

A MULTIPLE REGRESSION ANALYSIS OF SERVICE QUALITY IN HIGHER EDUCATION

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ABSTRACT

This study deals with the service quality in higher education from the stake holders perspective. Customer service in service industry is more significant than in manufacturing companies due to its special characteristics. The service quality higher education plays a vital role in the present scenario. Managing service quality in the competitive scenario plays a vital role in the significant of higher education. The study collects the data through primary data collection method from the students of Bharathiar University in Coimbatore. Sample sizes of 1600 were collected from the students of the affiliated colleges of Bharathiar University. The purpose of this study is to identify the effect of Service quality variables on the personal and institutional factors through multiple regression analysis. The outcome of this study will be useful for the policy makers to continually improve the service quality of education as imposed and required by the quality standards. The results of the improved effort finally will benefit the students as well

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1. Introduction

Higher Education plays a significant role in the development of a country. Higher education inculcates knowledge, employability skills and entrepreneurial qualities thereby, it eradicates poverty and inequality. During the pre-independence era access to higher education system was very much limited. From the year 1883 till the independence the number of colleges in India were not only inadequate but in few hundreds and subsequently the enrollment of the students was also found to be low. During the post independence era, India has tremendously showed an extra ordinary improvement with an increase in literacy rate of 74% as compared to 12% during the time of Independence.

Government at the state and central levels with various regulatory and accreditation bodies, monitor the higher educational institutions with a vision to ensure quality in educational services, yet, quality of higher education is struggling to attain the global level excellence in India [1].

In the area of higher education, the concept of what constitutes quality is still developing and keeps on emerging because the educational environment is dynamic. Service industries are playing an increasingly important role in the economy of many nations. In today's global scenario of competition, rendering quality service is a key for success. Many experts concur that the most powerful competitive trend currently shaping the services marketing is service quality. Since Education being included in the service sector, the problem and the importance of quality in education also occupies significant position. The aim of this study is to assess the influence of overall service quality scores on educational institutions based on the independent variables through a multiple regression analysis. Under these circumstances the study aims to find the effect of several personal and institutional variables and its effect on Service Quality.

II. Literature Review

There was a great impact of quality management during the World War II. It was not only the impact of Pearl Harbor or the consequence bombshell of Hiroshima and Nagasaki. There had always been a tug of war between USA and Japan. In general, the effect was negative for the USA and positive for Japan. During those times, US companies focused more on meeting the delivery dates whereas Japanese companies were serious on producing quality product [2]. According to [3] services marketing did not emerge as a distinct research discipline until the late 1970s. In less than four decades services have become the dominant form of economic activity

and are now playing an increasingly important role in the economy of many nations [4].

It is important to define a stakeholder in order to enable an understanding of the various stakeholders in the context of H.Ed. Freeman defines a stakeholder as “any group of individuals who can affect or is affected by the achievement of the organization objectives [5]. [6] Explains that stakeholders in a higher institution tends to include students, their parents & family, the local community, society, the government, the governing body, staff, local authorities and current & potential employers.

It is common for many organizations to have a number of stakeholders with different opinions, interests and attitudes towards the organization. This is no difference in the context of H.Ed, where a number of stakeholders exist, all experiencing the institutions in different ways. Therefore, it is essential to identify the primary stakeholder in an organisation to identify his/theirs appropriate perception towards the SERVQUAL in H.Ed. Although, there has been wider studies relating to the students perspective, as students are considered as the primary stakeholders. Quality in Higher Learning institutions can be fulfilled under SERVQUAL dimensions based on its characteristics. SERVQUAL dimensions can be applied to all service sectors and H.Ed does not seem to be exempted from this context [8][9].

[10] stated that the beginning stage in developing ‘quality in services’ is analysis and measurement. SERVQUAL is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in measuring them (Wisniewski, 2001).

Measurement of SERVQUAL allows for comparison before and after changes, for the location of quality related problems and for the establishment of precise standards for service delivery. Different authors have propounded and measured various dimensions of SERVQUAL. The constructs and the variables for the measurement vary in the context of Higher Education. The higher education is a part of pure service, which, when combined with the complex combination of the SERVQUAL factors like intangibility, heterogeneity, variability, perishability, simultaneity and heterogeneity may pose a tough challenge in evaluating SERVQUAL in education. This study has identified seven constructs as the SERVQUAL dimensions Curriculum, Co-Curriculum, Teaching Methodology, Examination, Infrastructure, Support Services and Administrative Staff. The Overall scores were analyzed based on these SERVQUAL constructs identified in this study.

III. Data Collection and Sample Size

Primary data will be collected from the students of affiliated colleges of Bharathiar University for the study purpose. The Tamilnadu State comprises of 22 State Universities, 2 Central Universities, 29 Deemed universities. Among the State Universities, Bharathiar University in Coimbatore ranks number one in Tamilnadu. Bharathiar University in Coimbatore has been chosen for the study, which comprises 107 affiliated colleges of which 96 are Arts, Science and Commerce Colleges and 11 are Management Institutes. In addition, there are 29 Research Institutes affiliated to this University. The sample size has been determined as 1600, which will be collected from the students of the affiliated colleges of Bharathiar University in the categories of Government, Aided Autonomous, Aided Non-Autonomous, Self Financing, Self Financing Autonomous and Constituent Colleges. The Sample will be restricted to Arts, Science, Commerce and Management students. The sample will exclude the diploma and Research Scholars.

