

Service Quality and Student Satisfaction in Higher Education: Evidence from Private Engineering and Management Colleges in India

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ABSTRACT: This study attempts to examine the impact of service quality dimensions (Teaching, Administrative services, Academic facilities, Campus infrastructure, and Support services) on students' satisfaction. HiEduQual scale was applied in the study and the data were collected from 240 student respondents from 12 reputed higher educational institutions distributed across the state of Andhra Pradesh. Structural equation modeling (SEM) with help of AMOS 25 was applied in the study. The empirical results revealed that Teaching, administrative services, academic facilities, and campus infrastructure have a significant positive effect on student satisfaction. Service quality and student satisfaction theoretical research model was formulated and proposed for utilization of future research in a similar context. The study outcomes and conclusions were limited to higher educational institutions in India.

KEYWORD: HiEduQual, Student satisfaction, Higher Education, Measurement Model, SEM

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I. INTRODUCTION AND LITERATURE REVIEW

Knowledge has emerged as one of the leading sources of economic growth of any country or the world at large. A perfect blend of quality human resources and a well-developed knowledge-driven institution is thriving across the globe and India has all the potential in this aspect. The role of education has been recognized in the building up of a nation ever since the emergence of civilization. The future of a nation depends on the wisdom of the older generation and the vigor of the younger generation. If the youth are imparted with accurate information and the latest skills, they bring prosperity and economic development.

The education system of India recognized the role of education in enhancing the value system among the youth and delivering equal opportunities for the people. Education is such a wise and productive investment that it continually bestows the best results in many ways. It has been accepted as the best profession in the world. Economic growth, social transformation is possible through the greater performance of the students which can be achieved by a strong, concurrent, and updated effective educational system.

In today's competitive educational environment, higher education institutions seek to benefit by exploring effective and creative ways to attract, satisfy and nurture strong relationships with students. Satisfying the customer's (student) desires at present is the key ingredient in contributing to the customer's future purchases. Additionally, a satisfied customer generally shares his product experience with others which is viewed as positive word of mouth (Lai, Lou, Yusof & Chew (2011).

The student is looked upon as the utmost valuable stakeholder among various internal and external stakeholders of the educational institutions in the society. Because, the complete quality implications related to educational institutions like input, process, and output are obviously implemented on the students. The student is also treated as a vital stakeholder, who bridges the relationship between educational institutes with their other stakeholders like parents, employers, and society. All this stakeholder satisfaction is depended on the satisfaction of the student. Service quality may be said as one of the significant factors through which students may be influenced and make them satisfied. Hence, the present study is focused on investigating the impact of service quality on customer(student) satisfaction in the higher education sector and to know the main priorities of students looking for getting admission to an educational institution.

Earlier studies on the constructs of service quality and student satisfaction have become indicators to establish the structural model with interrelationships among the study constructs. Quality of Service is depended

on the perceptual tendency of the customer (Kucukaltan, 2007). The same service can be perceived by different customers in different ways, some may receive it as high and some others as low. Service quality generally is evaluated by the customers based on the direction and magnitude of differences and expectations among them. Edvardson (1998) opined that service quality is the ability to determine the customer's needs and wants and meet their expectations. While Teas (1993), defined service quality as the valuation of customer ideal standards with service actual performance.

In higher education institutions, service quality can be said as the evaluating results of the services from administrative staff, lecturers, librarian security staff, etc. If these services are more than the expected level, then the service will be judged as high quality and vice versa. Students determine the perceived value of services based on their previous experience, service delivery process, and the service output of higher education institutions (Zeithaml, Parasuraman & Berry, 1990). It was found in the study conducted by Cuthbert (1996) that the tangibility dimension in service quality, when the apply SERVQUAL to measure the student satisfaction with the quality of service provided by the higher educational institutions, did not represent as a major contributor towards satisfaction of the students thought it has got the highest score in the scale followed by assurance, reliable, responsive and empathy. Smith and Ennew (2001) identified that there is a tough phase in the choice of satisfaction of students between the effective indignation and the technical functionality. It resulted in a study by Perisau and McDaniel (1997) that assurance and reliability have been identified as the significant factors in higher education. Students are most concerned with the knowledge, courtesy, and ability to inspire trust and confidence which is part of the assurance dimension. Umbach and Porter (2002) stressed the size or number of faculties in higher educational institutes to satisfy the students. LeBlanc and Nguyen (1997) stated that the reputation of the institution is also one of the important factors, as this is closely tied to the management of the institution which fosters organizational climate and image, to satisfy the students in higher educational institutions. Higher educational institutions, here, are treated as service-generated organizations and the students are the beneficiaries or customers of that organization. Customer response towards the offered service is termed as satisfaction (Tse & Wilton, 1998). It is fair due to its value pay (Oliver, 1989). Customer satisfaction can be said as a feeling which arises in a customer when a product or service performance meets or surpassed the prior expectations. It is a transaction-specific affective response resulting from the customer's comparison of product performance to some pre-purchase standard.

