students get exposed multiple perspectives are also considered.
2. Tangibles –the appeal of all physical facilities like canteens, hostels, libraries, computer labs, recreational facilities etc.
3. Responsiveness –the attitude of faculty, their dependability, sincerity, attention to students, level of care and safety provided by them and the right and timely service.
4. Convenience –availability of correct information, availability of employees to address the needs of students and the operating hours.

The services gap model is presented as a conceptual framework for analysing points of potential breakdown in any service delivery process (Zeithaml et al., 2006).

The four identified points of breakdown are:

- (1) Gap 1: not knowing what customers expect.
- (2) Gap 2: not having the right service designs to deliver what the customer expects.
- (3) Gap 3: not delivering to service standards that are set.
- (4) Gap 4: performance is not matched to promises

In every service context, these gaps need to be considered to enable co-creation of service and to develop effective metrics for quality assessment is developed (Gandhi, D. M. (2014)

In India, a country known for cultural diversity, this needs to be taken into consideration when an instrument is developed to assess quality of institutions. Quality-culture is a taken for granted concept in higher education industry. Quality culture can be a tool for asking questions about how institutions function and how they see themselves (Harvey, L., & Stensaker, B., 2008).

Employability of students is taken as an accolade for education institutions rather than the extent to which the individual student is capable of getting employed. Any assessment of employability must point to areas for internal improvement of educational institutes instead of simply ranking them (Harvey, L., 2001)

The main effects that external quality processes have on institutions and programmes include changes evident from one review to the next; improvements in performance indicators; adoption of formal internal quality processes by institutions; student feedback indicating positive changes and employer perceptions about the improvement in graduate abilities (Harvey, L., 2006).

In India, the quality assessment of higher education institutes has been done by National Assessment Accreditation Council, India and the Manual for Self-Study Report -Affiliated/Constituent Colleges (NAAC, India, 2016) explains the evaluation processes and steps followed by the Council to conduct the assessment. It is mentioned that 211 indicators are used by the council to start the assessment and their score is grouped to grade 33 key aspects of the institution on the quality front which is finally mapped to 7 key criteria:

1. Curricular Aspects
2. Teaching-Learning and Evaluation
3. Research, Consultancy and Extension
4. Infrastructure and Learning Resources
5. Student Support and Progression
6. Governance, Leadership and Management
7. Innovations and Best Practices

The key aspects under each criteria are shown in table 1.

The aggregate of the criterion scores decides the grade of college.

As per the newspaper article came on August 21, 2016 in Indian Express, The HRD minister Prakash Javadekar wants to make the assessment of quality of higher education institutions of India more efficient with less malpractices and improve the assessment framework by promoting research and entrepreneurship .He said that the draft of the proposed new National Education Policy was availed online and suggestions from people on this regard were invited until September 30. Hence we believe that this study is currently very relevant to higher education industry of India.

<p><b>Criterion I: Curricular Aspects</b></p> <p>Curricular Planning and Implementation</p> <p>Curricular Design and development</p> <p>Academic Flexibility</p> <p>Curriculum Enrichment</p> <p>Feedback System</p>	<p><b>Criterion III: Research, Consultancy and Extension</b></p> <p>Promotion of Research</p> <p>Resource Mobilization for Research</p> <p>Research Facilities</p> <p>Research Publications and Awards</p> <p>Consultancy</p>	<p><b>Criterion V: Student Support and Progression</b></p> <p>Student Mentoring and Support</p> <p>Student Progression</p> <p>Student Participation and Activities</p>
<p><b>Criterion II: Teaching— Learning and Evaluation</b></p> <p>Student Enrolment and Profile</p> <p>Catering to Student Diversity</p> <p>Teaching-Learning Process</p> <p>Teacher Quality</p> <p>Evaluation Process and Reforms</p>	<p>Extension Activities and Social Responsibility</p> <p>Collaboration</p> <p><b>Criterion IV: Infrastructure and Learning Resources</b></p> <p>Physical Facilities</p> <p>Library as a Learning Resource</p> <p>IT Infrastructure</p>	<p><b>Criterion VI: Governance, Leadership and Management</b></p> <p>Institutional Vision and Leadership</p> <p>Strategy Development and Deployment</p> <p>Faculty Empowerment Strategies</p> <p>Financial Management and Resource Mobilization</p> <p>Internal Quality Assurance System</p> <p><b>Criterion VII: Innovations and Best Practices</b></p> <p>Environment Consciousness</p>

