

SURFACE TRANSPORT IN INDIA
(CHANGING SCENARIO)

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Editors

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URBAN ROAD TRANSPORT SCENARIO IN INDIA

- *Dr. M. Selvam*

Road transport plays a dominant role not only in the economic and political spheres but also in the social sphere; its influence on the life of the people is considerable. It increases the standard of living of the people by distributing goods and offering services. It further helps the spread of education by bringing articles, reports, books, study materials within the reach of students and by ensuring quick distribution of mails. Road transport, especially bus transport, has virtually destroyed the feeling of isolation among the people living in distant areas. The development of bus transport also creates similarity in social customs, manner of living, broadens the outlook of the people from one caste to another and from one religion to another by which it eradicates the spirit of sectarianism.

There is a direct and intimate link between the availability of transport facilities and the ability of human being to create good environment in any country. The availability of adequate transport facilities has contributed to the development of a nation in all fields. Further, industrialization led to urbanization and the availability of transport facilities is a pre-requisite for industrial growth. The concentration of population in urban areas and the migration of people from rural areas have created many socio-economic problems. The outflow of people from rural areas is likely to prevent all the opportunities of development and utilisation of local resources. The density of population in urban areas leads to problems of housing, slum, unemployment, and scarcity of goods. Effectively the urban road transport helps in solving the above problems. Further in order to solve them, the growth of urban population should be studied intensively.

Urban Population in India

The urban population of our country is increasing at a much faster rate when compared with the increase in the total population. In India, the big cities are becoming bigger due to increasing migration from the rural areas. Rapid growth of population in Indian cities inevitably strains urban transport system and erode their capacity to cope with the growing complexities of overall urban development. The projected growth of population and its distribution between urban and rural areas are given in Table - 5.1. The urban population of 25.85 million in 1901 increased to 211.5 million in 1991. It may go upto 345 million in 2001. This gives an idea about the travel demand to be fulfilled due to higher rate of population growth. It is further projected that more than 50% of population in the country would be living in urban areas by the first quarter of the 21st century.¹

Urban Road Transport Scenario- Current Situation

The Indian urban transport scene, in short, can be visualised as follows :

- Poor speed on roads due to inverse proportion of road capacity and vehicle population.
- Bottlenecks creating traffic jams due to misuse of roads.
- Safety of road users at stake due to irresponsible and irrational movement.
- Unaffordable cost of travel due to use of personalised and para transit modes.
- Air and noise pollution due to increasing use of auto modes, and
- High consumption of scarce petroleum energy due to use of multiple modes to carry some volume of traffic.

Indian cities are growing at the rate of more than four percent a year, which is twice the rate of growth of population and the highest in the world.² The reasons for this rapid growth of urbanisation is due to over-riding factors such as increasing employment opportunities, city amenities (like ready availability of

electricity, transport, housing, education, medical care, banking facilities) and opportunities for enjoying the pleasures of sophisticated city life. Indian cities are of great economic importance and their efficient functioning influence future national economic growth. The efficient functioning depends mainly on efficient road transport.

The current situation of urban areas in the developing countries like India is alarming. Public transport is grossly inadequate both in quantity and quality. It is estimated that 25.5 million trips a day are being made by the buses in Indian cities. By the year 2000 A.D. this figure will be at least doubled.³ Considering the growth in travel demand due to growth in population and sprawl, trip rate statistics of five metropolitan cities on passenger KMs is given in Table - 5.2. The bus service in almost all the cities of India falls short of demand; systems are often severely over-stretched, uncomfortable and unreliable. Thus only through an efficient and economic bus transport system, they could meet the mobility requirements of growing urban population. The city authorities should carefully consider the various options available to solve travel problems. Urban road transport problems cannot be solved by adoption of ready - made universal policies, as social, economical and topographical conditions vary from country to country and city to city. India is not an exception.

Purpose of Travel

The natural tendency of people to go on travelling has usually led the way for road transport and the transport of things or goods has normally followed it. Urbanisation depends on road transport, without which, urbanisation cannot grow. As population concentrates rapidly in the urban areas, road transport between urban and its sub-urban (otherwise known as intra - city road transport) becomes essential.

All this means simply that urban road transport which is now prevalent will continue to be more important than in the past. People have always travelled to know much of the world's civilisation, culture, advancement etc., and accordingly, the structure of society has changed. Urban road transport becomes very important to the society but at the same time, it has more problems

also. The manner in which people move, the structure of urban road passenger transport and the effects of movements become problematic. To solve these problems, the various purposes for which people are travelling are to be studied by the city planners.

Table -5.3 shows purpose - wise analysis of trips for selected cities of India. In all cities, work trips account for major share, i.e, more than 30%. Mumbai has scored the highest share of work trips (64%), followed by Chennai (52%) and Delhi (46%). The metropolitan cities occupy higher rate of work trips than that of smaller cities. This is true because of the employment potential in the metropolitan cities. Education ranges between 30-49% in majority of the cities while other trips like shopping, social and entertainment trips etc., vary from 20-30%. The work and educational trips put together account for nearly 70-80%.

