



Service Quality Improvement-An Empirical Study of Indian Railways

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ABSTRACT

Service firms in the developing country like other organizations now realizing the significance of customer oriented philosophies and turning to quality management approaches to facilitate managing their businesses. This paper has started with the concept of service quality and has demonstrated the SERVQUAL model as an effective approach to measure the quality of provided services and also for finding the customers perceptions of the service quality with support of an example. Another aim of this paper is to point out how management of service improvement can become more logical and integrated with respect to the prioritized service quality dimensions. Five dimensions in service quality (SERVQUAL), tangibility, reliability, responsiveness, empathy, and assurance (Parasuraman, Zeithaml, & Berry, 1985) have been considered for this empirical research. General purpose of this research to know some factors that impact customer satisfaction. The purpose is to know that service quality (SERVQUAL) dimensions which makes the customers satisfied, and also to know that service quality (SERVQUAL) dimensions that are dominant in influencing customer satisfaction. The research methodology was carried out in a survey cross-sectional applied to 100 respondents. The data obtained are analyzed by using reliability method, correlation and regression. Result of research showed that services offered by railways have positive impact and are significant in building customer satisfaction. Findings of this empirical research reiterate the point of view that Service Quality dimensions are crucial for customer satisfaction in railways – a burgeoning sector with high growth potential and opportunities in fast growing economies like India's.

Keywords: service quality (SERVQUAL) dimensions customer satisfaction.

I. INTRODUCTION

A. An overview of Indian economy

The economy of India is the tenth largest in the world by nominal GDP and the third largest by purchasing power parity (PPP). India recorded the highest growth rates in the mid-2000s, and is one of the fastest-growing economies in the world. India has recorded a growth of over 200 times in per capita income in a period from 1947 to 2011. The growth was led primarily due to a huge increase in the size of the middle class consumer, a large labour force, growth in the manufacturing sector due to rising education levels and engineering skills and considerable foreign investments. India is the nineteenth largest exporter and tenth largest importer in the world. Economic growth rate stood at around 6.5% for the 2011–12 fiscal years. (www.indiabudget.nic.in). The World Bank has placed it in the list of low-income economy. India's economy is diverse, depending on agriculture, handicrafts, textile, manufacturing, and a multitude of services. The two-thirds of the Indian workforce depend directly or indirectly on agriculture. However, the service sector also plays an important role in India's economy. India's major industries include textiles, chemicals, food processing, steel, transportation equipment, cement, mining, petroleum, machinery and software. India stands out for the size and dynamism of its services sector. The contribution of the services sector to the Indian economy has been manifold: a 56.4 per cent share in gross domestic product (GDP), growing by 10 per cent annually, contributing to about a quarter of total employment, accounting for a high share in foreign direct investment (FDI) inflows and over one-third of total exports, and recording very fast export growth through the first half of 2010-11. Some services have been particularly important for this improving performance in India. Software is one sector in which India has achieved a remarkable global brand identity. Tourism-

and travel-related services and transport services are also major items in India's services. Besides these, the potential and growing services include many professional services, infrastructure-related services, and financial services.

Central Statistical Organization (CSO) classification of the services sector falls under four broad categories, namely

- Trade, hotels, and restaurants;
- Transport, storage, and communication;
- Financing, insurance, real estate, and business services;
- Community, social, and personal services.

II. LITERATURE REVIEW

A. Services

The rapid development of the service sector in developed market economies and the growing scale of international transactions in services have been major features of the world's economic development over the last few decades. The growth of the service sector is expected to be an effective means of promoting economic restructuring and raising the competitiveness of new private enterprises. In several transition countries, growing exports of services have been enabled by successful institutional transformations and technological advances. Additional revenues and growth stimulated by these exports have, in turn, influenced favourably the potential for internal reforms, facilitating structural adjustments and modernization. [1]

In a broad sense, services, which are often called the "tertiary sector" of the economy, represent a diverse group of economic activities which are not directly associated with the "primary" or "secondary" sectors i.e. agriculture, mining and manufacture of goods. Production of both goods and services

typically involves the provision of human value added in the form of labour, knowledge and skills. In both cases, it can be based on high technology and advanced knowledge or, alternatively, can engage large quantities of low-skilled labour.

