CHAPTER – 2

PASSENGER ROAD TRANSPORTATION SYSTEM IN INDIA
2.1. TRANSPORTATION IN INDIA:

In India, transportation is an important part of the nation’s economy. With a land area of 3,287,240 Kms. and an estimated population of more than 125 Crores; transport in India is both a necessity as well as a convenience. Since the economic liberalization of the 1990s, development of infrastructure within the country has progressed at a rapid pace, and today there is a wide variety of modes of transport by land, water and air. Even with rising income power of the rapidly growing largest middle class mass of India, the numbers of private vehicles – both two wheelers and four wheelers – are also on the rise (www.automobileindia.com).

But Public Transport still remains the primary and preferred mode of transport for most of the population, and India’s public transport systems are among the most heavily utilized in the world. Despite improvements, several aspects of transport are still riddled with problems due to outdated infrastructure and a burgeoning population, and demand for transport infrastructure and a service has been rising by around 10% a year (Owen, 1984). Taxes and bribes are common between state borders, and Transparency International estimates that truckers pay annually $5 billion in bribes. Although India has only 1% of the world’s vehicles, it accounts for 8% of the world’s vehicle fatalities. India’s cities are extremely congested - an average bus speed is 6-10 km/hour in many
large cities. India’s rail network is the longest and the fourth most heavily used system in the world. India’s growing international trade is putting strain on the ports in India. The country’s overburdened airports have just begun to get a makeover, with modernization work and greater investment in the aviation sector. In general, the public transport in India, even though being used virtually as a life line; suffers from outdated technology, incompetent management, corruption, over staffing, and low worker productivity.

2.2. ROAD TRANSPORT IN INDIA:

Road transport is vital to the economic development and social integration of any country in general, and a developing country like India in particular. Road transport fulfils a major role in the Indian economy involving a wide range of industries and services from vehicle manufacturers and suppliers to infrastructure builders, services, energy providers, public authorities, insurance and many others. Road transport, together with the other modes of transport, provides indispensable mobility for all the citizens and goods; and thereby contributes to the economic prosperity of a nation. It is a key factor to social, regional and economic cohesion, including the development of rural areas. However, the impact of road transport on the environment and health remains a major challenge in many aspects.

Transport Sector in India is a very extensive system comprising different modes of transport like roads, railways, aviation, inland waterways and shipping, which facilitates easy and efficient conveyance of goods and people across the country. Road Transport is the primary mode of transport which plays an important role in conveyance of goods and passengers and linking the centers of production, consumption and distribution. It is also a key factor for promoting socio-economic development in terms of social, regional and national integration.

Easy accessibility, flexibility of operations, door-to-door service and reliability have earned road transport an increasingly higher share of both passenger and freight traffic vis-à-vis other transport modes. As per the data up to March, 2010, out of total land
passenger requirements of the country, 85.2% are met by road transport while the remaining 14.8% are carried by railways at present. In addition to these factors, transit time, availability of capacity on alternative modes, quality and reliability of the service, associated costs like warehousing and demurrage etc.; these all influence the choice of the mode of transport. The alternative modes of transport viz. roadways, railways, waterways, airways, mass transit etc., each contribute to the transportation requirements of the economy.

Sustained economic growth has brought about expansion of the transport sector. The share of transport sector in Gross Domestic Product (GDP) of India has increased from 5.8% in 1999-2000 to 6.5% in 2010-11. In particular, the contribution of road transport sector in GDP has increased from 3.8% in 1999-2000 to 4.7% in 2010-11.

The share of various subsectors of the transport sector in the GDP since 2001-02 is given in Table 2.1.

From Table 2.1, it is clearly visible that road transport has emerged as the dominant segment in India’s transportation sector with a share of 4.7 per cent in India’s GDP in comparison to railways that has a mere 1.0 per cent share of GDP in 2010-11; as per the revised data on National Accounts released by the Central Statistical Organization (CSO). It may be noted that the entire increase in percentage share of transport in GDP since 1999-2000 has come from road transport sector only, with share of other modes remaining nearly constant. Over the last twelve years (1999-2000 to 2010-11), for which detailed revised data is available from the CSO, the growth rates across various modes have varied with road transport growing at a much higher rate compared to other competing modes; despite significant barriers to Inter-State road freight and passenger movement compared to inland water, railways and air transport which do not face rigorous en-route checks/barriers.
## Table 2.1: Share of Different Modes of Transport in GDP

<table>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Road Transport</td>
<td>3.8</td>
<td>3.9</td>
<td>3.9</td>
<td>4.1</td>
<td>4.3</td>
<td>4.8</td>
<td>4.8</td>
<td>4.7</td>
<td>4.8</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Water Transport</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Services*</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Total from the Transport Sector</td>
<td>5.8</td>
<td>6.0</td>
<td>6.0</td>
<td>6.2</td>
<td>6.3</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
<td>6.6</td>
<td>6.5</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

*Services incidental to Transport.

Note: All shares in GDP are inclusive of Financial Intermediation Services Indirectly Measured (F.I.S.M.). Data up to 2003-04 are at 1999-2000 prices. Data from 2004-05 onwards are at 2004-05 prices.