Congestion on the Road

In India, the urban poor cannot do without bus service. Unfortunately in many cities, bus service supply falls short of demand and hence, they are forced to travel by costlier modes of intermediate public and / or personalised transport irrespective of their capacity to pay. The public find no other way to go in for two wheeler and favour a three wheeler / four wheeler as a public carrier. Motor vehicles in India, which were about 1.86 million in 1971 have grown to about 29 million by 1995. It is also estimated that nearly 70% of the motor vehicles are registered and operated in urban areas.⁴ These small vehicles cause extreme traffic congestion on roads. It may result in uncontrolled vehicle movements in Central Business Areas of city, unrestricted parking, absence of scientific traffic management measures etc., Traffic congestion has already reached its highest pitch during peak hours, i.e, in the morning and in the evening. It also reduces the speed of buses thereby affecting the vehicles utilisation and productivity. It is no doubt that the road congestion particularly in urban areas is going to be trebled by the turn of this century

According to Abid Hussain,⁵ Ex-member, Planning Commission, Govt. of India, the overall journey speeds in large cities have already declined to 20-25 KMs per hour while in Central Business Area, they are even as low as 5-12 KMs per hour. The

reasons for heavy road congestion in Indian cities are :

- Growth of vehicles,
- Narrow width of roads,
- Inadequate right - of - way,
- Poorly designed inter-sections,
- Proliferation of motor vehicles as well as two and three wheelers.
- Lack of segregation of traffic
- Grossly inadequate public transport etc.,

The city planners have to study intensively the various reasons which account for heavy traffic congestion. The growth of mechanised vehicles is a dominant reason for heavy traffic congestion in Indian cities.

Table-5.4 reveals the details on composition and growth of mechanised vehicles in our country during the last four decades. It is clear that the share of two - wheeler is about 60% and by the turn of this century, it is likely to go up to 80%. Two-wheeler is more popular mode of personalised transport and the same trend may likely to continue in future also.

Urban Traffic Demand

In majority of the cities, densification of economic activities even at the cost of displacing the residents from inner areas to outer areas, is allowed; this trend, if allowed to continue, would increase the transport demand further in our urban areas. In order to formulate any system, the demand pattern has to be studied; as a result, an appropriate solution to a problem can be developed. The survey made in a few cities regarding traffic demands is given in Table-5.5. The table indicates that the total traffic demand in these cities. will continue to multiply in future. To formulate an appropriate solution to solve urban travel problems, the total traffic demand is to be considered and reduced considerably.

The Important Measures to Revamp the Ailing Urban Road Passenger Transport System

1. Traffic and town planning must go hand in hand. Urban planning must ensure a less transport intensive, less costly

- and more efficient and congenial urban pattern.
2. The land use planning must be so worked out that self-sufficient neighbourhoods are established so that the desired dispersal of population is ensured. Workers must be located in close proximity to their work places.
 3. To avoid traffic congestion, commuters who can manage their regular travel by walk and on cycle should be encouraged to do so as these modes are cost-effective, energy efficient and do not harm the urban environment.
 4. Commuters who are using auto modes should be encouraged to use the public bus system so that the use of personalised, paratransit and private modes can be minimised. Such an approach will reduce the vehicular traffic on the road and improve speeds and efficiency of public transport.
 5. The physical control measures like traffic engineering and priorities, general physical restraints may play an important role in the improved traffic Management.
 6. Adequate space for parking vehicles at appropriate places may be provided and necessary steps should be taken to enforce the use of such areas.
 7. A proper and systematic scheme for staggering the working hours which can ensure better distribution of trips and reduce road congestion as well as over-crowding on the buses during peak hours may be implemented.
 8. Traffic control signals, road markings, provision of pedestrains, subways and foot over bridges, grade-separated path for vehicles at junctions, traffic education & enforcement are some of the other important aspects which require careful consideration.
 9. It is necessary to optimise the carrying capacity of the existing road network.
 10. There is an urgent need for a fundamental reappraisal of the financing system to meet more effectively the credit needs of the transport sector.
 11. With a view to supporting long term funds to the private as well as STUs sectors, an apex financing body needs to be established.

12. In respect of passenger road transportation, the important role of the STUs, with reference to social objectives, will have to be given due weightage.
13. A National Institute for collecting and analysing data, carrying out research and providing management services in respect of passenger transport operations is urgent and imperative.

Conclusion

The urbanisation is an irreversible trend and it should be accepted as a matter of realities. Popularity of road transport as a mode is unquestionable because of various advantages such as flexibility, door to door service, reliability, speed and competitive resource cost. Since there is a limit for improvement in road capacities, the key solution to the problem of congestion is to adopt a mode which can carry more people and occupy relatively less road space. In order to meet the challenge, it is necessary to support and strengthen the public transport system in such a way as to meet the overall growing demand in cities. The policy of strengthening PTU will not only help in improving mobility on road but also lead to energy conservation control on the air and noise pollution. The bus system has its own limitation of capacities; hence the other option-light rail, suburban train, or any other capacity of mass transit may also be used. The present overall scenario of the transport system in our cities is pitiable.

