Measurement of Service Quality in Health Care Industry using Servqual Model: A Case of Select Hospitals

Bhupesh Umath, Assistant professor, Department of Mechanical Engineering, MIT Ujjain, India
Amit Kumar Marwah, Associate Professor, Department of Mechanical Engineering, MIT Ujjain, India
Manish Soni, HOD, Department of Mechanical Engineering MIT Ujjain, India

ABSTRACT

Service quality within hospital units is pivotal for satisfying, retaining & creating loyalty amongst patients. This research uses servqual model to analyze the gap between perceptions and expectations of the patients, concerning with the services at hospital units in select cities of Madhya Pradesh. Customer satisfaction level is assessed for the services offered at selected hospital units in the cities of Ujjain, Dewas and Indore. Five dimensions in service quality: tangibility, reliability, responsiveness, empathy, and assurance have been considered for this empirical research. Major objective of this research is to know critical factors that lead to patient's satisfaction. The other objectives are (1) to describe applied of servqual dimension in healthcare industry (2) to know servqual dimensions that make patients satisfied, and (3) to priorities servqual dimensions that are dominant in influencing patient satisfaction (4) to demonstrate the use of servqual for measuring patient's perceptions of health care service quality in hospitals. The research methodology is a cross-sectional applied to 340 respondents. The data obtained is analyzed by using reliability test, correlation analysis, descriptive analysis and service index. Results of research showed that services offered by hospitals have positive impact and are significant in building patient satisfaction. Findings of this empirical research reiterate the point of view that service quality dimensions are crucial for customer satisfaction in hospitals. Since it is an upcoming sector with high growth potential and opportunities in fast growing economies like India's. The results of this study is expected to give more knowledge about the importance of service quality (servqual), so that the hospitals can use them as initial building block for their management and to evaluate quality of service and further improve it.

Keywords
Service Quality, Patient satisfaction, SERVQUAL model, Hospitals, Perceptions, Expectations.

1. INTRODUCTION

The quality of service both technical and functional is a key ingredient in the success of service organizations [1]. Technical quality in health care is defined primarily on the basis of the technical accuracy of the diagnosis and procedures. Several techniques for measuring technical quality have been proposed and are currently in use in healthcare organizations. Information relating to this is not generally available to the public, and remains within the purview of health-care professionals and administrators. Functional quality, in contrast, relates to the manner of delivery of health-care services. India's healthcare sector has been growing rapidly and estimated to be worth Rs. 2925 billion by 2013, according to price water house cooper's report, 'healthcare in India: emerging market report 2008'. Revenues from the healthcare sector account for 5.7 per cent of the GDP, making it the third largest growth segment in India. The sector's growth will be driven by the country's growing middle class, which can afford quality healthcare [2].

Today, people are spending more on healthcare. A middle-level manager with a family of four, spends between Rs. 11375 and Rs. 16000 a year on healthcare compared to just Rs. 3000 in the late -1990s. Most users of healthcare have been paying from their own pocket and preferring private services to government ones. Patient quality initiatives, with their softer, experiential focus than clinical audit, with its precise and scientific methods of measurement, demand different measurement techniques.

In India, the service quality of health care is poor and in general, the health outcome is far from satisfactory. Therefore, government of India has adopted a policy of health care reform having two basic objectives to achieve health securities for all and to provide quality health facilities for all within every district in India [3]. In the healthcare sector, customer satisfaction is also an important issue as in other service sectors [4]. A health care organization can achieve patient satisfaction by providing quality services; keeping in view patients' expectation and continuous improvement in the health care service [5].

2. BACKGROUND

According to the World Health Organization statistics for Health Systems (which highlights the healthcare facts and figures of relevance to key Asia Pacific countries and compares them to some of the world's most developed
Service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either. There are a number of different "definitions" as to what is meant by service quality. One that is commonly used defines service quality as the extent to which a service meets customers' needs or expectations [6].

Service quality can thus be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs [6]. Always there exists an important question: why should service quality be measured? Measurement allows for comparison before and after changes, for the location of quality related problems and for the establishment of clear standards for service delivery. Edvardsen et al. states that, in their experience, the starting point in developing quality in services is analysis and measurement. The SERVQUAL approach, which is used in this paper, is the most common method for measuring service quality [7].