Source: Central Statistical Organization

Source: Road Transport Year Book-2009-10 & 2010-11
2.3. REGISTERED MOTOR VEHICLES IN INDIA:

India has experienced a tremendous increase in the total number of registered motor vehicles, which is shown in the following Figure 2.1. The total number of registered motor vehicles increased from about 0.3 million as on 31st March, 1951 to about 142 million as on 31st March, 2011. The total registered vehicles in the country grew at a Compound Annual Growth Rate (CAGR) of 9.9% between 2001 and 2011.

Figure 2.1: Total Number of Registered Motor Vehicles (in millions): 1951 - 2011

Source: Road Transport Year Book-2009-10 & 2010-11
The following Table 2.2 indicates the composition of vehicle population in India. A close look at the figures of vehicular composition in India reveals that the share of two wheelers was about 72% of the total registered motor vehicles in India as on 31st March, 2011, having increased from 8.8% as on 31st March 1951. Concomitantly, the share of number of registered cars, jeeps and taxis in the total number of registered vehicles stood at 13.6% as on 31st March, 2011, marking a steep decline from 52% as on 31st March 1951. The share of buses, including omni buses, in total registered vehicles declined from 11.1% as on 31st March 1951 to 1.1% as on 31st March 2011. The number of registered goods vehicles, which had accounted for 26.8% as on 31st March, 1951 constituted 5.0% of the total vehicles in the country as on 31st March, 2011. In terms of share in total, ‘other vehicles’, which include tractors, trailers, three wheelers (passenger)/Light Motor Vehicles (LMVs) and other miscellaneous vehicles, increased sharply from 1.3% as on 31st March, 1951 to 8.5% as on 31st March, 2011.
Table 2.2: Category-wise Number of Registered Motor Vehicles in India

<table>
<thead>
<tr>
<th>Vehicles</th>
<th>2-Wheelers</th>
<th>Cars / Jeeps / Taxis</th>
<th>Buses</th>
<th>Goods Vehicles</th>
<th>Others*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>As on 31st March</td>
<td>As % of Total Vehicle Population in Million</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1951</td>
<td>8.8</td>
<td>52.0</td>
<td>11.1</td>
<td>26.8</td>
<td>1.3</td>
<td>0.3</td>
</tr>
<tr>
<td>1961</td>
<td>13.2</td>
<td>46.6</td>
<td>8.6</td>
<td>25.3</td>
<td>6.3</td>
<td>0.7</td>
</tr>
<tr>
<td>1971</td>
<td>30.9</td>
<td>36.6</td>
<td>5.0</td>
<td>18.4</td>
<td>9.1</td>
<td>1.9</td>
</tr>
<tr>
<td>1981</td>
<td>48.6</td>
<td>21.5</td>
<td>3.0</td>
<td>10.3</td>
<td>16.6</td>
<td>5.4</td>
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<tr>
<td>1991</td>
<td>66.4</td>
<td>13.8</td>
<td>1.5</td>
<td>6.3</td>
<td>11.9</td>
<td>21.4</td>
</tr>
<tr>
<td>2001</td>
<td>70.1</td>
<td>12.8</td>
<td>1.2</td>
<td>5.4</td>
<td>10.5</td>
<td>55.00</td>
</tr>
<tr>
<td>2002</td>
<td>70.6</td>
<td>12.9</td>
<td>1.1</td>
<td>5.0</td>
<td>10.4</td>
<td>58.92</td>
</tr>
<tr>
<td>2003</td>
<td>70.9</td>
<td>12.8</td>
<td>1.1</td>
<td>5.2</td>
<td>10.0</td>
<td>67.01</td>
</tr>
<tr>
<td>2004</td>
<td>71.4</td>
<td>13.0</td>
<td>1.1</td>
<td>5.2</td>
<td>9.4</td>
<td>72.72</td>
</tr>
<tr>
<td>2005</td>
<td>72.1</td>
<td>12.7</td>
<td>1.1</td>
<td>4.9</td>
<td>9.1</td>
<td>81.5</td>
</tr>
<tr>
<td>2006</td>
<td>72.2</td>
<td>12.9</td>
<td>1.1</td>
<td>4.9</td>
<td>8.8</td>
<td>89.61</td>
</tr>
<tr>
<td>2007</td>
<td>71.5</td>
<td>13.1</td>
<td>1.4</td>
<td>5.3</td>
<td>8.7</td>
<td>96.7</td>
</tr>
<tr>
<td>2008</td>
<td>71.5</td>
<td>13.2</td>
<td>1.4</td>
<td>5.3</td>
<td>8.6</td>
<td>105.3</td>
</tr>
<tr>
<td>2009</td>
<td>71.7</td>
<td>13.3</td>
<td>1.3</td>
<td>5.3</td>
<td>8.4</td>
<td>115.0</td>
</tr>
<tr>
<td>2010</td>
<td>71.7</td>
<td>13.5</td>
<td>1.2</td>
<td>5.0</td>
<td>8.6</td>
<td>127.7</td>
</tr>
<tr>
<td>2011</td>
<td>71.8</td>
<td>13.6</td>
<td>1.1</td>
<td>5.0</td>
<td>8.5</td>
<td>141.8</td>
</tr>
</tbody>
</table>

*Others include Tractors, Trailers, 3-Wheelers (Passenger Vehicles) / LMV and other miscellaneous vehicles which are not classified separately.

