

# “A Comparative Study on Public and Private Road Transportation in Karnataka”

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**Abstract :** A study on Public and Private Road Transportation Performance evaluation of Road transport in karnataka with special reference to KSRTC by J. Madegowda (1995) that the economic development of a country is largely conditioned by the adequacy, efficiency, regularity, safety, and punctuality of the transport service, these study also analyse the profitability of the corporation can be to a greater extend improved through various concept. The conscious efforts towards the better investment decisions and allocation of resources. Identifying the unnecessary costs and eliminating the same. Improving the fares, annually in the light of cost hike. Plugging the leakages in the traffic revenue and enabling functional autonomy and enforcing accountability for results. The study also included as an integral part of the overall policy of government and the corporation in making the corporation as an instrument of better services to the general public, the operative efficiency and the profitability of the corporation are bound to improve in future. Vehicle crashes are a major concern in rapidly growing urban agglomerations. They also have attracted the attention of researchers, academicians, and policy makers. A large body of research literature exists that throws light on the magnitude of this problem and also indicates the interventions required. In a vast majority of Indian cities, buses are the main mode of public transport. An externality of the bus-based public transport system, like any other mode of transport, is the injuries and fatalities arising out of the crashes involving them. Buses are involved in 12-20 percent of fatal crashes in Indian cities. This paper presents an analysis of the fatal crashes that involved public transport buses in Bengaluru, India. The study suggests that low floor buses with mechanical doors and segregated pedestrian and bicycle lanes can have a major impact on reducing fatal crashes of bicycles and pedestrians involving buses.

**IndexTerms - Road Transport, KSRTC, MGRDT.**

## I. INTRODUCTION

Public road transport organizations are an integral part of the Indian transport sector. While an increasing number of car and two-wheelers contribute to traffic congestion and pollution, the bus-based public road transport services accommodate a larger number of commuters, thereby transporting the maximum number of people per unit of road space and passenger—km per litre. On an average, the energy consumption of a car is 6 times more than that of a bus, whereas energy consumption of two- and three-wheelers is 2.5 and 4.7 times more than that of a bus, respectively. this highlights the need for the growth of public road transport organizations as a means of mass commuting to meet the transport demand of the country. Public road transportation organizations require substantial improvements on several fronts to become a preferred choice of commutation for passengers. During 2014- 2015, public road transport organizations in India reported 19076 road accident cases, of which 4129 were fatal accidents [1]. Indian public road organizations lag on bus penetration. the bus penetration in India (1.4 buses per 1000 persons) is much lower as compared to that of other developing countries like thailand (8.6 buses per 1000 persons), South Africa (6.5 buses per 1000 persons), and Mexico (2.8 buses per 1000 persons) [1]. It is suggested that public road transport organizations should modernize the fleet and scrap overaged buses which are necessary to maintain service quality and meet the expectation of passengers. To become an effective means of mass commutation, it is important that public road transport organizations become financially and operationally efficient. the road transport organizations should boost traffic revenue, trim unnecessary expenses, increase operational efficiency, and provide accident-free safe services to the passengers. the best performing road transport organization on each criterion should be identified, benchmarked, and the key learnings should be shared among the organizations. A comprehensive performance evaluation technique needs to be developed which evaluates the relative performance of road transport organizations on multiple criteria and ranks these organizations based on their relative performances.

**Private transport** (as opposed to public transport) is the personal or individual use of transportation which are not available for use by the general public, where essentially the user can decide freely on the time and route of transit ('choice rider' vs. 'captive rider'), using vehicles such as: private car, company car, bicycle, dicycle, self-balancing scooter, motorcycle, scooter, aircraft, boat, snowmobile, carriage, horse, etc., or recreational equipment such as roller skates, inline skates, sailboat, sailplane, skateboard etc.

Transport combines different components and different sectors of the economy and affects the economy at all points of development. Apart from the administrative, social and cultural benefits of a good and efficient system of transport, it is recognised that an efficient and cheap transport system is a key factor in economic development of developing country like India. Economic development is so much affected by the transport system for a well developed transport system which has become a symbol of civilization. In the surface transport system both for movement of passengers and goods, road transport is of crucial importance in India. The passenger buses have been progressively nationalized in the country, with the rationale such as to run service large scale and providing more economical service, better amenities, bringing effective co-ordination between rail and road services, etc. Thus fifty per cent buses are at present being run by the public sector undertakings in the country. But, it is distressing to note that all the State transport corporations are running under loss due to uneconomic fares, heavy interest burden, and heavy burden of taxes and to uneconomic routes.