**Service Quality Dimensions**

Parasuraman et al. identified five dimensions of service quality (Viz. reliability, responsiveness, assurance, empathy, and tangibles) that link specific service characteristics to consumer’s expectations. (a) Tangibles: physical facilities, equipment and appearance of personnel; (b) Empathy- caring, individualized attention; (c) Assurance- knowledge and courtesy of employees and their ability to convey trust and confidence; (d) Reliability- ability to perform the promised service dependably and accurately; and (e) Responsiveness- willingness to help customers and provide prompt service.

**Patient Satisfaction**

Patients, in general, receive various services of medical care and judge the quality of services delivered to them[8]. The service quality has two dimensions (a) a technical dimension i.e., the core service provided and (b) a process/functional dimension i.e., how the service is provided[9]. It suggested a widely used model known as SERVQUAL for evaluating the superiority of the service quality. In the SERVQUAL model, Parasuraman et. al. identified the gap between the perception and expectation of consumers on the basis of five attributes viz. reliability, responsiveness, assurance, empathy and tangibles to measure consumer satisfaction in the light of service quality[10]. In general, patient satisfaction surveys are used to examine the quality of the healthcare service provided.

Much evidence has been documented for the service quality to satisfaction link in different consumer satisfaction studies including those in the area of health care marketing[11]. The Consumer Assessment of Healthcare Providers and Systems is one of the tools applied for measuring patient satisfaction with quality of care. According to Agency for Healthcare Research and Quality, CAHPS is an internationally validated tool to be anchored on a specific episode of contact between the patient and healthcare professional. CAHPS focuses on assessing the actual experience of patients during care process instead of measuring patients’ perception. As per the CAHPS methodology, patients are asked to indicate if they receive any specific quality of care.

**Gaps in service quality**

Gap 1: The difference between actual customer expectations and management’s idea or perception of customer expectations.

Gap 2: Mismatch between manager’s expectations of service quality and service quality specifications.

Gap 3: Poor delivery of service quality i.e. difference between service delivery and service quality specifications.

Gap 4: Differences between service delivery and external communication with customer.

Gap 5: The difference between what customers expect of a service and what they actually receive.
Expectations are made up of past experience, word-of-mouth and needs/wants of customers measurement is on the basis of two sets of statements in groups according to the five key service dimensions

Servqual model
Measuring service quality is difficult due to its unique characteristics: Intangibility, heterogeneity, inseparability and perish ability. Service quality is linked to the concepts of perceptions and expectations [12]. Customers' perceptions of service quality result from a comparison of their before-service expectations with their actual service experience. The service will be considered excellent, if perceptions exceed expectations; it will be regarded as good or adequate, if it only equals the expectations; the service will be classed as bad, poor or deficient, if it does not meet them. Based on this perspective, Parasuraman et al. developed a scale for measuring service quality, which is mostly popular known as SERVQUAL. This scale operationalizes service quality by calculating the difference between expectations and perceptions, evaluating both in relation to the 22 items that represent five service quality dimensions known as ‘tangibles’, ‘reliability’, ‘responsiveness’, ‘assurance’ and ‘empathy’. The SERVQUAL scale has been tested and/or adapted in a great number of studies conducted in various service settings, cultural contexts and geographic locations like the quality of service offered by a hospital [13], a CPA firm, a dental school patient clinic, business school placement center, tire store, and acute care hospital, pest control, dry cleaning, and fast food [14], banking and discount and departmental stores [15]. All these studies do not support the factor structure proposed by Parasuraman et al. The universality of the scale and its dimensions has also been the subject of criticisms and it is suggested that they require customization to the specific service sector in which they are applied.

22 statements of the servqual instrument
E1. They should have up-to-date equipment.
E2. Their physical facilities should be visually appealing.
E3. Their employees should be well dressed and appear neat.
E4. The appearance of the physical facilities of these firms should be in keeping with the type of services provided.
E5. When these firms promise to do something by a certain time, they should do so.
E6. When customers have problems, these firms should be sympathetic and reassuring.
E7. These firms should be dependable.
E8. They should provide their services at the time they promise to do so.
E9. They should keep their records accurately.
E10. They shouldn’t be expected to tell customers exactly when services will be performed.
E11. It is not realistic for customers to expect prompt service from employees of these firms.
E12. Their employees don’t always have to be willing to help customers.
E13. It is okay if they are too busy to respond to customer requests promptly.
E14. Customers should be able to trust employees of these firms.
E15. Customers should be able to feel safe in their transactions with these firms’ employees.
E16. Their employees should be polite.
E17. Their employees should get adequate support from these firms to do their jobs well.
E18. These firms should not be expected to give customers individual attention.
E19. Employees of these firms cannot be expected to give customers personal attention.
E20. It is unrealistic to expect employees to know what the needs of their customers are.
E21. It is unrealistic to expect these firms to have their customers’ best interests at heart.
E22. They shouldn’t be expected to have operating hours convenient to all their customers.

