Chapter I

Introduction and Design of the Study
1.1 Introduction

Transport is an inevitable and fundamental need of mankind. There is no better single yardstick than transport to measure the stage of development of a country. Quoting Alfred Marshall, Koteswaran stated that

Probably more than three quarters of the whole benefit derived from the progress of manufacturing during the 19th century has been through its indirect influence in lowering the cost of transport of men and goods, of water and light, of electricity and news: for the dominant fact of our age is the development not of manufacturing, but of the transport industries...it is they which have done by far the most towards increasing wealth.1

The modern means of transport have not only broken all the boundaries of time and distance but also the monopolies of areas and have saved people from exploitation. Transport plays a crucial role in shaping the economic development of the nation through structuring agricultural, industrial and commercial sectors. The success of the agricultural, industrial and commercial revolution was not only due to the introduction of fundamental changes in the process and techniques of production but also due to the movement of goods and persons to far off places with tremendous speed. Therefore, it gets higher priority in all planned economies. There are five principal modes of transportation in India i.e. Rail, Road, Air, Ocean, and Inland water transportation. In road

transport the bus transport is the primary mode which provides effective link to each and every part of the country.

1.2 Role of Road Transport

Road transport consists of movement of goods and people from one place to another. It plays an important role in the economy of the country and is particularly suitable for short and medium distance. It offers a number of advantages such as flexibility, reliability, speed, and door to door service. K.B. Patel is of the opinion that, "road transport has a dynamic role in the strategy and economic development because of its built in flexibility and adaptability to a variety of operating conditions and ability to extend its services to our vast rural areas and its lakhs of villages." At the same time, it promotes a balanced growth of the various regions in the country and can help in the dispersal of industry and commerce over wider regions.

1.3 Nationalisation of Road Passenger Transport

In India, till the World War I, the development of motor transport was very slow, and hence, its regulation was not seriously considered. After independence, the government had to restructure the national goals and accordingly started exercising control over strategic industries.

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R. Vasudevan states that

The nationalisation of bus services was undertaken partly to overcome the inefficiency associated with the private bus transport such as floating of labour laws, skipping or curtailing the run of scheduled bus services, proneness of under cut or overcharge bus fares depending on convenience of the operators, etc., and partly with a view to adhering to the principles of socialisation of basic utility services.3

The fragmentation of the industry, however, necessitated state monopoly, and the Road Transport Corporations Act was passed in 1950 with the objective of providing efficient, adequate, economic, and co-ordinated public transport facilities on business principles. Necessary changes and suitable amendments were made in the Motor Vehicles Act of 1956 to give effect to the objectives set out in the Road Transport Corporations Act for the preparation and approval of nationalisation schemes framed by the Road Transport Corporations.

The nationalisation of road passenger bus transport undertakings mainly offers the planned system of extensive route coverage, satisfactory level of bus services, dependable bus services with fixed fares and limited stoppages, trained work force and professional management, better maintenance and safety standards, improved bus terminal facilities etc. The nationalised bus transport plays unique role in extending transport

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service to the interior and sparsely populated areas and in linking the
cities.

Vasudevan reveals that

The institutional set up of the State Transport
Undertakings gives a distinct advantages: better
operational efficiency by monitoring and co-
ordinating the efforts to conserve the fuel much
better than fragmented industry of the private
operators and passenger benefits provided through
concession in tickets, construction of bus stations
and pick up sheds etc., and the workers are also
benefitted by the provision of the welfare
measures.  

But at the same time, the performance, especially financial performance,
is affected by overall high level of taxation, uneconomic routes,
concessional travel, and inflexible fare structure fixed by the state
government. However, the National Transport Policy Committee (1980)
observed that State Transport Undertakings have been providing
satisfactory services with regularity of bus schedules and less malpractices
in fares charged and collected.

So far as the types of organisations are concerned, some were
formed under the Road Transport Corporation Act of 1950, while some
are operating as Road Transport Companies under the Companies Act of
1956. In some of the states, the Government and Municipal bodies
themselves run the bus transport Departmentally. In India, as on 31st

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4R.Vasudevan 1.
March 1989, there were 67 Nationalised Road Transport Undertakings of which 21 were Corporations, 27 were Companies, and eight were Government Departments and 11 were Municipal Undertakings.⁵

Among the sixty seven State Transport Undertakings, fifty nine own 99.8 per cent of total passenger fleet of State Transport Undertakings as on 31st March, 1989 and constitute 35.65 per cent of the total estimated number of buses in the country. Their capital investment was Rs.3,283.21 crores, and these 59 undertakings employed 7.12 lakh, employees. These undertakings performed 863.50 crores total effective kilometres, carried daily on an average of 5.36 crores of passengers, and consumed 17.49 lakh tonnes of High Speed Diesel Oil for passenger buses only. However, they incurred a loss of Rs.428.29 crores.⁶

