

Question of urban transport in India

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ABSTRACT

Public bus transport is of great import in India. Not only is an efficient public bus system important for meeting the mobility needs in this rapidly growing economy, but a higher share of bus transport would also have a positive impact on pollution, both local and global, and energy demand. That apart, improved availability of public transport is critical for ensuring access to basic services such as education and health, and integrating rural communities into the economic mainstream. Hence, it is incumbent on governments in developing countries to institute appropriate policy initiatives to increase the share of public transport. The increasingly urban character of growth has led to a rapid growth in transportation activity in India cities.

Introduction

India's transport crisis has been exacerbated by the extremely rapid growth of India's largest cities in a context of low incomes, limited and outdated transport infrastructure, rampant suburban sprawl, sharply rising motor vehicle ownership and use, deteriorating bus services, a wide range of motorized and non-motorized transport modes sharing roadways, and inadequate as well as uncoordinated land use and transport planning. In the following section I discuss the major issues of urban transportation in India:

a. Changing pattern of high growth rate of motor vehicles in India

The economic growth, increasing disposable income, and increasing urbanization is creating greater demand for transport and the number of vehicles on India's road system is growing at a rate of 10% per annum. India had 89.6 million registered motor vehicles at the end of 2005/06. Personalized modes (two wheelers and cars) accounted for about 85% of the total number of motor vehicles in the country. A further break up of motor vehicle population reflects the dominance of two-wheelers with a share of more than 72% in the total vehicle population, followed by passenger cars at 13%. In contrast to personal vehicles, the percentage share of buses in the total number of registered vehicles has declined from 11.1% in 1951 to 1.1% during 2006, which indicates slow growth in public transport modes.

b. Equity issues with 25.7% of the urban population living below the poverty line, the mobility problems of the poor need special attention. Although India experienced very high rates of motorization in the past decade due to higher growth rates witnessed in the last decade, the growth has bypassed a vast majority of the population. The following table shows that a mere 4.6% of the urban households owned a motor car whereas 41.7% of the urban households owned a bicycle. Most of the poor urban households cannot afford any private motorized transport and are forced to walk or cycle long distances. About two-thirds of the trips in selected Indian cities were by walking or cycling as compared to 10-20% of the trips by private motorized transport (mainly cars and motor cycles). Similar results were found by Baker et al (2005) for the city of Greater Mumbai. Baker et al did a survey of 5,000 households and found that 44% of the commuters in Mumbai walk to work and the proportion of poor people who walk to work is even higher at 63%.

Table 1: Percentage of urban households possessing a specific vehicle

Year	Bicycle	Two wheeler (%)	Motor car (%)
1993-94	37.1	11.6	1.2
1999-00	39.0	18.4	2.7
2004-05	41.7	26.0	4.6

Source: NSS 2005

However, transport policy in India continues to focus on the needs of the urban elite and middle class. Most of the funds are allocated to roadway expansions and improvements such as construction of flyovers, multi-laning of existing roads etc. which encourage the use of personal vehicles and ignore the needs of the poor. Urban transport infrastructure does not include any facilities for walking and cycling. With the exception of few cities, most of the major road networks have not been provided with footpaths and bicycle lanes.

c. Importance of intermediate personal transport (IPT) and Para transit. Public transport facilities are inadequate in most Indian cities. Therefore, IPT modes like auto-rickshaws, maxi cabs and motor cabs assume importance to meet the travel demand, particularly in the smaller cities. There are also locally contrived mechanical contraptions (commonly called jugad) which are used for ferrying goods and passengers in most cities of India. IPT are preferred by urban residents because they provide greater flexibility, frequency, better access and comfort over existing public transport.

Auto-rickshaws/passenger three wheelers are a very important mode of travel in most of the Indian cities. The share of passenger three wheelers in total stock of passenger vehicles namely two wheelers, passenger three wheelers, cars and jeeps, taxis and buses was 4% in 2006. The share of passenger three wheelers is highest in Cochin (43%) followed by Patna (10%) and Bombay (8%).

Public transport is the predominant mode of transport in mega cities while the IPT modes are popular in smaller cities. This is because larger cities have better public transport facilities as compared to smaller cities. The share of trips by IPT modes was higher than public transport in cities with population of 0.1-0.5 million in 1998 but the share of IPT modes in total trips declined with increase in city size.

d.High congestion levels Traffic congestion is one of the most pressing transport problems in Indian cities despite the fact that vehicular ownership rates in most Indian cities is much lower than developed countries. The road way speeds for motor vehicles has declined in most cities and the average travel time has increased greatly. The stop-and-go traffic flow caused by congestion also wastes energy and increases pollution. Moreover, roadway congestion increases the likelihood of crashes.

The three main reasons for increasing congestion levels in the Indian cities are as follows:

1. Uneven distribution of vehicles: The vehicular penetration of India at 22 vehicles/1000 persons is quite low as compared to the developed countries like U.S.A. (675/1000 persons) and Japan (598/1000 persons). However, even at such low levels of motorization congestion has become a major problem in Indian cities because of uneven distribution of vehicle population. In 2006, the twenty-three metropolitan cities in India, each with over one million population, accounted for about 28% of the total vehicles registered in the country. About 53% of the total cars and 31% of the two-wheelers in the country were confined to these metropolitan cities in 2006.

Moreover even within metropolitan cities vehicles are distributed very unevenly. In 2006, Delhi, Mumbai, Kolkata and Bangalore accounted for 48% of the total registered vehicles in metropolitan cities. Delhi had the highest stock of registered motor vehicles at 4.48 million and its share in the two wheeler and car population in metropolitan cities was 16% and 30% respectively in 2006.

2. Heterogeneous traffic: Indian cities are characterized by the co-existence of slow non-motorized modes such as bicycles, cycle-rickshaws, pedestrians, and animal-drawn carts along with faster motorized modes such as cars, trucks, buses, and auto rickshaws. Slow moving transport modes reduce the average motorway speeds for motor vehicles and increase travel time of urban commuters. They also increase the probability of accidents.

3. Inadequate transport infrastructure: The motor vehicle population in metropolitan cities of India increased from 7.42 million in 1991 to 21.06 million in 2006, registering an average annual growth rate of 8.4%. (MORTH 2009) However, the length of urban roads increased from 186,799 km in 1991 to 301,310 km in 2004 at an average annual growth rate of 3.7%. (TERI 2009) Moreover, most roads in Indian cities are narrow, with only one lane in each direction. Barring a few cities, roads are generally in a state of disrepair and there is a general lack of modern traffic signals and signage.

The addition of more capacity in the form of roads and flyovers has not been able to meet surging demand by

private vehicles. These measures have only succeeded in shifting the point of congestion further up the traffic stream, without really improving the overall performance of the network.

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