3. RESEARCH METHODOLOGY
The study is based mainly on the primary data collected from patients, doctors, nurses and other staffs of the hospitals of Ujjain, Dewas & Indore with the help of a well drafted, pre tested, and structured questionnaire based on 22 statements given by servqual instrument. There are two sets of questionnaire form. One for the patients shows the expectations and other set for the hospitals staff members’ shows perceptions. Total numbers of respondents are 340. Out of which 270 respondents have given positively responses. Out of 340 respondents, 190 from Ujjain city, 60 from Dewas and 90 from Indore city.
254 respondents have gender male and 86 respondents have female. Also there are 40 respondents from hospital staff members showed positive responses to fill questionnaire. The questionnaire designed on the basis of 22 statements of servqual instrument in which 4 statements for tangible factor, 5 statements for reliability factor, 4 statements for responsiveness, 4 statements for assurance and 5 statements for empathy.

In this study the simple random sampling procedure is used and the questionnaire is designed on the basis of 7 point Likert scale. In which 1 show strongly disagree and 7 shows strongly agree. The data has been collected using questionnaire and interview method.

For analysis of data we used SPSS (version 16) software. We have determined the Descriptive analysis, gap no. 5 of servqual gaps, correlation analysis and Service index.

### 4. DATA ANALYSIS AND RESULTS

**Reliability analysis**
For reliability of data Cronbach’s Alpha value is used. The Cronbach’s Alpha value is determined by using spss software. In statistics, Cronbach’s \( \alpha \) (alpha) is a coefficient of internal consistency. It is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees. The theoretical value of alpha varies from zero to 1, since it is the ratio of two variances. However, depending on the estimation procedure used, estimates of alpha can take on any value less than or equal to 1, including negative values, although only positive values make sense.

<table>
<thead>
<tr>
<th>SCALES</th>
<th>NO.OFITEMS</th>
<th>CRONBACH ALPHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibility</td>
<td>4</td>
<td>0.922</td>
</tr>
<tr>
<td>Reliability</td>
<td>5</td>
<td>0.95</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4</td>
<td>0.929</td>
</tr>
<tr>
<td>Assurance</td>
<td>4</td>
<td>0.948</td>
</tr>
<tr>
<td>Empathy</td>
<td>5</td>
<td>0.936</td>
</tr>
</tbody>
</table>

\( N =340 \)

The values of Cronbach Alpha (\( \alpha \)) for all dimensions separately are more than 0.90. By study we know that If the value of \( \alpha \) is greater than 0.8 than we can say that the model we used is reliable and will give proper results that are also reliable.

**Correlation analysis**
Correlation analysis studies the joint variation of two or more variables for determining the amount of correlation between two or more variables. If two or more quantities vary in sympathy so that movements in one tend to be accompanied by corresponding movements in the other then they are said to be correlated. There are several methods of correlation analysis. Of the several mathematical methods of measuring correlation, the Karl Pearson’s method, popularly known as Pearson’s coefficient of correlation, is most widely used in practice.

#### Table II: Correlation Matrix for Service quality

<table>
<thead>
<tr>
<th></th>
<th>TG</th>
<th>RL</th>
<th>RP</th>
<th>AS</th>
<th>EM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG</td>
<td></td>
<td>0.744</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RL</td>
<td>0.666</td>
<td></td>
<td>0.707</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>0.668</td>
<td>0.746</td>
<td>0.751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS</td>
<td>0.636</td>
<td>0.716</td>
<td>0.673</td>
<td>0.737</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>0.737</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2Tailed)

The bivariate correlation procedure has been subjected to two tailed tests of statistical significance at two different levels- highly significant (\( p < .01 \)) and significant (\( p < .05 \)). Correlation Matrix presented in Table support all hypothesized positive relationships among the studied variables with high statistical significance. The variable Tangible significantly (statistically) and positively correlated with reliability (\( r = 0.74, p < .01 \)), the Responsiveness with Assurance (\( r = 0.75, p < .01 \)) and the Assurance with Empathy (\( r = 0.73, p < .01 \)). Also the correlation between reliability and assurance, responsiveness and reliability, reliability and empathy are good correlated with each other.