B. Defining Service

A Service is any act or performance that one party can offer to another that is essentially intangibles and does not result in the ownership of anything. [2]

A service is a set of singular and perishable benefits

- Delivered from the accountable service provider, mostly in close coactions with his service suppliers.
- Generated by functions of technical systems and by distinct activities of individuals, respectively.
- Rendered individually to an authorized service consumer at his/her dictated trigger, and, finally, consumed and utilized by the triggering service consumer for executing his/her upcoming business or private activity.

C. Customer Satisfaction

Customer satisfaction is the key factor determining how successful the organization will be in customer relationships; therefore it is very important to measure it. There are two principle interpretations of satisfaction, within the literature of satisfaction as a process and satisfaction as an outcome [3]. Early concepts of satisfaction research have typically defined satisfaction as a post choice evaluative judgment concerning a specific purchase decisions. The most widely accepted model, in which satisfaction is a function of disconfirmation, which in turn is a function of both expectations and performance [4].

More recently, renewed attention has been focused on the nature of satisfaction ± emotion, fulfilment and state [3]. Consequently, recent literature adds to this perspective in two ways. First, although traditional models implicitly assume that customer satisfaction is essentially the result of cognitive processes, new conceptual developments suggest that affective processes may also contribute substantially to the explanation and prediction of consumer satisfaction. Second, satisfaction should be viewed as a judgment based on the cumulative experience made with a certain product or service rather than a transaction-specific phenomenon. There is general agreement that: Satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations[2].

D. Service Quality

Much of the initial work in developing a model to define and assess service quality has been conducted by Parasuraman, Zeithaml, and Berry. In conceptualizing the basic service quality model PZB, identified ten key determinants of service quality as perceived by the company and the consumer reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customer and tangibility. They noted that discrepancies existed between the firm's and the customer's perceptions of the service quality delivered. In investigating these discrepancies, PZB, assert that service quality can be assessed by measuring the discrepancies or "gaps" between what the customers expects and what the consumer perceives he receives. Arguing that the magnitude, and direction of this gap, directly affects the service quality that the consumer perceives, noted that customers would have perceptions of high service quality to the extent that their expectations are lower than the perceived service performance. If the converse were true, customers would perceive low service quality. Service quality is about ensuring customers, both internal and external, get what they want. Customer satisfaction is the feeling or attitude of a customer towards a product or service after it has been used. Satisfaction and service quality are often treated together as functions of customer's perceptions and expectations. Customer satisfaction is determined by defining customer perceptions of quality, expectations, and preferences. 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. In search of competitive advantage, both practitioners and academics are keen on accurately measuring service quality in order to better understanding its essential antecedent and consequences, and ultimately establish methods for improving and measuring service quality.[7]

This project start with the concept of service quality, customer satisfaction and followed by study on different models of measuring service quality while focusing mostly on SERVQUAL approach, which is the most common method for measuring service quality [8]. The purpose of the research is to find the most important service quality dimensions that affect customer satisfaction in Indian railway. Since SERVQUAL model is founded a comprehensive method, we are going to adopt and deploy it to encompass various aspects of service quality in relation to the railway in Ujjain. Besides, a questionnaire has been designed based on literature in order to examine all service quality dimensions in SERVQUAL model.

E. Definition of Service Quality

Some important definitions of service quality as defined by the researchers until now are "Service quality is determined by the differences between customer's expectations of services provider's performance and their evaluation of the services they received" [7].

"Service quality can be defined as "the difference between customers expectations for service performance prior to the service encounter and their perceptions of the service received" [9].

"The Service quality is the subjective comparison that customers make between the quality of the service that they want to receive and what they actually get" [10]

F. Servqual

The SERVQUAL instrument developed by Parasuraman has proved popular, being used in many studies of service quality. This is because it has a generic service application and is a practical approach to the area. A number of researchers have applied the SERVQUAL model to measure service quality in the Indian railway, with modified models to suit specific situations. The SERVQUAL instrument consists of 26 statements for assessing consumer perceptions regarding the quality of a service. Respondents are asked to rate their level of agreement or disagreement with the given statements on a 5-point Likert scale. Consumer's perceptions are based on the actual service they receive. The statements represent the determinants or dimensions of service quality. Refinement of this work reduces the original service dimensions used by consumers to judge the quality of a service from ten to five. The 5 key dimensions [7] that were identified are given in Table 1.

