

# **COMBATING AIR POLLUTION AND CONGESTION FROM VEHICLES THROUGH TECHNICAL AND BEHAVIOURAL STRATEGIES**

**Bhavya Adlakha**

## **ABSTRACT**

**“Automobiles has a big footprint from tail emission to road infrastructure”  
- National Geographic**

**Rapid growth and urbanization in India cities is often causing motorization proliferation. Road transport has become one of the major contributors to air pollution. Manifold increase in the number of private vehicles has led to severe congestion on roads of Indian cities. In fact, 5 of the Indian cities come in the list of the world's most congested cities. However, some cities are still better off than the others. Vehicular emissions and congestion related problems impose various direct and indirect costs which often cripples the economy. This study is largely based on discussing the problems and solutions to deal with vehicular emissions (pollution) and congestion. Paper uses the case of Indian cities to understand the link between local pollutants, vehicles and congestion. The study reviews technical approaches that are adopted to deal with these simultaneous issues and highlights the behavioral approaches in offering a better solution. The study begins with an overview of trends in SO<sub>2</sub> and SPM in various Indian cities and the mobility patterns observed in different regions. Using a Least Squares Dummy Variable (LSDV) Regression, the study then examines the effectiveness of Bharat Stage Emission Standards (BS norms) in reducing the concentration of SO<sub>2</sub> in 19 cities where there was a timely adoption as compared to the ones where implementation of these norms was delayed by 3-4 years. Lastly, the study throws some light on the issue of congestion and how it can be solved by changing the habits of individuals and giving a nudge for sustainable modes of transport including moving towards an integrated and sustainable urban transport. Finally, the study identifies few loopholes in the current transportation system and suggestions to improve the same with a long-term vision.**

**KEYWORDS: Bharat Stage norms, Modal Split, Bus Aggregators, Pollution and Congestion.**

**JEL CODES: H23, K32, R41, R42, R48, R53, R58**