### History of KSRTC:

In order to cater to the transport needs of the travelling public of the then state of Mysore, Mysore Government Road Transport Department (MGRTD) was inaugurated with 120 buses on 12th September 1948. The State Transport, which was being administered as a Department of the Govt. of Mysore was subsequently converted into an independent Corporation under Section 3 of the Road Transport Corporation Act, 1950 on 1st of August 1961. The assets and liabilities of MGRTD excepting those of BTS unit as on 01-08-1961 were passed on to the new Corporation, which was named as MSRTC. The assets and liabilities of the residual MGRTD i.e. of BTS Unit were subsequently passed on to the Corporation on 1st of October 1961. Thus, Corporation was ultimately established for the entire State of Mysore. At the beginning, the passenger transport services were operated in 6 Divisions- 5 Divisions operating mofussil services and 1 Division operating city services of Bangalore. It had 37 Depots, 2 Regional Work Shops and a Central Office at Bangalore. There were 15 permanent and 30 temporary bus stations with 35 wayside shelters and 104 pick-up shelters. The total number of employees deployed was 9705 and the staff ratio per schedule was 9.43. The total number of routes operated was 1065 with 1029 schedules and route length of 32,134 miles, average daily scheduled mileage being 127571. The total number of inter-state routes operated by the Corporation on a reciprocal basis with the neighbouring states were 40 i.e., 29 Maharashtra, 1 Goa, 7 Andhra Pradesh, 2 Tamil Nadu and 1 Kerala. The total number of vehicles held was 1518 with average vehicle utilisation of 123.8 miles. The average number of passengers carried per day was 4.35 lakh. The rate of breakdown was 1.88 and that of accident was 1.19. Earning per Mile (EPM) realized was 161.6 Ps., and Cost per Mile (CPM) was 127.2 Ps., resulting in net profit margin of 34.4 Ps/mile.

**Road Transport in Karnataka:** The Mysore Government Road Transport (MGRDT) was established on 12th September 1948. By the end of the year 1948, the Department was operating services on 81 routes, with a fleet of 120 buses and with an invested capital of Rs. 17.77 lakhs. Nationalization of Road Transport was also initiated in Bombay State in 1948, and by State Transport buses. The urban and suburban services in Mysore City and Bangalore Metropolis were nationalised in October 1955 and October 1956 respectively. At the time of Re organisation, the new State inherited 438 nationalised routes with 530 buses from Bombay State, 30 nationalised routes with 80 vehicles from Hyderabad State and 310 nationalised routes with 215 buses from Mysore State. In the wake of Reorganisation of States, the MGRTD grew overnight phenomenally and became the fourth biggest undertaking in the country. Karnataka State Transport Corporation was statutorily established on 1-1-1961 under the provisions of the Central Road Transport Corporation Act of 1951 and was being managed as a Government Department, as a wing of the Home Department for nearly 13 years since its inauguration. The Objectives incorporated behind the establishment of the corporation are:

1. To provide the public with road transport facilities marked by high reliability, reasonable comfort and moderate cost within the existing technological and economic constraints.
2. To constantly explore the newest and the latest technological development in the field of road transport in order to provide better, safer and cheaper mode of road travel to the traveling public, and
3. To build up and maintain a high technological capacity in the Corporation to keep the ever-growing fleet in an excellent condition. At present, KSRTC has been divided into four sub corporations.
4. KSRTC (Karnataka State Road Transport Corporation) with its head quarters at Bangalore to take care of the inter-State and inter-State services originating from Bangalore and the other adjoining southern districts.

5. NWKRTC (North West Karnataka Road Transport Corporation) with its head quarters at Hubli to serve the northern and western districts. NEKRTC (North East Karnataka Road Transport Corporation) with its head quarters at Gulbarga to serve the Hyderabad- Karnataka region.
6. BMTTC (Bangalore Metropolitan Transport Corporation) with its head quarters at Bangalore to take care of the City services.

