



A STUDY ON DETERMINANTS INFLUENCING MANAGEMENT OF QUALITY IN PUBLIC TRANSPORTATION

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Abstract: Services are intangible services that include one person (the service provider) providing an act, performance, or experience to another (the service consumer or customer). Services, unlike tangible things, cannot be handled, touched, or seen before purchasing. Typically, service is an intangible element that can be given through a contact between the service provider and the client or through the service provider's technical systems to the customer. Public transportation is an important component of urban and rural infrastructure. Service quality is an important feature of public transportation that has a direct impact on customer happiness and the overall performance of the system. The level of satisfaction is directly linked to the level of service quality. Passenger service quality is becoming increasingly important, attracting the attention of practitioners, academics, and researchers. Studying service quality in public transportation is a worthwhile task that entails investigating several areas of service delivery within the transportation system. The current study is a critical evaluation of previous studies on the quality of service in road public transit. The purpose of this study is to define the dimensions for evaluating service quality in public transportation, as well as to design a model for evaluating service quality.

Keywords: Service, Quality, Public transportation, Service delivery, facilities, Customer, Satisfaction.

I. Introduction

Services are intangible offerings that involve an act, performance, or experience provided by one party (the service provider) to another (the service consumer or customer). Unlike physical products, services cannot be held, touched, or seen before the purchase. Typically service is an element that is intangible in nature and can be delivered out of an interaction between the provider of service and the customer or through the technical systems of the service provider to the customer. The marketing of services presents unique challenges and considerations compared to the marketing of tangible goods. Service marketing strategies often emphasize the people, processes, and physical evidence (tangible cues) associated with the service to create a positive and memorable customer experience. This approach helps differentiate services in the market and build strong, long-term relationships with customers. Because of the inherent characteristics of the service, it varies from person to person and system to system. Hence, determining quality in service is indescribable for a particular person or system. According to Philip Kotler and Gary Armstrong 'service quality' is "the ability of a service firm to hang on to its customer".

II. Need and Significance of the Study

Public transportation refers to a system of transportation that is available for use by the general public, typically consisting of vehicles such as buses, trains, subways, and trams that operate on scheduled routes with designated stops. Public transportation is a vital part of urban infrastructure and plays a crucial role in providing mobility, reducing traffic congestion, lowering emissions, and promoting sustainable urban development.

Service quality is a critical aspect of public transportation that directly influences customer satisfaction and the overall effectiveness of the transportation system. Service quality is directly proportional to the level of satisfaction. Efforts to enhance service quality in public transportation require a holistic approach, considering both the tangible aspects (vehicles, facilities) and intangible aspects (reliability, communication). However, the increasing needs of the passengers provide the scope of enormous opportunities for public transport corporations to develop the passenger base and to retain the existing passengers. Passenger service quality is growing importance now a day's drawing the attention of practitioners, academicians and researchers. Studying service quality in public transportation is a valuable endeavor, and it involves examining various aspects related to the delivery of services within the transportation system.

The importance of service quality in public transportation cannot be overstated, as it directly impacts the satisfaction of passengers, the overall effectiveness of the transportation system, and the success of urban mobility initiatives.

III. Objectives of the Study

The present study is a descriptive study performed with the following objectives.

1. To review and understand the existing literature on evaluating service quality in public transportation.
2. To identify the dimensions required to analyze the quality in service under public transportation.
3. To propose a model to evaluate the service quality.

IV. Review of Literature

Public transportation is the prime carrier of the mobility system in the developing economy like India. Focusing on service quality in public transportation is significantly important. A literature review on service quality in public transportation encompasses a wide range of studies, theories, and frameworks that explore the various dimensions, factors, and implications of service quality within the context of public transit systems.