Student Performance and Learning Outcomes	Maintenance of Campus Facilities	Innovations Best Practices
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Table 1

## METHODOLOGY

In this study, the modified SERVQUAL scale developed by Koushiki Choudhury, 2014 has been used to analyse how higher education institutes in India have improved the quality during past 2 decades

An expert interview has been done with an academic consultant of NAAC to understand the process of evaluation of service quality in Indian higher education institutes.

National Assessment Accreditation Council, India gives scores out of 4 for each of 33 key quality aspects of an institution. These 33 aspects are developed from 211 assessment indicators. The 33 key aspects are grouped to 7 criteria according to their characteristics. Each of these scores is multiplied with specific weights and added to get a net score which is the score for the corresponding criterion. The scores of 7 criteria are used to assess the quality of the institution. The scores given by NAAC for 110 colleges across 3 cycles with an average period gap of 5 years between the cycles have been collected.

NAAC was not using an instrument with key aspects under each criterion and a final ranking in cycle 1 like in cycles 2 and 3. The evaluation was just for the 7 criteria and the aggregate score was given as the weighted average of 7 criteria. Ranks like 'A' grade or 'B' grade was not given. For example, if the criteria scores and weights for criteria for a HEI is as below,

	Weightage	Score
<b>Criterion I: Curricular Aspects</b>	10	65
<b>Criterion II: Teaching—Learning and Evaluation</b>	40	78
<b>Criterion III: Research, Consultancy and Extension</b>	5	60
<b>Criterion IV: Infrastructure and Learning Resources</b>	15	80
<b>Criterion V: Student Support and Progression</b>	10	72
<b>Criterion VI: Governance, Leadership and Management</b>	10	78
<b>Criterion VII: Innovations and Best Practices</b>	10	74

Table 2

The aggregate score is a weighted average of the scores: 75.1 out of 100.

In cycle 2 and 3, though there were key aspects under criteria, the weights of aspects varied in within and across months, years and cycles.

For example, the weights used to evaluate HEI, XYZ using key aspects of criterion 1 in cycle 2 are 10,15,5,10,10 in Feb, 2010 whereasthe weights used to evaluate HEI, RST using key aspects of criterion 1 in cycle 2 are 90,30,10,10,10 in Feb, 2010. In Table 3 and Table 4 , the weights can be seen as varied across years within same cycle for 2 different HEIs.

Even the key aspects under each criterion are modified across cycles and within same cycles.

The evaluation of cycle 2 , criterion 2 of HEI, LMN in November 2008 is as below:

	<b>Weight</b>	<b>Score</b>	<b>Weighted Score</b>
<b>Criterion II: Teaching—Learning and Evaluation</b>	<b>450</b>	<b>20</b>	<b>1380</b>
Admission process and student profile	30	4	120
Catering to diverse needs	45	4	135
Teaching-Learning Process	270	3	810
Teacher Quality	65	3	195
Evaluation Process and Reforms	30	3	90
Best Practises in teaching,learning and evaluation	10	3	30

*Table 3*

The evaluation of cycle 2 ,criterion 2 of HEI, PQR in March 2007 is as below:

	<b>Maximum Score</b>	<b>Actual Score</b>
<b>Criterion II: Curriculum transaction and evaluation</b>	<b>1195</b>	<b>1099</b>
Admission process	30	28
Transaction of theory	90	87
Teaching Practice	100	91
Assessment and evaluation	70	67
Use of IT	60	56