### **Present Status (Month of Nov-2020):**

KSRTC has its Corporate office at Bangalore. Presently, it covers seventeen Districts (Bangalore Urban, Bangalore Rural, Ramanagar, Kolar, Chickballapur, Tumkur, Chitradurga, Davanagere, Shivamogga, Mangalore, Udipi, Chickmagalur, Hassan, Mysore, Mandya, Chamarajnar, Coorg) in the State under its operational jurisdiction. The Corporation functions in 3-tier system, i.e., Corporate office, Division office and Depots. There are totally 17 Divisions - 16 operating Divisions viz. Bangalore Central, Ramanagar, Tumkur, Kolar, Chickballapur, Mysore City, Mysore Rural, Mandya, Chamarajnar, Hassan, Chickmagalur, Mangalore, Puttur, Davanagere, Shivamogga, Chitradurga and 1 bus station division viz., Kempegowda Bus Station at Bangalore. There are 83 Depots, 2 Regional Workshops, 1 Central Training Institute, 4 Regional Training Institutes, 1 Printing Press and 1 Hospital. KSRTC has a workforce of about 37618 employees. It operates on an average 20.67 lakh kms daily with a fleet size of 8492 vehicles and earns traffic revenue of Rs. 630.53 lakh daily by catering to 13.66 lakh passengers on an average. It stands 5<sup>th</sup> amongst STUs in the nation by size.

The performance of the government bus network improved in certain areas after these were created, although they were never really cash rich.

## **II. TRANSPORT AND ECONOMIC DEVELOPMENT**

20th century revolution in transport has made us aware of the relationship of immobility with poverty with transport innovations influencing most profoundly the pace and growth of economic development. Obstacles to movement restrict the market, increase production cost and raise prices beyond competitive reach of the consumer. The total world of transportation is not only too large but of great scope, diversity and complexity. Transport comes into play for everything and remains an essential part of everything, remaining as various as life itself. The great difference between modes is obvious enough but the more subtle differences that exist between groups and classes can be even more important in their consequences.

### **Modes of Transport**

For nearly a hundred years, the railways remained the dominant mode for land transport and continues to remain the land carrier that can carry anything anywhere the rail tracks go and do it at a cost lower than other types of land or air transportation. Today, other modes have developed providing transport more effectively and efficiently. Pipelines for the movement of liquids, aircraft for high speed long distance travel and trucks offering speed, flexibility and door to door service for short and medium levels provide better alternatives. All these have effected the market share and role of different modes of transport.

The fluctuations in demand for transport services can be rapid, both in volume and in direction. There could be an almost chronic imbalance between supply and demand in many services, at any rate, over the short term. This causes both pricing and operating problems. It is sometimes a question of too little or too much. Unlike many other sectors of the economy, transport can neither be stored nor traded and to meet the peak demands of traffic extra capacity needs to be created, which necessarily idles in the non peak periods.

The shrinking of the world paradoxically increase transport volume and demand with more exchange of goods. Enterprises which are efficient and flexible, which move with the changing times and provide appropriate technologies and remain commercial in their attitude, will survive and continue to have an important role to play.

## **III. INVESTMENT BY STATE AND PRIVATE SECTOR PARTICIPATION**

A transportation network makes the markets more competitive while the system widens the opportunities for suppliers and buyers and improves the allocation process of goods and services. The supply of transport is a mix bag of public and private entities. The highways are provided by the state while most of the vehicles using them are private. Airports, provided by the government with aircraft both in the private and public sector. Most ports have been developed by the state while ships using it could be public or private owned. Railways, is the only exception, which provides the way and the vehicles as one integrated entity. Where profits can be made, responses of the private firms are high, subsidies on the other hand

tend to continue with vested interest and through political pressure. Subsidized services pursue objectives that often differ from the aims of economic efficiency and transport services sometimes used for redistribution of income from the general tax payer to the user of subsidized transport operation.

Government comes a great deal into transport affairs and is inevitably closely involved in questions of infrastructure and space. Provision of transport infrastructure calls for state intervention to ensure long term economic development.

As there is no effective way of reducing risks in fixed infrastructure, only the state is in a position to cover the risks. Investments that require long term finance like building of roads, ports, railways, have a high degree of market failure in these activities and have to remain the responsibility of the state. To bring in private sector participation for investments in infrastructure presents the policy makers a task to create an entirely new system of incentives, risk and profit sharing.

