

An Assessment of Service Quality in Higher Education

¹Dr.P.Madhan Kumar, ²Salauddin Shaik,
^{1,2}Assistant Professor,
¹School of Management Studies, ²School of Commerce,
^{1,2}REVA University, Bengaluru, India

Abstract: Service quality in Higher Education Setting has been received considerable attention during past few years. However, service quality dimension and its approach in higher education setting is still not clear. Against this background the aim of this study is to explore the potential effect of service quality dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) on Student Satisfaction, with moderating role of gender. A survey was conducted among the students studying in public, deemed and private universities in Tamilnadu. This research has adapted descriptive research in the form of cross section research design. A measuring instrument in the form of structured questionnaire was distributed by means of convenience sampling to the respondents. Around 536 students participated in the study and a questionnaire was administered with each of them separately. Data analysis was performed using statistical software SPSS and AMOS. Multiple regression analysis was used to examine the relationship between service quality and student satisfaction. The results revealed that four predictor variables namely, Reliability, Assurance, Empathy and Responsiveness were significantly influencing students' satisfaction. Among Four predictor variables reliability had the highest impact on students' satisfaction. More over results reveals, gender moderates the relationship between three service quality dimensions (Reliability, Assurance and Empathy) and Student satisfaction. Finally this study concludes with important implications for educational institutes and future research in the area of service quality

IndexTerms - Service quality, Servqual, Student Satisfaction and Gender.

I. INTRODUCTION

The progression of Indian Higher Education sector has drawn global attention and competitive pressure from local and foreign institutions within countries in order to attract the new students (Arambewela, Hall, & Zuhair, 2005). The increase in competitive pressure gives educational institutions no option, than to provide quality services to the students (Parasuraman, Berry & Zeithaml, 1998). The nature of services in higher education is quite complex due to the length of the process and variety of variables affecting it. To gain a competitive advantage, higher education institutions must provide quality services to students, since excellent service quality will lead to customer (Student) satisfaction (Sohail, Rajadurai, Rahman, 2003). Numerous approaches (Servqual, Servperf and Hedperf) have been applied by the various researchers to evaluate service quality in Higher Education setting. However, service quality dimensions and its approach are still not clear (Carman, 1990; Parasuraman, Berry, Zeithaml, 1993; Cronin, Taylor, 1994; Owlia and Aspinwall 1996; Buttle, 1996). Although there are numerous studies about service quality in higher education has been done but studies focusing on the role of gender as a moderator is still limited (Mavondo et al., 2004., Arambewela et al., 2006., Arambewela and Hall, 2009). Hence, this study is essential to identify the factors that satisfy students and how gender moderates the relationship between service quality dimensions and student satisfaction in Higher education setting. In the light of the above discussion, the aim of this research is to, (1) explore the relationship between perceived service quality and student's satisfaction and, (2) test the moderating effects of gender, on the relationship between perceived service quality and student's satisfaction.

II. LITERATURE REVIEW

2.1 Satisfaction

Crawford (1991) was the first one to introduce the concept of the student as customers. Ramsden (1991) stated that student satisfaction is a key indicator of the quality of teaching. Oliver (1997) defined satisfaction as a pleasurable fulfillment, which means that consumers perceive that "consumption fulfils some need, desire, goal, or so forth and that this fulfillment is pleasurable. Thus, satisfaction is the consumer's sense that consumption provides outcomes against a standard of pleasure versus displeasure." Elliott and Shin (2002) defined student satisfaction as "the favorability of a student's subjective evaluation of the various outcomes and experiences associated with education. Petruzzellis and Romanazzi (2010) indicated that the measurement of service quality can be tested by assessing student satisfaction, due to the fact that students are the actual customers within the Higher Education Institutions.