According to the CIRT review the company structure seems to exhibit somewhat higher level of physical as well as financial performance than other types of organisations, such as Corporations, Government Departments and Municipal Undertaking.⁷

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1.4 State Transport Undertakings in Tamilnadu

The State Transport Undertakings of Tamilnadu endeavour to link the city, town, and villages through transport facilities and to provide necessary services to people everywhere in the state. The nationalisation of passenger road transport service in Tamilnadu commenced with the takeover of all routes in Madras city in 1948. In Tamilnadu, the State Transport Undertakings were formed under the Indian Companies Act of 1956 with 100 per cent shareholding by the government of Tamilnadu.

In 1967, the government decided that all routes of 75 miles (120 kms) and above, both ordinary and express services; all routes in Kanyakumari district including those radiating or terminating in the district; and all routes radiating from or terminating in Madras city irrespective of length would be fully nationalised. In 1971, all the routes, buses, workshops, and the staff of fleet operators owning 50 permits and above were acquired under the Tamilnadu Fleet Operators Stage Carriages (Acquisition) Act 1971. These transferred permits were operated first by three government corporations covering two or three districts each according to the geographical compactness: Cheran Transport Corporation in Coimbatore and the Nilgris; Pandiyan Roadways Corporation in Thiruchirapalli, Madurai, Ramanathapuram, and Tirunelveli; and Cholan Roadways Corporation in South Arcot and Thanjavur districts.
At present, in Tamilnadu, the nationalised bus transport services dominate in the districts of Madras, Coimbatore, Kanyakumari, the Nilgris, Madurai, Thanjavur, Tirunelveli, and Ramanathapuram. Meanwhile, both public and private bus services play more or less equal role in some districts like Salem, Periyar, Pudukottai, and Pasumpon Muthuramalingam. However, in the districts of North Arcot, Dharmapuri, Thiruchirapalli, Dindigul, Kamarajar, Chingleput, and South Arcot, the private fleet owners are operating more bus services than the public sector corporations.  

In Tamilnadu, the extent of nationalisation of passenger bus service has increased by 15 per cent between the period 1978 and 1988. The number of Transport Corporations in Tamilnadu has now gone upto 16 through the progressive nationalisation and bifurcation of the large units and establishment of new corporations.

Table 1.1 exhibits the details of State Transport Undertakings in Tamilnadu in the year 1987. The performance of State Transport Undertaking varies in all main aspects such as fleet strength (varying from 494 to 2,089), number of routes operation (fluctuating from 305 to 919), occupancy ratio (differing from 62.9 to 89.2), profit and loss (varying from 66.37 lakhs to -487.45 lakhs), number of villages covered (fluctuating from 21 to 556), and number of passengers carried (varying from 0.73 lakh to 30.30 lakhs). The table also brings out the fact that the Pallavan Transport

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9P. Jegadish Gandhi, and G. John Gunaseelan 5
### Table 1.1