Parasuraman, Zeithaml & Berry (1985) felt that consumers can feel both satisfaction and dissatisfaction due to the service provided and the money paid. Customers are satisfied when they receive more than the price paid and vice versa. Students' satisfaction, a short-term attitude results from their educational experiences (Elliott & Healy, 2001). Elliot and Shin (2002) further opined that student satisfaction is the students' experience by evaluating the educational outcomes. Therefore, student satisfaction can be defined as a function of the relative level of experiences and perceived performance about educational service (Carey, Cambiano, & De Vore, 2002.). Student satisfaction is influenced by many factors such as personal factors and institutional factors. Personal factors coverage, gender, employment, preferred learning style, and institutional factors cover quality of instructions, promptness of the instructor's feedback, clarity of expectation, teaching style (Marzo Navarro, Pedraja Iglesias, & Rivera Torres, 2005; Appleton-Knapp & Krentler 2006). In addition to that, teaching ability, flexible curriculum, university status, and prestige, independence, caring of faculty, student growth and development, student-centeredness, campus climate, institutional effectiveness, and social conditions have been identified as major determinants of student satisfaction in higher education (Douglas, Douglas & Barnes, 2006; Palacio, Meneses & Perez, 2002).

Service quality and student satisfaction relationships are still unclear theoretically, and the studies on this relationship exploration are also very less due to its complexity (Anderson, Fornell & Lehmann, (1994). Studies which are conducted in the Indian context by Annamdevula and Bellamkonda (2016a & 2016b) showed that service quality was having a constructive impact on the satisfaction of the student and the increase in service quality was leading to ascended student satisfaction. The results were supported by Chandra, Hafni, Chandra, Purwati, & Chandra, (2019), Nagaraju, and Subbarayudu (2017) in the Indian context.

Similarly, the studies conducted in other countries also show a comparable result. Mansori, Vaz, & Ismail, (2014) have empirically found the existence of the association between quality of educational institutions and satisfaction of the students in Malaysian education background. The same was proved again by Alves & Raposo (2009), Duarte, Raposo & Alves (2012) in Portugal, and Khoo, Ha., and McGregor (2015) in Singapore education scenarios. Keeping all these studies in view, the present research model is proposed to study the influence of service quality in private engineering and management colleges on student satisfaction.

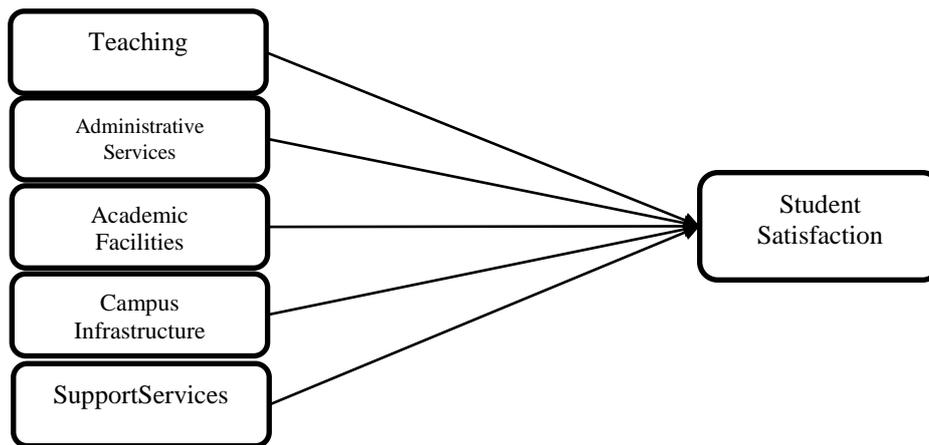


Figure 1 Conceptual Model

Hypotheses

- H 01 Teaching has a significant positive effect on student satisfaction
- H 02 Administrative Services has a significant positive effect on student satisfaction
- H 03 Academic Facilities has a significant effect on student satisfaction
- H 04 Campus Infrastructure has a significant effect on student satisfaction
- H 05 Support Services has a significant effect on student satisfaction

II. RESEARCH METHODS

The present study has been conducted in engineering and management institutions of higher education in the state of Andhra Pradesh, India. A multi-stage sampling technique is adopted for the study. Andhra Pradesh is divided into three regions in the first stage, four colleges from each region are selected in the second stage. 20 students who are studying their second year in the college are approached and distributed questionnaires to collect the data. The study adopted HiEduQual (Higher Education Service quality), developed by Annamdevula and Bellamkonda (2012). A total of 240 student responses are received and used for the analysis and interpretation.