2.2 Service Quality

The definition of service quality can be provided from the perspective of how the consumers or users of the service judge the service based on what they may have experienced. The service quality construct in the services literature is based on perceived quality. The term perceived service quality has been defined differently by various authors in service quality literature. For Instance, Zeithaml (1987) and Zammuto et al (1996) defined perceived quality as the consumer's judgment about an entity's overall experience or superiority. Perceived quality is also seen as a form of attitude related to, but not the same as satisfaction and it results from a comparison of expectations with perception of performance (Rowley, 1996). It is also viewed as the degree and direction of the discrepancy between consumer's perceptions and expectations (Parasuraman et al., 1988). In brief, perceived quality of a service is the outcome of an evaluation process, where the consumer compares expectations to the service they received (Grönroos, 1982). With regard to education sector, the perception of service quality at universities is the perception of the difference between what the student expects from the university and what they receive (O' Neill & Palmer, 2004).

2.3 Attributes of Service Quality

The SERVQUAL instrument developed by Parasuraman et al (1991) has proved popular, being used in numerous studies of service quality. The SERVQUAL Instrument measures the five dimensions of Service quality namely Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Tangibles are related to the physical condition and availability of facilities and human resources. Reliability relates to the ability of service providers to provide services in accordance with what is promised. Responsiveness relate to the ability of service providers to provide the best service to consumers. Assurance deals with the knowledge and skills of service provider employees. Last, empathy deals with the personal attention provided by the service provider to the consumers. The use of SERVQUAL in educational services has been widely demonstrated in previous studies and found mixed results (Zammuto, Keaveney, & O'Connor, 1996; Browne et al., 1998; Oldfield & Baron, 2000; de Jager & Gbadamosi, 2013; Chui & bin Ahmad, 2016; Naidu & Derani, 2016). Based on the above literature, the research hypotheses to be tested are as follows:

H1: There is a positive and significant relationship between Perceived service quality dimensions and student satisfaction.

H1a: There is a positive relationship between Tangibility and Students' Satisfaction.

H1b: There is a positive relationship between Reliability and Students' Satisfaction.

H1c: There is a positive relationship between Responsiveness and Students' Satisfaction.

H1d: There is a positive relationship between Assurance and Students' Satisfaction.

H1e: There is a positive relationship between Empathy and Students' Satisfaction.

Gender

Gender refers to a set of characteristics differentiating males from females. Other than being physically or biologically different, females and males can be different in attitudes, traits, and activities that are able to influence consumer behaviour (Hoyer & MacInnis, 2010). There are research evidences about direct impact of gender over service quality and customer satisfaction (Soutar and McNeil (1996). Kamal and Ramzi (2002), in his study found that gender variable has an influence on the satisfaction scale of service quality which male student were found to be more satisfied than female students. Palli and Mamilla (2012) research found a mixed result; it reveals no significant difference in the satisfaction of the respondents in terms of age, occupation of the parent and income, but gender shows a significant difference in the students' opinion with regard to the service quality of departments of the university whereby the female students were more satisfied than the male students. For that reason, the association between service quality and satisfaction seems to vary between male and female customers. These arguments support, that gender moderate the relationship between service quality and student satisfaction. Based on the above arguments, it is hypothesized that:

H2: Gender moderates the relationship between perceived service quality dimensions and Student satisfaction.

H2a: Gender moderates the relationship between Tangibility and Students' satisfaction.

H2b: Gender moderates the relationship between Reliability and Students' satisfaction.

H2c: Gender moderates the relationship between Responsiveness and Students' satisfaction.

H2d: Gender moderates the relationship between Assurance and Students' satisfaction.

H2e: Gender moderates the relationship between Empathy and Students' satisfaction.

III. PROPOSED THEORETICAL FRAMEWORK

The proposed relationships have been combined and developed into a conceptual framework (Figure 1).

