

RESEARCH PAPER ON TRAFFIC POPULATION IN INDIA

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just about everywhere in Indian cities, the time it takes for people to travel to work or for leisure doubles between the off-peak and peak hours. What we often fail to realise is that congestion is not benign – it not only contributes to the toxic pollution in the air we breathe, but also takes a toll on our mental well-being. It is this human face of being stuck in traffic that should compel us to make a change. Richie (name changed), a professional in the development sector in Delhi, commutes 30 km from Dwarka to South Delhi for work. He estimates that he loses 24 hours – a full day – every eight days to traffic congestion. That adds up to nearly two years lost to traffic, over the past 15 years of commuting to his workplace from Dwarka. This is despite Richie's efforts to avoid peak traffic hours, which in Delhi typically run from 9 am to 12 noon and again from 6 pm to 9 pm. Richie's colleague Kiran, who also lives in Dwarka, prefers to take the metro. But it does not ease her commute much. To cover the last leg of her journey – 4.5 km from the metro station to office – she relies on autorickshaws, which take anywhere from 20 to 40 minutes to cover the distance, depending on congestion. This is a daily ordeal, which has a huge impact on our quality of life and mental health. We lose productive time stuck in traffic; we lose time with our families; and by the time we reach our destination, it feels as though we have come through a warzone. The gridlock also means more pollution as vehicles stuck in traffic continue to burn fuel inefficiently, spewing harmful emissions into the atmosphere. This increases exposure to higher concentrations of toxic pollutants such as nitrogen oxides (NOx) and particulate matter, which are linked to respiratory illnesses, cardiovascular diseases and premature deaths. The 2018 emissions inventory studies by The Energy and Resources Institute (TERI), a research institute headquartered in Delhi, along with Automotive Research Association of India in Pune and the Indian Institute of Tropical Meteorology (IITM), also in Pune, show that vehicles contribute about 40 per cent of the particulate load and 81 per cent of NOx emissions from all sources in Delhi. Dynamic estimation of the changing contribution of sources during winter months by IITM shows that vehicles' contribution can be more than 50 per cent of the daily overall pollution from local sources in Delhi. This indicates the potentially high impact of roadside exposure due to congestion on the health of Kiran, who says traffic conditions have barely improved over last 20 years, despite repeated government efforts to widen roads, build flyovers and expand the metro network. An annual traffic index released by TomTom NV, a Dutch multinational developer of location technology, for 2024 shows that on average, a person living in urban India spends close to 94 hours a year for a 10 km one-way journey within the city centre, and 75.6 hours for the same journey in the metro region. Three Indian cities – Kolkata, Bengaluru and Pune – feature among the top five in the list of slowest cities in the world on the index, with modelled average travel time ranging between 33 and 35 minutes per 10 km. To understand the patterns and triggers of congestion, between May and June visited more than 40 cities across the country. For clarity, we have grouped them into three categories – mega and metro cities (with populations over 4 million), million-plus cities (with populations between 1 million and 4 million), and sub-million cities (with populations under 1 million) – and also analysed their mobility patterns over the past two decades. This was not easy, primarily because our cities do not have official systems for collecting data related to trends in modal share (percentage of people using a particular mode of transport), travel demand, travel distances, traffic and journey speed and

congestion impacts, among others. So, the documents considered for this assessment range from city mobility plans to independent research, and have been prepared in different years; in several cases, the information is old and not comparable. For instance, the data available for Delhi, Agartala and Surat are nearly 20 years old, while those for Bengaluru, Pune, Bhubaneswar, Chennai, Hyderabad, Shimla, Varanasi, Bhopal and Jaipur are 17 years old. Data for Kolkata is a quarter-century old. In Ahmedabad and Tiruchirappalli, data sets are not available to show dependence on different modes of transport. However, together with our on ground reportage, these documents offer a glimpse into how India's cities move. Here are the key findings. **Walking and cycling, an undeniable reality**

Across the cities nearly half of the population still cycle or simply walk to work. In the national capital 42 per cent people commute by cycling or walking; the figures are even higher in Mumbai (47 per cent) and Kolkata (48 per cent). In fact, the share of non-motorised transport (NMT) – which includes walking and cycling – in overall urban transportation has increased over the past two decades across all cities visited by Mega and metro cities have recorded the highest increase of 5 per cent. In million-plus cities, the NMT share has grown by 1.5 cent, while smaller (sub-million) cities show a 3.21 per cent rise. In several million-plus and smaller cities, these low-cost modes of transport remain a critical backbone of mobility. They account for 54.5 per cent of travel in Varanasi, a pilgrimage town in Uttar Pradesh; 64 per cent in Madhya Pradesh's Singrauli, known for its power plants; and 55 per cent in Visakhapatnam, the most populous city in Andhra Pradesh known for its ports and industries.

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- City decongestion planned by relocating truck terminal & buses to Panjapur is adding new marketplace
- *Mobility plans highlight need for footpaths, cycle tracks, electrification*

UTA for Trichy still pending despite longstanding policy is mandate to Trichy has made progress in lowering its average annual Particular Matter (PM10) levels since 2019 and aims to reduce them further, according to the Trichy city municipal corporation. The city implemented several measures to bring its PM10 levels down from over 70 microgrammes per cubic meter ($\mu\text{g} / \text{m}^3$) to just over 40 $\mu\text{g} / \text{m}^3$ in recent years. Being the fourth-largest city in Tamil Nadu, Trichy has experienced substantial population growth, increased employment activities, a rise in income levels, greater ownership of private motorised vehicles and urban sprawl. Being the fourth-largest city in Tamil Nadu, Trichy has been experienced substantial population growth, increased employment activities, a rise in income levels, greater ownership of private motorised vehicles and urban sprawl.