#### IV. GROWTH OF TRANSPORT NETWORK AND DEMAND

##### Transport network and systems

India's transport system is one of the largest in the world serving the land mass of 3.3 million square km and a population of over one billion. The network for the services comprise mainly of roads, railways and air services. The 6000 km coast line has 12 major and over 150 minor ports. While the ministry of Railways is responsible for running of the rail system, the highways are the joint responsibility of the Central Ministry of Road Transport and Highways (for National Highways) and the State Governments (State Highways, District and Rural roads). The Ministry of Civil Aviation looks after Airports and the Ministry of Urban Development responsible for Urban Transport.

The growth in the network of transport and the demand for transport services in the last 50 years has been quite significant as can be seen from the figures given in Table 1. Currently, about 800 billion tone kms of freight and 2300 billion passenger kms<sup>1</sup> is handled by the transport system, with the total transport demand growing at around 10 percent a year in the last 10 years. The modal growth rates have varied with road transport and air services growing at a much higher rate than the railways.

Railways which had a market share of 88% of freight and 68% of the passenger business in land transport in 1950-51 has come down to about 40% of freight and about 20% of passenger market share in 1999-2000 while road transport has moved from 12% to 60% in freight and from 32% to 80% in the passenger business in the same period.

##### Investment in the Sector

Investments made in the transport sector in the last 50 years is given in Table 2. Public investment in transport as a percentage of total expenditure has been declining almost steadily since the early 1960s when transport investment was allocated about 23.1% of the total plan funds. It declined to 16% till the mid 1970s and has been close to 12% in the 1980s and 1990s. Considering the developing nature of the country and the state of its transport system plagued with deficiencies, it seems justified to devote a larger proportion of the total resources to the development of this basic infrastructure.

**Table 1: Expenditure in the transport sector 1951-2002(Rs.Crore)**

	Ist Plan (1951-56)	IIInd Plan (1956-61)	IIIrd Plan (1961-66)	Annual Plan (1966-69)	IVth Plan (1969-74)	Vth Plan (1974-79)	Annual plan (1979-84)	VIth Plan (1980-85)	VIIth Plan (1985-90)	Annual plan(1990-92)	VIIIth Plan (1992-1997)	Xth Plan(1997-2002)
Sector	Exp.	Exp.	Exp.	Exp.	Exp.	Exp.		Exp.	Exp.	Exp.	Exp.	Anti-Exp.
Railways	217	723	1326	509	934	2063	714	6585	16549	10208	32302	46405
Roads & Bridges	147	242	440	309	862	1701	467	3887	6335	3656	16095	47600
Road Transport			27	55	128	503	143	1276	2151	986	3538	5933
ports	28	33	93	53	249	488	57	725	1513	668	2302	5331
shipping	19	53	40	32	155	469	147	468	720	939	3033	2909

IWT			4	6	11	16	6	63	188	57	152	280
LH & LS			4	2	6	9	2	*	*	4	25	58
Civil Aviation	23	49	49	66	177	294	132	957	1948	1055	7249	6958
Other transport									72	118	244	1851
transpo	434	1100	1983	1032	2522	5543	1668	13961	29476	17691	64940	117325
Tpt as %age of total plan	22.05	23.54	23.12	15.98	15.98	14.06		13.00	13.51	14.12	12.88	
*Included under Ports Sector												

From V Plan , Rly outlays and expenditure include outlays financed from depreciation reserve fund.

From IV plan, outlays for metro transport projects also included.

Road transport does not include investments by the private sector in road vehicles.

The shortage of funds affected the roads to an extent that almost the entire National Highway system was deficient in pavement thickness while over 17000 kms of the 52000 km National Highway Network continued to be single lane. Fortunately recent actions have given a fillip to the National Highways and both the central and some state governments have begun reversing the declining trend and the low level of funding for this sector. Funding for the two main road agencies MORTH (Ministry of Road Transport and Highways and NHAI has been consistently increased over the past few years, the most important development being the implementation of a Central Road Fund (CRF), fully adopted in 1999, giving the fund an annual income of Rs. 50 billion. The CRF brings a new resource through a tariff of one rupee on each litre of petrol and high-speed diesel.

### **Issues for transport planning and thinking**

1. The increased transport demand for passenger and freight services.
2. Increase in transport of finished products rather than bulk movement of unfinished goods.
3. Customized transportation requirements with 'made to order' products increasing.
4. Own vehicle travel .
5. More transportation of long distances by Air, faster and bigger ships.
6. Multi modal transport and supply chain management.
7. Terminal Management
8. Logistic service providers to manage supply chains.
9. Increased containerization.
10. Better roads, express ways, heavy-haul vehicles.
11. Globalisation, regional links, global trade and economy.
12. A web based society that may reduce travel for business and work.
13. Borderless transport across states with less or no proper work aided by IT.
14. Maintenance of assets
15. Changes in technology.
16. Increased Financial Resources.
17. Cost based pricing, reduction if not elimination of subsidies. A framework for integrated transport policy.