III. RESULTS AND DISCUSSION

Collected data were systematically arranged, tabulated, and analyzed using appropriate statistical tools with the help of SPSS and AMOS software. The structural equation modeling was carried in two distinct steps in the study. In the first step, the measurement model was developed with all the constructs, and later in the next step, the structural model with observed (Independent) and latent (dependent) constructs were developed.

Measurement model

The measurement model was developed with the study constructs like Teaching, administrative services, academic facilities, campus infrastructure, support services, and student satisfaction, and presented in figure 2.

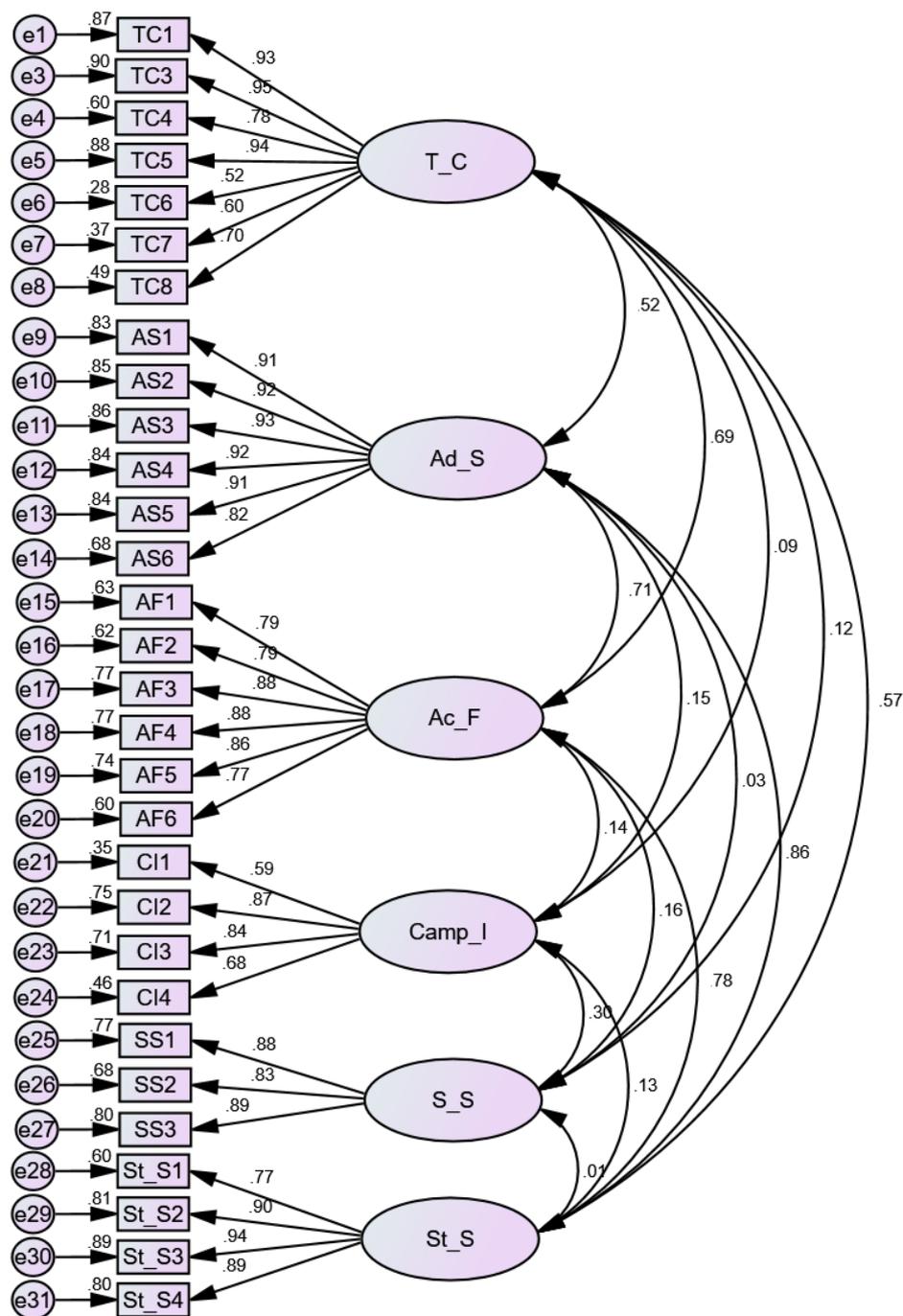


Figure 2 Measurement Model

Validity and Reliability

Individual item reliabilities, convergent and divergent validities were applied to assess the measurement model fitness, reliability, and validity (Hulland, 1999). The item reliability was acclaimed through factor loadings. The items below which are loaded below 0.5 are discarded and not considered for the analysis (Hair, Black, Babin, Anderson&Tatha,2008). All the factor loadings for their respective constructs are greater than the standard level 0.5. So, all the items possess reliability.

The estimation of convergent validity is carried for each construct. The Average Variance Extracted (AVE) and Composite Reliability (CR) are calculated to assess the convergent validity for each construct. The AVE and CR values if greater than 0.5 and 0.7 respectively, then it is deemed that the measurement model possesses convergent validity. The results of the measurement model reveal that all the factor loadings, AVE,

and CR values are greater than the standard levels. Hence, it is concluded that the measurement model possesses convergent validity.

The square root of AVE and inter construct correlations are compared for determining the discriminant validity. It is presumed that discriminant validity is established when the square root of AVE is greater than the inter construct correlations.

