

TRAVELLER SATISFACTION WITH TNSTC TOWN BUS SERVICES: A STUDY WITH SPECIAL REFERENCE TO KANYAKUMARI DISTRICT

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ABSTRACT

Traveller's road transport is a key component of economic development and plays a vital role in ensuring customer satisfaction. In India, road transport is the most widely used mode of travel, accounting for approximately 85% of passenger traffic and 60% of freight movement, primarily due to its easy accessibility. The country boasts a vast and expanding road network, including national highways that connect major cities and tourist destinations.

Tamil Nadu State Transport Corporation Limited (TNSTC), the world's largest bus corporation, operates intra- and intercity bus services across South India, providing affordable, comfortable, and timely transportation to the public. This study evaluates the performance of TNSTC in Kanyakumari district and analyses traveller's satisfaction with its services.

The analysis is based on primary data collected from 384 respondents through structured questionnaires. Tools such as simple percentage analysis, the Kruskal-Wallis test, and the Mann-Whitney U test were employed for data interpretation. The study reveals that frequency of usage significantly influences satisfaction with TNSTC's time schedule, whereas age and gender have no notable impact. Most respondents are under the age of 25, prefer alternative modes of transport, and travel for personal reasons. It is recommended that TNSTC conduct regular feedback surveys among frequent users to enhance schedule reliability and overall service quality.

Keywords: *Traveler Satisfaction, Service quality, Road transport, TNSTC.*

INTRODUCTION:

As of 2024, the Tamil Nadu State Transport Corporation (TNSTC) and the State Express Transport Corporation (SETC) have launched major modernization initiatives to enhance public transportation across the state. Along with six other transport undertakings, they operate a combined fleet of approximately 20,260 buses, with around 18,728 in daily service. To address the issue of an aging fleet—over 52% of the buses are more than 15 years old—the state government has initiated a comprehensive vehicle replacement plan. This includes the procurement of 7,682 new buses. Among them are 552 Ultra-Low Entry (ULE) diesel non-AC buses, funded by the German Development Bank (KfW), equipped with advanced features such as automatic transmission and intelligent transport systems. In addition, SETC has added 150 new BS-VI diesel buses offering sleeper-cum-seating arrangements, individual charging ports, and enhanced safety features. TNSTC divisions have also received 135 BS-VI buses to replace older vehicles.

As part of its commitment to sustainability, Tamil Nadu is introducing 1,000 electric buses in Chennai under a Gross Cost Contract (GCC) model. The first batch of 120 electric buses is expected to become operational by early June 2025, marking a significant step toward eco-friendly transportation. These modernization efforts underscore the state's dedication to improving service quality, safety, and environmental sustainability in public transportation, thereby contributing to economic and social development.

In the southern region, Tamil Nadu State Transport Corporation (Tirunelveli) Limited operates through its Nagercoil division, which comprises 11 branches: Ranithootham I, II, III, Kanyakumari, Vivekanandapuram, Monday Market, Colachel, Thiruvattar, Marthandam, Kuzhithurai, and Chettikulam.

Transport plays a crucial role in economic growth, serving as a catalyst for development by facilitating the movement of people and goods. Across India, state transport undertakings operate over 3.5 lakh buses, serving more than 300 million people. Tamil Nadu alone operates 17,284 buses, catering to over 15 million travellers daily. The core mission of these undertakings is to provide economical, efficient, effective, and well-coordinated road transport services throughout the state.

ROAD TRANSPORT IN INDIA

India's road transport system plays a crucial role in the nation's economic growth, serving as the backbone for both passenger and freight movement. As of 2024, India retained its position as the country with the largest road network in the world, spanning approximately 6.7 million kilometers. This vast network accommodates nearly 85% of passenger traffic and 64.5% of freight movement, making it indispensable to daily life and industrial logistics.

Although National Highways account for only 2% of the total road length, they handle about 40% of overall road freight, underscoring their strategic importance. The expansion of the National Highway network in recent years reflects the government's sustained infrastructure focus aimed at enhancing mobility, reducing travel time, and promoting regional development.

The fiscal year 2023–24 marked a record in highway construction, with 12,349 kilometers completed—a 20% increase over the previous year. This progress was driven by an unprecedented capital investment of ₹3.01 lakh crore, more than 5.7 times the expenditure from a decade ago. These developments signal strong momentum in the road sector, both in terms of scale and financial commitment. However, in the subsequent fiscal year, the pace of development began to slow. By December, only 5,852 kilometers of highways had been constructed, and the number of project awards declined significantly. Administrative delays and the absence of a unified approval mechanism have been identified as key contributing factors.