### **V. PROMOTION OF ROAD INFRASTRUCTURE SUPPORT**

The aggregate length of roads, which was 0.4 million km in 1950-51 has increased 8 fold to 3.4 million km in 2002 but over the same period the number of passenger buses has shown 19 fold jump from 0.34 lakh to 6.35 lakh and goods vehicle fleet more than 36 fold increase from 0.82 lakhs to 29.74 lakh. The geographic coverage of India's highway network at 1.03 km of highway per square km of land is much denser compared to USA (0.77) and that of China (0.20). But, China's highway network consists of over 34,288 km of four or six lane access controlled expressway linking the major cities. In India, expressways do not yet link the major economic centres.

The country's road network can broadly be divided into three categories viz. (a) National Highways (NHs) (b) State Highways (SHs) (c) Major District Roads (MDRs) and (d) Rural Roads. The SHs and MDRs serve as secondary road network and provide connectivity between primary (NHs) road network and tertiary (rural roads).

1. **National Highways:** The National Highways running across the length and breadth of the country connect all state capitals, major ports, international boundaries, areas of economic and strategic importance, etc. The present total length of NHs is about 66,590 km. An overwhelming proportion of the total length of NHs is two or single laned (56% and 32 % of the total length of national highways are double/intermediate lane and single lane respectively) and only 12 per cent of the length of the NHs are four lane and more. The NHs constitutes less than 2 per cent of the road length of the country but carry about 40 % of the road based traffic. Highway capacity shortages are aggravated by heterogeneity in traffic, encroachment, and frequent and long halts at state and municipal check posts. Further, over loading by rigid two-axle trucks has been a major source of damage to road structure and pavement.

In order to expand and improve road connectivity in the country, the Government has launched National Highways Development Project (NHDP). It is the largest highway project ever undertaken in the country. The NHDP is being implemented by National Highways Authority of India (NHAI). Government has envisaged investment of Rs.2,35,430 crore for upgradation of National Highways under various phases of NHDP over the medium term.

State Highways and Major District Roads: State Highways and Major District Roads constitute the secondary system of road transportation in the country. The State Highways provide linkages with the National Highways, district headquarters, important towns, tourist centres and minor ports. Their total length was about 1,37,711 km as at the end of March 2002. Major District Roads run within the district, connecting areas of production with markets, rural areas to the district headquarters and to State Highways/ National Highways. By acting as the link between the rural roads and National Highways, the State Highways and Major District Roads contribute significantly to the development of the rural economy.

Construction and maintenance of SHs, MDRs and Rural Roads is undertaken by various agencies in States and Union Territories. The size and spread of the road network comprising SHs and MDRs are reasonable but the standards and quality of these roads are not adequate to cope with the growing traffic. Their conditions and state vary widely from state to state due to a number of factors which include: inadequate finance and its thin spread over a number of projects; weak management by contractors and; delay in pre-construction activities. With a view to augment the resources, funds are being provided from the Central Road Fund (CRF) by the Union Government for the development of State Roads. The funds from the CRF are provided for improvement of State Roads other than rural roads. At present, the annual amount available from this source is about Rs. 1560 crore. The state-wise distribution of this amount is done on the basis of fuel consumption and geographical area of the state.

2. **Inter State Connectivity:** To promote inter-state facilities and also to assist the State Governments in their economic development through construction of roads and bridges of Inter-state and economic importance, Central Government provides 100% grant for inter-state connectivity projects and 50% grant for projects of economic importance. This fund is also made available from the CRF. An amount of about Rs. 170 crore per annum is available for development of the state roads under this scheme.
3. **Rural roads:** Rural roads connect villages giving access to rural population to the National Highways through Major District Roads and State Highways. Around 59 per cent of the total road length is accounted by rural roads largely built under Jawahar Rojgar Yojna. These roads are of limited value from the point of view of movement of heavy traffic.

Roads are also being developed in rural areas under the Pradhan Mantri Gram Sadak Yojana (PMGSY). The objective of PMGSY is to link all villages with a population of more than 500 people with all-weather roads by the year 2007. This is being implemented by Ministry of Rural Development.