Table 2 Discriminant Validity Results

	CR	AVE	MSV	Ad_S	T_C	Camp_I	Ac_F	S_S	St_S
Ad_S	0.964	0.817	0.733	0.904					
T_C	0.918	0.626	0.474	-0.521	0.791				
Camp_I	0.838	0.569	0.091	0.154	0.086	0.755			
Ac_F	0.929	0.688	0.605	-0.712	0.688	0.136	0.829		
S_S	0.900	0.750	0.091	0.034	0.118	0.302	0.163	0.866	
St_S	0.931	0.773	0.733	0.856	-0.567	0.134	-0.778	0.006	0.879

Table 2 reveals that each construct's square root of AVE is greater than its inter-construct correlations. It is observed that there is discriminant validity. So, study data passed through all the conditions like factor loadings, convergent validity, and discriminant validity and so proceeded for developing the structural model.

Structural Model

Structural Equation Modelling (SEM) presents the Modelling of constructs Teaching, Administrative services, Academic facilities, Campus infrastructure, Support services, and Student satisfaction. Pictographic representation of modeling with constructs is presented in figure 3 and their results are shown in Table 3.

Table 3 SEM Results

Measure	Estimate	Interpretation
CMIN	822.146	--
DF	225	
CMIN/DF	3.653	Between 1 and 8
GFI	0.986	>0.90
AGFI	0.968	>0.90
NFI	0.968	>0.90
RFI	0.970	>0.90
IFI	0.966	>0.90
TLI	0.968	>0.90
CFI	0.968	>0.95
RMSEA	0.046	>0.08

The normed chi-square (CMIN/DF) value of 3.65, Root Mean Square Error Approximation (RMSEA) value of 0.046 are meeting the minimum acceptability standard. The model fit indices like Goodness of Fit Indices (GFI), Adjusted Fit Indices (AGFI), Normed Fit Indices (NFI), Relative Fit Indices (RFI), Incremental Fit Indices (IFI), Tucker and Lewis Indices (TLI), and Comparative Fit Indices (CFI) are meeting the minimum acceptable standard of <0.9. All these indicate that the model has a good fit. The R2 value 0.80 accounts for 80 percent of the variation in Satisfaction through five service quality factors.

