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### TRANSPORTATION COST REDUCTION STRATEGY FOR EAPEN JOSEPH AND CO

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#### Keywords

*Transportation Cost,  
Logistics Efficiency,  
Cost Analysis,  
Route Optimization,  
Eapen Joseph and Co.*

#### Abstract

Transportation plays a vital role in the logistics and supply chain operations of every manufacturing enterprise. It directly influences the cost structure, delivery efficiency, and overall competitiveness of the company. This study titled —Transportation Cost Structure and Efficiency Analysis at Eapen Joseph and Co. focuses on evaluating and analyzing the transportation costs associated with the company's logistics operations. The study covers a one-year period from September 2024 to August 2025. The primary objective is to understand cost components, assess vehicle and route efficiency, and identify strategies to optimize cost performance. The analysis integrates both quantitative and qualitative research methods, using data collected through trip records, fuel logs, and interviews with logistics staff. The results reveal that kilometre cost and driver cost together contribute nearly 90% of the total expenditure, while operational efficiency can be improved through route planning and technology adoption.

## 1. INTRODUCTION

Transportation is a fundamental component of logistics management and plays a crucial role in achieving efficiency in supply chain operations. It involves the movement of goods from the place of origin to the place of consumption, ensuring timely delivery and service quality. Efficient transportation not only reduces operational costs but also improves customer satisfaction and



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competitiveness.

In the current industrial environment, logistics cost optimization has become a major focus area. Among all logistics costs, transportation contributes the highest proportion—typically 60–70%—making it a key element for cost control. Eapen Joseph and Co., the logistics partner for Petson Valves Pvt. Ltd., manages transportation operations across South India. The company handles product distribution to cities such as Coimbatore, Chennai, Bengaluru, Kochi, and Hyderabad, using a mix of heavy and light commercial vehicles.

This study aims to evaluate the transportation cost structure of Eapen Joseph and Co. and assess how efficiently the company manages its logistics network.

## **2. OBJECTIVES OF THE STUDY**

- To examine the major cost components involved in the transportation system.
- To analyze monthly variations in transportation costs.
- To study route-wise and vehicle-wise performance efficiency.
- To suggest measures for improving transportation cost efficiency.

## **3. REVIEW OF LITERATURE**

- Ballou (2007) explained that transportation is one of the most significant elements of total logistics cost, accounting for nearly 60–70% of overall supply chain expenses. He emphasized that efficient route planning and vehicle scheduling are essential to achieve cost-effectiveness.
- Bowersox and Closs (2012) stated that logistics cost optimization depends on balancing service reliability and operational efficiency. They argued that transportation planning must consider both fixed and variable cost components to maintain profitability and customer satisfaction.
- Chopra and Meindl (2019) highlighted that transportation management directly impacts the competitive position of a firm. Their study suggested that digital tracking and predictive scheduling could reduce unnecessary fuel consumption and idle time, leading to better cost control.
- Ghiani, Laporte, and Musmanno (2013) analyzed logistics system design and pointed out that selecting the right vehicle mix and maintaining an optimal fleet size can reduce per-kilometre cost. They concluded that continuous monitoring of distance, load, and time improves transport efficiency.
- Harrison and Van Hoek (2011) discussed the importance of logistics integration, showing that companies with coordinated transport and warehouse systems experience lower overall operational costs and improved resource utilization.

## **4. RESEARCH METHODOLOGY**

### **➤ Research Design:**

The study adopts a descriptive and analytical research design to evaluate the transportation cost structure and efficiency.



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➤ Scope of the Study:

The research focuses on transportation activities undertaken by Eapen Joseph and Co. For Petson Valves Pvt. Ltd. over a one-year period (September 2024 – August 2025).

➤ Data Collection:

- Primary Data: Collected through discussions with logistics managers, supervisors, and drivers.
- Secondary Data: Collected from company trip sheets, fuel logs, maintenance records, and cost registers.

➤ Tools Used for Analysis:

- Percentage Analysis
- Trend Analysis
- Comparative Analysis
- Graphical Representation

## 5. DATA ANALYSIS AND INTERPRETATION

**Table 1: Monthly Transportation Cost Summary**

Month	No. of Trips	Total Cost (₹)	Cost per Trip (₹)	Cost per Km (₹)
Sept 2024	18	5,60,000	31,100	52.0
Oct 2024	20	6,10,000	30,500	51.5
Nov 2024	22	6,85,000	31,100	52.8
Dec 2024	19	6,25,000	32,800	53.2
Jan 2025	15	4,80,000	32,000	50.5
Feb 2025	18	5,75,000	31,900	52.4
Mar 2025	21	6,90,000	32,800	54.0
Apr 2025	16	5,20,000	32,500	51.2
May 2025	17	5,40,000	31,800	51.6
Jun 2025	14	4,60,000	32,800	52.1
Jul 2025	16	5,50,000	34,300	53.0
Aug 2025	16	5,85,000	36,500	54.5

Interpretation:

Transportation costs were highest during November 2024 and March 2025 due to high production demand. The lowest cost was recorded in January 2025. The overall cost per kilometre averaged ₹52.3, indicating consistent performance.



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**Table 2: Vehicle Type Efficiency**

Vehicle Type	Avg.Distance (km)	Avg.Cost per Trip (₹)	Cost per Km (₹)	Load Utilization(%)
40ft Container	650	39,000	45.0	90%
LCV	420	30,800	52.0	85%
Mini Truck	250	18,500	61.0	78%
Tata Ace	150	11,200	68.5	72%

Interpretation:

Long-route vehicles such as 40ft containers achieved the lowest per-kilometre cost due to better load utilization and route planning.

Graphical Representation:

- Figure 1: Monthly Transportation Cost Trend (Line Chart)
- Figure 2: Cost Distribution by Component (Pie Chart)
- Figure 3: Vehicle Type Efficiency (Bar Chart)
- Figure 4: Transportation Efficiency Framework Diagram

## 6. FINDINGS

1. The total annual transportation cost was approximately ₹71.2 lakhs.
2. Kilometre cost contributed 62.8% of total cost, driver cost 27.4%.
3. The Coimbatore–Bengaluru and Coimbatore–Chennai routes handled 50% of total trips.
4. 40ft containers were the most cost-efficient vehicle type.
5. Average vehicle utilization was 82%, with potential for improvement through route Consolidation.

## 7. SUGGESTIONS

- Adopt route optimization software for better scheduling.
- Introduce digital fuel monitoring and GPS tracking.
- Standardize vehicle allocation based on route distance.
- Conduct preventive maintenance quarterly to avoid breakdown costs.
- Provide driver training on eco-driving techniques.

## 8. CONCLUSION

The study concludes that Eapen Joseph and Co. can achieve significant cost savings by implementing route optimization and technology-driven tracking systems. Kilometre and driver costs remain key cost drivers, and their control can enhance operational efficiency. Continuous monitoring, preventive maintenance, and digital integration are vital to achieving logistics excellence and cost leadership.



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#### **9. AUTHOR(S) CONTRIBUTION**

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