

## A Study and Analysis of the Development of Urban Transportation Policy in India

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**Abstract**— In comparison to most European and North American cities, Canadian cities experience far higher levels of traffic fatalities, injuries, noise pollution, and inequalities. The extremely rapid growth of India's largest cities in an environment of low incomes, inadequate and outdated transportation infrastructure, rampant suburban sprawl, sharp increases in vehicle ownership and use, deteriorating bus services, a variety of motorized and non-motorized transport modes sharing roadways, and inadequate as well as uncoordinated land use and transportation planning have all contributed to the country's transportation crisis. This article evaluates the severity and root causes of the most pressing issues in India's transportation system and travel behavior and suggests policy changes to help the country's urban transportation dilemma.

**Keywords**— Transportation system, Transport Policies, Sustainability, urban Transportation

### I. INTRODUCTION

India's population is expanding quickly, and this, combined with rising economic levels, causes a substantial increase in the number of vehicles. India is currently the sixth-largest automobile producer in the world. India ranks in the center of the world's nations in terms of per capita automobile ownership. Hence, any sudden rise in income levels and the lack of an adequate public transit system encourage the expansion of vehicles in India. By 2030, it is anticipated that yearly sales of passenger automobiles would reach 10 million. The abrupt increase in vehicles leads to a number of problems, including air pollution, traffic congestion, and the

use of fossil fuels. A country's economy is seen to be extremely dependent on the transportation sector. The fossil fuel-intensive Indian transportation industry, which is expanding quickly, accounts for 6.5% of the country's GDP (GDP). Behind China and the United States of America, India is the third largest emitter of greenhouse gases globally. Due to its importance, the transportation sector accounts for around 24% of all CO<sub>2</sub> emissions, with road transportation contributing the most.

One of the main causes of climate change is the transportation industry. Most transportation policies are built around the idea that climate change is one of the greatest challenges to humanity. Worldwide initiatives are being made to minimize emissions from all sources, including the transportation industry. An international climate change pact with legal force was signed in 2015 in Paris. Under this pact, almost 196 nations made a commitment to prevent global warming from rising by more than 1.5 degrees Celsius over pre-industrial levels. Notwithstanding the commitments and goals, emissions grew, and the reduction goal has multiplied five times. In recent years, India has initiated numerous measures to solve these problems. These initiatives mark a change from conventional supply-centric strategies and planning to demand-centric ones. Since the majority of Indians lived in rural areas after independence, the country's transportation system placed a strong emphasis on bringing these areas together. In this regard, there has been a major development of the infrastructure through the building of roads, railroads, flyovers, and underpasses. Yet, the rising number of vehicles in India brought with it

additional problems like snarled traffic, extended travel times, climate change, and traffic accidents. This caused the Indian government's strategic strategy to change. The ninth planning commission recommended building out a comprehensive mass transit system to address the expanding mobility issues. Since then, numerous projects have been put in place with the overarching objective of creating a sustainable transportation system to alleviate India's transportation issue

## II. OBJECTIVE:

This paper tries to outline the development of India's urban passenger transportation policies. The policy measures taken into consideration in this analysis are limited to urban road passenger transportation from the post-independence era. While investigating policies for other transport sectors is similarly important, doing so in one article may undermine the in-depth review that is necessary. As a result, it is advised that this paper's future focus be on such policies. The following are the study's goals at this time.

- 1) To examine and expose numerous externalities and issues with transportation in India.
- 2) Review and discussion of the Government of India's (GOI) varied policy responses to the escalating urban transportation issues.
- 3) To determine the shortcomings and problems with the current transportation regulations.

## III. EVOLUTION OF URBAN TRANSPORT:

From horse-drawn carriages and rickshaws to Uber and bullet trains, travelling between points A and B has become simpler and faster.

Mobility or freedom of movement are fundamental human rights in many nations. When it comes to travelling around, public transportation is quite important, particularly for individuals who cannot afford to purchase a car. In metropolitan regions,

especially, buses, trains, and subways are how we go to our destinations.

