Chapter I

INTRODUCTION
The movement of men, material and goods has a paramount significance to achieve lasting progress of any region or country. It is no doubt that, the transportation should be considered as one of the premiere needs of any society for the timely fulfillment of economic, social and cultural needs as economic compulsions of present day have become twined with the "mobility factor". It need not be overemphasized here that the needful movement of men, material and goods to the potential employment centres, production centres, and marketing places from far away places give enormous strength to the economy of any country. The absence of mobility question the very survival of men and the consequent insurmountable problems jeopardize the every effort to the economic development. The development of interior places of rich resources of men and material, the expansion of various kinds of services to the needy, the simultaneous development of other sectors in the country require and should be rightly supported by the presence of the sound transport network.

Transport is the lifeblood of civilization and constitutes an important item of infrastructure for economic growth. "The significance of the transport sector lies not only in the specific services it renders, but even more, in unifying and integrating influence it exerts upon the economy, enhancing productivity, widening the market and introducing new stimuli to economic activity". It also plays an important role in the development of communication systems and provides a vital link between and among various centres of production, marketing, responsibility, distribution and services. It is of no exaggeration that the transport affects the ordinary
life of a person of any country or region and a country’s development is vitally linked with the development of transport. It is the transport sector which has transformed the entire world into one organized unit. The demand for transport can be regarded as derived demand which depends on the progress of the economies. In this sense transport becomes an essential input of economic development. The transport network can rightly be compared with the arterial system of the human body. The flow of goods and services can be maintained properly only when transport system is smooth and efficient.

The transport network in India consists of railway system, a road network, air transport and water transport (coastal shipping and inland waterways). So far as inland transport is concerned, the transport sector is totally dominated by rail and road networks. These two alone carry more than 90% of the inland passengers and freight traffic. With in these two modes of transport, the road network has been playing a vital role both in freight and passenger traffic. Other modes provide important specialized services and each has a role to play because of the size of the country and its geographical features. For instance, air transport provides for quicker transport of personnel and perishable cargo and also in case of natural calamities and international flights help to bringin foreign exchange through tourists. Inland water transport and coastal shipping can provide cheap and pollution free transport and a lot of precious fuel can be saved. Rail transport is best suited for the haulage over long distances of passengers and bulky and heavy commodities. It has also the advantage of speed when compared to road transport and a very large carrying capacity. However, it is a capital intensive mode and inflexible being track bound. Out of these
modes of transport, road transport is the only mode which is complete in itself due to certain advantages of flexibility, door to door service, reliability, speed, less stringent packaging conditions, personalized service, suitability to lift a small unit of carriage from the interior places, etc.

Railways could play a dominant role both in freight and passenger traffic over the decades till the emergence of road transport as the key for sustained economic development. From the point of view of economy, bus transport can carry far greater passengers with far lesser capital investment than railways. The most significant development in the transport sector of the Indian economy is the marked shift in the relative shares of rail and road transports in carrying the total traffic. The share of road transport in carrying the passenger and freight traffic has been increasing at a very fast rate as compared to that of the railways.