To ensure smoother traffic flow, it is important that provision is made for wayside amenities, maintenance and repair facilities and parking spaces along highways. Also, a Corridor Management Plan should be drawn up for major state highways so that the problems of ribbon development, encroachments, uncontrolled access and poor safety can be tackled.

- 4. Public Private Partnership (PPP) :**Traditionally, the road projects were financed only out of the budgetary grants and were controlled/supervised by the Government. The road sector has attracted little private sector participation in the past. The traditional system of financing road projects through budgetary allocation has proved to be inadequate to meet the growing requirements of this sector. To encourage private sector participation, several initiatives have been taken by the Union Government; which include: - <sup>TM</sup> Provision of capital subsidy up to 40% of the project cost to make projects commercially viable. <sup>TM</sup> 100% tax exemption in any consecutive 10 years out of the first 20 years of a project. <sup>TM</sup> Provision of encumbrance free site for work, i.e. the Government shall meet all expenses relating to land and other pre-construction activities. <sup>TM</sup> Foreign Direct Investment up to 100% in road sector. <sup>TM</sup> Higher concession period, (up to 30 years). <sup>TM</sup> Right to collect and retain toll. The implementation of NHDP–III and NHDP–IV phases is to be mainly undertaken under PPP mode. The PPP projects are being implemented for the National Highways on Build Operate Transfer (BOT) (Toll) and BOT (Annuity) basis.
- 5. PPP initiative by the States:** Many State Governments have modified existing legal provisions to facilitate PPP in the road sector. Many States have amended the Tolls Act to allow the private sector to levy and collect tolls on State roads and bridges. With a view to fully exploit the potential of PPP mode in the road sector following steps could be taken.
- (i) Creation of PPP units at Centre and State level to perform the functions of information dissemination and guidance so as to provide advisory to PPP programme.
  - (ii) Proper estimation of road traffic and its projection.
  - (iii) Timely completion of pre-construction activities so that the work can be started by the concessionaire on the appointed date

## VI. PUBLIC PASSENGER TRANSPORT BY ROAD

The changing composition of vehicle population over time reflects an increasing importance of personalized mode (cars & two-wheelers) of transport vis-avis public bus road transport mode. The marginalisation 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% number of buses grew by less than 7 per cent during 1991 to 2004 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 2004. This marginalization of Public Bus Transport (PBT) 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.

Public transport system comprises of a wide array of passenger services which includes mass transit/metros, contract carriages (taxis, autos), high capacity buses and stage carriages (buses, mini buses etc). Each of these modes has certain distinct features. Mass transit/metros has the capacity to move large volume of passenger quickly but entails huge fixed costs and are suitable for big metros; high capacity buses also enjoy the advantage of carrying large volume of passenger traffic at a lower cost vis-à-vis metro but requires dedicated lanes for faster movement which are hard to create where road space is scarce. Taxis and autos provide comfort and flexibility of personalized mode but do little to lessen the burden of congestion. Amongst the differing modes of public road transport bus is the optimum from the point of view of cost effectiveness and benefits to the society as it entails less fuel cost and pollution per passenger km compared to other road based competing modes of public transport.

## VII. METHODOLOGY

Through Karnataka State Road Transport Corporation, (KSRTC) and the private sector in the state of Karnataka. The jurisdiction of KSRTC spreads over 14 districts of Karnataka. In some districts, both KSRTC and private operators have a presence. In some other districts, only KSRTC operates the bus

services. Only private operators are allowed to function in the remaining districts. Thus, the area of operations can be broadly categorized into 3 categories

#### **Category I:**

These are the districts where only KSRTC (public) services are available. KSRTC enjoys monopoly status in these districts.

#### **Category II**

These are the districts where only non-nationalized (private) services are available. Only the private bus operators are allowed to provide service in these districts. They do face competition among themselves in these districts.

#### **Category III**

These are the districts where both KSRTC as well as private services are available. There is intense competition between the private operators as well as KSRTC in these districts. Data was collected from a sample of commuters, employees and opinion makers through a structured questionnaire. A two-stage sample design was adopted for selecting the sample of commuters, employees and the opinion makers. First, the sample of districts was selected in each category of operations. These districts are Hassan, Dharwad and Gulbarga under Category I; Mangalore and Davanagere under Category II; and Mandya and Kolar in category III. The second stage included the selection of routes in each sample district. The routes that were in operation within the district only were considered for the study. In other words, long distance inter-district routes were kept outside the purview of the current study. A random sample of 10% of the total schedules operated was selected. In Category II and Category III districts, routes where there are at least five operators were selected to ensure competition. The sample was selected in such a way that both rural and city services were included. For this purpose, certain amount of stratification was done in the sampling procedure. The sample includes a minimum of ten commuters on each schedule and two opinion makers from the villages visited.