In 39 nations throughout the world, 243 billion public transportation trips were taken in the previous five years, according to Union Internationale des Transports Publics (UITP). With 85 billion total journeys, China has the largest market for public transportation, followed by Japan and Brazil. Urban areas have shifted towards being more and more dominated by automobiles during the last few decades. With the rapid expansion of vehicles, cities that lack experience or have poor town planning face problems like pollution, traffic congestion, accidents, and environmental degradation.

Our transportation networks were altered by technology, allowing commuters to use private vehicles like taxis. MyTaxi in Europe, GrabTaxi in China, Ola/Uber/Meru in India, Didi Chuxing in Southeast Asia, and Uber, Ola, etc. Uber is the

## TRANSPORTATION REGULATIONS:

India is a nation whose economy is in transition from one that is developing to one that is developed. Without the industry and service sectors, which are predominantly centred in metropolitan areas, the enormous economic growth would not have been conceivable. As a result, there is a significant correlation between the economic growth of a metropolitan area and India's total economic growth. Yet, as noted in "Developed Economies," economic expansion is correlated with an increase in transportation and environmental issues. Following independence, India made numerous efforts through numerous policy changes to address a variety of transportation-related problems.

**The following sub-sections contain a list and description of some of the major policies.**

1. Metro Railways (Construction of Works), 1978 Act and Amendment Act in 1982
2. The Air (Prevention and Control of Pollution) Act, 1981
3. The Environment (Protection) Act, 1986
4. The Motor Vehicles Act, 1988
5. Integrated Transport Policy, 2001
6. National Auto Fuel Policy, 2003
7. Jawaharlal Nehru National Urban Renewal Mission (JNNURM), 2005
8. National Urban Transport Policy (NUTP), 2006
9. National Action Plan on Climate Change, 2009
10. National Road Safety Policy, 2010
11. National Electric Mobility Mission Plan (NEMMP) 2013
12. India Transport Report: Moving India to 2032 (2014)
13. Intended Nationally Determined Contribution (INDC), 2015
14. Smart Cities Mission, 2015
15. Green Urban Mobility Scheme, 2017
16. National Policy on Transit-Oriented Development, 2017
17. Metro Rail Policy 2017
18. National E-Mobility Programme, 2018
19. National Policy on Biofuels, 2018
20. Motor Vehicles Act (Amendment Bill, 2019)

#### V. CHALLENGES AND POLICY GAPS:

Traffic congestion and automotive pollution are still rising in India despite numerous efforts by the GOI. The majority of the laws in force today have been developed over the course of four decades. The evolving policies, however, fall short of meeting the population's burgeoning transportation needs. The necessity to enhance the licensing system and lower accidents is addressed by the Motor Vehicles Act (1988).

These kinds of regulations were put in place when there were a lot fewer vehicles on the road and significantly lower income levels than there are now. There aren't many major players who can meet the demand for ETS on a PAN India basis. The penalties have been altered, nonetheless, by the

most recent revision to the Motor Vehicle Act (Amendment Bill, 2019). The effect is yet not fully understood.

The JNNURM and NUTP plans specifically attracted attention to the national transportation industry. These regulations seek to lessen car expansion, promote hybrid and electric vehicles, minimise air pollution, and enhance the availability of comfortable, secure, and affordable public transportation. These regulations recommend that in order to handle the local transportation concerns, the Urban Local Bodies of the major cities should create Comprehensive Mobility Plans. These CMPs are intended to serve as the development of the transportation system's future development manuals. The CMPs make only general mention of the plans for reducing emissions. They talk about the goals but do not outline the strategies for achieving them. A typical CMP, for instance, estimates a percentage rise in the modal share of public transportation. The absence of thorough policy planning and review leaves a knowledge gap on reaching the targeted goal. One of the reasons the CMPs do this is because not significantly reduce traffic issues, and the number of private vehicles keeps increasing. Long delays between the amendment and implementation phases of policies like transit-oriented development cause a significant increase in land prices. In order to create the NMT infrastructure, which serves as feeders to transit hubs, private land acquisition is difficult. As a result, all LUB participants should work together to develop appropriate land-use transportation policies, such as the Integrated Transport Policy, which also supports the TOD policy.