IV. Data Analysis

Scientifically designed, structured and administered questionnaire will be distributed to the service recipients. A Multiple regression analysis will be used to identify the effect of personal variables like Age, Gender, Residential Location and Type of Degree as well as Institutional variables like ISO recognized Institutions, NAAC accredited Institutions, Level of Study and the Percentage of marks. These variables are analyzed to identify its effect on the overall service quality scores like Curriculum, Co-Curriculum, Teaching Methodology, Examination, Infrastructure, Support Services and Administrative Staff. The analysis will identify the variables, which has a huge effect on the Service Quality of Higher Educational Institutions.

V. Results and Discussion

How the overall service quality scores on educational institutions is influenced by various predictor variables (independent variables) is explained by Multiple Regression analysis. Regression analysis was applied to find the effect of several personal and institutional variables on the overall Service Quality of educational institutions.

The following variables were identified to be included in the model.

Gender, Age, Location of your Residential area, Degree, ISO recognized Colleges, NAAC accredited Institutions, Level of Study, Percentage of marks obtained until previous semester.

Multiple Regressions is mainly building an equation wherein the coefficients of predictor variables are found out. The general Multiple Regression equation is of the form,

$$Y = a_0 + a_1X_1 + a_2X_2 + \dots + a_nX_n$$

where Y, the dependent variable a_0 , constant

a_1, a_2, \dots, a_n are the regression coefficients for the independent variables X_1, X_2, \dots, X_n respectively.

The results of regression analysis are given below.

Table I: Dependent Variable: Overall Service Quality Score

	Regression Coefficients (B)	Std. Error	Beta	t	Sig.
(Constant)	146.222	25.766			
Gender	25.697	3.322	.204	7.736	**
Age	4.014	1.420	.099	2.828	**
Location of your Residential area	-14.216	1.835	-.191	-7.746	**
Degree	5.127	4.371	.040	1.173	Ns
Does your college recognized with ISO?	-22.251	3.965	-.156	-5.612	**
Does your college accredited with NAAC status?	-2.421	3.520	-.018	-.688	Ns
Level of Study	10.700	3.220	.086	3.323	**
Percentage of marks obtained until previous semester	-6.186	1.827	-.091	-3.385	**

R	R Square	F	Sig.
.326	.106	22.588	**

(** 5% , * 1%)

Table I, shows the results of regression analysis, giving details of Multiple R, R^2 and regression coefficients of variables in the regression equation. Multiple R given in the table above is the multiple correlation coefficient of dependent variable with the group of independent variables included in the analysis. The R-value indicates that a moderate correlation

(0.326) exists between the dependent variable(Overall Service Quality Score) and the set of independent variables. Next given is R square which when expressed in percentage, explains that 10.6% of the variation in the Overall Service Quality score is due to the 8 predictor variables in the equation. Next given is F value(22.588). This value is F-statistic, calculated for R, used to find whether R-value is significant or not. The associated significance level ($P < 0.01$) tells us that R is fairly significant at 1% level.

From the regression table, it is seen that among the 8-predictor variables, except 'Degree' and 'Does your college accredited with NAAC status?' all other variables have significant effect on Overall Service Quality Score at 1 % level. Individually, Gender (a dummy variable coded as 0-Male 1-Female) shows that on average, female students are more agreeable on service quality compared males. Age, shows that there is positive effect on service quality. That is, students on higher age tend to score more on overall service quality compared to younger age groups. The residential area of students graded as 1-Rural, 2-Urban, 3-Metro and 4-Cosmopolitan show that, compared to rural, students from more urbanized areas have higher service quality scores. That is service quality of educational institutions are more appropriate or more agreeable to urban students and more urbanized students than rural students

The predictor variable, level of study shows that students in the final year scores more on service quality than students in the second year of study. The two dummy variables 'Recognized with ISO' and 'Accredited with NAAC status' (coded as 0-Yes 1-No) show that the service quality scores of the students studying in either ISO recognized institutions or NAAC accredited institutions are higher compared to students studying in the institutions with out either ISO are NAAC Status. The degree of the students , Bachelor or Master's, shows that students studying Masters Degree tend to score higher on service quality compared to students studying Bachelors degree.

The percentage of marks obtained shows that, it has negative effect on service quality score. That is, students who have scored higher marks are less agreeable on Service Quality compared to students who have scored less marks. The Beta coefficients, which are standardized regression coefficients of the respective predictor variables are free from units of measurements and hence are comparable. The Beta coefficients show that, Gender has more effect on service quality compared to other variables, followed by location of residential area, irrespective of the

sign of the coefficients. The NAAC accredited or not is has least affected the service quality compared to other variables.

V. Conclusion

The results indicate that there is a significant effect of personal and institutional factors on SERVQUAL variables except for the Type of Degree and the NAAC accredited Institutions. This implies that whether the institutions is accredited with NAAC status or not accredited with NAAC status, it has least effect on the SERVQUAL variables. The regression analysis also reflected that the more focus should be laid on the NAAC accredited formulation of policies and framework as the students find no difference with the accredited and non accredited institutions regarding Service Quality frameworks. This will ultimately reflect on the adverse effect of the competitive scenario on the prospect customers for an institution.

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