From Table 1.1, it is observed that the trend of modal split shows a gradual transformation form a rail dominated transport to road dominated transport. Railways which were constituted the main transport system of the country, started loosing its ground from the 1950s itself. The level of rail-based passenger mobility has declined to below 50% by 1960-61 itself from a significant level of 65.05 per cent of total surface-based passenger movement. Whereas, the road share has increased by more than two times to the 34.95 per cent which was existed in 1950-51. The upward sloping curve of road share and downward sloping curve for rail share tells the story of marked shift in the relative shares of rail and road transports.
Table 1.1
TRENDS IN RAIL AND ROAD SHARE IN PASSENGER MOVEMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Rail passenger Service (pass. kms in billions)</th>
<th>Road passenger service (pass. kms in billions)</th>
<th>Rail Share (in percentage)</th>
<th>Road Share (in percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-51</td>
<td>67.065</td>
<td>36.027</td>
<td>65.05</td>
<td>34.95</td>
</tr>
<tr>
<td>1955-56</td>
<td>62.898</td>
<td>59.417</td>
<td>51.42</td>
<td>48.58</td>
</tr>
<tr>
<td>1960-61</td>
<td>78.061</td>
<td>94.976</td>
<td>45.11</td>
<td>54.89</td>
</tr>
<tr>
<td>1965-66</td>
<td>96.756</td>
<td>145.317</td>
<td>39.97</td>
<td>60.03</td>
</tr>
<tr>
<td>1970-71</td>
<td>118.120</td>
<td>238.608</td>
<td>33.11</td>
<td>66.89</td>
</tr>
<tr>
<td>1975-76</td>
<td>148.761</td>
<td>350.466</td>
<td>29.8</td>
<td>70.2</td>
</tr>
<tr>
<td>1980-81</td>
<td>208.558</td>
<td>583.031</td>
<td>26.35</td>
<td>73.65</td>
</tr>
<tr>
<td>1985-86</td>
<td>240.623</td>
<td>953.394</td>
<td>20.15</td>
<td>79.85</td>
</tr>
<tr>
<td>1990-91</td>
<td>295.790</td>
<td>1562.149</td>
<td>15.92</td>
<td>84.08</td>
</tr>
<tr>
<td>1995-96</td>
<td>342.359</td>
<td>2406.365</td>
<td>12.46</td>
<td>87.54</td>
</tr>
</tbody>
</table>
The information on rail road share clearly reveals the dominant role of road transport over rail transport in India. The reasons behind the growing share of road transport and declining importance of rail transport are many. Some of them are ever-increasing traffic demand, failure of railways in paying adequate attention on capacity expansion and individuals preference towards roadways on various bases. An individual choses a particular mode on the basis of speed, security and service as and when the passengers travel and wish to travel. Railway suffers in the matter of speed and service. The capacity constrained traffic congestion, nearly stagnant route length, insufficiency of rolling stock and destination rigidity make rail transport more time consuming than road transport. Therefore, individuals prefer road transport even at a high transport price. Traffic congestion, delay, paucity of funds and long gestation periods, etc., restricted the role of railways in meeting the increasing demand for transportation.

PUBLIC SECTOR PASSENGER TRANSPORT IN INDIA

Transport, in view of significant role, gained a due recognition and place in the planning process. The role and rationale of Public Sector Passenger Transport can not be really described unless a resume of the events leading to the foundation of public sector is presented. It is a well known fact that policies like Industrial Policy have been well defined from time to time to achieve the economic development in a planned manner. The emphasis on public sector development was considered an economic necessity during 1940s. Our Industrial Policy was based on the papers prepared during the war viz. the Bombay plan, the paper prepared by the Congress Party known as the Nehru Plan, and other one was a white paper presented
by the British Government in April, 1946. One of the impressive features of these papers was that they had one thing in common and it was the need for development of public sector.

Socio-economic and political factors obviously compelled the then Governments to focus more on exploring various economic substitution possibilities to grow faster and determined one of such possibility is to give public transport a pride of place.

THE TREND IN NATIONALIZATION OF PASSENGER TRANSPORT IN INDIA

In the early period of development immediately after our independence, the pace of nationalization was very high since it was felt necessary and prudent that public transport services for passenger traffic should be the responsibility of the Government or the public sector. The poor coverage and inadequate service provided by the private operators due to their inability to invest huge fixed investments on the one side, and the implied objectives of providing employment, cheap transport facilities at large level and the promotion of activities on which the private undertakings are reluctant to engage in (due to low immediate direct returns) on the other side, compelled various states to expand their area of coverage and some of them achieved 100 per cent nationalization. In view of the growth in demand anticipated at that time, it was felt that only a predominant public sector undertakings in road passenger transport would serve adequately. As a result, the country which had little buses in the state sector witnessed a substantial and multi-
fold expansion of public transport activity with growth of State Road Transport Undertakings (SRTUs) over the years. Prior to 1950, there were only 15 STUs in the country and the number of passenger buses were less than 20,000. In 1995, the number of passenger buses increased to 4,49,000 of which over 1,11,100 were with STUs. To bring passenger road transport in the organized sector and to meet the demand for an economic, efficient and reliable transport system, STUs were subsequently set up at regular intervals by almost all the State and Union Territories. At present, there are 72 SRTUs in the country organized as State Road Transport Corporations, Transport Companies, Municipal Undertakings and Departmental Undertakings.