Source: Road Transport Year Book-2009-10 & 2010-11

The proliferation in the personalized mode of transport has serious implications for traffic congestion, energy efficiency and pollution. The growth in number of registered vehicles amongst different categories of vehicles during the period of 1991 to 2011, which coincides with era of significant economic reforms, shows that amongst the various categories of vehicles, the highest Compound Annual Growth Rate (CAGR) has been recorded by Cars/Jeeps and Taxis (10.5%) followed by two-wheelers.
(10.2%). The overall CAGR has been of about 10% in total vehicle registrations with variation across vehicle categories. Personalized category of motor vehicles, viz., two wheelers and cars grew at a CAGR 10.2% and 10.5% respectively which was higher compared to growth in buses (6.9% per annum) and goods vehicles (9.1% per annum). The higher growth in personalized motor vehicles reflects rising disposable income; easing of supply side restraints (Lifting of Licensing, Quantitative Restrictions etc.); and availability of more convenient financing options. In contrast, slower growth in goods vehicle category to some extent shows changes in structure of economy and shift from commodity producing sector like agriculture and industry towards services which are far less material intensive together with higher input costs and a plethora of regulations.

The changing composition of vehicle population over time reflects an increasing importance of personalized mode (cars & two-wheelers) of transport vis-à-vis Public Bus Transport (PBT) mode. The marginalization of the bus mode of transport is reflected in the fact that while the vehicle population grew at a compound annual growth rate (CAGR) of close to 10%; the number of buses grew by less than 7 per cent during 1991 to 2011 with a meager growth of less than 1 per cent in the number of buses owned by the public sector entities.

The slower growth in the number of buses has resulted in sharp erosion in the share of buses in total vehicle population from more than 11% in 1951 to a mere 1.1% in 2011. This marginalization of Public Bus Transport (PBT) mode also reflects major sociological and economic changes related to increase in disposable income of households, changes in lifestyles, urbanization etc.

This has been accompanied by increasing motorization through rising number of cars and 2-wheelers resulting in congestion and therefore, slowing down the movement of Public Bus Transport. With rising income and greater need for mobility, the personalized mode of transport is likely to grow in importance in the coming years. The proliferation in the personalized mode of transport imposes negative externalities
on the society in the form of traffic congestion, carbon emissions/pollution, inefficient use of fuel, scarce road space, etc.

The growth of vehicular traffic on roads has been far greater than the growth in road network; as a result the main arteries face capacity saturation. Between 1951 and 2004 the motor vehicle population grew at a CAGR of close to 11 per cent (10.9%) compared to CAGR of 3.6 per cent in the total road length with National Highway segment increasing by 2.3 per cent only. A noteworthy aspect has been the step-up in the growth of National Highway network in recent years which has grown at CAGR of about 4.5 per cent with total vehicle population growing at 10 per cent CAGR during 1991-2006.

During 2001-2011, the growth rate of registered motor vehicles was almost three times the growth rate of the road network, which is shown in Figure 2.2. Amongst the various categories of vehicles, the highest CAGR during 2001-2011 was recorded by cars, jeeps and taxis (10.5%), followed by two-wheelers (10.2%).

Figure 2.2: Compound Annual Growth Rates (in %) in Vehicles and Road Length

<table>
<thead>
<tr>
<th>Period</th>
<th>Two-Wheelers</th>
<th>Cars, Jeeps &amp; Taxis</th>
<th>Buses</th>
<th>Goods Vehicles</th>
<th>Others*</th>
<th>Total</th>
<th>NHs</th>
<th>SHs &amp; PWD</th>
<th>Rural</th>
<th>Urban</th>
<th>Project</th>
<th>Total</th>
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<tbody>
<tr>
<td>1961/1951</td>
<td>12.5</td>
<td>6.9</td>
<td>5.3</td>
<td>7.4</td>
<td>26.5</td>
<td>8.1</td>
<td>1.9</td>
<td>4.0</td>
<td>-0.5</td>
<td>NA</td>
<td>NA</td>
<td>2.7</td>
</tr>
<tr>
<td>1971/1961</td>
<td>20.7</td>
<td>8.2</td>
<td>5.4</td>
<td>7.4</td>
<td>15.0</td>
<td>10.9</td>
<td>0.0</td>
<td>2.6</td>
<td>6.0</td>
<td>4.5</td>
<td>NA</td>
<td>5.7</td>
</tr>
<tr>
<td>1981/1971</td>
<td>16.3</td>
<td>5.4</td>
<td>6.5</td>
<td>7.4</td>
<td>18.1</td>
<td>11.2</td>
<td>2.9</td>
<td>4.5</td>
<td>5.9</td>
<td>5.5</td>
<td>3.5</td>
<td>5.0</td>
</tr>
<tr>
<td>1991/1981</td>
<td>18.4</td>
<td>9.8</td>
<td>7.4</td>
<td>9.4</td>
<td>10.9</td>
<td>14.8</td>
<td>0.6</td>
<td>2.1</td>
<td>4.0</td>
<td>4.3</td>
<td>1.2</td>
<td>3.0</td>
</tr>
<tr>
<td>2001/1991</td>
<td>10.5</td>
<td>9.1</td>
<td>6.7</td>
<td>8.1</td>
<td>8.6</td>
<td>9.9</td>
<td>5.5</td>
<td>3.1</td>
<td>1.4</td>
<td>3.0</td>
<td>0.6</td>
<td>2.1</td>
</tr>
<tr>
<td>2011/2001</td>
<td>10.2</td>
<td>10.5</td>
<td>6.9</td>
<td>9.1</td>
<td>8.0</td>
<td>9.9</td>
<td>2.1</td>
<td>3.0</td>
<td>4.4</td>
<td>5.0</td>
<td>2.6</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Note: NHs: National Highways; SHs: State Highways; PWD: Other Public Works Department roads
* Others include tractors, trailers, three-wheelers (passenger vehicles/LMVs) and other miscellaneous vehicles which are not classified separately.
NA: Not Available