Eboli, L., & Mazzulla, G. (2008) focussed on how customers of a transport system have a certain idea of how good the service is, which is a sign of the transport system. This study presented a clearly defined study method for figuring out which parts of service quality should be worked on first. Tripathi, V., Kumar, A., & Nema, G. (2012) opined that Despite a geometric growth in travel demand, India's public transport utilization has declined. The researchers have attributed that the variables like infrastructure, poor service quality, and socio-cultural stigmas connected with public transit in India contributed to this fall.

Tripathi, V., Kumar, A., & Nema, G. (2012) elaborated that The effective management of service quality plays a pivotal role in enhancing the utilization of public transportation. In this study, the authors employed the SERVQUAL framework as a tool for assessing the service quality of a specific public transportation mode. Silcock(1981) in his study on public transport industry expressed that accessibility, reliability, comfort, convenience and safety are the major dimensions in evaluating the service quality. Bakti and others(2015) identified the dimensions of service quality and test the convergent and discriminant validity of the dimensions. This study used a model called P-TRANSQUAL consists of four dimensions, which are comfort, tangible, personnel, and reliability to measure service quality. Vilakazi, A. M. (2013) focussed on attitudes of

passengers regarding the quality of service provided by the bus and minibus taxi businesses in South Africa. The study found that there was no significant relationship between gender, income, and the overall service quality given by minibus taxis.

Ueasangkomsate, P. (2019) evaluated service quality using modified SERVQUAL in Thai public road passenger transport. The study found that on-board security, personnel civility and expertise, and bus driver competency affected passenger transport service quality. Technical efficiency are significantly in evaluating service quality is impacted by factors such as operational profit, investment, and business size. The large-scale operators with a greater capacity for investment are often more technically efficient than smaller-scale operators (Jarbouli and others, 2013).

Cunningham, L., Young, C., & Lee, M. (2000) have investigated how customers rate the quality of a company's services is essential for developing effective marketing and management strategies. This research shows that triangulation may be used to evaluate transportation services. Surveys, critical incident procedures, and focus group interviews are used to get information from commuters and transportation authorities alike. The consideration of passenger perceptions is of utmost importance since the viewpoint of customers holds significant relevance in the assessment of a transportation service's performance (Eboli, L., & Mazzulla, G. (2011)). According to Rajsman, M., & Škorput, P. (2022) due to increased competition between road carriers on the market for transport services, achieving the appropriate level of quality transport service is crucial for the operations of carriers in the public road intercity line passenger transport. For the survival and growth of public road passenger carriers, an accurate evaluation of their attained competitiveness is essential. Authors have proposed a multi-criteria model for assessing the quality of transportation services based on the passenger satisfaction measurement method. Madhavaiah, C., & Rao, S. D. (2007) have studied four hundred and two passengers to evaluate the relative merits of APSRTC and commercial Andhra Pradesh road transportation. results showed that riders of APSRTC buses and those of commercial travel operators had vastly different expectations and views of the level of service they received. Govender, K. K (2014) have opined that the quality of service offered by public buses was affected by factors like dependability, comfort, service, and safety, whereas that of minibus taxis was affected by factors including dependability, price, and service.

Nwafor, M. E., & Onya, O. V. (2019), explains that the Nigerian road service faces serious obstacles. It was suggested that the government take immediate action to create strategies and systems to make road restoration and building easier. Travelers' expectations of road transportation systems' service quality guide transportation policymakers' technological needs according to Motevalli Habibi, H., Mirzahosseini, H., & Afandizadeh, S. (2022). The hybrid FQFD-ER results showed that the right road lanes in width and number increase service quality.