While observing the trend in nationalization of road passenger transport sector in the country, the percentage of public buses to total buses held which was only 29.3 in 1959 had gone up to a significant 40.00 in 1970 and 47.10 in 1977, started showing a slow rate of decline in the following years. The figure reached to 36.9 in 1986 and this rate of declining tendency picked up momentum and the same was 37.10 in 1987. The same has come down to 24.70 by the end of 1995-96 (the level which was in initial years). A significant observation is that the pace of nationalization was very high in 1970’s and sizeable addition was made to the existing fleet every year. The share of private sector though decreased in these years, it could maintain a major share in the passenger transport sector as seen in Table 1.2.
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Bus under</th>
<th>Percentage of nationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>1959</td>
<td>14060</td>
<td>33966</td>
</tr>
<tr>
<td>1960</td>
<td>16093</td>
<td>37481</td>
</tr>
<tr>
<td>1961</td>
<td>18000</td>
<td>38000</td>
</tr>
<tr>
<td>1965</td>
<td>24784</td>
<td>45686</td>
</tr>
<tr>
<td>1966</td>
<td>26495</td>
<td>46680</td>
</tr>
<tr>
<td>1967</td>
<td>28572</td>
<td>47414</td>
</tr>
<tr>
<td>1968</td>
<td>30760</td>
<td>51969</td>
</tr>
<tr>
<td>1969</td>
<td>32927</td>
<td>53099</td>
</tr>
<tr>
<td>1970</td>
<td>35189</td>
<td>55057</td>
</tr>
<tr>
<td>1971</td>
<td>37073</td>
<td>55541</td>
</tr>
<tr>
<td>1972</td>
<td>35189</td>
<td>55057</td>
</tr>
<tr>
<td>1973</td>
<td>37073</td>
<td>55541</td>
</tr>
<tr>
<td>1974</td>
<td>32927</td>
<td>53099</td>
</tr>
<tr>
<td>1975</td>
<td>30760</td>
<td>51969</td>
</tr>
<tr>
<td>1976</td>
<td>28572</td>
<td>47414</td>
</tr>
<tr>
<td>1977</td>
<td>26495</td>
<td>46680</td>
</tr>
<tr>
<td>1978</td>
<td>24784</td>
<td>45686</td>
</tr>
<tr>
<td>1979</td>
<td>22892</td>
<td>44578</td>
</tr>
<tr>
<td>1980</td>
<td>21000</td>
<td>42000</td>
</tr>
<tr>
<td>1981</td>
<td>19100</td>
<td>40000</td>
</tr>
<tr>
<td>1982</td>
<td>17200</td>
<td>38000</td>
</tr>
<tr>
<td>1983</td>
<td>15300</td>
<td>36000</td>
</tr>
<tr>
<td>1984</td>
<td>13400</td>
<td>34000</td>
</tr>
<tr>
<td>1985</td>
<td>11500</td>
<td>32000</td>
</tr>
<tr>
<td>1986</td>
<td>9600</td>
<td>30000</td>
</tr>
<tr>
<td>1987</td>
<td>7700</td>
<td>28000</td>
</tr>
<tr>
<td>1988</td>
<td>5800</td>
<td>26000</td>
</tr>
<tr>
<td>1989</td>
<td>4900</td>
<td>24000</td>
</tr>
<tr>
<td>1990</td>
<td>4000</td>
<td>22000</td>
</tr>
</tbody>
</table>
THE ROLE AND RATIONALE OF SRTUs IN INDIA:

During the last four decades, public passenger road transport has rapidly gained importance in the overall transport in India. It has been clearly perceived from time to time that the STUs were not an ‘industry’ to generate profits but organizations which run on business principles and yet fulfil a variety of social and political obligations in the country. There has been a contribution from these STUs in attainment of various objectives of promotion of best possible system of transportation, balanced regional development with committed and continued efforts. Their popular, cheap, efficient and stable passenger transport operations rightly supported simultaneous development of other sectors, expansion of various kind of services to the needy and development of interior and inaccessible places of rich resources of men and material. The STUs stood favourably in comparison with the best organized private sector as an ‘ideal employer’ and a figure of 7,62,678 representing the staff on their roll (by 1998) itself speak the employment potentialities in these STUs. Their role in the form of honest tax payer supporting the Government and governmental schemes is a commendable one. All these STUs paid Rs. 377.47 crores of taxes to the government exchequer during the year 1998-99. The total capital investment in these STUs touched the figure of Rs. 8128.99 crores (by the end of 1998-1999), out of which the Government’s contribution was Rs. 3628.57 crores and the total value of fixed assets is Rs. 5214.55 crores.

While reviewing the various periods of STU’s history, the first two decades i.e. 1960’s and 1970’s, were the periods of growth and the management of all these STUs could pay more attention on expanding and designing the organization.
structures to rightly integrate and exercise the controls. In the 1980's, the emphasis was on cost control and cost reduction and the structures were formally and informally modified for attaining these two. The STUs rightly determined the need for improvement in fuel efficiency (kilometres per litre of H.S.D) and efficient material management. In the 1990's, the STUs have turbulent times and pressures in ensuring the financial viability, customer satisfaction and social obligations. The Government of India has been pursuing the policy of privatization and trying to distance itself from any commitments to STUs. Due to emergence of a new set of challenges in the external environment, the concerned governments have been adopting a lukewarm attitude in extending the financial support to these STUs and all the policies became neutral if not altogether adverse. In addition to these, the financial performance of these STUs was predictably disappointing. The cumulative losses of all STUs touched the staggering figure of Rs. 9113.63 crores by the end of 1997-1998 which was only Rs. 2935.18 crores at the end of 1991-92.

PRESENT STUDY

The present study is an attempt to evaluate the physical and financial performance of Andhra Pradesh State Road Transport Corporation (APSRTC) and ascertain the need for adoption of new strategies to increase its operational efficiency. APSRTC is the oldest and the second largest Public sector Transport Corporation in the country, next to Maharashtra State Road Transport Corporation (MSRTC) in its size and volume of operation. The present Andhra Pradesh State Road Transport Corporation had a humble beginning in 1932 as an ancillary organization of Nizam State Railways known as "Road Transport Department"
continued its operations till the Nizam State was federally merged in the Indian Union in 1950. For a shorter period, it continued as an agency of the Indian Railways and thereafter, it was managed as a Department of State Government of Hyderabad till 1956. During the period 1956-58, it was run as a Department of Andhra Pradesh State Government due to the merger of State of Hyderabad and Andhra to form a combined "Andhra Pradesh State". At present, with the fourth distinctive stage, that is, as a statutory corporation it came into being on 11th January, 1958 under the Road Transport Corporation Act, 1950.

From its modest beginning in 1932 with 27 buses, 166 employees and a capital investment of Rs.3.93 lakhs, the corporation has achieved remarkable progress in its history in terms of its size and volume of operation. APSRTC has webbed its activity over 26,424 village of 32,480 in the state covering 81.35 percent of total villages with its rural services and operating city services in eight major cities with a mix of services like Ordinary, Express, Gramani, Metro express and Metro liner. The corporation could be the trendsetter for its innovative approach in introducing Hi-tech coaches, A.C -2 tire sleeper coaches, Gramani services, and Metro express buses on city routes. By the end of 1998-99, the corporation has 17885 buses with a fleet utilization of 98.30 per cent carrying 1.25 crores passengers per day on average and 7446 crores passenger kilometers as its volume of operation with a scheduled services of 17100. With a network of 204 Depots, 34 Divisions and 10 Regional offices spread over the entire state, the corporation could run its buses on 8558 routes.
Inspite of phenomenal growth and improvement in physical and operational parameters like fleet strength, fleet utilisation, vehicle utilisation, fuel efficiency, passengers carried, the corporation could travel through ineluctable route of mounting losses. The corporation entered in to a syndrome of losses along with other major STUs in the country. It incurred losses for seven consecutive years starting from 1977-78 to 1983-84. By the end of March 1984, its accumulated losses mounted to Rs 77.04 crores. Through the corporation has slightly recovered in the following years and brought down the cumulative losses to Rs 33.13 crores by the end of 1988-89, it again plunged into losses from 1989-90 and the cumulative losses of the corporation touched the staggering figure of Rs 100.43 corers by the end of 1991-92