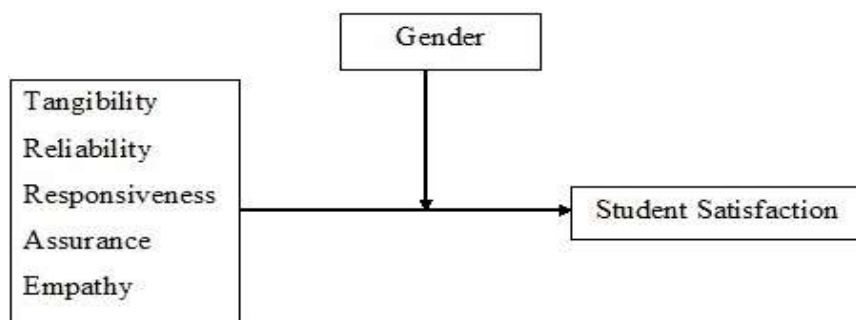


Figure 1: Proposed Conceptual Framework

3.1 Methodology

Sample and Procedure: This research has adapted descriptive research in the form of cross sectional design. A measuring instrument in the form of a structured questionnaire was distributed to students studying at public, deemed and private universities in Tamilnadu. For the empirical investigation, a measuring instrument was adapted from Parasuraman et al. (1990) to measure perceived service quality. The Student Satisfaction was measured by using 6 item scale developed by Atheeyaman (1997). Both of these scales were measured using five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Respondents were asked to fill the questionnaire in a self-administered manner. The language of communication was English and the questionnaire consisted two sections. First section gathered data on the possible influence of the independent variables (tangibles, reliability, responsiveness, assurance, and empathy) on student satisfaction and second section gathered demographics data of respondents.

Data processing was done by using Statistical Package for Social Sciences, (SPSS Version 21) and Analysis of Moment Structure (AMOS, Version 20) were used to analyze the data. After collecting data from the respondents, the questionnaires were checked for omissions to discard totally unfit or incomplete responses. A total of 600 self-administered questionnaires were distributed to the respondents in different public and private universities of Chennai, of which 536 questionnaires were found usable. The sample consisted of 536 respondents and was split between 286 male (53.4%) and 250 female respondents (46.6%). In terms of age group 65.98% were between the age group of 21 to 25 years, 30 % were between the age group of 26 to 30 years and 4.1% were above the age of 31 years. In terms of University, 222 (41.4%) students were studying Public University, 193 (36%) students were studying in Deemed University and 121 (22.6 %) students were studying in Private universities.

3.2 Empirical Results

Measurement Model: With the perspective of Fornell and Larcker (1981) in the SEM, generally constructs should first be evaluated by confirmatory factor analysis (CFA). Seven general model fit measures were used to evaluate the model's whole goodness of fit: the ratio $\chi^2/(d.f.) = 4.58$, Adjusted goodness-of-fit index (AGFI)= 0.88, Relative fit index (RFI)=0.93, Normalized fit index (NFI)=0.95, Comparative fit index (CFI)=0.96 and Root mean square error of approximation

(RMSEA)=0.08. All the model fit indices gone beyond the general approval grades proposed by former investigations, indicating that the measurement model showed a good fit with the data collected.

Validity of the measurement model was assessed using Convergent and discriminant Validity. Convergent validity is the degree to which factors that are supposed to measure a single construct, agree with each other (John and Benet-Martinez, 2000). Convergent validity can be established through three criteria suggested by Hair et al.,(2006), (1) Standardized Factor Loadings greater than 0.5 (2) Average Variance Extracted should be greater than 0.5 (3) Reliability should be greater than 0.5. Measurement model results revealed that all loadings of the standardized factor loadings were above the 0.5 cut-off. AVE and Construct Reliability were estimated using the method given by Fornell and Lacker (1981). Results are reported in Table 1, which revealed that AVE and Construct Reliability estimates for each variable are above the ideal 0.5 cut-off. The satisfaction of conditions for all the Regression Weights, CR, and AVE support the Convergent Validity of the constructs to a reasonable extent.