V. Models to evaluate Service Quality

Multiple approaches and frameworks exist for assessing service quality in several industries. The SERVQUAL model is a highly utilized model. SERVQUAL, created by Parasuraman, Zeithaml, and Berry, outlines five fundamental aspects of service quality. The five dimensions of service quality are as follows: Tangibles, which refer to the physical appearance of facilities, equipment, personnel, and communication materials; Reliability, which pertains to the ability to perform the promised service dependably and accurately; Responsiveness, which involves the willingness to help customers and provide prompt service; Assurance, which encompasses the knowledge and courtesy of employees, and their ability to inspire trust and confidence; and Empathy, which involves the provision of caring, individualized attention to customers. In order to assess the quality of service, it is customary to gauge the perceived performance in several aspects and then compare it with the customers' expectations. The disparity between perceived performance and customer expectations aids in identifying areas that require enhancement. Another often employed model is the SERVPERF model, which is a modified version of SERVQUAL. This model exclusively emphasizes service performance rather than the disparity between expectations and perceptions. Numerous academics have acknowledged the necessity of creating separate and reliable metrics for evaluating service quality. Various models are formulated in management literature. Another approach for assessing Service Quality is the Gap Model, often known as Gap Analysis. This approach discerns the disparities that may arise between client anticipations and appraisals. An analysis of these gaps can be conducted in order to enhance the quality of service.

The Customer Satisfaction Index (CSI) quantifies customer satisfaction by evaluating their interactions with a particular service. Frequently, it entails conducting customer surveys and gathering feedback.

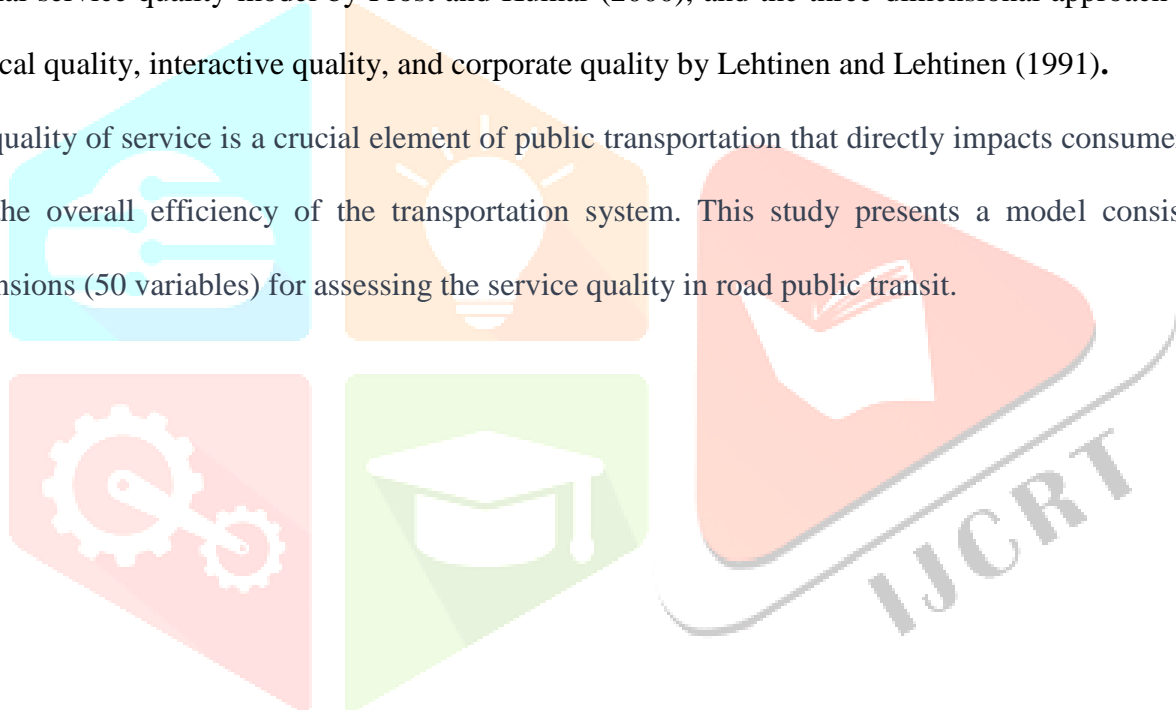
Customer Effort Score (CES) measures the level of ease customers experience in accomplishing their objectives when utilizing a service. The Net Promoter Score (NPS) is a metric that assesses the probability of

customers advocating a service to others. The question is straightforward: "On a scale of likelihood, how probable are you to recommend our service to a friend or colleague?"