Reference:

1. Reddy T.S, Khem Chand & Purnima Parida, " Pricing Policy for Urban Bus Transport Systems" Motor Transport; May96, PP.20-24.
2. Patnkar P.G."Urban transport (in India) in Distress" CIRT Publication, Pune, 1989. P-5.
3. Patankar P.G. Op. Cit 1989. P-22.
4. Reddy T.S, Khem Chand & Purnima, Op. Cit.
5. Abid Hussain Forward note on the book " Urban transport (in India) in Distress" CIRT Publication, Pune, 1989.

Table-5.1
Growth of Population: 1901-2000

Year	Population (in million)			% age of Urban Population	Percentage of Growth		
	Total	Rural	Urban		Total	Rural	Urban
1901	238.33	212.48	25.85	10.84	-	-	-
1911	252.01	226.07	25.94	10.29	5.73	6.39	0.35
1921	251.24	223.15	28.09	11.18	0.30	1.29	8.26
1931	278.87	245.41	33.46	11.99	10.99	9.96	19.12
1941	318.54	274.39	44.15	13.86	14.22	11.81	31.97
1951	360.95	298.51	62.44	17.30	13.31	8.79	41.42
1961	439.07	360.14	78.93	17.98	21.64	20.65	26.41
1971	547.95	438.86	109.09	19.91	24.79	21.85	38.22
1981	685.18	525.46	159.72	23.31	25.04	19.73	46.42
1991	846.3	634.8	211.5	25.0	23.51	20.80	32.41
1995	930.0	680.0	250.0	27.0	9.89	7.12	18.21
2000 *	950.0	605.0	345.0	36.31	2.15	-11.02	38.00

* Estimated Growth

Table-5.2
Growth of Passengers KMs in Selected Cities

Name of the City	Passenger KMs (in million)		
	1981	2001	% age of Increase
Bangalore	18.4	54.8	198
Calcutta	111.8	182.0	66
Chennai	47.2	82.2	74
Delhi	95.9	225.1	135
Mumbai	112.2	204.1	82

Source: M.V. Bagade "Urban Transport Scenario in South Asian Countries" *Journal of Transport Management*, Dec 1991, P. 31-35.

Table 5.3
Purpose-Wise Analysis of Trips in Selected Cities.

Name of the city	Purpose of Trips (in percentage)		
	Work	Education	Other Trips
Bangalore	49.0	13.0	38.0
Coimbatore	50.0	39.0	11.0
Chennai	52.0	30.0	18.0
Delhi	46.0	31.0	25.0
Hyderabad	53.0	34.0	13.0
Kanpur	30.5	39.0	30.5
Mumbai	64.0	19.0	17.0
Pune	42.0	33.0	25.0
Thane	33.0	47.0	20.0

Source :P.G. Patankar, Urban Transport (in India) in Distress, Pune ,CIRT Publication, 1989, p.59.

Table 5.4
Composition and Growth of Vehicles (1951-2000)

Year	Two Wheeler	Car,jeeps& Taxis	Buses	Others	Total
1951	0.27 (8.8)	1.59 (52.0)	0.34 (11.2)	0.86 (28.0)	3.06 (100.00)
1961	0.88 (13.3)	3.09 (46.6)	0.57 (8.6)	2.09 (31.5)	6.64 (100.00)
1971	5.76 (30.9)	6.82 (36.6)	0.94 (5.0)	5.12 (27.5)	18.64 (100.00)
1981	25.28 (48.9)	11.17 (21.6)	1.54 (3.0)	13.73 (26.5)	51.73 (100.00)
1987	67.49 (61.1)	17.31 (15.7)	2.64 (2.2)	23.19 (21.0)	110.45 (100.00)
2000*	346.48 (81.8)	33.14 (7.8)	5.46 (1.3)	38.52 (9.1)	423.60 (100.00)

Source : P.G. Patnakar, Urban Transport (in India) in Distress, Pune, CIRT Publication, 1989, P.4-5.

- Note: 1. The Figures in brackets indicate the percentage to the total vehicles in that year
2. * Estimated by CIRT.

Table 5.5
Traffic Demand in Selected Cities

Name of the City	No. % of Daily Trips (in lakhs)		Growth in Times
	1986	2001	
Bangalore	20.00	70.00	2.50
Calcutta	110.00	145.00	1.32
Chennai	67.37	140.40	2.08
Delhi	51.83	120.00	2.32
Hyderabad	29.69	56.39	1.90
Mumbai	118.0	182.59	1.55

Source :P.G.Patankar, Urban Transport (in India) in Distress, Pune, CIRT, Publication, 1989, P.26.