Sources: 1. Offices of State Transport Commissioners/UT Administrations

Source: Road Transport Year Book-2009-10 & 2010-11
Figure 2.3 depicts the share of different categories of vehicles in the total registered motor vehicle population, as on 31st March 2011. Two-wheelers accounted for the largest share of 72%, followed by cars, jeeps and taxis (14%), other vehicles (8%), goods vehicles (5%) and buses, including Omni buses (1%).

Figure 2.3: Composition of Registered Motor Vehicles (as on 31st March, 2011)

2.4. PASSENGER ROAD TRANSPORTATION SYSTEM IN INDIA:

Public Land Passenger Transport services in India can be classified into two groups like the Rail Passenger Transport and the Road Passenger Transport. Out of total land passenger requirements of the country, 80% are met by road transport while the remaining 20% are carried by railways at present (Patankar, 1983).

Buses take up over 90% of Road Public Transport in Indian cities, and serve as a cheap and convenient mode of transport for all classes of society. India’s passenger road
transport for short and medium distances is bus oriented. Buses even compete with railways on certain long-distance routes by offering night services (Dhar, 2008). Services are mostly run by government owned state transport corporations. All passenger buses use the standard truck engine and chassis and are not economical for city use – there are virtually no buses in India specifically designed for urban conditions. As a result, available urban mass transport services are over-crowded, unreliable, and involve long waiting periods. However, after the economic liberalization, many state transport corporations have introduced various kinds of special buses like low-floor buses for the disabled and air-conditioned buses to attract private car owners to help decongest roads (Patankar, 1989).

Off late also, new initiatives like Bus Rapid Transit System (BRTS) and air-conditioned buses have been taken by the various state governments to improve the bus public transport systems in cities. Bus Rapid Transit Systems already exist in many cities like Pune, Jaipur, Guwahati, Delhi, Visakhapatnam, Thiruvanathapuram, Indore and Ahmedabad. In 2005, the Central Government had come up with the Jawaharlal Nehru National Urban Renewal Mission, where the Central, State and local governments come together to fund and create better infrastructure for cities (Trivedi, 2009).

High Capacity buses can be found in cities like Mumbai, Bengaluru, Nagpur and Chennai. The city of Bengaluru is the first Indian city to have an air-conditioned bus stop, located near Cubbon Park. It was built by Airtel. The city of Chennai houses Asia's largest bus terminus, the Chennai Mofussil Bus Terminus.

In India, as in many other parts of the world, investment in Road Passenger Transport system is treated as a part of public provision of services whereby one of the key objectives of this provision has been to meet the social obligations of an affordable, safe and reliable bus service to the country people (Transport Research Wing, 2002).

In India, the Road Transport Corporation Act, 1950 enabled State Governments and Central Government to take initiative for establishing the Road Transport Corporations.
Similarly, the Motor Vehicles Act, 1950 was subsequently amended to make special provision for State Transport Undertakings (STUs) (Singh, 1993). This Act was further amended in 1969 for promoting “State Monopoly” in passenger road transport services. Henceforth, The Indian bus transport industry is dominated by the publicly owned State Road Transport Undertakings, abbreviated as STUs (Singh, 2000).

In respect of bus transport operations in private sector, they are conducted mainly by private individuals or smaller companies who are very scarcely distributed and perform independently. The private sector passenger road transport is thus in the most disorganized state resulting into fierce and unhealthy competition with the public sector undertakings in the country. Public passenger road transport operations are mainly common in larger cities where daily commuting is done by the residents for the purpose of work, education, marketing and recreation. In such a situation, in the opinion of Padam (1990, 1992), the State Transport in India needs to go for a major turnaround considering the new economic compulsions, if they really want to survive. Somewhat similar need was signaled by Pillai (1992) while referring to future of STUs in India.

With the provision of forming State Road Transport Undertakings (STUs) under the Road Transport Corporation Act, 1950, and the amended form of the Motor Vehicles Act, 1950; the Passenger Road Transportation System in India has been organized in four forms (Singh, 2000), viz.,

(a) Public Corporations like Andhra Pradesh State Road Transport Corporation (APSRTC), Maharashtra State Road Transport Corporation (MSRTC), Gujarat State Road Transport Corporation (GSRTC), Karnataka State Road Transport Corporation (KnSRTC), Uttar Pradesh State Road Transport Corporation (UPSRRTC), Rajasthan State Road Transport Corporation (RSRTC), Kerala State Road Transport Corporation (KSRTC), Delhi Transport Corporation (DTC), Madhya Pradesh State Road Transport Corporation (MPSRTC) etc.