To enhance road safety, the government has prioritized improvements in accident-prone zones. A total of 13,795 black spots have been identified along National Highways, with corrective measures—both temporary and permanent—implemented at many of these locations through engineering solutions and traffic-calming strategies. These initiatives highlight the country's commitment to expanding and upgrading its road infrastructure, while also placing a strong emphasis on safety and sustainability in transport development.

REVIEW OF LITERATURE

Sunil R. Kewatea and Vivek R. Gandhewar (2024) The study reveals that the SERVQUAL model is an effective tool for assessing service quality in public transportation. It highlights findings from Ghana, where availability and reliability were key Satisfaction drivers (Atombo & Wemegah). Gender-based interior design preferences in Dhaka were explored using AHP by Sultana and team. Rahatgaonkar and Mathankar found that measuring Satisfaction helped MSRTC enhance travellers focus. **Eugene Sogbe, Susilawati Susilawati and Tan Chee Pin (2024)** The study reveals that service quality, Satisfaction, and attitude are key determinants of public transport usage in developing countries. It highlights safety, reliability, comfort,

affordability, and accessibility as the most influential factors shaping travellers perceptions. The review emphasizes the need for tailored policies and improved service features to boost ridership in developing regions. **Rui Rong, Lishan Liu, Ning Jia and Shoufeng Ma (2022)** This study employs the Gradient Boosting Decision Trees (GBDT) algorithm, an ensemble learning technique, to identify key factors influencing travellers perception and Satisfaction. The analysis is conducted in two distinct phases. In the initial phase, the most influential perceived factors are determined by selecting variables with the highest relative importance scores produced by the GBDT model. Unlike many previous studies on public transport Satisfaction that focus solely on either actual travel performance or user perception, this research integrates a more comprehensive approach. **A. Gajendran and Dr. P. Kaliyaperumal (2022)** The study reveals that travellers perception and Satisfaction are shaped by factors like service quality, affordability, punctuality, and infrastructure. The research highlights that while public bus services are cost-effective, they often lag in comfort and maintenance compared to private operators. The study found a significant gap between travellers expectations and service delivery. Factors such as inadequate shelters, delays, and poor facilities impact Satisfaction levels. It emphasizes the need for both public and private transport sectors to enhance quality, safety, and customer orientation. **Vinayak Shivaji Salokhe and Dr. Omprakash Haldar (2022)** The Study reveals that service quality, especially tangibility, reliability, and frequency, significantly affects traveler Satisfaction. The SERVQUAL model is widely used to measure these dimensions. Urban context, demographic variables, and mode of transport influence perception and loyalty. Cost, convenience, cleanliness, and safety are repeatedly identified as key factors. Understanding and addressing user expectations is crucial for enhancing public transportation services.

RESEARCH GAP

Despite significant investments and advancements in India's road transport infrastructure such as the expansion of the National Highway network, the introduction of modern buses, and a focus on sustainability and safety there remains limited research on how these developments impact travellers satisfaction at the regional and local levels, particularly in southern districts like Kanyakumari.

Most existing studies focus on macro-level metrics such as total kilometers constructed, capital investments, and accident statistics. However, micro-level analyses evaluating passenger perceptions, service quality, and satisfaction with specific transport providers like TNSTC are scarce. Furthermore, while modernization efforts (e.g., introduction of BS-VI buses and electric buses) are underway, there is insufficient data assessing their real-world effectiveness from a commuter's perspective, especially in semi-urban and rural areas.

Additionally, factors such as frequency of service, punctuality, comfort, accessibility, and safety are critical to users but are often underexplored in regional transport research. Few studies consider demographic influences (age, gender, frequency of travel) on satisfaction, and even fewer apply robust statistical tools like the Kruskal-Wallis and Mann-Whitney U tests for insight.

OBJECTIVES OF THE STUDY

1. To study the performance of TNSTC at Kanyakumari district.
2. To analyze the traveller Satisfaction towards various service of TNSTC.

LIMITATIONS OF THE STUDY

1. The study is restricted only to the traveller Satisfaction in rural transport service of Kanyakumari district. Hence the general application of the results may be restricted only to similar personal profile.