| Correlation Matrix | | | | | | | |
|---------------------------------------|--------------------|-------------------|--------------------|-------------------|-----------------------|---------------------|---------------|
| | Reliability | Assurance | Tangibility | Empathy | Responsiveness | Satisfaction | Gender |
| Reliability | 0.886 | | | | | | |
| Assurance | .325 ⁻ | 0.952 | | | | | |
| Tangibility | .019 | .060 | 0.936 | | | | |
| Empathy | .172 ⁻ | .178 ⁻ | .038 | 0.822 | | | |
| Responsiveness | .594 ⁻ | .257 ⁻ | .063 | .504 ⁻ | 0.887 | | |
| Satisfaction | .815 ⁻ | .336 ⁻ | .006 | .183 ⁻ | .657 ⁻ | 0.846 | |
| AVE | 0.786 | 0.906 | 0.876 | 0.675 | 0.786 | 0.716 | NA |
| Construct Reliability | 0.916 | 0.966 | 0.955 | 0.861 | 0.917 | 0.938 | NA |
| Cronbach's α | 0.914 | 0.966 | 0.954 | 0.855 | 0.911 | 0.936 | NA |

***p < .001. **p < .01. *p < .05. Note: Diagonal elements in bold represent square root of AVE

The recommended approach for establishing Discriminant Validity is to compare the squared correlation between two constructs with either of their individual AVE estimates. The AVE estimates should be greater than the squared correlation estimate. To assess the discriminant validity of the constructs the square root of average variance extracted of each construct was compare with their correlations as recommended by Fornell and Larcker (1981). From Table 1 it can seen that, Square root of AVE (Highlighted bold in diagonal) for the construct is greater than its correlation with other constructs. This establishes the discriminant validity between constructs used in this research. In terms of reliability, measuring instrument was assessed by the CR estimates and Cronbach's alpha correlation coefficients. From Table 1 it can be seen that all the measuring instruments obtained a construct reliability estimate of above the recommended value of 0.60 (Hair, Black, Babin, Anderson & Tatham 2006). All the variables obtained Cronbach's alpha correlation coefficient above the recommended 0.70 (Nunnally & Bernstein, 1994) so the items can be regarded as reliable. These consequences show that the measurement items have high reliability and validity.

Since our study was cross-sectional, data have been obtained from the same source, with a similar response format, and is thus susceptible to Common method variance (CMV). We assessed CMV with two separate tests. Firstly, Harman's one-factor test was conducted to identify potential bias caused by common method variance (CMV). If a single factor emerges or one general factor explains most of the covariance in the independent and dependent variables, it is reasonable to conclude that a significant CMV is present (Podsakoff et al., 2003). We entered all scale items into a principal components analysis and examined the unrotated factor solution. Six factors possessing an eigen value greater than 1.0 emerged, which accounted for 86.7% of variance. The first factor accounted for 34.43% of variance, which showed that the items did not load on a general single factor. As it mentioned form Podsak off et al. (2003), the first factor's variance is not greater than 50%, which shows no serious CMV problems. To confirm this result, we further assessed CMV through common latent variable test, which enables the researcher to account for measurement error in variables. All items were allowed to load on their theoretical constructs, as well as on a latent common methods variance factor. The significance of the structural parameters were examined both with and without the latent

common methods variance factor in the model. Results indicated that all the delta values were less than 0.2, so common method bias was not a major threat in our study. After confirming CMB is not a major issue, we performed analysis of variance (ANOVA) test to examine differences among various universities (Public University, Private University, Deemed University) to do a comparative analysis. Anova results confirmed mean difference among universities, F values were significant for almost all variables. To determine which industries were different from one another, we further performed Tukey's honestly significant difference (HSD) post hoc test. However, results did not yield any consistent pattern that could be used as the basis of clustering of the data for further analyses. Therefore, we combined the samples for analyzing the hypothesized relationships.