(b) Departmental Undertakings like State Transport Punjab (STPJB)
(c) Municipal Undertakings like Bombay Electricity Supply & Transport Undertaking (BEST); and

(d) Government Companies.

These four types of set up basically fall under the broad category of State Transport Undertaking (STU), even known as State Road Transport Undertaking (SRTU).

Presently, in India, there are total 21 such Public Corporations constituted under the provisions of the Road Transport Corporation Act, 1950; while 31 undertakings are formed under the Indian Companies Act, 1956. The Urban Transport is operated by 10 Local Municipal Councils; while the remaining 9 Undertakings function as part of the Government Departments. Corporations account for about 75% of the bus fleet strength followed by Companies (17%); the share of Municipal Undertakings (4.5%) and Government Departmental Undertakings (3.5%) were lower.

The percentage of nationalization in different states of India varies considerably, being highest (68.78%) in Maharashtra State. Public sector passenger road transport in India is operated through a wide network of passenger road transport undertakings owning 113370 buses having fleet strength varying between 5 buses to 17000 buses among organizations under single management and control. The largest among them are the Maharashtra State Road Transport Corporation (MSRTC) and the Andhra Pradesh State Road Transport Corporation (APSRTC) with a fleet of about 17000 passenger buses each.

The institutional structure of the State Transport Undertakings (STUs), alternatively known as the State Road Transport Undertakings (SRTUs); varies from corporations (constituted under the Road Transport Corporations Act) to companies (constituted under the Companies Act) and to those operated departmentally or by the municipal authorities. Thus, the organizational form for public sector bus transportation varies from State to State, the most common form being that of a Corporation form; constituted under the provisions of the Road Transport Corporation Act, 1950.
Accordingly, most of the states in India have established these road transport corporations under the Road Transport Corporation Act of 1950. So, as and when the private corporations were notified and taken over, they were entrusted to these state road transport corporations. In this, the state of Tamil Nadu is a noteworthy exception wherein a conscientious strategic decision was taken to set up a number of state road transport corporations have been set up under the Companies Act of 1956 with operations limited to one or two districts. So, all the STUs in Tamil Nadu have been established in the form of Government Companies. Contrary to this, in all other states, the major problem is having only one STU under the Road Transport Corporation Act of 1950 to run the entire passenger road transport business for the whole state. So, in case of Tamil Nadu, this decentralization has triggered the much needed element of healthy competition among the transport undertakings within the state itself, as financial and social indicators can be very well used to compare their relative performance. So, in a way, it introduced the possibility of yardstick comparison as well as paved the way for more cohesive management, which is always found missing in most of the Government owned and operated undertaking. Even the company form of these undertakings provided operational autonomy to each of these road transport corporation and boosted the development and further nurturing of business culture and professionalism in the seemingly bureaucratic set up of the STU. That’s why the STUs in the state of Tamil Nadu present striking positive variations – a very encouraging picture of productive efficiency as compared to their counterparts in other states of our country (Singh, 2000).

Ironically, over a period of time, except the consoling and very promising example of Tamil Nadu State, most of these STUs have accumulated deficits only and ironically have not been able to meet increasing transport needs of the public (Singh & Kadiyal, 1990). Thus, despite its prime position in the movement of people especially in remote rural areas, these public undertakings are subjected to criticism due to heavy losses incurred by them every year (Thomas, 2000; Sofres Mode, 2002). On the part of these STUs, one major constraint is that being a State Owned and Operated Transport Undertaking, the State Government controls the STU’s fares as well as the most
relevant aspects of their supply (ILO/UNDP Project on STUs in India - A Study of Performance, Problems and Prospects, 1982). Hence, these STUs have relatively few incentives to run their business efficiently (Jha & Singh, 2000); and are always seen as ‘public servants’ without much botheration about their profitability (Chakrobarthy, 2007).

Considering the rich and depth of the passenger road transportation system in India, one must say that it plays a pivotal role in India in bringing about greater mobility both within and between rural and urban areas. Through increased mobility it also contributes immensely to social and economic development of different regions of the country (Raza & Aggarwal, 1986). But, with ever increasing population in our country heading towards becoming the ‘thickly populated country’ of the world; the demand pressures for better road transport facilities are on the rise (Kadam, 2002; Pucher & Korattyswaroopam, 2004).

Patankar (1983, 1989), who studied the Road Passenger Transport in India and analyzed the operational productivity and efficiency of STUs for the period 1973-74 to 19979-80; opined that the future of road passenger transport sector in India would brighten only with productivity oriented planning. With this, there is a high felt need to streamline the entire passenger road transport system in India on the line of Tamil Nadu State initiative (Mishra & Nandagopal, 1991).

2.5. THE LEGALITIES OF ROAD TRANSPORTATION CORPORATION ACT IN INDIA:

It is one of the earliest legislations giving effect to the post-independence accent on nationalization of core sectors in business and industry. The concept of “Government in Business” drawn from the socialist philosophy is meant for the state to carry on such activity, so long as such activity does not encroach upon the rights of other to carry on the same or is not contrary to law. If in the interest of general public, the state decides to provide transport amenities, it will only be discharged out of its primary duties.
The Motor Vehicles Act of 1939 was intended for regulation and co-ordination of road transport and to vest the control of the use of transport vehicles in the hand of the transport authorities. An amendment was made and separate government department was established for running transport services to the exclusion of private operators in defined areas and routes. The private operator approached High Court against the decision of the Regional Transport Authorities in giving preference to State Government.