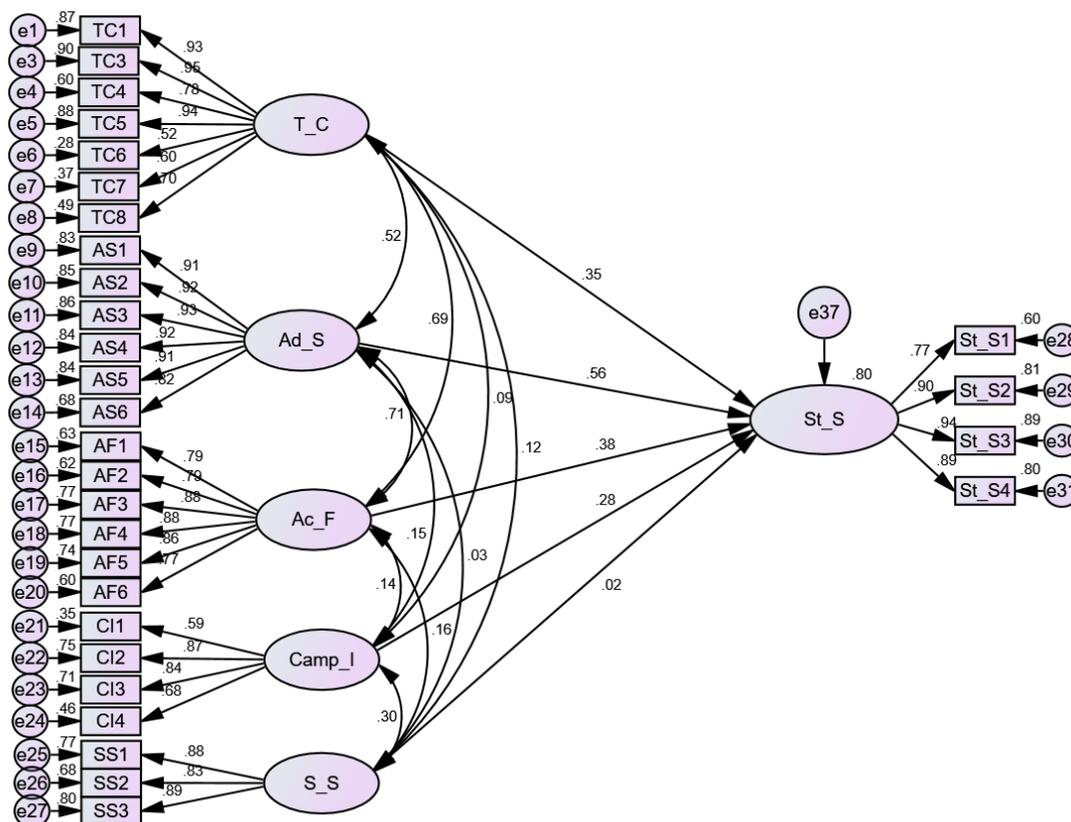


Figure 3 Structural Model

Table 4 Structural Model Summary

Hypothesis	DV	IV	Std. Est	Sig.	Result
H1	Student Satisfaction	<= Teaching	0.351	0.000	Supported
H2	Student Satisfaction	<= Administrative Services	0.563	0.000	Supported
H3	Student Satisfaction	<= Academic Facilities	0.380	0.000	Supported
H4	Student Satisfaction	<= Campus Infrastructure	0.284	0.000	Supported
H5	Student Satisfaction	<= Support services	0.02	0.448	Not Supported

The hypotheses results and the standardized regression estimates of the structural model are depicted in table 4. The hypotheses H1, H2 H3, and H4 are supported and H5 is not supported.

Student satisfaction is highly influenced by administrative services (Beta value 0.563) followed by Academic facilities (Beta value 0.380), Teaching (beta value 0.351), and Campus infrastructure (beta value 0.284).

The objective of the study was to identify service quality influence on satisfaction among students. HiEduQual scale which was developed by Annamdevula and Bellamkonda (2012) is adopted for the study. The scale consists of five factors namely Teaching, Administrative services, Academic facilities, Campus infrastructure, and Support services.

The hypotheses H1, H2, H3, and H4 revealed that Teaching, Administrative services, Academic facilities, and Campus infrastructure have a significant positive effect on student satisfaction. This indicates that Teaching, Administrative services, Academic facilities, and Campus infrastructure enhance satisfaction among the students.

IV. IMPLICATIONS AND CONCLUSION

The present paper highlights the integration of the HiEduQual model with student satisfaction in the higher education context. The results of the present study add to the existing body of service quality in higher education.

Higher educational institutions are facing mounting competition in India both in terms of quality and student retention. Consequently, it has become essential for higher educational institutions to persistently reengineer to accelerate the speed and provide better quality services to the students which can match the ever-changing industry requirements. So, the higher educational institutions should require continuous evaluation of services offered and student satisfaction and the present study throws light on service quality influence on student satisfaction.

Conclusion and Further Research Directions

Study results predominantly stick to previous research except for the Support services. Support services is not influencing the satisfaction among the students. The statistical insignificance of the hypothesis H5 “Support service has significant positive effect on student satisfaction” reveals a unique result. As the study was focused on the influence of service quality on student satisfaction and excluded the mediating and moderating effect of other variables and demographical factors may be focused for further research.

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