

A Study on Service Quality of Facilities and Amenities in the Indian Railways at Vijayawada Railway Station

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Abstract: The service quality is the heart of the service sector. The intangible aspects will influence the satisfaction of the customers. The journey of the train is the bundle of expectations of the passengers. This paper focuses on how the South-Central Railway offered different amenities to the passengers and the level of satisfaction of the users of services in various parameters like drinking water, cleanliness, booking facilities, security, parking facilities, toilets, display boards lighting, and illumination facility, etc. the findings from the study identifies the relationship between various amenities and passenger satisfaction. The suggestions are drawn based on the feedback given by the passengers.

Keywords: Railways, Passengers, Amenities, Satisfaction, Cleanliness, SerQual.

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I. INTRODUCTION

The railway system in India, operated by Indian Railways, forms the primary mode of long-distance transportation for both passengers and freight. The Indian railway network has been an integral part of the nation's social, political, and economic fabric since its inception. The expansive railway network has integrated markets across the country and connected people from all parts of India. It has been intertwined with the country's economic development, fuelling the growth of industries and agriculture. From humble beginnings in 1853 with the first train running between Mumbai and Thane covering 34 kilometers, Indian Railways has grown tremendously. It now spans more than 7,000 stations across a route length of over 65,000 kilometers, with a fleet of over 8,000 locomotives, more than 42,000 passenger coaches, around 5,000 auto rickshaws, and over 2,30,000 wagons as of 2023. The growth of Indian Railways since the mid-19th century has been phenomenal, playing a vital role in India's economic, industrial, and social progress.

Indian Railways is the second largest rail system in the world under single management. It has become part and parcel of the country's socio-economic life, impacting not

only its culture, and socioeconomic activities but also largely influencing our art, history, and literature besides unifying the nation's people. The Railway traveler today expects much more from the system than in the past in the form of amenities. The image of the Railways is largely dependent upon the quality of passenger services. It should be a continuous endeavor to improve railway users' services. A large area of activities of the Railways is focused on passenger services and safety. It is the true motto of the Railways' functioning. Apart from the ongoing measures, the Railways has initiated several special steps to enhance safety and security standards.

II. REVIEW OF LITERATURE

According to some studies conducted by Leonard & Sasser(1982), Cronin & Taylor(1992), Gammie(1992), Hallowell(1996), Chang & Chen(1998), Gummeson(1998), Lassar et al(2000), Silvestro & Cross(2000), Newman(2001), Sureshchandaret al(2002), and Gurău(2003), the last few years have seen service quality become a major area of concern to practitioners, scholars, and managers due to its powerful influence on business performance, tourism, customer satisfaction, customer loyalty, and productivity.

Another investigation undertaken by Qasem Saeed et al. (2021) in China also assessed how service quality impacts satisfaction for the hospitality industry in Changsha, China based on guest surveys conducted by 167 people. According to their finding, all service quality factors positively relate to satisfaction. Assurance had the greatest influence, whereas the effects of empathy and responsiveness were also significant, but lesser by comparison.

Saleem and Raja (2014) studied the influence of service quality on customer satisfaction, brand image, and loyalty in Pakistan's hotel industry. The researcher's primary data through questionnaires in 5- and 8-star hotels in hotels and achieved a response of 86%. Data was analysed using SEM (structural equation modelling). The analysis indicated that customers who are loyal and satisfied benefited from the high service quality that was provided.

This means that a strong brand identity was associated with high client loyalty. The research demonstrates that for the hotel sector to improve customer satisfaction, loyalty, and brand image, they have to provide superior service.

Furthermore, Padlee and colleagues (2019) examined the relationship between service quality and customer satisfaction within the Malaysian hotel sector. They also examined the potential impact of customer pleasure on behavioral intentions. The study employed a revised questionnaire derived from previous research, which was sent to patrons of two suburban hotels. Padlee et al. (2019) conducted a study using multiple regression analysis to study the influence of four factors of service quality (staff behavior, hotel amenities, physical evidence, and meal quality) on customer satisfaction. The primary factor that had the greatest impact on satisfaction was the quality of the meal. Subsequently, the conduct of the staff and the facilities provided in the rooms followed.

III. CONCEPT OF SERVQUAL MODEL

SERVQUAL is a method for gauging service quality based on the difference between the expected and experienced service by the customers. It was developed in

1985 by Parasuraman, Zeithaml and Berry, have identified 10 factors

- Reliability – the quality of consistently performing and doing something correctly on the first attempt.
- Responsiveness – the inclination of the workforce to deliver services whenever they are needed.
- Competence – the required skills and knowledge needed to execute a particular task.
- Access – being approachable, including eye contact,
- Courtesy – the consideration given to others by the contact person, such as being polite, respectful, and friendly.
- Communication -providing information to clients and customers for enable them to make viable decisions in a manner they understand clearly.
- Credibility-trustworthiness, believability, and honesty while having the client's interest at heart.
- Security, – having no risk, danger, or uncertainty.
- Understanding/ knowing the customer, – making efforts to understand the specific needs of a customer.
- Tangibles, – the physical evidence like personnel appearance that confirms a service was provided.