#### Social Justice:

Internationally, one of the essential elements that is frequently overlooked in transportation regulations is social equity. The zoning system has affected land prices in metropolitan areas. Low-income persons who cannot afford such expensive locales

are forced to relocate to a region that is substantially less expensive due to higher land prices at specific locations.

According to studies, the lower-income group relies heavily on public transit for commuting.

3. Low-income populations frequently lack access to basic public transportation services as a result of ineffective land-use transportation policy, making commuting difficult. They, therefore, rely on private vehicles, which increases the expense of their trip relative to using public transit and limits how far they can travel in quest of better possibilities. Vehicles produce more pollution and cause more traffic, while low-income populations bear a significant portion of the burden. Unfortunately, the planning framework for India's current transportation regulations does not take equity into account. Men also travel more than women, which increases traffic congestion and pollution. The wealthy groups employ more intimate language. most transportation policies were implemented a necessity in the transportation industry and are promoting it.

## 2. Fuel Technologies:

In 2009, the National Policy on Biofuels was first put into effect. The desired goals for blending biofuels with gasoline and diesel were not reached because of the inadequate availability of biofuels in India. As a result, in 2019 the GOI announced an updated policy with new aims.

India has to produce 22% more biofuel, under the suggested 2030 targets. The annual output growth between 2019 and 2025, however, reveals an 86% shortfall in production. Plans and initiatives for electric mobility by the GOI will aid in the transition away from fossil fuels as a source of energy. Would it, however, be able to fix the emissions issue is the crucial query that needs to be answered. India currently uses 26% renewable and

74% non-renewable energy sources. Hence, the electricity produced using this energy vehicle emissions are significantly increased as a result of the mix.

## 3. Traffic Safety:

Road safety is another area where government policies are imposed. The National Road Safety Policy was introduced in this regard in 2010. With infrastructural upgrades, this policy seeks to increase road safety. This policy had an effect in lowering the rate of increase in accidents in India. The 2010 National Road Safety Policy Intervention has assisted in reducing the growth in traffic-related deaths, injuries, and illnesses, and this growth has been nearly steady from 2010 to 2019. Urban sprawl was caused by the growth of the new townships, which raised the value of the land and prompted the construction of commercial complexes.

These places are also sparsely populated, making it difficult to provide an excellent public transit infrastructure.

## 4. Institutional set up in cities and urban governance:

Urban transportation governance is a multidimensional process where several parties influence the overall level of quality and quantity of transportation infrastructure as well as the provision of related services. Implementing urban transportation strategies involves strong governance. Successful policy implementation depends on an institutional framework that is functionally sound.

## VI. CONCLUSION:

The urban passenger transportation industry is essential to everyone's daily existence. It is regarded as the foundation of any nation's economy and a significant source of air pollution. In recent decades, attention has been drawn more and more to the role that urban transportation plays in climate

change. Urban mobility is the outcome of a confluence of multifaceted policies, operations, and operational deficiencies.

Nevertheless, it was discovered that the initiatives were not functioning as expected. The fundamental cause of these unfavorable outcomes is the absence of rigorous oversight and coordination amongst different institutions/ministries. Moreover, the creation of mixed communities and compact city shapes might lessen the need for travel. The activity zones are brought closer together by the compact city shapes. Motorized automotive travel can be decreased and communities can become safer and more livable by offering an affordable and efficient NMT system. It is past time for India to increase its investments in creating large mass transit systems supported by an effective NMT system, making cities more welcoming to pedestrians and cyclists. Cities become less crowded, polluted, and unsafe as a result.

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