

A Study on Measuring Service Quality of Mumbai Metro

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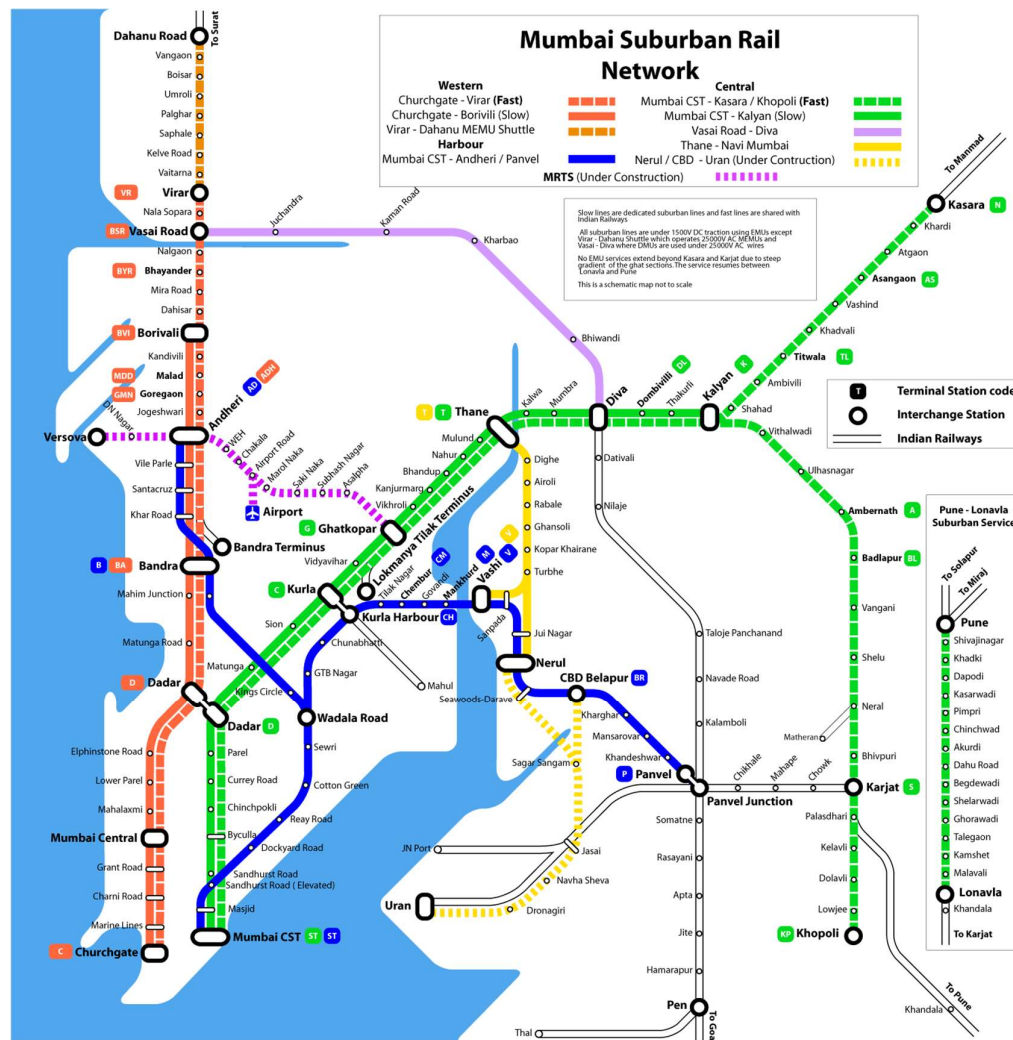
ABSTRACT

Service Quality is the lengths to which a company goes to achieve customer contentment and loyalty. The purpose of conducting this research is to examine the service quality of metro in Mumbai suburban. The technique used in this study is paired t-Test. The findings of this study indicates that metro does not address the queries and complaints of the commuters as well as the staff are not caring towards the commuter. Further studies can be conducted building a SEM model and evaluating impact of service quality on commuters' satisfaction.