ISO 9000 principles, first designed for quality management systems, can also be extended to service sectors to guarantee continuous service quality. Six Sigma is a data-driven approach that seeks to enhance processes and minimize failures. It is applicable to service processes in order to enhance quality.

Several other models have been developed in the literature to identify the factors that determine service quality and the appropriate techniques for measuring it. These models include the attribute service quality model by Haywood-Farmer (1988), the synthesized model of service quality by Brogowicz et al. (1990), the attribute and overall affect model by Dabholkar (1996), the P-C-P attributes model by Philip and Hazlett (1997), the internal service quality model by Frost and Kumar (2000), and the three-dimensional approach comprising physical quality, interactive quality, and corporate quality by Lehtinen and Lehtinen (1991).

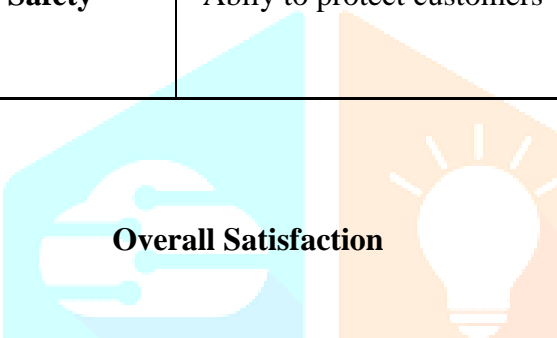
The quality of service is a crucial element of public transportation that directly impacts consumer happiness and the overall efficiency of the transportation system. This study presents a model consisting of 10 dimensions (50 variables) for assessing the service quality in road public transit.



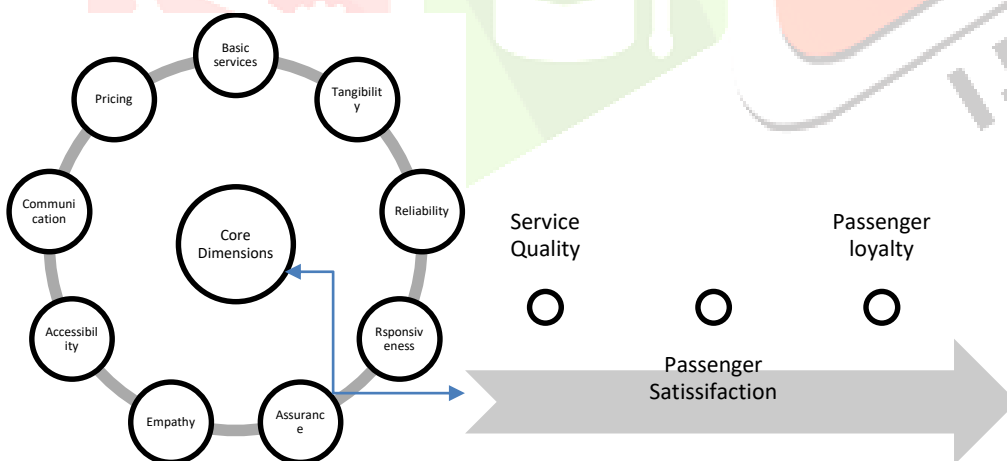
VI. Variables and Dimensions in measuring service quality

Assessing and enhancing the quality of service can lead to more earnings and a better reputation for the business. Irrespective of the sector, the level of service quality can significantly influence the company's capacity to meet consumer demands and maintain competitiveness. Acquiring the knowledge and ability to assess and enhance service quality is a highly valuable expertise, involving exhaustive research and specialization in the field.