The government of India felt the necessity of having statutory bodies to operate transport services. It was therefore, decided that road transport operations should be publicly managed by establishing corporation. The Constituent Assembly passed Road Transport Corporation Act in the year 1948.

In exercised of the provisions of this Act, the Government of Bombay established the first Road Transport Corporation on 17th November, 1949. The road transport services which were being operated by the Road Transport Department were entrusted to the new Corporation. This act was challenged by the private operators. The Bombay High Court accepted the contention of the private operators and declared the Road Transport Corporation Act 1948 as ultra virus and consequently the Corporation established in pursuance of the provisions of the said Act was declared as having no legal existence.

The Parliament immediately took up the matter and passed the Road Transport Corporation Act 1950 on 4th December, 1950 rectifying certain defects in the earliest legislation. The 1950 Act repealed the 1948 Act and validated retrospectively the incorporation of the Bombay State Road Transport Corporation, which was established under the provision of the 1948 Act.

2.5.1. Power and Duties of the State Road Transport Corporations:

- To operate road transport services in the state.
- To provide any subsidiary service for providing any amenity of facility to persons making use of any road transport services of a corporation.
• To provide for its employees suitable conditions of service including fair wages, establishment of provident fund, living accommodation, places for rest and recreation and other amenities.

• To manufacture, purchase, maintain and repair rolling stock, vehicles, appliances, plant, equipment or any other thing required for any of the activities of the Corporation.

• To acquire and hold such property both movable and immovable as the Corporation may deem necessary for the purpose of any of the said activities and to lease, sell or otherwise transfer any property held by it.

• To purchase by agreement or to take on lease or under any form of tenancy any land or building.

• To authorize the disposal of scrap vehicles, old tyres, used oils, or any other spare parts.

• To purchase vehicles of any kind as required.

• To do anything to develop the skill of persons employed by the corporation.

• With the prior permission of the State Government, to do all other things to facilitate the proper carrying on of the business of the Corporation.

2.5.2. Finance and Audit of the State Road Transport Corporations:

As per the Act, the Corporation will act as the Corporation and it should be able to stand on its own fleet in order to fulfill the objectives and justify its existence. Under the provisions of the act, the Capital requirement of a Corporation may be provided by the Central and State Government in agreed proportion of 2:1 between State and Central government. Where such capital contribution is not available from the government, Corporation may approach to Open Market.
Under the provisions of this act, a Corporation is liable to pay interest on capital borrowed from the Central and State Government. After setting off the payment of interest and Dividend and contribution to the depreciation and other payment of interest and dividend, rest of the money left will be utilized for creating amenities of the passenger, welfare of its employees, its own expansion programme and road development.

2.6. FINANCING OF STATE ROAD TRANSPORT UNDERTAKINGS IN INDIA:

Most bus services in the domain of public passenger road transport are owned, operated and managed by the State Road Transport Undertakings (SRTUs). It is funded through its internal resources, market borrowings and equity capital provided by the Central and State governments. The quantum of internal financing for all public passenger road transport undertakings together works out to 51% of the total capital; while the market borrowings and the equity capital of the Governments stands at 11% and 38% respectively.

For most of the State Road Transport Undertakings (SRTUs), financing of the operation cannot be fully covered by the revenues from fares/user charges. So, their operating and capital investment costs are covered by a combination of state and local government subsidies, grants, and loans that varies from state to state. Significantly, no government level has any dedicated taxes whose proceeds would be automatically earmarked for public transport. With critical shortages of revenues at every government level, public transport must compete each year with many other urgent needs for public funds. The willingness of the Central and state governments to fund public transport can vary substantially over time, making long-term planning very difficult.

Also SRTUs are confronted with a situation where staff costs and fuel costs account for more than three fifth of their expenditure with staff costs more or less in the nature of fixed costs due to the limited ability to adjust labour force in response to the changing
market conditions. The fact that government financial support is required to fill the gap between revenue and costs of operation does not mean that SRTUs are unviable; but also reflects that fares are not adjusted in line with rising fuel and other costs. Besides bus fares are also set with socio economic objectives in mind. Presently acquisition cost of a bus is compounded by the existence of multiple commodity taxation viz., Central Excise and State VAT/Sales Tax. In view of the advantages of public bus transport system it would be desirable to lessen the burden of commodity taxation. In addition, public buses (Contract/Stage carriage) are subject to Motor Vehicle Tax (MVT) and Passenger tax etc., which also need to be rationalized. There is heavy and varying incidence of MVT on public buses, in general, and SRTUs, in particular.

At present, the Government of Gujarat levies a passenger tax of 17.5% on passenger income since GSRTC is a stage carrier. This passenger tax of 17.5% levied in Gujarat is the highest in the country. In fact, it is approximately twice the rate charged in Andhra Pradesh and Karnataka. However, the private operators (who are supposed to operate as contract operators) pay a one-time yearly payment of Rs. 90,000 per bus.