At present almost all the STUs in the country experiencing the turbulent times and pressures in ensuring financial viability, customer satisfaction and fulfillment of social obligations. APSRTC is no exception to this situation. Due to emergence of a new set of challenges in the external environment, STUs are forced to cumulative losses every year. There have been several reasons responsible for this dismal financial performance of APSRTC and other STUs. The growing tax burden, the burgeoning interest commitment, increasing social cost due to extending concessions in fares on social welfare considerations, a responsibility for fair labour practices, continuously expanded employment opportunities, lack of necessary autonomy and flexibility to manage their affairs, etc., made the STUs to lose their ground particularly to private sector. In addition to these factors, competition from
personalized transport, private operators of buses, tempos, and jeeps are posing a great challenge to the corporation, as is the case with similar STUs in the country.

If we look at from a different angle, opportunities are also available for STUs with the increase in population, gross national product, per capita income, increase in agricultural yield per hectare, income of employees of industries, industrialization and urbanization etc. Demand on traffic is continuously on the increase, which provides excellent opportunities for STUs to grow by providing good quality services and thereby increasing their business volume, revenue, and profit. In this background every STU should realize that it is a high time to develop/evolve internally consistent generic strategies for creating a defensible position in the long-run and for out-performing competitions from the existing and future private operators. Cost control, improving crew and vehicle productivity, improving the quality of service, scientific resource planning and allocation, cost leadership, optimum utilization of available resources, proper monitoring of services which are provided to meet the transport demand, etc., are the pertinent strategies to be adopted by the STUs for their survival in the present competitive environment. All these strategies are necessary to maintain adequate growth rate in transport service kilometres. The adequate growth will not only help to improve overall quality of service but also bring down the high incidence of fixed costs in any transport organization.

At this stage, APSRTC should recognize that the challenge and focus of bus operations in the state would be on technology and customers (passengers). It should develop more effective strategies or establish infrastructure/systems that can
ensure cost reduction, performance improvement, quality of service and optimum utilization of resources. Since the “Decision Support System” (DSS) is useful in attaining all these objectives, the discussion of operational efficiency and DSS gains paramount significance.

OBJECTIVES

In the light of both the conceptual and pragmatic analysis of the present status of APSRTC, this study makes an endeavor to evaluate physical and financial performance and operational efficiency of APSRTC and to know how the information system/systems help the corporation to achieve the objectives of cost reduction, improving quality of service, optimum utilization of resources and increasing operational efficiency.

Thus, the main objective of this study twined with the various sub-objectives. These sub-objectives are:

(i) to review the financial performance of APSRTC;

(ii) to evaluate the operational efficiency of APSRTC;

(iii) to analyze the role of “Decision Support System (DSS)” for improving operational efficiency and quality of service in APSRTC, and

(iv) to give appropriate suggestions for the improvement of financial status and overall performance of APSRTC.
ReView of literature

Satya Narayana\textsuperscript{2} examined the different aspects relating to organisational set-up, Capital structure and financial policies of Andhra Pradesh State Road Transport Corporation (APSRTC). The study has focused more on financial performance parameters with less emphasis on physical and operational performance parameters. The researcher appraised the performance of APSRTC through comparative study. However, the comparison of performance parameters of APSRTC was limited to Gujarat State Road Transport Corporation and one transport company in Tamilnadu (KottaBomman).

Viswanadham's\textsuperscript{3} study focused on finances of APSRTC, analysis of financial structure, deployment of funds, cost-fare relationships and fund-flows between the corporation and Government. As a part of the study, the physical and financial performance of APSRTC were also analysed. However, the study relates to the period of 12 years i.e. from 1965-66 to 1976-77, during which period, the APSRTC on the whole but for the two to three years, did not incurred losses. During this period, the size of the organisation was very small and the corporation could run the buses in less number of routes. Further, the study did not make a thorough attempt on inter-STU comparison.