Keywords: Service Quality, Commuters satisfaction, Transport

INTRODUCTION

The Metro or Rapid Transit system was planned to be started in the 1920s, but it failed to be initiated due lack of funds and proper planning. It started in Kolkata in 1971 and is the oldest-running metro service in India. At that time, only three lines were operational, and later in 1972, several other lines received approval and were deadlines to be operational by 1991. The second Metro line is the Delhi Metro which is also the largest in the country and was started in 2002 and is still running successfully; several other states followed the course, such as the Bangalore Metro, which started in 2011, Gurugram in 2013, Mumbai in 2014, Jaipur in 2015, Chennai in 2015, Kochi in 2017, Lucknow in 2017 and Hyderabad in 2017. Several other metro lines are being constructed in Nagpur, Noida, Gandhinagar, and Ahmedabad. And several more under planning. Mumbai Metro started operating in 2014 with 12 stations connecting the central railway line to the western railway. The Metro line is Phase I of the planned Metro lines in Mumbai; it has been running successfully between the Versova-Andheri-Ghatkophar corridor and has made life easier for many it is called the Blue line or Line 1 of the Mumbai Metro. Another Metro Mumbai Line became partly operational in April 2022 on the Dahisar –D.N Nagar line, which is known as Line 2A or the Yellow Line; it became fully operational in January 2023; it has 17 stations on the Dahisar to D.N.Nagar and the other phase which is also called the Line 2B will have 22 stations and will run between D.N.Nagar to Mandale. Then there is Aqua Line or Line 3, which is being built completely underground and will have 27 stations and will start from Cuffe Parade and go to SEEPZ and Aarey Colony. Green Line or Line 4 will have 32 stations and cover the Kasarvadavali in Thane until the Wadala in South Mumbai. There are several other lines; in total, there are 14 Metro lines that will be operational in this decade according to the plans laid by the government. Almost all the Metro lines construction is in process.



Source: <https://mapa-metro.com/en/India/Mumbai/Mumbai-Suburban-Railway-map.htm>

The metro lines will change the entire outlook of Mumbai city, making travelling easier and more comfortable. It will reduce the traffic in the Mumbai local trains and ease the commute of those travellers who travel from far locations than the planned Metro lines. However, the Metro line has several benefits, whether reaching on time for work or with comfort and a better environment. The study is based on the SERVQUAL Model and the basis of 5 dimensions, i.e. Assurance, Reliability, Responsiveness, Tangibility and Empathy. Assurance is a customer's faith and certainty towards the company; it is essential with services that a customer trusts in the servicing firm's potential to deliver. Reliability refers to the organization's ability and dependability in performing a service that satisfies the customer's needs. Responsiveness is the company's ability to assist its customers with swift replies towards the issues and queries a customer may have towards the product or any other service. Tangibility refers to the potential of any company to represent its service quality towards its customers. Empathy is how a company delivers its services and empathizes with the customer's demands and preferences. This research aims to examine the Metro Suburban line's service quality and give appropriate suggestive measures for its eradication.

REVIEW OF LITERATURE

1. Barve, M. S. S., & Joshi, S.(2021). After the lockdown period, the authors examined the commuter's satisfaction and the service quality of Mumbai metro rails. The focus of this study is to scrutinise the commuter's perception towards metro rail and also to understand the factors that influence the use of metro rail. Fifty-one respondents belonging to various age groups, gender, occupation, income range and education were selected for this study, and the outcome indicated that most respondents preferred Metro. Also, the ambience and environment of the rail were good and comfortable; the only issue was that the ticket cost was expensive.