In practice, all the private operators operate as a stage carrier resulting in an uneven competitive environment and unfair tax obligations to the State Owned and Operated State Road Transport Undertakings.

So, the main underlying principles of costing should emphasize on:

(a) Where costs are incurred for policy reasons, such as higher service levels or lower fares than would be justified on exclusively commercial grounds, those responsible for them must assume responsibility for their payment and;

(b) Subsidies implicit/explicit should be considered and calculated as payments for services rendered.
2.7. PROBLEMS OF NATIONALIZED PASSENGER TRANSPORT IN INDIA:

As development of road transport is mainly assigned under the State Government, the Nationalization of this sector also comes under the preview of state Governments. This explains the absence of uniformity in nature of nationalization of passenger transport in the different states. The nationalization is also gradual and sometime partial, in the given state. The heterogeneous characteristics of the different state transport undertaking in different states are responsible for different problems:

- **Legal Constraints:**

It is common experience that the efficient operations of different State Undertakings are different owing to many legal constraints. For instance, the Motor Vehicle Act imposes many administrative procedures to get permit for route of the bus services. The demand pattern for passenger travel is also uneven and sometime more random in nature than generally observed in the case of other productive enterprises. Rising cost of many inputs required for bus operations is uncontrollable cost component as the operations have no influence to control the prices of fuels, tyre and spares. The economic rationale demands the immediate upward change in the fare structures based on cost of the operations, but owing to legal and administrative procedure, the various steps needed appear to be highly time consuming, more over resistance from the public and political authorities is also creating problems even for justified increase in fare. The lag in increase in fare and high cost of operations owing to non-controllable cost component creates the long term problem of financial viability of the organization.

- **Heavy Burden of Taxation:**

The taxation on road transport industry in India is highly burden-some. The fixed component of taxation which is independent of vehicle utilization per day creates fixed
liabilities on the organization. When the prices of inputs affecting variable cost component are rising the fare is not flexible as needed, the burden of taxation is to be reduced so that the financial viability would be possible.

**Issue of Industrial Relations:**

For healthy and competent operations of nationalizes bus transport undertakings, the congenital employer-employee relationship is a pre-requisite. It appears that the managerial efforts to boost up the labour productivity do not get adequate response from labour. This type of situation may not be justified. So the real challenge lies in how to provide incentive by providing good atmosphere so that the additional expenditure is compensated by increase in the productivity of bus services. In this particular context the attitude of Trade Union in favor of increase in productivity is to be encouraged.

**Nature of the Nationalization of Road Transport Industry:**

How the nationalization is being implemented in a particular State is also very much vital for economic operation of the ST Undertaking. If there is a partial nationalization compelling STU to compete with private operators, many problems would crop up as private operators are having special advantages which may create the problems for highly legalized and accountable organization like STU. It appears that as far as possible the partial nationalization should be avoided.

**2.8. PRIVATIZATION OF STATE ROAD TRANSPORT UNDERTAKINGS IN INDIA:**

One possible solution for many of these problems might be the selective privatization of India’s public transport sector. That could be done either through opening up the market to private firms (who would own, manage, operate and finance their own systems) or by having public agencies contract with private firms to operate services on
a system wide basis, for selective routes, or for selected functions (like maintenance). Vijayaraghavan (1995) highlighted the fact that one of the major criticisms of SRTUs is that they are, by and large, operations-oriented rather than strategy-oriented. SRTUs in India are not really competing well in an industry, which is becoming more and more unstable. Kulshrestha (1989, 1990, 1994) extensively studied the state road transport in India and opined that the public sector transport in India has been facing competition with other means of transport and from the private operators.

Considering this, he felt that privatization seems an option for bus services, which account for more than 90 percent of India’s public transport (Vijayaraghavan, 1995).

World Bank strongly recommends privatization of public bus service. According to the report of World Bank, Public Bus accused publicly owned and operated systems of being inefficient and highly unprofitable, providing insufficient and low-quality services, and failing to respond to market demands. Mishra & Nandagopal (1993) suggested that with the severe and continuing resource problems besetting the Indian economy, and with the pressure on policy makers to increase economic growth, there is a need to privatize State Transport Undertakings (STUs). Obviously, the debate as to whether STUs should undergo sweeping reforms, or be privatized; being a serious and sensitive issue, demands considerable attention.

Although there were some minor attempts at privatization in the 1980s, the first large-scale privatization of buses occurred in Delhi in 1992, when numerous small, private bus firms entered the market. Unfortunately, the new private operators were not adequately regulated and coordinated, leading to complete chaos. Moreover, the private buses were often poorly maintained, unsafe, noisy, and highly polluting, adding to the already severe congestion, safety, and air pollution problems in Delhi. In the years since 1992, regulations have been strengthened and better enforced. Moreover, many private bus operators are now much better coordinated than at the outset. Service quality problems still remain, but privatization appears to have brought some substantial economic benefits. In a comparison of public and private bus operators in Delhi, the World Bank found that private bus firms carried twice as many passengers.
per bus per day (1,584 vs. 751), earned twice as much revenue per bus per day (2,700 vs. 1,321 Rupees), required less than half the staffing per bus (4.6 vs. 9.6 employees), cost less than half as much per bus km (7.7 vs. 17.2 Rupees), and actually made a profit (3.2 Rupees per bus km) while the public bus firms ran a loss (11.0 Rupees loss per bus km) (Marwah, Sibal, and Sawant 2001).