IV. STATEMENT OF THE PROBLEM

The quality of services provided by railway systems is a key factor in ensuring passenger satisfaction and operational efficiency. In India, where the railway network serves millions daily, examining specific stations becomes imperative to understand general service quality dynamics. Vijayawada Railway Station, as a critical junction in the Southern Railway zone, presents a unique case for such an analysis. It serves as both a transit point for long-distance travelers and a hub for regional services, making its facilities and amenities essential for passenger comfort. Despite its significance, anecdotal evidence suggests a varying level of service quality, encompassing aspects from cleanliness to accessibility. This study aims to systematically explore these service attributes, pinpoint deficiencies, and recommend improvements, thereby contributing to enhanced user experiences and informed policy-making in the Indian Railways' framework. Through this lens, the investigation into service quality becomes not only relevant but vital for sustainable railway operations.

V. ANALYSIS AND INTERPRETATION

Table 1 Frequency of the Visit of the Respondents:

Age	Daily	Weekly	Monthly	Yearly	Total
less than 20 years	3	3	0	2	8
21-30 years	5	4	8	39	56
31-40 years	3	4	8	5	20
41-50 years	0	1	1	7	9
above 51	0	0	0	7	7
Total	11	12	17	60	100

Table 2 Chi-Square Tests

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.850	12	.001
Likelihood Ratio	33.962	12	<.001
Linear-by-Linear Association	4.241	1	.039
No. of Valid Cases	100		

Most respondents fall in the age group of 21-30 years, followed by 31-40 years. The age group "less than 20 years" has a relatively lower count. The majority of respondents visit the Vijayawada Railway Station either weekly or monthly. Daily visits are more common among respondents aged 21-30 years. Yearly visits are relatively less common across all age groups. The Chi-Square tests evaluate whether there is a significant association between age and the frequency of visits. The Pearson Chi-Square and Likelihood Ratio tests both suggest a significant association ($p < 0.001$), indicating that age and frequency of visits are not

independent variables. The Linear-by-Linear Association test also shows a significant association ($p = 0.039$), suggesting a linear trend in the association between age and frequency of visits.

The results of the Chi-Square tests indicate that there is a statistically significant association between age and the frequency of visits to Vijayawada Railway Station. The detailed cross-tabulation provides insights into the specific patterns of this association across different age groups.

Table 3 Respondents' Opinion on the Overall Cleanliness of the Station:

		Poor	Unsatisfactory	Satisfactory	Good	Outstanding	Total
Age	less than 20years	3	2	1	2	0	8
	21-30 years	4	2	25	23	2	56
	31-40 years	2	2	12	3	1	20
	41-50 years	0	0	4	3	2	9
	above 51	0	0	5	1	1	7
Total		9	6	47	32	6	100

Table 4 Chi-Square Tests

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	29.339 ^a	16	.022
Likelihood Ratio	26.301	16	.050
Linear-by-Linear Association	3.304	1	.069
No. of Valid Cases	100		
a. 20 cells (80.0%) have an expected count of less than 5. The minimum expected count is 42			

Most respondents across all age groups rated the cleanliness as either satisfactory or good. The age group 21-30 years has the highest count of respondents who rated cleanliness as satisfactory. Respondents aged less than 20 years and 31-40 years have a higher count of poor ratings compared to other age groups. The outstanding rating is not given by respondents aged less than 20 years. The Chi-Square tests assess the relationship between age and cleanliness ratings. The Pearson Chi-Square and Likelihood Ratio tests suggest a significant association ($p = 0.022$ and $p = 0.050$, respectively), indicating that age and cleanliness ratings are not independent. The Linear-by-Linear Association test has a p-value of 0.069, suggesting a trend, although not statistically significant at the conventional 0.05 significance level.

The note mentions that 80% of cells have expected counts less than 5, with the minimum expected count being 0.42. This suggests that caution should be exercised in interpreting the results, as the Chi-Square test assumptions may not be fully met due to low expected counts in some cells.

The Chi-Square tests indicate a statistically significant association between age and cleanliness ratings. However, the cautionary note about expected counts suggests that the results should be interpreted with care, and further investigation may be needed to explore the patterns in more detail.

VI. FINDINGS

The Chi-Square tests suggest a potential association between occupation and booking preferences, but the significance level is not strong. The expected count note indicates caution due to low expected counts in some cells. Further investigation may be needed to explore the patterns in more detail, and the results should be interpreted with care.

