URBAN MOBILITY IN INDIA

Emerging Issues in Urban Transport

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Contribution:

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Abbreviations:

GDP- Gross Domestic Product
GHG- Green House Gas
ICE- Internal Combustion Engine
NMT- Non-Motorised Transport
EV- Electric Vehicle
AI- Artificial Intelligence
IPT- Intermediate Public Transport
BRTS- Bus Rapid Transit System
MRTS- Mass Rapid Transit System
SPV-Special Purpose Vehicle
CMP- Comprehensive Mobility Plan
ITS- Intelligent Transport System
TOD- Transit Oriented Development

1. Introduction

Urbanisation is taking place in a rapid manner in the current situation all over the world and India, as the second largest populated country with 31% of urban population (2011 census) is going to attain 50% urbanisation by 2050. Here, the transport sector plays a major role behind the growth of an urban area by providing accessibility to all kind of services along with movement of the people residing in it. Mobility in urban area is not only about the people but it also includes the freight and logistics where, the goods and services should reach to the people in time.

Similar to the human body, urban mobility works as the veins for urban area by providing a medium of movement to the people and other activities from one point to another, which directly or indirectly strengthen the economy of the area as well as nation. With the rapid urbanisation, the spatial forms of urban areas are also expanding and mobility pattern is changing day by day. In a country like India, the transport sector is vast and diversified. Especially in big metro cities, urban mobility is not able to cater to the increasing urban population and freight movement. Hence, there is a need for improvement in the Urban Mobility system. Therefore, we can say, “urban mobility is the backbone of urban area”.

Various policies and projects are being implemented in India at both National and State levels to enhance the passenger mobility, logistics and freight transport system. “National Urban Transport Policy”, “National Mission on sustainable habitat”, “EV policy” and TOD are examples of urban transport policies and projects in India.

Apart from this, There new policies and projects like EV policy, dedicated freight corroder, etc. are in initial stages to meet the sustainable goal as well as peoples demand.

UTTIPEC in TOD, BRTS and MRTS corridors are some of the major examples of transport projects in India but they are successful to the limited cities only.

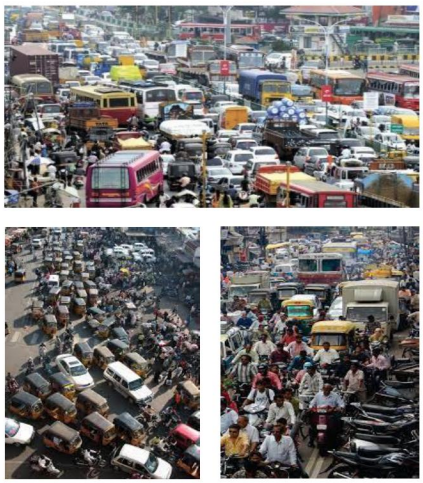
2. Urban Mobility in Indian Context

Although, urban population in India is less than one third of total population but it contributes almost 70% of the total GDP (Barclay, 2014). In the last two decades the number people migrated from rural to the urban area is substantial. The dependency on urban mobility is increasing with the increase in population. The uncontrolled urbanisation is creating various challenges in the urban area and urban mobility is one them. The present scenarios of urban mobility in most of the Indian cities very much similar to following points,

- Growing use of personal vehicle.
- Declining ridership of public transport.
- Poor pedestrian and bicycle infrastructure.
- Lack of integration between the modes.
- Vehicular air and noise pollution.

The transport service includes all class and categories of population in urban areas. Despite the increasing levels of people's movement in Indian cities, access to places, activities and services is becoming increasingly difficult in terms of convenience, cost and time. In addition to these, people are moving towards the suburban areas and unplanned transport corridors with long distance trips, huge traffics and accident rate etc. makes urban mobility a huge challenge.

Due to the haphazard growth of populations, the cities are expanding in unplanned manner. In this regard, we cannot ignore the substantial informal settlements within the cities, which is a common issue and developing a transport plan to include these growing settlements is a challenge often faced by planning authorities. There is need of equity in urban mobility, which can cater all classes of people socially as well as economically.



(Source-IndiaTimes.com)

These above pictures define the unplanned and disturbed traffic conditions in most of our Indian cities (Kolkata, Mumbai, Chennai etc.).

Informal settlements are emerging as a challenge behind the unstable, unbalanced and, inadequate organic transport system and the financially weaker section belongs to it, who also need the transport system in a reasonable price.

3. Key Issues & Challenges

3.1 Key Issues in urban transport

- **Environmental Pollution**

Air pollution in Indian cities is the fifth leading cause of death and transport sector contributes 15% CO2 emission along with noise, water pollution and the Increasing GHG emission is also a matter of concern (Lancent, 2019). Although, Government has taken various steps forward like EV policy to electrify the vehicles but it is very much in its Initial stage in India and major focuses are to reduce the harmful emissions causing by the privately owned vehicles, charging stations installation and reduce crude oil consumption.

ICE vehicles are the major contributors to the environment pollution in urban areas. Apart from the harmful gas emission, they also produce noise pollution and heat emission from burning crude oil.

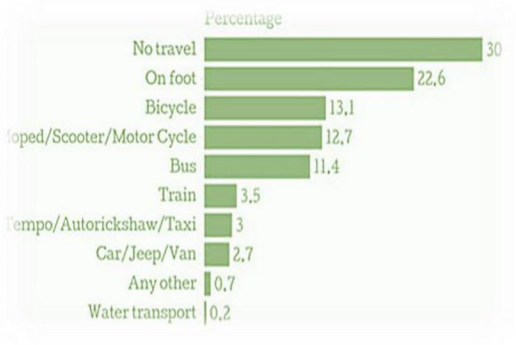
- **Road congestion (also parking unavailability)**

With huge number of urban traffic (private vehicles), road congestion is the most immediate transport problem in many of our major cities. Vehicles beyond the catering capacity of the cities are also creating parking issues. The post Covid-19 situation is also reducing the public transport demand in most of our cities (TheWorldBank, 2021). With slow average speed and more travel time during congestion, the GHG emission also increases.