**TABLE 1
SERVQUAL ATTRIBUTES AND DEFINITION ACCORDING TO RAILWAYS**

Dimension	Service quality
Tangibles	Appearance of physical facilities, equipment, personnel and written materials
Reliability	Ability to perform the promised service dependably and accurately
Responsiveness	Willingness to help customers and provide prompt service
Assurance	Employees' knowledge and courtesy and their ability to inspire trust and confidence
Empathy	Caring, easy access, good /communication, customer understanding and individualized attention given to customers

Various scholars have considered different dimensions of service quality. Gronoos considers technical, functional, and reputational quality [11]. Lehtinen and Lehtinen consider in-

teractive, physical, and corporate quality [12] and Hedvall and Paltschik focus on willingness and ability to serve and the physical and psychological access to the service [13]. In conceptualizing the basic service quality model, which identified 10 key determinants of service quality as perceived by the service provider and the consumer namely - reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding or knowing the customer, and tangibility to formulate a service quality framework, SERVQUAL [4]. Later they modified the framework to five determinants: reliability, assurance, tangibles, empathy, and responsiveness, or RATER. The techniques of customer satisfaction analysis allow the critical aspects of the supplied services to be identified and customer satisfaction to be increased [7].

The literature review also shows that researchers have identified different factors of quality in the context of different services. Transit Cooperative Research Plan defines transit quality as “the overall measure or perceived performance of transit service from the passenger’s point of view” [15]. Some identified the attributes that passengers use to evaluate the service quality of Indian Railways as reliability, assurance, empathy, tangibles, and responsiveness. It was found that passengers were “moderately satisfied” to “satisfied” on these dimensions [14]. They identified employee behaviour as most important determinant of customer (passenger) satisfaction with Indian Railway services [16]. Determinants of Customer Satisfaction on Service Quality and study of Railway Platforms in India finds that five factors are considered important for determining satisfaction with railway Platforms [17]. It used SERVQUAL and model of service quality gaps for determining and prioritizing critical factors in delivering quality services. Outcomes of the study outline the fact that since SERVQUAL closes one of the important service quality gaps associated with external customer services; it could be extended to close other major gaps. An evaluation of the quality of customer service delivery offered by the east London public transport commuter rail service provider and these collective findings create the opportunity for Metrorail to improve their quality of service as perceived by commuters. According to marketing research of railway passenger service quality, the Biggest “GAP” occurs when it comes word to the equipment for providing the transport, timely and flawlessly realized transportation, safety and satisfaction [18]. The Impact of Service Quality Management (SQM) Practices on Indian Railways - A Study of South Central Railways had identified the order of importance for these eight factors, identified as the most important and the least important factors [12].

IV. METHODOLOGY

A. Introduction

The word research is composed of two syllables, re and search.re is a prefix meaning again, anew or over again search is a verb meaning to examine closely and carefully, to test and try, or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles. Research is a structured enquiry that utilizes acceptable scientific methodology to solve problems and create new knowledge that is generally applicable. Scientific methods consist of systematic observation, classification and interpretation of data. Research can be classified from three perspectives:

1. Application of research study.
2. Objectives in undertaking the research.
3. Inquiry mode employed.

From the point of view of application, there are two broad categories of research:

- Pure research.
- Applied research.

From the viewpoint of objectives, a research can be classified as

- Descriptive
- Correlational
- Explanatory
- Exploratory

From the process adopted to find answer to research questions – the two approaches are:

- Structured approach
- Unstructured approach

To meet the mentioned objectives of the present study, the proper methodology among the mentioned above is required to be designed. In the present study the focus is on-

- (1) Survey to identify the level of satisfaction of a particular service.
- (2) Data analysis and interpretation to determine statistical parameters of importance.

We have conducted a pilot survey. A total of 100 respondents were strategically selected to conduct the pilot survey in different field. The pilot study has been conducted to identify the factors that mostly satisfy the customer. Another reason of the pilot study is to refine the test instrument. On the basis of factors identified in the pilot study stage, a structured questionnaire has been constructed on Likert 5 point scale to conduct a survey. The questionnaire includes questions on each of the 26 variables. In this project, software Statistical Package for Social Sciences 16(SPSS 16) which provides the descriptive statistics and other statistical tools is used.