2. **Bhagyalakshmi, R., & Vasudevan, (2020).** The satisfaction of passengers with the level of service provided by the Chennai metro train was investigated thoroughly in this paper. The author believes commuters are integral to any transport, and their satisfaction should be prioritized. The research used a planned questionnaire for this study and selected 220 respondents to assist in understanding the Chennai metro's service quality. The results of this study indicated a significant association between the service quality and the four dimensions selected for the study, i.e. service ascent factor, service establishment factor, infrastructure facilities factor and amenities and hygiene factor.
3. **Kumar, B. S. P. A. (2021).** The author studied customer contentment towards the metro rail services in Hyderabad. Hyderabad is one of the metropolitan cities of India. The metro rail was introduced in the city in November 2017. Customer contentment has its roots in the success of any service. This research uses descriptive analysis with a random sample of hundred respondents who regularly travel in the Metro. The outcome of this study indicated that the service quality of the Hyderabad Metro rails is directly associated with customer contentment.
4. **Sharma, K., & Poddar, S. R. (2018).** The authors conducted “a study on the service quality of the Mumbai metro.” The authors think railways are the cheapest, the most used and swiftest form of transport in India, which so many people use regularly. Mumbai. The paper aims to determine the service quality of the Mumbai Metro by using a structured questionnaire acquired from 50 regular travellers of the Mumbai metro. The study's findings indicated that age, gender, educational qualification and income have no association with customer satisfaction. The study's authors believe that over 50% of respondents are happy with Mumbai Metro's level of service..
5. **Singh, B., & Kumar, D. (2014).** The authors researched the level of customer contentment with the Delhi Metro. The authors believe that service quality has always been considered a factor for customer contentment. It acts as a bridge in developing a relationship with the customer and leads the institutions to understand the customers' needs and requirements. The research used a sample size of 143 customers, of which 80 respondent data was utilised. The study concluded that empathy, tangibles, responsiveness and assurance have a pragmatic relationship with customer contentment.
6. **Srivastava, G. N. (2017).** The author conducted exploratory research on the Delhi Metro to suggest new and improved services to the Delhi Metro. The author elaborates on the benefits of Metro services and how it has reduced travel time and made travelling more comfortable. Using the qualitative technique, the study used 1015 samples from over 160 Delhi Metro stations and analysed the data using SPSS 20. This analysis revealed that the commuters wanted to introduce eight new services out of the ten proposed services.

OBJECTIVES OF THE STUDY

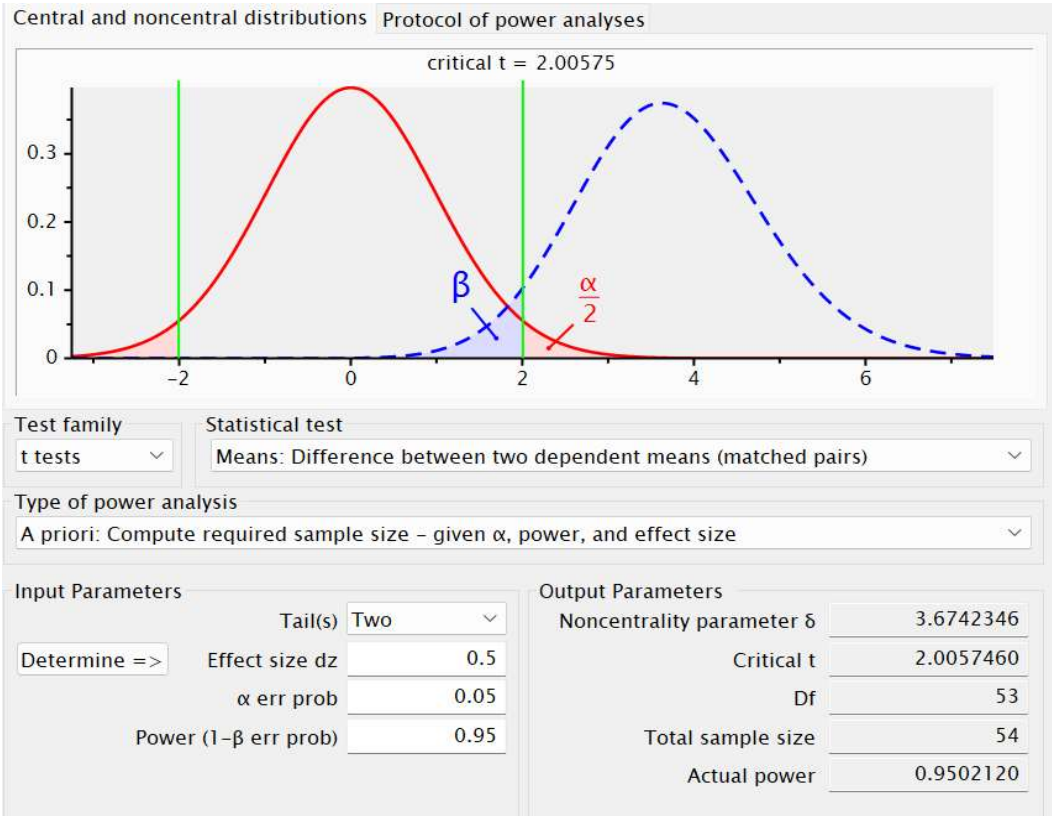
1. To measure the service quality of Mumbai Metro.
2. To give appropriate suggestive measures for the improvement of service quality of Mumbai Metro.

Hypothesis:

Ho: There is no significant difference in the expected and perceived mean scores.