Data with respect to the extent of services provided by the operators as well as various quality indicators were collected through a structured questionnaire. Data from the employees of the operators including, the drivers and conductors were collected through a structured questionnaire. In addition, focus group discussions were carried out. A suitable sample of the employees was selected for this purpose. The information thus, collected included career progression, remuneration, and incentive schemes, if any, and processes for maintaining code of conduct, training provided, if any, etc.

Selected persons who are opinion makers in the villages, as well as elected representatives were interviewed to elicit their opinion on various aspects of the services provided. Information, both with respect to actual and desired level of services was obtained. Focus group discussions as well as individual interviews were carried out with this group of stakeholders. In addition, members of intelligentsia were also interviewed for their opinion on societal benefit vis-à-vis commercial benefit.

Different questionnaires were developed to separately obtain information from commuters, employees and opinion makers and intelligentsia.

In order obtain the perceptions as well as the working conditions of the employees of both KSRTC and the private operators, a sample of their employees was selected. These employees were selected from the same routes as the commuters. This section presents a brief description of the sample profile. A total of 467 employees were selected from the 7 sample districts. Of these, 223 were from KSRTC and the remaining were from private operators. The district wise distribution of these 467 employees is presented in Table 2.

<b>District</b>	<b>KSRTC</b>	<b>Private</b>	<b>Total</b>
<b>Mandya</b>	<b>24</b>	<b>45</b>	<b>69</b>
<b>Kolar</b>	<b>52</b>	<b>43</b>	<b>95</b>
<b>Hassan</b>	<b>56</b>		<b>56</b>
<b>Gulbarga</b>	<b>48</b>		<b>48</b>
<b>Davanagere</b>		<b>78</b>	<b>78</b>
<b>Dharwad</b>	<b>43</b>		<b>43</b>
<b>Mangalore</b>		<b>78</b>	<b>78</b>
<b>Total</b>	<b>223</b>	<b>244</b>	<b>467</b>



## Transport Demand in 2020

Given the past rate of growth and anticipated GDP growth of 8%, the freight traffic growing at an annual rate of 8% is likely to reach 5490 billion tonne kms in the year 2020. The World Bank in their recent report have indicated a growth rate of 10 percent in the coming years. If a 10%

growth is visualized the traffic demand would reach 10,056 billion tonne kms. It may be safe to assume that freight traffic is likely to be in the range of 5000 to 7000 billion tonne kms against 1100 bt kms in 2000. At the lower end of the range and assuming Railways have a market share of 20 percent in 2020 the rail freight traffic will be 1000 billion tkms against 308 btkms in 1999-2000, a more than threefold increase in freight traffic.

Similarly, the passenger traffic is likely to grow to 11,763 billion pkms in 2020 when projected on the basis of past trends and to 10,082 billion pkms when correlated with population growth. The passenger traffic demand thus is likely to grow more than 4 times in the next 20 years. The different segments in passenger traffic and the distribution between different modes is discussed separately for long distance, medium distance, short distance and commuter traffic.

## VIII. CONCLUSION

A Nations Public Transport System is the major determinant of economic growth of the country. Globalization coupled with consumer and producer differences, growth in different sectors of economy, change in demography and technology had a terrible impact on our public transport system .Kerala State Road Transport Corporation had a tough time and phasing a crisis. Functioning of the corporation is merely satisfactory. Proper management of men and material is very necessary, to recoup the past glory of KSRTC .Abolition of corruption and the implementation of revival package should be able to solve the crisis. Let's hope KSRTC should regain its past glory, vigour and pride. The present study is an attempt to consider various aspects of physical and financial performance of State Owned Road Transport Corporation. The work has been analysed in detail within the objectives mentioned and exhausted almost all the secondary and primary sources for collation of data. Based on the findings of study few suggestions are being offered at the end. The suggestions, if implemented in good faith would certainly be helpful in improving the performance of the Public Road Transport System both in the Division and State

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