*Table 4*

The evaluation of cycle 3 , criterion 2 of HEI, LMN in February 2014 is as below:

	<b>Weight</b>	<b>Score</b>	<b>Weighted Score</b>
<b>Criterion II: Teaching—Learning and Evaluation</b>	<b>350</b>	<b>22</b>	<b>1250</b>
Student Enrolment and Profile	30	4	120
Catering to Student Diversity	50	4	200
Teaching-Learning Process	100	3	300
Teacher Quality	80	4	320
Evaluation Process and Reforms	50	3	150
Student Performance and Learning Outcomes	40	4	160

*Table 5*

Even in the same cycle, different instruments can be seen. Few institutions were not assessed based on weighted average method. They were scored directly out of maximum value. An example is shown below for evaluation of criterion 1 of an HEI.

	<b>Maximum Score</b>	<b>Actual Score</b>
<b>Criterion I: Curricular Aspects</b>		
Goal Orientation	25	22
Curriculum Development	20	17
Program Options	15	12
Academic Flexibility	15	12
Feedback mechanism	25	22

*Table 6*

Hence only the raw scores for all criteria are considered for the analysis.

As shown in above examples, each criterion score of cycle 1 was given out of 100 but in cycle 2 and cycle 3, scores were not in standardized format. They are either out of 4 when the instrument takes weighted average to score or it is a value given out of a maximum value for a key aspect. Hence the criterion scores of cycles 2 and 3 were converted to percentages like in cycle 1.

Thus, a new dataset with percentage scores for 7 criteria across 3 cycles is developed for analysis.

The collected 10890 data points are converted to mapped criterion scores for each cycle resulting in 4 criteria scores in percentages for each of the 3 cycles for every institution. These scores can be compared across cycles to understand the areas of quality improvement. The criteria out of 7 which showed congruence with the final ranking given by NAAC to HEIs are mapped to the 4 dimensions of modified SERVQUAL scale to evaluate service quality in different dimensions during the course of all the cycles. The mapping is done considering the key aspects of each criterion.

## **ANALYSIS**

The analysis on the collected data was started with ANOVA test to prepared dataset of 7 criteria scores and aggregate scores in percentages to check whether there is any significant improvement in the 7 dimensions and total ranking. ANOVA showed significant improvement in aggregate ranking and all 7 criteria for the institutions between cycles. A post-hoc test using LSD procedure was conducted to check between which cycles is the improvement.

The Software used for this analysis is SPSS.

After finding out between which cycles there is a significant improvement, the criteria which showed significant improvement across those cycles were mapped to the dimensions of modified Servqual using the definitions of the dimensions given by K.Choudhury.

## **RESULTS AND DISCUSSION**

ANOVA results in SPSS showed that there is a significant improvement in ranking given by NAAC to HEIs. Post-hoc test using LSD revealed that significant change in ranking is only between cycle 1 and cycle 3. There is no significant change in ranking between cycles 1 and 2 as well as cycles 2 and 3.