3.3 Testing Hypotheses

To test the effect of service quality dimension on student satisfaction, Regression analysis was used. The five factors of service quality collectively explained a total of 93.3% variance on the customer satisfaction for males ($R^2 = 0.933$). Three dimensions of service quality showed a statistically significant and unique relationship with customer satisfaction for male Students. The dimensions of Reliability ($\beta = 0.819$, $p < 0.001$) indicated the strongest influences over student satisfaction, followed by Responsiveness ($\beta = 0.209$, $p < 0.01$) and Empathy ($\beta = -0.041$, $p < 0.05$). The five factors of service quality collectively explained a total of 88.7% variance on the customer satisfaction for females ($R^2 = 0.887$). Four dimensions of service quality showed a statistically significant and unique relationship with customer satisfaction for Female Students. The dimensions of Reliability ($\beta = 0.866$, $p < 0.001$) indicated the strongest influences over student satisfaction, followed by the dimension of Responsiveness ($\beta = 0.154$, $p < 0.05$), Empathy ($\beta = -0.068$, $p < 0.05$) and Assurance ($\beta = -0.065$, $p < 0.05$). Thus the result supporting hypotheses H1b, H1c, H1d and H1e. However, Tangible Dimension ($\beta = -0.016$, $p < .221$) was found insignificant for both male and female students.

Table 2 : Results from Process Macro

| | B | SE | t | BC 95% CI | |
|--|----------|-----------|----------|------------------|--------|
| constant | 1.539 | 0.814 | 1.891 | -0.060 | 3.138 |
| Gender | 0.361 | 0.575 | 0.628 | -0.768 | 1.489 |
| Reliability | 2.052 | 0.087 | 23.517 | 1.881 | 2.224 |
| Gender x Reliability | -0.041 | 0.061 | -0.664 | -0.161 | 0.080 |
| $R^2 = .89^{***}$ Dependent Variable : Student Satisfaction | | | | | |
| | B | SE | t | BC 95% CI | |
| constant | 5.819 | 2.610 | 2.230 | 0.693 | 10.946 |
| Gender | 5.213 | 1.678 | 3.107 | 1.917 | 8.508 |
| Assurance | 1.369 | 0.258 | 5.316 | 0.863 | 1.875 |
| Gender x Assurance | -0.462 | 0.166 | -2.786 | -0.787 | -0.136 |
| $R^2 = .132^{***}$ Dependent Variable : Student Satisfaction | | | | | |
| | B | SE | t | BC 95% CI | |
| constant | 21.270 | 1.843 | 11.542 | 17.650 | 24.890 |
| Gender | -0.585 | 1.196 | -0.489 | -2.934 | 1.765 |
| Tangibility | -0.227 | 0.222 | -1.021 | -0.663 | 0.210 |
| Gender x Tangibility | 0.150 | 0.145 | 1.038 | -0.134 | 0.434 |
| $R^2 = .008(ns)$ Dependent Variable : Student Satisfaction | | | | | |
| | B | SE | t | BC 95% CI | |
| constant | 9.511 | 2.728 | 3.487 | 4.153 | 14.868 |
| Gender | 4.683 | 1.689 | 2.773 | 1.366 | 8.001 |
| Empathy | 1.015 | 0.277 | 3.671 | 0.472 | 1.559 |
| Gender x Empathy | -0.412 | 0.173 | -2.388 | -0.751 | -0.073 |
| $R^2 = .05^{***}$ Dependent Variable : Student Satisfaction | | | | | |
| | B | SE | t | BC 95% CI | |
| constant | -0.591 | 1.677 | -0.352 | -3.885 | 2.704 |

| | | | | | |
|---|--------|-------|--------|--------|--------|
| Gender | 6.921 | 1.128 | 6.135 | 4.705 | 9.137 |
| Responsiveness | 2.189 | 0.177 | 12.336 | 1.840 | 2.538 |
| Gender x Responsiveness | -0.693 | 0.119 | -5.812 | -0.928 | -0.459 |
| $R^2 = .469***$ Dependent Variable : Student Satisfaction | | | | | |