These financial comparisons between public and private buses are somewhat exaggerated, since private firms can usually select profitable routes, while public firms are often required to provide unprofitable services on lightly used routes to achieve social objectives (Ramanayya, Nagadevara & Roy, 2005). Moreover, private bus companies offer their employees much lower wages, less job security, and less generous fringe benefits such as pensions and health insurance. Thus, to some extent, the private bus firms have lower costs due to lower salaries for their workers.

Kolkata currently has a large number of privately operated buses as well (about 1,800 private vs. 1,200 public), and as in Delhi, they have fewer employees per bus, lower costs, and much higher cost coverage through fare revenues than the publicly operated buses. Privatization of certain routes to private operators has been done in Bangalore and Hyderabad, but still with the overall coordination of a public agency. It appears that privatization does indeed have much potential to improve efficiency, but that it must be accompanied by strict regulations, performance standards, and overall coordination to ensure an integrated network of services. In light of the transport funding crisis in Indian cities, they may have little choice but to seek the cost savings possible with privatization and increased competition (Viton, 1986).

2.9. THE CHALLENGE OF PRIVATIZING STATE ROAD TRANSPORT UNDERTAKINGS IN INDIA:

The real challenge to privatize the vast operations of the SRTUs would be regulatory oversight at not too high a cost, which also ensures that operating companies adhere strictly to their timetables and do not omit services. Independence of observing and
certifying agencies, while necessary is not adequate since collusion is possible and a public entity could be slack. The only solution is to raise the punitive measures against service omission and to bring in competitors’ monitoring of each other. The monitoring by independent agencies could usefully have representation on their boards of users and other organizations like large employers who stand to gain through better and efficient performance of SRTUs especially in the cities. Peak pricing creates perverse incentives unless the peak is of small duration, ensuring competition from other modes wherever feasible rail and taxis can have some positive effect. But the social benefit in the privatization of bus companies can be maximized if they can be sold off as operating units. This could be financially unsound since the entire burden of workers would then be on the government account, and socially the costs of unemployment among the ex-public sector employees (or of continued over manning and high salaries) would be on the government and consumers (especially if there is a concession approach that is used). Hence, other less conventional measures that are able to bring the economies (and natural high motivation) of owner supervision (small bus companies) or self-supervision of the smaller cost of operators who have access to the unorganized (competitive) labour markets, would be worthwhile. Thus, sets of three or fewer buses could be sold at values close to a values assessment as also garages to cooperatives of ex-SRTU employees. As both employee and owner they would be value added maximizes rather than pure profit maximizes allowing them to compete with a private company that has access to low cost labour. The key to such cooperatives would be a framework that is acceptable to workers and workers would have to be helped to have the financial means to come together in groups to buy buses and depots. Credit assistance for such operators with appropriate safeguards may also be required.

Whatever the industry structure, but especially, if these are many small operators, the crucial determinant of success would be a regulatory mechanism that ensures route discipline and service frequencies. SRTUs vary in their efficiency and in some - Maharashtra, Karnataka - it may be possible to sell off SRTUs to a few employee owned largish enterprises. (In Tamil Nadu, the SRTUs compete and are oriented
commercially, so that they are best left much as they are with sell off to the incumbent managers and employees through stock options, without disturbing their structure). In others, where the share of SRTUs in total passenger carriage is small, it may be worthwhile to close operations; sell assets to finance liabilities, to retire workers, and shift the focus on regulating a private sector service quality in contrast to fares have been ignored in the regulatory approaches thus far. This is most unfortunate since privatization then has come to mean bus mafias, poor and overcrowded services, where safety aspects are ignored. Delhi’s private operations illustrate how best not to privatize. The potential of private bus transport to cheaply provide quality service is very large (Mishra & Nandagopal, 1991).

Few studies on performance of PSUs are correct with regard to their methodology. But the few that bring out the fact that the performance of PSUs - a few exceptions apart - has been woefully below that of the private sector. Many studies though have attempted to justify such performance on the ground that these enterprises have ‘multiple’ objectives, ‘non-commercial’ objectives, or social objectives, that they were set up to ‘lead’ or to develop sectors rather than make profits and so on (Gundam, 1998).

2.10. RECENT AND PLANNED IMPROVEMENTS IN PUBLIC ROAD TRANSPORT IN INDIA:

The main bus operator in Mumbai (BEST) has already introduced smart cards for fare collection on some premium bus services and also plans to introduce low-floor buses to facilitate travel by passengers with disabilities. Delhi has also been at the forefront of innovations in bus services, both by requiring a complete switchover to non-polluting CNG buses and by introducing privatization and increased competition among bus firms to reduce costs. As noted earlier, both of those policy changes caused enormous disruptions in service for several transitional years, but the overall result has been positive. Chennai has plans to introduce privatized, competitive bus services on roughly half its bus routes, following the example of Delhi and the recommendations
of the World Bank. Bangalore had planned a new light rail system, but it has been indefinitely postponed due to a shortage of funds. Instead, a less expensive system of grade-separated bus ways and high-capacity articulated buses are being considered (Gaur, 2002).