The data obtained from the passengers are entered in SPSS sheet for calculating the descriptive statistics, Pearson correlation, and Reliability test and Multiple Regression analysis. This Chapter deals with the methods used to calculate the service quality and passengers perception of service organization.

V. RESULTS AND DISCUSSION

A. Introduction

This chapter presents result obtained from the analysis of data and discussion about obtained results. Mean, Pearson correlation coefficient, Reliability and Multiple Regression analysis is done to measure the customer perception in Railway System. Data analysis is done in previous chapter in which relationship between various factors of SERVQUAL are calculated. Result of this study shows the satisfaction level of customers who are using Railway service.

Descriptive result interpretation

- The results as per the statistics for Gender reveals that the mean for reliability is highest (M=2.75).
- The results as per the statistics for Different age groups reveals that the mean for reliability is highest (M=2.75).
- The results as per the statistics for Income groups reveals that the mean for empathy is highest (M=2.8433).
- The results as per the statistics for different occupation reveals that the mean for reliability is highest (M=2.75).
- The overall statistical data reveals that according to the customer’s perception, among all the five variables of SERVQUAL under study, RELIABILITY gets the highest score.
- Mean of all five SERVQUAL factors is 2.559 which is the average of overall SERVQUAL attributes which means that the customers are somewhat agree about the overall services of railway as per the Likert five point scale. All the variables are critical variable with mean range between 2.1 and 3.
- Result of correlation shows many significant positive correlations between factors which are presented in Table III below.

**TABLE III
RESULT OF CORRELATION BETWEEN FACTORS**

Variables	Positive correlation with other variables
Tangibles	Reliability, Responsiveness, Assurance, Empathy

Reliability	Responsiveness, Assurance, Empathy
Responsive-ness	Assurance, Empathy
Assurance	Empathy

The above Table III shows the positive correlation among all the five attributes of SERVQUAL model. For example, as shown in first row the tangibles attribute is positively correlated with the reliability, responsiveness, assurance and empathy.

- Result of multiple regression analysis showing positive relationship between dependent and independent variables is presents in Table IV.

**TABLE IV
RESULT OF MULTIPLE REGRESSIONS BETWEEN FACTORS**

Dependent Variable	Positive relation with independent variable
Reliability	Tangibles, Responsiveness, Assurance,
Responsiveness	Tangibles, Empathy , Assurance,

The results obtained from this study shows that level of SERVQUAL is not very good but overall mean of the SERVQUAL attribute is less which shows that service given by the Railways agrees to a very less amount. The level of service can be increased by improving various attributes such as tangibles, reliability, responsiveness, assurance, empathy. These variables can contribute to a large extent to improve the SERVQUAL.

B. Conclusions

Following major Conclusions are drawn after careful analysis of data and are discussed below:

- The major contribution of this study is the identification of factors that determine customer satisfaction with the quality of services provided in Indian Railway. The study is based on empirical research.
- Determinants identified are reliability and responsiveness, assurance, empathy, tangibles.

- In order to improve service quality, it is necessary to contact employee regularly and assess their service experiences. Tangibles, assurance and empathy factors are considered most important by customers. These factors determine customer’s satisfaction for railway services.
- The study thus provides a direction for better railway services whereby areas for improving services may be identified and customer satisfaction, specifically in railway, may be enhanced.
- With the knowledge and experience of the customers, the service organizations can judge how well the organization or employee performed on each dimension and the governing bodies could identify the weakness in order to make improvement. Railway needs to concentrate on reliability and responsiveness.
- The overall mean of all the attributes comes out to be below average which is an indication that there is a need of improvements in the services of railway in each and every sector.

C. Limitations

The present research had certain limitations.

- Firstly, the data were gathered from a specific geographic area of Ujjain city. As a result, the study may have contained some information and results that can be specific only for the railway services of Ujjain. Hence, the results of this study cannot be generalized.
- Secondly, the results of this study may not have been representative of the whole population, due to the fact that a convenience sampling method was used to collect the data.
- Some people might not give accurate response which affects the result of study.
- Some respondents have not taken the questionnaire seriously and hence the researchers had to discard those responses.
- Finally, the study is limited to only railway industry and cannot be generalized across the different transportation modes.

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