To test the Moderation effect, we used PROCESS macro suggested by Hayes (2012). The results in Table II indicate that three dimensions of service quality, Assurance ($B = -.46$, $P < .05$, CIs $-.78$ $-.13$), Empathy ($B = -.41$, $P < .05$, CIs $-.75$ $-.07$) and Responsiveness ($B = -.69$, $P < .05$, CIs $-.92$ $-.45$) are significantly predicting Student satisfaction, thus supporting hypotheses H2c, H2d and H2e. This result is congruent with the previous findings of (Snipes et al, 2006 & Ganesan L et al., 2008). To ease interpretation of the significant moderators, graphs were plotted. As demonstrated in Figure 2, when the level of Assurance from university increases from low to high, the level of Student satisfaction increases for both men and women. However, the rate of increase is greater for men than women. In the same manner, when the level of empathy and responsiveness increases from low to high, the level of Student satisfaction increases for both men and women. However, the rate of increase is greater for men than women. This study found that male students shown higher satisfaction level than female students. This results is congruent with the previous findings of (Jin, Line & Goh 2013).

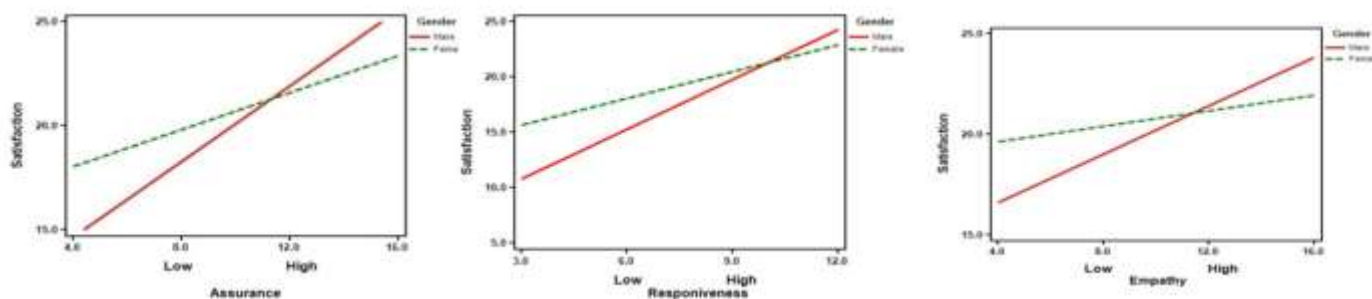


Figure 2: Interaction Effect of Gender on Service quality dimensions

IV. CONCLUSIONS

This study makes important contributions to the emerging body of research on service quality in Higher Education Setting. First, it confirms the effect of service quality has a positive relationship with student satisfaction namely, Assurance, Empathy, reliability and responsiveness. Also, it takes into consideration moderating role of gender. Results of moderation analysis suggest that gender moderates the relationship between three dimensions of service quality (Assurance, Empathy and Responsiveness) on Student satisfaction. Overall these results supported the prior predictions about the linkages. The above findings shows that the university is providing better quality of educational services and are also successful in gaining student satisfaction. The following recommendations may enhance the ability of universities to gain student satisfaction. The Universities should concentrate on tangible and reliable aspects namely, Comfortable lecture rooms, computer labs, Clean environment, and Non-discriminatory treatment provided by staff and lecturers. Thus, this present research concluded that student satisfaction is one of the most important factors in Higher Education Setting. The results of this study will help educational institutions to understand the needs of the students and encourage them to improve on service quality dimensions that greatly influence student satisfaction. In addition, the findings may potentially enable future researchers to apply similar approaches in other areas of interest. Future research is also recommended to include other moderating variable like Students age, course and Grade to make the analysis more specific.

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