| Dimension | Meaning | Variables |
|-------------------------|---------------------------------------|---|
| Basic facilities | Core and much needed | 1. Sufficiency of benches in bus stations/stops |
| | | 2. Lighting at the bus stations/stops |
| | | 3. Availability of Fans in the bus stations |
| | | 4. Cleanliness of buses/bus stations and stops |
| | | 5. Maintenance of bus stations |
| Tangibles | Visible elements | 1. Condition of buses |
| | | 2. modern technology |
| | | 3. Appearance of staff |
| | | 4. Onboard comfort |
| | | 5. Complaints and suggestions box |
| Reliability | Able to be trusted | 1. Consistency and disruptions |
| | | 2. sympathetic and reassuring |
| | | 3. Dependable in customer service |
| | | 4. Promised services on time |
| | | 5. APSRTC bus schedules are reliable |
| Responsiveness | Ability to react quickly and promptly | 1. Prompt service |
| | | 2. Staff willingness to help |
| | | 3. Response at enquiry counters |
| | | 4. Alternative arrangements |
| | | 5. APSRTC tells customers exactly when the services will run/stop |
| Assurance | Able to deliver services competently | 1. Trusting employees |
| | | 2. Abilities and competencies of staff |
| | | 3. Politeness of staff |
| | | 4. On-board security |
| | | 5. Reliable transit time |
| Empathy | Thinking from customer view | 1. Personal attention |
| | | 2. Knowing passenger needs |
| | | 3. Delivering best experience to customers |
| | | 4. Serving best interest of customers |
| | | 5. Convenient operating hours |
| Communication | Providing required information | 1. Clarity of announcements |
| | | 2. Accuracy in announcements |
| | | 3. Name boards are legible and understandable |

| | | |
|-----------------------------|--|--|
| | | 4. Availability of staff for enquiry |
| | | 5. Internal communication |
| Pricing | Value for money | 1. Reasonable ticket pricing |
| | | 2. Bare minimum luggage price |
| | | 3. Value for the money paid |
| | | 4. Special concessions for seniors |
| | | 5. Special ticket pricing for students |
| Accessibility | Ability to reach customer | 1. Bus stations and stops are accessible |
| | | 2. Buses are available at all times |
| | | 3. Sufficient allotment of seats for ladies and senior citizens |
| | | 4. Attention to women, children, and the handicapped. |
| | | 5. Reaching destination on time |
| Safety | Ability to protect customers | 1. Safe mode of transportation |
| | | 2. Provision of fire exit |
| | | 3. Provision of a first aid box |
| | | 4. Sufficient supporting poles |
| | | 5. Closed doors |
| Overall Satisfaction |  | 1. Same service for all time |
| | | 2. Overall rating |
| | | 3. Future usage |
| | | 4. Is there anything else you would like to add or any other comments or suggestions you have regarding public transportation services in your area? |

VII. Proposed model to evaluate service quality



VIII. Implications

Road transportation is prioritizing customer retention, satisfaction, and safety rather than just attracting new customers. Other transportation models exist. Transportation service quality is an increasing concern. Quality in service is a continual process that involves assessing current service levels and delivering them to increased standards. Public road transport companies face the challenge of portraying their services as market-worthy.

Public road transit is still seen as a system for the poor in many areas. Public transport providers should identify service quality dimensions to enhance passenger value and improve service performance. Higher-level individuals must examine the link between customer satisfaction and service quality, as the former precedes the latter. Public transportation systems should serve customers' infrastructure, safety, and social needs. This study suggests that service providers might use its findings to improve their delivery and satisfy client expectations.

IX. Acknowledgements

The present study was conducted as a part of a minor research project under ICSSR (File no-02/124/2022-23/RP/MN) on “Analysing the service quality in public transport system among the rural commuters to build sustainable mobility-A study with reference to North East Coast(NEC)Region of Andhra Pradesh. This study is supported by ICSSR, New Delhi. The implications and elements of this study are majorly the part of the minor research project.

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