Kulshrestha\textsuperscript{4} made his research on different managerial problems that affect the functioning of STUs in the country. The study focussed on various aspects of internal administration, operational management, management of maintenance and service, personnel administration and financial administration of six selected STUs,
including APSRTC. The researcher appraised the performance of Rajasthan State Road Transport Corporation (RSRTC).

Anjaneyulu made a study on physical, operational and financial performance of APSRTC with much focus on Tax burden and impact of tax burden and impact of tax burden on financial viability. The researcher appraised the physical performance of APSRTC by comparing it with other major STUs of Karnataka, Maharastra, Uttar Pradesh and Gujarat States on various parameters. The study covers period of ten years starting from 1982-83 to 1991-92.

Sashtry in his research work, analyzed the capacity and its utilization, operational performance, quality and reliability of services, analyses of costs, cost-fare relationships, profitability and inter-relationships between physical and financial performance of eleven STUs, selected on the basis of their size under six categories. The study focused more on qualitative aspects. The researcher could analyse how an improvement in physical parameter leads to improvement in financial performance. Since the research covers the period of 1970s, the researcher could examine the performance of State Road Transport Corporations in their initial stages of operation. Many STUs did not emerge as capable operators in their respective states.

Swamy's study is devoted mainly to the analysis of operational efficiency of APSRTC by applying various costing and financial techniques like Marginal costing, Break-even Analysis, Standard Costing, Ratio Analysis and Cost of Capital during the study period 1977-78 to 1986-87. The study aimed at quantifying the efficiency of APSRTC and other six selected STUs.
Patankar\textsuperscript{8} in his book, dealt with economic, financial and technical aspects of passenger road transport in India. He has presented the status of rural transport, urban transport in India during 1970s. He made a detailed analysis of factors influencing operational efficiency and financial performance of STUs and made some practical recommendations. Even though the book contains some valuable information on operational and financial performance parameters, it is not, by itself, an empirical study.

Saxena\textsuperscript{9} studied the Financial Management of some selected State Road Transport Corporations in the Country with special reference to the Uttarpradesh SRTC on the basis of their Profit and Loss accounts, Balance Sheet and other Financial Statements. He analysed the financial structure, sources of income in the selected STUs by applying different techniques of financial analysis. Vidya (10) had laid stress on route-wise cost, profitability analysis, organizational set up and the various physical performance parameters, like vehicle utilization, load factor, fuel efficiency, volume of operation, staff productivity and quality of service in terms of accidents, breakdowns, regularity, punctuality of services in Punjab Roadways. He analysed the contributions of inter-state routes and their importance for maximising the overall revenue and the strategies to be adopted for minimising the losses in public passenger transport undertakings.

Mahesh Chand\textsuperscript{11} reviewed the financial performance of 25 selected Public Road Transport undertakings which were managed as Corporations and Companies during the period 1975-76 to 1979-80. He has selected a very few financial indicators to appraise the performance of selected STUs. The STUs were
ranked based on the performance of only one year i.e. 1979-80. Moreover, the inter-STU comparison was limited to four indicators viz., Cost Per Vehicle Kilometre, revenue per vehicle kilometre, Revenue capital ratio and cost revenue ratio.

