

# KSCSTE-NATPAC SURVEY

A survey based on the study on different public transport freight transport operations was conducted on the 6th of March 2023 by volunteers from NSS Unit,180, and EEE Department MBCCET Peermade. Kerala State Council for Science, Technology and Environment – National Transportation Planning and Research Centre

The reason behind the survey is to determine the cost of stage carriage, intermediate public transportations such as taxis and autos, passenger water transport etc. The data is collected in the form of questionnaire surveys pertaining to auto rickshaw, motor cabs and different types of goods vehicles. This survey is taken from Pambanar, Kuttikanam, Elappara in Idukki district.

The Department of Electrical and Electronics Engineering of MBCCET, in collaboration with the National Transportation Planning and Research Centre (NATPAC) under KSCSTE, and the NSS Unit, conducted a comprehensive survey on public and freight transport operations. The initiative aimed to assess transport usage patterns, infrastructure gaps, efficiency challenges, and sustainability prospects in the current transport systems of Kerala. This activity was carried out under the joint objective of promoting academic field engagement, civic responsibility, and data-driven awareness among students.

## OBJECTIVES OF THE SURVEY

- To collect real-time data on public and freight transport patterns in Kerala.
- To understand user satisfaction, vehicle occupancy, frequency, and connectivity issues.
- To identify logistical challenges, environmental impacts, and infrastructure gaps.
- To promote student involvement in research-based social engineering initiatives.
- To contribute primary data to NATPAC's ongoing policy formulation and transport planning studies.

## METHODOLOGY

- Type of Survey: Structured Field Survey and Direct Observation
- From: Public transport users, freight truck drivers, auto-rickshaw operators, and traffic police.
- Locations Covered: [Pambanar, Kuttikanam, Elappara.]

## KEY OBSERVATIONS

- **Public Transport:**
  - Irregular service frequency during peak hours.
  - Lack of last-mile connectivity and poor condition of bus stops.
  - User demand for more electric or eco-friendly buses.
- **Freight Transport:**
  - Frequent delays due to poor road conditions and traffic congestion.
  - Inadequate facilities at loading/unloading areas.
  - High dependency on diesel-fueled heavy vehicles.
- **General:**
  - Absence of integrated digital tracking systems.
  - Minimal awareness of sustainable transport options.
  - Strong support among stakeholders for smart mobility solutions.

## STUDENT INVOLVEMENT & LEARNING OUTCOMES

- Hands-on experience in data collection, analysis, and public interaction.
- Improved understanding of urban planning, transportation logistics, and energy management.
- Students learned how engineering knowledge can directly support policy and infrastructure development.

## PO & PSO MAPPING JUSTIFICATION

PO / PSO	Justification
<b>PO1 – Engineering Knowledge</b>	Applied core knowledge of systems, energy use, and transportation technology.
<b>PO2 – Problem Analysis</b>	Identified and analyzed real-world transportation problems from a technical and social perspective.
<b>PO3 – Design/Development of Solutions</b>	Suggested solutions such as smart scheduling, route optimization, and vehicle electrification.
<b>PO4 – Conduct Investigations</b>	Conducted field surveys and interviews with proper tools and methodologies.
<b>PO5 – Modern Tool Usage</b>	Used digital survey tools, GPS, and data analysis software (if applicable).
<b>PO6 – The Engineer and Society</b>	Understood societal needs and the role of engineers in shaping sustainable transport systems.
<b>PO7 – Environment and Sustainability</b>	Addressed environmental impacts of freight and public transport, promoting greener alternatives.

<b>PO / PSO</b>	<b>Justification</b>
<b>PO8 – Ethics</b>	Maintained ethical standards in data collection and public interaction.
<b>PO9 – Individual and Team Work</b>	Worked collaboratively in student teams with clearly divided roles.
<b>PO10 – Communication</b>	Improved communication skills through public interactions and report preparation.
<b>PO11 – Project Management and Finance</b>	Survey planning, route management, and time/resource allocation developed managerial skills.
<b>PO12 – Life-Long Learning</b>	Gained motivation to pursue further learning in smart mobility, transportation systems, and sustainability.
<b>PSO1</b>	Understood how electrical/electronic systems (e.g., GPS, vehicle control systems) apply in transport tech.
<b>PSO2</b>	Gained exposure to digital tracking, control systems, and data processing in transport applications.

## PHOTOS



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**APIAKTU NSS CELL**  
**MBCET, PEERMADÉ**

# NATPAC SURVEY



## CONCLUSION

The survey conducted under the joint effort of the EEE Department and NSS Unit, in collaboration with KSCSTE-NATPAC, was a valuable experiential learning exercise that connected classroom knowledge with societal needs. It enabled students to understand the current landscape of Kerala's public and freight transportation and to contribute meaningfully to future improvements through data-driven insights. Such initiatives not only strengthen student competencies but also promote responsible engineering aligned with national development goals.