H1: There is a significant difference in the expected and perceived mean scores.

RESEARCH METHODOLOGY



Data Analysis and Interpretation

Research Methodology	Descriptive
Data Collection	Both primary and secondary
Sample Size	128 Mumbai Metro commuters using google forms
Sample Size Justification	Minimum sample required at 0.5 effect size, Alpha of 5% and power of test 95% to apply paired t-test = 54
Sampling Technique	non-probability convenience sampling technique
Statistical Tool	SPSS 26
Statistical Technique	paired t-test

Table No. 01: Reliability Analysis

Construct	Expected	Perceived
Assurance	0.776	0.722
Reliability	0.700	0.834
Responsiveness	0.788	0.898
Tangibility	0.766	0.844
Empathy	0.835	0.717

All the values of Cronbach's Alpha > 0.70 indicating the responses are reliable and sufficient correlation between the items exist.

Table No. 2: Gap Analysis- Assurance

	Expected		Actual		GAP	P-Value
Items	Mean	SD	Mean	SD	(Perceived Mean - Expected Mean)	
The metro staff are highly trained and competent	4.3800	.79	4.7800	.78	0.4	0.000
The metro area is safe in all aspects	4.8500	.89	3.8900	.78	(0.96)	0.000
The metro surrounding provides friendly environment	3.9770	.55	4.4590	.92	0.482	0.000

Table No. 3: Gap Analysis- Reliability.

Items	Expected		Actual		GAP	P-Value
	Mean	SD	Mean	SD	(Perceived Mean - Expected Mean)	
Metro always shows fair and true advertisement	3.7800	.85	4.4500	.98	0.67	0.000
Metro services are reliable and dependable.	3.2000	.87	3.8900	.99	0.69	0.000
Information available at metro station is accurate.	2.4000	.68	2.8900	.75	0.49	0.000

Table No. 4: Gap Analysis- Responsiveness.

Items	Expected		Actual		GAP	P-Value
	Mean	SD	Mean	SD	(Perceived Mean - Expected Mean)	
Metro addresses the queries of customer and complaints.	3.6500	.76	3.3000	.70	(0.35)	0.000
The metro in suburban provides timely response to customer query.	3.9800	.68	4.7600	.88	0.78	0.000
Metro in suburban provide on time response to the customer.	4.4500	.81	4.7000	.84	0.25	0.000

Table No. 5: Gap Analysis- Tangibility

Items	Expected		Actual		GAP	P-Value
	Mean	SD	Mean	SD	(Perceived Mean - Expected Mean)	
The physical appearance of metro is appealing.	2.8700	.90	3.6400	.80	0.77	0.000
Metro air conditioner works properly	3.9500	.50	4.7600	.60	0.81	0.000
Canteen facility at metro station is very professional.	2.8700	.88	4.2000	.99	1.33	0.000

Table No. 6: Gap Analysis- Empathy

Items	Expected		Actual		GAP	P-Value
	Mean	SD	Mean	SD	(Perceived Mean - Expected Mean)	
Metro in suburban is under CCTV surveillance for safety	3.7900	.78	4.7200	.70	0.93	0.000
The metro staff are caring towards commuters.	4.2400	.71	3.9660	.93	(0.274)	0.000
Metro are commuter friendly.	4.3200	.68	4.9000	.74	0.58	0.000

CONCLUSION

Mumbai metro has helped a lot of commuters to comfortably travel from one part of the city to the other; the current line that is the Verosva-Andheri-Ghatkopar line, has been operational since 2014 and has numerous commuters to easily travel from the central suburbs to the western suburbs previously where several people used to travel by either changing trains from Dadar Station or to take Auto rickshaws from either Ghatkopar or Kurla Station are now travelling comfortably in AC coaches of the metro and reaching their workplaces on time without any hassles of being stuck in huge traffics and leaving homes hours earlier than their scheduled office hours. The study analyses data for service quality, scoring the highest in assurance, reliability and tangibility, which indicates customer content with the services provided. As for responsiveness, it was observed that although metro provides timely responses to customer queries and on-time responses to the customer, it needs to

address the customer queries and complaints. Similarly, in Empathy dimensions, it was seen that the metro is under CCTV surveillance for safety, and the metro is commuter friendly. Still, the staff could be more caring towards the commuters. Overall, Metro Management must provide better customer services for maximum customer contentment. Also, they should keep upgrading their services to maintain service quality.

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