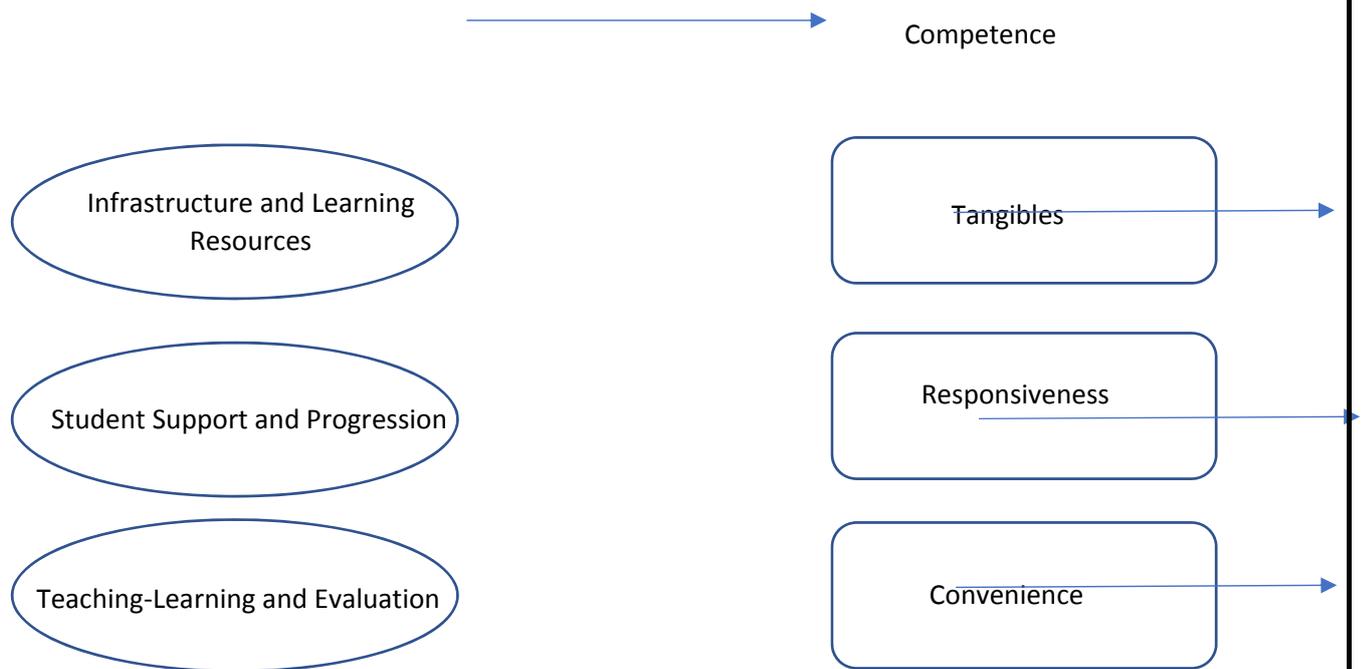
ANOVA results also showed that only 4 criteria out of 7 have a significant change between cycles:

Curricular Aspects, Teaching-Learning and Evaluation, Student Support and Progression, Infrastructure and Learning Resources. For Infrastructure and Learning Resources, the mean difference is significant at 0.1 level and for the other 3 criteria, the mean difference is significant at 0.05 level.

Post-hoc test using LSD was conducted to check which among these 4 criteria have significant growth between cycle 1 and cycle 3. It was found that all 4 criteria have significant growth between cycles 1 and 3.

According to the definitions of K.Choudhury, the significant criteria of NAAC are mapped using the key aspects to modified Servqual as below:





## CONCLUSION

As per the data collected from NAAC, a significant improvement in quality of higher education institutions is seen only between cycles 1 and 3.

Between cycles 1 and 3, only 4 criteria out of 7 are showing significant improvement: Curricular Aspects, Teaching-Learning and Evaluation, Student Support and Progression, Infrastructure and Learning Resources. The 4 significant criteria can be mapped to the 4 dimensions of modified Servqual scale as Competence, Convenience, Responsiveness and Tangibles respectively.

Though NAAC considers Research as a major factor in quality assessment, the study shows that there is no significant improvement in research component of an institution though the overall ranking of institution has a growth. Hence this study gives pointers to policy makers of NAAC regarding the significance of the various criteria and the corresponding key aspects under them used for the evaluation of HEIs.

The study also suggests some guidelines for institutions to focus on Curricular Aspects, Teaching-Learning and Evaluation, Student Support and Progression, Infrastructure and Learning Resources for better accreditation.

## LIMITATIONS of THE STUDY

The weights used to calculate aggregate scores varied across time periods. Hence only the raw scores could be used for the analysis. The study would have shown results with more reliability if the weights were also standardized. The measurement instrument varied across 3 cycles and sometimes within cycles and this would have had some influence on the study.

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