Acharya & Bhatt\textsuperscript{12} reviewed the performance of GSRTC by studying it's physical performance in terms of volume of operation, fleet strength, passengers carried and population per bus. He has reviewed the cost-revenue trends and the extent of urban and rural deficit incurred in the operational of nationalized bus transport services in Gujarat State. Agarwal\textsuperscript{13}, in his study, analyzed the financial performance of Rajasthan State Road Transport Corporations (RSRTC) and UPSRTC. The analysis was made on the basis of various ratios, i.e. Liquidity ratios, Leverage ratios, Activity ratios and Profitability ratios. Inter-firm comparison was made on the basis of profit earned, value added, ratio of cause and effect and composite ratio etc. The study did not present evaluation of STUs performance on physical performance parameters. Arora's\textsuperscript{14} study relates to the appraisal of undertakings both in public and private sector operating services in the State of Punjab. The study revealed that the performance of private operations was better than the performance of public sector transport undertakings both in terms of physical and financial performance variables. He asserted that these public sector transport undertakings were not able to increase their operations, without increasing their costs and consequently losses. On the other hand, the private operators could increase their volume of operation without incurring losses, rather they could increase their profits. In this study, the researcher opined that there is a much scope to invest huge funds in the transport industry as there is a scope for further increase in the transport needs of the public.
Murthy\textsuperscript{15} studied the seasonal changes in the parameters that determine cost and revenue to trace their ultimate effect on cost-fare relationships of some STUs and suggested the alternatives to minimise deficits. He could analyse the impact of \textquoteleft seasonal factor\textquoteright on various physical and operational parameters like volume of operation, vehicle utilization, and load factor. The various financial aspects were also reviewed in this study.

Rahi\textsuperscript{16} evaluated the trend of cost, revenue and profits, managerial efficiency of Punjab Roadways in terms of rate of return on the capital invested, total effective kms operated, total cost and capital investment etc. He made a comparative performance study of the Punjab Roadways and Ambala Bus Syndicate Pvt., on the basis of profitability and managerial efficiency parameters.

Pathak\textsuperscript{17} made an inter STU comparison of nine STUs. He viewed that profitability is not the right criteria for the performance evaluation of STUs, and suggested to consider value added concept as an alternative criteria to measure efficiency of STUs. He used the factor of productivity approaches for measuring the productivity of various public sector passenger transport corporations during the 1970s.

Gangappa\textquotesingle s\textsuperscript{18} study confined itself to the evaluation of performance of City Transport Service of APSRTC, focusing on the Twin-city service of Hyderabad and Secunderabad. He analyzed operational performance, cost-structure, cost-fare relationships and financial performance of the selected city services of APSRTC. The study made a comparative analysis of twin cities operations with other city services.
managed by APSRTC for one year and with Bombay Electrical and Transport (BEST), Pallavan of Madras and Ahmedabad Municipal Transportation for five years.

Bagade\textsuperscript{19} presented an outline of various steps to be taken by the management to control costs and to maximise revenues and minimize losses in GSRTC. He also analysed the need for considering the relevant parameters like riding habit, population growth, average distance traveled in forecasting travel demand, supply and profitability of GSRTC.

Gopala Krishna and Raghu Ram\textsuperscript{20} reviewed the performance of Rajasthan State Road Transport Corporation (RSRTC) and made focus on problem analysis of various structural, productivity and fare related matters. He suggest that the corporation should concentration Re-organization and implementation of incentive schemes, profit-sharing schemes and workers involvement for improviding productivity in the corporation.

Rajesham\textsuperscript{21} studied the implementation of the incentive schemes in Passenger Transport Industry at various operative levels in the organization and determined its effect on performance level of various sections in APSRTC in the year 1982-83. He could suggest that the organisations should follow distribution of savings to the employees for their better involvement in generating revenue earning kilometres.

Kulakarni\textsuperscript{22} made a study on Tax-planning in passenger road transport. He analyzed the different provisions of Motor Vehicle Act and operational strategies
to be followed in reducing the major taxes like Motor Vehicle Tax and Passenger Tax in Maharashtra State Road Transport Corporation.

Apart from the few studies mentioned above which were presented in detail operational and financial performance of APSRTC and other major STUs, there are a number of studies on other aspects of the management of Passenger STUs, Particularly APSRTC. Subramanayam\textsuperscript{23} evaluated the performance of APSRTC from the point of view of organisation structure, vehicle productivity, fuel efficiency, incentive schemes, leadership styles, etc. Ramanadham\textsuperscript{24} studied the functioning of erstwhile Road Transport Department of the present APSRTC. Krishna Murthy\textsuperscript{25} analysed the Incentive schemes in APSRTC and Narasimloo\textsuperscript{26} on the Quantum of depreciation to be allowed on the basis of historical cost and acquisition cost and determined the factors for formulation correct retirement policy. Paniswara Raju\textsuperscript{27} studied purchasing, stores and Inventory Management aspects in APSRTC. Mutyala Naidu\textsuperscript{28} examined the Human Resource Management aspects in APSRTC and Chand Basha made\textsuperscript{29} a study on Trade Unionism and leadership aspects in APSRTC. Laxmi Prasad\textsuperscript{30} analyzed various aspects of personnel management exclusively related to the conductors of APSRTC.

