



# The Future of Rajasthan State Road Transport Corporation (RSRTC): An Analysis Based on the Number of Buses Held

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## Abstract

This research paper analyzes the trends in the number of buses owned by the Rajasthan State Road Transport Corporation (RSRTC) over a span of two decades. Using secular trend analysis, the study estimates the potential year when the number of RSRTC-owned buses might reach zero. The implications of these findings for the corporation's future operations, as well as potential strategic adjustments, are discussed. This paper aims to provide insights that could guide policy formulation and operational strategies for RSRTC.

**Keywords:** RSRTC, public transport, secular trend, fleet management, Rajasthan.

## Introduction

The Rajasthan State Road Transport Corporation (RSRTC) is the largest provider of intercity bus transportation in Rajasthan, established on October 1, 1964. RSRTC operates a fleet of 3,708 buses across 52 depots within Rajasthan and three outside the state (Indore, Ahmadabad, and Delhi). The corporation serves an average of 731,000 passengers per day, covering 1,284,000 kilometers daily. RSRTC offers various services, including Ordinary, Express, Deluxe, A/C Gandhi Rath, A/C Sleeper, and Volvo-Mercedes<sup>1</sup>.

Road transport is a crucial mode of transport for urban and rural linkages<sup>2</sup>. The Rajasthan State Road Transport Corporation (RSRTC) is a key player in providing public transportation services across Rajasthan. The importance of public road transport is not limited to the mobility of people; moreover, it is also contributing to employment in the form of administration and workshop staff<sup>3,4,5</sup>. Established to ensure accessible and affordable transportation, RSRTC has been pivotal in connecting remote and urban areas alike. However, over the years, the number of buses owned by the corporation has been in decline, raising concerns about the sustainability of its operations. This research seeks to analyze the long-term trends in RSRTC's bus ownership and project the potential future of the corporation based on these trends.

## Literature Review

Previous research has highlighted the challenges faced by state road transport corporations across India, including financial instability, competition from private operators, and aging fleets. Studies have shown that a reduction in the number of buses directly impacts service quality and operational efficiency. This paper builds on these findings by specifically analyzing RSRTC's bus fleet and its implications for the corporation's future.

## Methodology

The study uses historical data from 2002-2003 to 2023-2024 on the number of RSRTC-owned buses. A linear regression model was applied to identify the secular trend, which was then used to estimate the year when RSRTC's bus fleet might be reduced to zero. The following steps outline the methodology used:

1. **Data Collection:** Data on the number of RSRTC-owned buses for each year was collected from official RSRTC reports.
2. **Data Conversion:** The years were converted into a numeric format, and linear regression was applied.
3. **Trend Analysis:** The linear regression model provided a trend line, which was used to project future bus numbers.

## Results

The analysis revealed a consistent downward trend in the number of buses owned by RSRTC. The trend line suggests that the fleet size decreases by approximately 48 buses each year. Based on this trend, it is estimated that the number of RSRTC-owned buses could reach zero by the year 2101-02, if no corrective measures are taken.

## Graph

*Figure 1: Trend Line Showing the Decline in the Number of RSRTC-Owned Buses over the Years*

## Tables

### Year-wise Data of RSRTC-Owned Buses and Trend Calculations

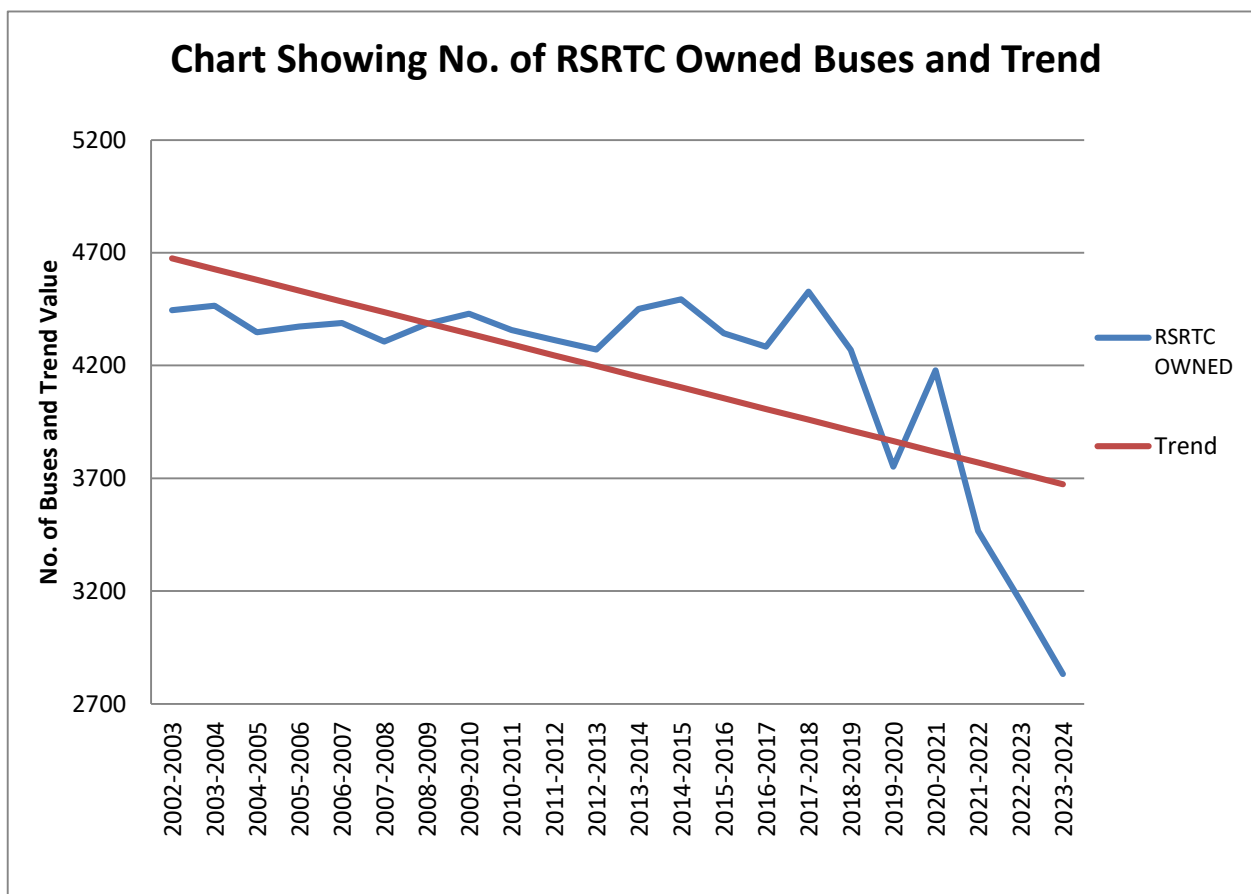
The trend equation for the number of buses owned by RSRTC is:

$$Y=4722.49-47.66X$$

YEAR	RSRTC OWNED	Trend
2002-2003	4446	4674.84
2003-2004	4465	4627.18
2004-2005	4348	4579.53
2005-2006	4373	4531.87
2006-2007	4389	4484.22
2007-2008	4306	4436.56
2008-2009	4384	4388.9

2009-2010	4430	4341.25
2010-2011	4357	4293.59
2011-2012	4314	4245.94
2012-2013	4271	4198.28
2013-2014	4451	4150.63
2014-2015	4493	4102.97
2015-2016	4343	4055.32
2016-2017	4284	4007.66
2017-2018	4528	3960.00
2018-2019	4270	3912.35
2019-2020	3751	3864.69
2020-2021	4179	3817.04
2021-2022	3466	3769.38
2022-2023	3157	3721.73
2023-2024	2833	3674.07

Table-1



Base value is used from 2700 to show no. of busses and trend in the above figure

Figure 1

## Discussion

The results of the trend analysis highlight a concerning downward trajectory for RSRTC's fleet. If this trend continues unabated, RSRTC may find itself unable to maintain its current level of service, potentially leading to a complete cessation of operations. This outcome would have significant social and economic implications for the state of Rajasthan, particularly in rural and underserved areas.

The study underscores the need for RSRTC to explore alternative strategies to reverse this trend. Options could include public-private partnerships (PPP), fleet modernization programs, and increased investment in sustainable transportation options such as electric buses. Additionally, RSRTC could benefit from adopting new technologies and optimizing its operational efficiencies to reduce costs and enhance service quality.

## Future Scope of the Research

This research provides a critical foundation for understanding the challenges facing RSRTC, but there are several areas where future research could expand on these findings:

1. **Alternative Transport Solutions:** Future research could explore the viability of introducing electric buses or other sustainable transport options within RSRTC's fleet.
2. **Impact of Technological Advancements:** Studies could investigate how implementing intelligent transportation systems (ITS) and real-time tracking could improve RSRTC's service delivery and operational efficiency.
3. **Economic Analysis:** An in-depth economic analysis could help assess the financial sustainability of RSRTC and explore alternative funding models. Further, to find out the probable areas of strength and weakness, it is necessary to evaluate the depot-wise performance level of Rajasthan roadways<sup>6</sup>.
4. **Comparative Studies:** Research comparing RSRTC with other state transport corporations could identify best practices and lessons learned.
5. **Policy Recommendations:** Developing specific policy recommendations for state and central governments could help in supporting RSRTC's sustainability.
6. **Social Impact:** Investigating the social implications of a declining public transport system on rural and semi-urban populations could offer insights into the broader impact of RSRTC's challenges.
7. **Environmental Impact:** Future studies could focus on assessing the environmental benefits of transitioning to electric or hybrid buses.
8. **Longitudinal Studies:** Conducting long-term studies on service quality and customer satisfaction could provide insights into the effectiveness of implemented strategies.

## Conclusion

The analysis of RSRTC's fleet size reveals a troubling trend that, if left unaddressed could lead to the corporation's eventual decline. Immediate and strategic actions are necessary to reverse this trend and ensure the sustainability of public transportation in Rajasthan. The future of RSRTC lies in its ability to adapt to changing conditions, invest in modern technologies, and embrace innovative strategies to maintain and expand its service offerings. It is quite interesting and effective to see how various depots of Rajasthan roadways are working efficiently at the level within STU<sup>7</sup>.

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