A. Through a passenger satisfaction survey conducted at Vijayawada railway station, the following key findings were noted:

➤ Cleanliness:

- Only 32% of passengers rated the overall cleanliness of the station as good.
- Platforms were found littered with garbage at certain locations.
- Cleaning of toilets and drinking water facilities needed improvement.

➤ Seating:

- Nearly 60% of passengers faced issues finding seats during peak hours on platforms.
- Seating capacity was inadequate compared to average footfall.
- Most seats were found broken or in poor condition.

➤ Food and Retail:

- Only 49% of passengers were satisfied with the current food options available.
- Limited stalls served fast-moving snacks but quality needed upgrading.
- No major food courts or retail shops were present.

➤ Staff Assistance:

- Only 42% of passengers found staff behavior courteous and helpful.
- Staff training was required to enhance customer service orientation.

B. Footfall analysis showed platforms getting overcrowded during 6-9 am and 5-8 pm peak hours daily. Basic amenities like drinking water and clean toilets were insufficient to cope with the surge in passengers.

- Daily average footfall is around 50,000 passengers with peaks during festive season touching 70,000.
- Weekday footfalls range from 30,000-40,000 while weekends see higher traffic of 40,000-60,000.
- Morning and evening hours from 6-9 am and 5-8 pm see the highest rush with 10,000-15,000 passengers per hour utilizing the station.
- Long-distance trains contribute to over 70% of total footfall. The remaining 30% is accounted by suburban trains within the district.
- Nearly 55% of passengers are male while 45% are female. Youth and working adults from 18-45 years form the majority at 65%.

- Platform utilization shows Platform 1 handling the highest traffic of 15,000 passengers daily followed by Platforms 2, 5 and 8 with 10,000 each. Other platforms see 5,000-8,000 footfalls.
- Analysis of peak hour footfalls helped determine the requirement of additional amenities like benches, water kiosks, shops/stalls on a platform.
- Spatial analysis of passenger flows helped identify choke points and scope to decongest specific areas through better signage and crowd management.

The footfall analysis provided valuable insights into demand patterns, space planning and infrastructure augmentation needs to handle the projected traffic in future.

➤ Train Information Systems:

The existing system of static display boards and manual announcements by staff for providing train information was found to be outdated based on the passenger feedback and requirements:

- Static boards displayed pre-printed paper notices which were changed manually on train schedule changes. This led to incorrect or delayed information many times.
- Announcements by staff were inconsistent due to human errors and delays. Not all passengers could hear them clearly especially during peak hours.
- No real-time details were provided on estimated arrival/departure times, platform changes, delay updates etc. Passengers faced difficulties in making informed decisions.
- The system was ineffective in handling unexpected disruptions or diversions requiring frequent updates.
- No multilingual support was available to cater to the diverse passenger demographic.
- Digital displays and infotainment systems present at other major stations were lacking at Vijayawada hampering connectivity experience.
- Passengers expressed dissatisfaction with the existing arrangements and highlighted the need for upgrading to automated systems for seamless travel.
- Benchmarking with global standards showed modern real-time digital signage, announcement, and passenger information systems becoming a necessity.

Therefore, it was evident that investments were required to implement advanced train information displays, connected audio systems, and multilingual passenger apps to provide accurate updates on the move for enhanced connectivity.

VII. SUGGESTIONS

Outsource professional cleaning and upgrade cleanliness standards with regular audits. Increase seating capacity, add drinking water kiosks, and improve toilet facilities on platforms. Increase the number of food vendors offering travelers a variety of inexpensive options. Install modern digital display boards, and infotainment systems on all platforms for real-time updates. Provide better signage, introduce porters, and enhance security features.

Upgrade luggage handling facilities like trolleys, storage, and wrapping services.

VIII. CONCLUSION

Vijayawada railway station, being one of the major stations under the South Central Railway zone, currently lacks several basic amenities when benchmarked against the standards expected at a modern terminal station. The findings from the passenger feedback survey and facility audit highlighted shortcomings in key areas like cleanliness, seating availability, food and retail options, train information systems, and security provisions. However, the station possesses huge potential to be developed into a model railway terminal through focused investments and service improvements. Implementing suggestions around deep cleaning mechanisms, augmenting seating capacity on platforms, introducing diverse food and retail outlets, upgrading to digital train information displays and strengthening security features can help boost passenger experience to world-class levels. Regular monitoring of progress through periodic satisfaction surveys is recommended to gain insights for further enhancements. Assessing commuter needs and refining services accordingly will ensure Vijayawada station remains relevant to changing passenger expectations over time. With a well-planned transformation touching all aspects of station operations and management, it can set a benchmark for passenger convenience and services within South Central Railway. With the execution of measures to address current gaps through a phased roadmap, Vijayawada is capable of emerging as a showcase station exemplifying best practices in amenities, facilities, systems, and customer-centricity. This will not only elevate passenger journeys but also augment traffic volumes and revenue potential for the railways.

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