- **Equity**

The transport service is still not equitably distributed to all parts of the cities and society. Apart from the people of marginalised section, the normal people are not able to access most of the transport services. Therefore, the mobility problems of poor are a special concern. Equity in urban mobility has to be equal benefits for all the users residing in cities. All modes should be accessible and approachable to all the people but the ground reality is far away from these.

Equity is not only about the poor or marginal groups but it also includes the services like special provisions for elder people and pregnant women in public transport, transport access for the people beyond city limits, Pedestrians and cycle lane etc., which are out of reach form the users.



(Source-Census 2011)

As per the above chart, the number of pedestrians and NMT users are very high. Pedestrian and NMT movements are the only unorganised movement and due to improper infrastructures, people are taking as their compulsion rather than an option of travelling.

• Lack of Public Transport

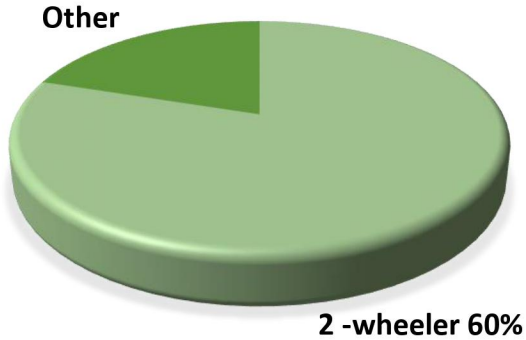
The high percentage of travel in India is by the lower income group is by foot or bicycle who cannot afford motorized transport. The improper infrastructure of IPT as feeder service is still at negligible scale.

Only in cities with huge population and longer trip distances, the limited classes of people only prefer the use of public transport. Walking and cycling play major role in last mile connectivity with safe, secure and walkable distance to approach the nearest metro or bus stop but the infrastructures are in poor condition at the current scenario.

• Traffic Crashes

In India, an average 1274 accidents and 405 deaths are happening every day. In Indian scenario, due to Inadequate traffic infrastructure designs, distracted driving behaviours, unawareness or violation of the traffic rules, unsafe vehicles conditions, the high percentage of fatalities are happening. Most of the accidents consist of pedestrian, bicyclists and slow-moving riders.

• Two-wheeler Ownership



(Source-Census 2011)

The number of two wheelers is increasing as an affordable medium for the people of small and medium towns. In the big cities, also people prefer two wheelers for making short trips and assignments against the chocked infrastructure.

The sprawling, low-density development in cities has made cars and motorcycles use a much more necessary to get around. Two-wheeler constitutes nearly 60% of registered vehicles in most of the cities in India (2011 Census).

Cars and Two-wheelers are growing at the rate of 9.6 and 10.3% per annum (2011 Census). By improving the IPT and public transport, we can create a major difference in congestion, travel time and growing pollution impact in cities.

3.2 Challenges

- **Regulatory structure**

There are multiple different legislations available for transport systems, but there is absence of umbrella legislation to address the urban transport requirement of Indian cities comprehensively. The umbrella legislation helps to improve transparency and coordination among them.

- **Diversified Institutional structure**

There is a lack of coordination in working together between different institutions under central, state and city level. In the result, multiple agencies under different government bodies are unable to work together.

(Source-KhajeelTimes.com)

The pictures show the smart traffic control of Dubai. It is a best example of traffic control system combing AI, ITS, big data and Internet to detect road incidents, provide better responses, monitoring traffic, capturing data, running smart services, reduce congestion and deliver smooth mobility to the commuters (Khajeel, 2021).

- **Human Capital**

Although, employment or job opportunities are high in this sector but in some cases due to various limitations like lack of skills and training, limited ability to take up new tasks, area specific human resource availability the capacity building is still in poor stage.

- **Data**

Lack of data availability, no digitized form of data, time-consuming process to access the data, low quality data availability, no real time data etc. are constrain behind the improvement of urban transport system and effective of Governance.

4. Suggestions and Way forward:

1. Promote Sustainable Mobility

With the aim of zero carbon emission, there is need to shift from ICE modes to environment friendly modes like NMT and EV (both private and public) to support low carbon and less polluting mobility. Also, we can promote public transport over private.

2. Improve Last-mile connectivity

The integration of walking or bicycling with the public transports like BRTS, MRTS to promote public transport over the private transport. In the special cases, we can introduce environment friendly on demand transport systems (Ola, Uber) through sharing ridership to the destination. Improve the IPT services as feeder service to link the public transport and last mile connectivity.

3. Flexibility and Transparency in mobility

Provide multi modal transport facility, which can meet both the choice and demand of citizens. Better coordination among different transport systems at different levels (both policy and administrative) can help people to reach their destinations in an easy and convenient way.

4. Capacity building and public awareness

Capacity building defines the training and human resource development to improve the performance and through public awareness, we can promote the urban mobility as smooth, environment friendly and user-friendly mode to access.

5. Government level initiatives

SPV to coordinate different institutions with in the city, umbrella legislation for comprehensive development of transport, Special focus to the vulnerable groups and all other groups from policy level to the ground level, make provision to promote and well integration for all the modes of transport.

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