**Descriptive analysis**

![Fig. 2 Mean Values for hospitals](image-url)
From the mean value of graph it is found that value of mean of empathy for hospital U2 is 4.35 which are highest among all hospitals. Hospital U3 is good at tangibles whose mean value is 4.14, for hospital I2 has service quality good in reliability, assurance and empathy. For all hospitals values of means varies from 3.95 to 4.22. This means service qualities of all hospitals are quite good.

Standard deviation for hospital U1 of tangible is 1.208 and 1.389 of assurance, for hospital I3 value of sd is 1.351 for hospital U3, for hospital D1 value of sd of responsiveness is 1.451 and sd of empathy is 1.239.

**Gap analysis**

The gap of servqual (gap between perception and expectation) is found out by the difference between average mean of perception and expectation.

**Table III: Gap analysis (E-P)**

<table>
<thead>
<tr>
<th>HOSPITALS</th>
<th>SERVICE INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>-0.062</td>
</tr>
<tr>
<td>U2</td>
<td>0.321</td>
</tr>
<tr>
<td>U3</td>
<td>0.113</td>
</tr>
<tr>
<td>I1</td>
<td>0.44</td>
</tr>
<tr>
<td>I2</td>
<td>0.035</td>
</tr>
<tr>
<td>D1</td>
<td>-0.01</td>
</tr>
<tr>
<td>OVERALL</td>
<td>0.159</td>
</tr>
</tbody>
</table>

In the ideal case, the P-E value should be zero, so the service index value should also be zero. And in our study, the value of Service Index is -0.051 which is close to 0. So hospital U1 has good service quality. For hospital I2 value of service index is -0.16 which is also nearest to 0, so we can say that the Service Quality of the hospital I2 is GOOD and provides satisfactory services. For overall hospitals service index value is 0.177 which is quite nearest to 0 mean that service quality for all hospital is quite good.

**5. CONCLUSIONS**

Because perceived quality is an important measure in influencing patients value perception and, in turn, in affecting patients’ intention to hospital services [16], the findings of the present study are of importance for hospital administrators in Madhya Pradesh with respect to the non-clinical aspects of service quality. Government efforts to decrease its expenditure on health care, and to modernize hospitals through the accreditation exercise, have successfully improved the level of service quality. In general, Malwa’s healthcare providers seem to be doing a better job in achieving customer satisfaction with regard to service quality. In order to improve service quality, it is necessary to contact employees regularly and assess their service experiences. Reliability, tangibles, assurance, responsiveness and empathy factors are considered most important by patients. These factors determine customer’s satisfaction in hospitals and may be different from determinants of satisfaction with healthcare organization as a whole.

This study largely focused on SERVQUAL being the measurement tool for measuring the service quality. With the development of healthcare industry, some more areas need to be explored. In addition, the limitation and shortcoming of this study also provide implications for future research. Future research could add extensions to this study. At the end, in this competitive market, service
quality is one of the key elements which bring customer satisfaction.

As the survey have been done only 5 - 6 hospitals of Ujjain, Dewas & Indore cities of State Madhya Pradesh of India. So this is the limitation of the study. Another limitation is Service satisfaction is a personal disposition and depends upon person to person; also it depends upon a lot number of factors, so inferences drawn by study may vary. Also we used simple random sampling method for collecting data in this study which has not good result than 100% sampling procedure. These are some limitations of present study.

Due to certain constrains, the study is limited up to a particular group of hospitals. This study can further be used as a basis for studying the service satisfaction level among the patients of the private hospitals across entire India. The inference drawn by that study can be helpful for government in formulating policies related with selection and training of staff members in private hospitals. Also the factors which are responsible for the service quality can be found out and on this basis the quality of the hospital can be improved in the hospitals of India in urban as well as in rural areas. And also the rating of the hospitals can be done by this study. It can also be used as a basis of standards and comparison for various hospitals of India. The results of this study can be used for a new hospital for improving patient satisfaction and also can get higher rate of return.

REFERENCES


[4] Shabbir et.al. (2010), “customer satisfaction is also an important issue as in other service sectors”.


[9] Shabbir et.al. (2010), “customer satisfaction is also an important issue as in other service sectors”.