METHODOLOGY

The present study is descriptive in nature and aims to examine the issues outlined in the research objectives. A convenience sampling technique was adopted due to the unknown size of the population. Accordingly, the sample size was determined using Cochran's formula for an unknown population, resulting in a sample of 384 respondents. Primary data was collected through a structured questionnaire. For analytical purposes, the data was systematically classified to address the study's objectives, and appropriate statistical tools were applied. The tools used for detailed analysis include simple percentage analysis, the Kruskal-Wallis test, and the Mann-Whitney U test.

ANALYSIS AND INTERPRETATION

Table 1: Demographic Factor of the respondents

Demographic Factor	Group	Frequency	Percentage
Gender	Male	112	29.2
	Female	272	70.8
Age Group	below 25	114	29.7
	25-34	77	20.1
	35-44	98	25.5
	45-55	62	16.1
	Above 55	33	8.6
Occupation	Student	61	15.9
	Government Employees	170	44.3
	Private Employees	103	26.8
	Others	50	13.0
Income	Below 10000	72	18.8
	10000-25000	58	15.1
	26000-50000	120	31.3
	Above 50000	134	34.9
Usage	Daily	178	46.4
	Occasionally	151	39.3
	Rarely	55	14.3
Vehicle Owned	Do not own any vehicle	197	51.3
	Two wheelers	162	42.2
	Four wheelers	25	6.5

Source: Primary Data

Interpretation:

The demographic profile of the respondents reveals a diverse group across gender, age, occupation, income, usage habits, and vehicle ownership:

- **Gender:** The sample shows a strong female representation, with **70.8%** of respondents identifying as female, while **29.2%** are male.
- **Age:** The largest segment of respondents (**29.7%**) falls under the age group of **below 25 years**, followed by **35–44 years (25.5%)**, **25–34 years (20.1%)**, **45–55 years (16.1%)**, and **above 55 years (8.6%)**. This indicates a broad age distribution with a noticeable concentration in the younger demographic.
- **Occupation:** **Government employees** make up the largest occupational category at **44.3%**, followed by **private employees (26.8%)**. **Students** account for **15.9%**, while **13.0%** fall under the 'others' category. This distribution highlights a predominance of working professionals, particularly from the public sector.
- **Monthly Income:** A significant proportion of respondents (**34.9%**) earn **above ₹50,000**, while **31.3%** fall in the **₹26,000–₹50,000** range. Those earning **below ₹10,000** and **₹10,000–₹25,000** constitute **18.8%** and **15.1%** respectively, indicating a relatively affluent sample group.
- **Usage Behavior:** A high level of engagement is evident, with **46.4%** of respondents using the service/product **daily**, **39.3%** using it **occasionally**, and only **14.3%** reporting **rare usage**.
- **Vehicle Ownership:** The majority of respondents (**51.3%**) do **not own any vehicle**. Among vehicle owners, **42.2%** possess **two-wheelers**, while only **6.5%** own **four-wheelers**, suggesting that two-wheelers are the predominant form of private transportation among the sample.

Kruskal Wallis Test:

Hypothesis: 1

Null Hypothesis (H_0):

There is no significant difference in the mean rank of respondents' age groups with respect to overall satisfaction with the existing services rendered by TNSTC.

Alternative Hypothesis (H_1):

There is a significant difference in the mean rank of respondents' age groups with respect to overall satisfaction with the existing services rendered by TNSTC.

Table 2: Age group and Overall satisfaction with Existing Service Rendered by TNSTC

Factor	Age					Chi square	P value
	Below 25	25-34	35-44	45-55	Above 55		
Overall Satisfaction with existing service rendered by TNSTC	190.50	183.48	201.26	189.48	200.12	1.418	0.841

Source: Primary Data

Inference:

The table presents the overall satisfaction levels with the existing services rendered by TNSTC across different age groups. The **mean ranks** show that respondents in the **35–44 age group (201.26)** and those **above 55 years (200.12)** reported relatively higher levels of satisfaction compared to other age groups. In contrast, the **25–34 age group** recorded the **lowest satisfaction**, with a mean rank of **183.48**.

However, the **p-value** obtained from the Kruskal-Wallis test is **greater than the standard significance level of 0.05**, indicating that the observed differences in satisfaction across age groups are **not statistically significant**. Therefore, it can be concluded that there is **no significant difference in overall satisfaction with TNSTC services among the various age groups** considered in the study.

Hypothesis 2

Null Hypothesis (H_0):

There is no significant difference in the mean rank of government bus usage frequency with respect to the time schedule maintained by TNSTC buses.