The review of literature on STUs has clearly revealed that there is no comprehensive study on the operational and financial performance of APSRTC in recent years. All these studies represent the study period of 1970s and 80s i.e. the period well before the beginning of financial crunch in APSRTC. These studies did not made any attempt on information systems which are very important for efficient management of STUs in the present days. It is felt that the STUs should require
design and adoption of information systems for their survival and growth. Hence, the present study examines intensively the performance of APSRTC in comparison with other major STUs in the country. The present study covers a period 14 years from 1985-86 to 1998-99 during which the performance of STUs faced severe criticism. The study also makes a detailed comparative analysis by covering STUs which represent about 75 per cent of fleet of all State Road Transport Corporations.

METHODOLOGY

(i) Selection of STUs:- The STUs were selected (for comparing the performance of A.P.S.R.T.C) on the basis of fleet strength and number of employees. Though wide variations exist, the transport corporations of Karnataka, Maharashtra, Gujarat and Uttar Pradesh States were selected for comparison purposes. Karnataka and Maharashtra State road transport corporations were selected on the bases of fleet strength and these SRTCs are happened to be the neighbouring STUs of A.P.S.R.T.C. As Gujarat State Road Transport is very sound in some key parameters, it's performance is considered for meaningful comparison. Uttar Pradesh State Road Transport Corporation (UPSRTC) is the biggest State Transport Undertaking extending it's services in Northern India.

(ii) Period of Study:- The Present study covers a period of 14 years from 1985-86 to 1998-99 in order to draw the trends in productivity and performance keeping 1985-86 as base.

(iii) Data Sources:- The study is based mainly on Secondary Data. The data relating to the selected STUs (MSRTC, Kn.SRTC, GSRTC AND UPSRTC)
have been obtained from the "Performance Statistics of State Road Transport Undertakings" Published by Central Institute of Road Transport (C.I.R.T), Pune for the period 1985-86 to 1998-99. The data relating to A.P.S.R.T.C are collected from its published Annual Administrative Reports, Management Information Systems (MIS) wing and various offices located at District and Headquarter levels.

LIMITATIONS

In the absence of "standards for measuring the performance of A.P.S.R.T.C, an inter-firm comparison has been made. While making an inter-firm comparison, the analysis suffered from the limitations due to the existing differences among the STUs in age composition of vehicles, quality of roads, density of population, economic conditions, fare structure, traffic demand, operational procedures, management practices, state policies, Tax bases and tax rates, etc. The non-availability of data for some years relating to some parameters restricted the comprehensive analysis of performances to some extent. The study does not consider the inflationary conditions, completion level, market strategies, etc., in evaluating the physical, operational and financial performances. Besides, it does not take into consideration the level of passenger expectations, travel demand and the service mixes in appraising the quality of service of A.P.S.R.T.C. The differences exist among these STUs in classifying the accidents into minor, major and fatal accidents.
CHAPTERISATION

The study is presented in five chapters. Chapter One outlines the importance of public sector passenger transport, the trend in nationalization of passenger transport in India, the role and rationale of state road transport undertakings in India, need for the present study, review of literature, objectives, methodology adopted, and limitations. Chapter Two deals with the analysis of financial performances of APSRTC. Cost-revenue relationships, the structure and trends of costs, and the tax burden, are presented in this chapter. Chapter Three deals with operational efficiency of APSRTC various physical and operational and quality of service parameters are studied in this chapter. Chapter Four outlines the importance of "Decision Support Systems" (DSS) for the organisations, the need for adoption of DSS in STUs, the decision-making environment in APSRTC, basic data required for DSS, and the DSS environment for increasing operational efficiency and improving financial viability of APSRTC. Chapter Five present the summary of the study and the suggestions for increasing the operational efficiency and improving the financial status of APSRTC.
REFERENCES