Alternative Hypothesis (H_1):

There is a significant difference in the mean rank of government bus usage frequency with respect to the time schedule maintained by TNSTC buses.

Table : 3 Usage of government vehicle and Time schedule maintained by Buses of TNSTC.

Factor	Usage			Chi square	P value
	Daily	Occasionally	Rarely		
Time Schedule maintained by Buses of TNSTC	191.71	195.95	185.59	0.469	0.791

Source: Computed Data

Inference:

The table presents the satisfaction levels of respondents regarding the time schedule maintained by TNSTC buses, categorized by their frequency of usage. Respondents who **use the service occasionally** reported the **highest level of satisfaction**, with a **mean rank of 195.95**, followed by **daily users** with a **mean rank of 191.71**. Those who **rarely use the service** reported the **lowest satisfaction**, with a **mean rank of 185.59**.

The test yielded a test statistic of **0.469** and a **p-value of 0.791**. Since the p-value is **greater than the standard significance level of 0.05**, the result is **not statistically significant**. Therefore, it can be concluded that there is **no significant difference** in satisfaction levels regarding the TNSTC bus time schedule among respondents with different usage frequencies.

Hypothesis 3

Mann Whitney U Test:

H_0 : There is no significant difference between mean rank of male and female with respect to ticket pricing.

H_1 : There is significant difference between mean rank of male and female with respect to ticket pricing.

Table 4: Gender and Ticket Pricing

Factor	Mean Rank of Gender		Z Value	P value
	Male	Female		
Ticket pricing maintained by Buses of TNSC	183.21	196.33	1.203	0.229

Source: Computed Data

Inference:

The table presents the perception of male and female respondents regarding the ticket pricing maintained by TNSC buses. The **mean rank for female respondents is 196.33**, which is slightly higher than that of **male respondents at 183.21**. This suggests that **female respondents are, on average, more satisfied** with the ticket pricing compared to their male counterparts.

To assess whether this observed difference is statistically significant, a **Mann-Whitney U test** was conducted. The test yielded a **Z value of 1.203** and a **p-value of 0.229**. Since the p-value is **greater than the standard significance level of 0.05**, it can be concluded that the **difference in perception between male and female respondents regarding ticket pricing is not statistically significant**.

FINDINGS

The study reveals a diverse respondent profile across gender, age, occupation, income, frequency of usage, and vehicle ownership. The majority of respondents are female and below the age of 25, with a significant portion comprising government employees earning above ₹50,000 per month. Most respondents use TNSC services either daily or occasionally, and more than half do not own a personal vehicle.

Regarding satisfaction with TNSC services—such as overall service quality, time schedule, and ticket pricing—some variation is observed across demographic groups. However, statistical analyses using the Kruskal-Wallis and Mann-Whitney U tests indicate that these differences are not statistically significant. This suggests that perceptions of service satisfaction are generally consistent across age groups, usage frequency, and gender.

SUGGESTIONS

While overall satisfaction with TNSC services appears consistent across various demographic groups, there remains scope for improvement to enhance the overall traveler experience. TNSC should prioritize adherence to time schedules, as even frequent users reported only moderate satisfaction in this area. Punctuality in arrivals and departures is crucial for building trust, particularly among daily commuters.

Although digital ticketing facilities are available, increased efforts are needed to raise awareness and adoption among passengers. Moreover, periodic reviews of ticket pricing, in relation to service quality and passenger expectations, can help maintain fairness and transparency in fare structures.

Finally, establishing robust traveler feedback mechanisms and acting on passenger input in a timely manner will promote a sense of responsiveness and accountability, ultimately leading to higher satisfaction across all user segments.

CONCLUSION

The study indicates that satisfaction with TNSTC services is generally consistent across various demographic groups, with no statistically significant differences observed based on age, gender, or frequency of usage. However, specific aspects such as time schedule adherence and service efficiency present key areas for improvement. A noteworthy development is the Tamil Nadu government's initiative to provide free travel for women in town buses, which appears to have contributed to the high proportion of female users and improved public transport accessibility. To build on this positive momentum, TNSTC should focus on enhancing punctuality, broadening awareness and usage of digital ticketing systems, and implementing regular traveler feedback mechanisms. These efforts will help ensure that services remain responsive to the diverse and evolving needs of the public, thereby fostering greater satisfaction and trust among commuters.

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