Performance of State Transport Undertakings in Tamilnadu in 1987

<table>
<thead>
<tr>
<th>Name of the corporation</th>
<th>Date of Incorporation</th>
<th>Area of operation</th>
<th>Fleet strength</th>
<th>Number of routes in operation</th>
<th>Occupancy ratio</th>
<th>Profit/Loss after providing depreciation (Rs. in lakhs)</th>
<th>Number of new villages/hamlets covered directly</th>
<th>Average number of daily passengers carried (in lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallavan Transport Corporation (PTC)</td>
<td>1.1.72</td>
<td>Madras Metropolitan city</td>
<td>2,089</td>
<td>314</td>
<td>89.2</td>
<td>-487.45</td>
<td>NA</td>
<td>30.30</td>
</tr>
<tr>
<td>Pandiyar Roadways Corporation (PRC)</td>
<td>17.1.72</td>
<td>Madurai and Kamarajar districts</td>
<td>739</td>
<td>411</td>
<td>67.2</td>
<td>-168.17</td>
<td>159</td>
<td>9.23</td>
</tr>
<tr>
<td>Chera Transport Corporation (CTC)</td>
<td>1.3.72</td>
<td>Coimbatore and the Nilgiris</td>
<td>1,182</td>
<td>919</td>
<td>69.0</td>
<td>-20.18</td>
<td>29</td>
<td>11.28</td>
</tr>
<tr>
<td>Cholan Roadways Corporation (CRC)</td>
<td>1.3.72</td>
<td>Thanjavur district</td>
<td>656</td>
<td>476</td>
<td>65.0</td>
<td>4.75</td>
<td>38</td>
<td>6.63</td>
</tr>
<tr>
<td>Anna Transport Corporation (ATC)</td>
<td>5.2.73</td>
<td>Salem district</td>
<td>992</td>
<td>724</td>
<td>65.0</td>
<td>-24.69</td>
<td>22</td>
<td>8.12</td>
</tr>
<tr>
<td>Kattabomman Transport Corporation (KTC)</td>
<td>1.1.74</td>
<td>Tirunelveli and Chidambaram districts</td>
<td>647</td>
<td>490</td>
<td>64.9</td>
<td>-33.27</td>
<td>46</td>
<td>4.83</td>
</tr>
<tr>
<td>Thanthai Periyar Transport Corporation (TPTC)</td>
<td>16.1.75</td>
<td>South Arcot and Southern Area of Chingleput districts</td>
<td>772</td>
<td>NA</td>
<td>74.8</td>
<td>49.31</td>
<td>169</td>
<td>5.34</td>
</tr>
<tr>
<td>Pattukottai Azhagiri Transport Corporation (PATC)</td>
<td>15.9.75</td>
<td>North Arcot and Northern area of Chingleput districts</td>
<td>817</td>
<td>473</td>
<td>74.3</td>
<td>66.37</td>
<td>25</td>
<td>5.01</td>
</tr>
<tr>
<td>Thiruvalluver Transport Corporation (TTC)</td>
<td>15.9.75</td>
<td>Entire State of Tamilnadu</td>
<td>750</td>
<td>493</td>
<td>80.1</td>
<td>-41.88</td>
<td>NA</td>
<td>0.73</td>
</tr>
<tr>
<td>Corporation</td>
<td>Date</td>
<td>Districts</td>
<td>Ridership</td>
<td>Fare per 100</td>
<td>Distance</td>
<td>Fare per 100</td>
<td>Ridership</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------</td>
<td>------------------------------------------</td>
<td>-----------</td>
<td>--------------</td>
<td>-----------</td>
<td>--------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Marudhupandiyar Transport Corporation (MPTC)</td>
<td>1.4.83</td>
<td>Pudukkotai, Ramnathapuram and Pasumpon Muthuramalingam districts</td>
<td>555</td>
<td>393</td>
<td>71.2</td>
<td>-129.20</td>
<td>556</td>
<td></td>
</tr>
<tr>
<td>Nesamany Transport Corporation (NTC)</td>
<td>1.4.83</td>
<td>Kanyakumari district</td>
<td>494</td>
<td>305</td>
<td>69.6</td>
<td>-20.45</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Jeeva Transport Corporation (JTC)</td>
<td>1.4.83</td>
<td>Periyar district</td>
<td>604</td>
<td>432</td>
<td>62.9</td>
<td>-14.39</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>Dheeran Chinnamalai Transport Corporation (DCTC)</td>
<td>1.4.85</td>
<td>Thiruchirapalli district</td>
<td>532</td>
<td>365</td>
<td>64.0</td>
<td>0.56</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Rani Mangammal Transport Corporation (RMTC)</td>
<td>1.4.86</td>
<td>Anna district</td>
<td>536</td>
<td>394</td>
<td>71.2</td>
<td>-13.41</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Annai Sethya Transport Corporation (ASTC)</td>
<td>1.4.87</td>
<td>Dharmapuri district</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

Corporation's, performance is comparatively good in fleet strength, occupancy ratio, and number of passengers carried, whereas Cheran Transport Corporation operates more number of routes. Marudhu Pandiyar Transport Corporation serves a large number of villages.

Among these 15 Corporations, Pallavan Transport Corporation is plying purely city service, and Thiruvalluvar Transport Corporation is doing inter-city/state services, and the remaining corporations are plying service mix of operation in terms of more city/town services, mofussil/express services, limited stop services, point-to-point services and inter-city/state services.

1.5 Physical Performance of State Transport Undertakings

As on 28th February 1990, 15 Transport Corporations were operating 13,578 buses. These include 423 mini buses and short wheel base buses operated for the benefit of the people in the interior villages. Tamilnadu State Transport Undertakings carry nearly 135.38 lakhs passengers per day and cover 46.58 lakhs kilometres every day. During 1987-88, State Transport Undertakings were operating on 7,000 routes and employing 88,000 persons.\(^\text{10}\)

The Planning Commission of India has pointed out that as against the all India level of vehicle productivity of 265 kilometres per bus per

\(^{10}\)Transport Department, On the Performance of State Road Transport Undertakings, Transport Department, (Madras: Government of Tamilnadu, 1988) 3.
day, vehicle productivity in Tamilnadu transportations is 346 kilometres, the highest so far achieved in the country.11

1.6 Financial Performance

According to the Transport Department Report, during the year 1988-89, all the transport corporations except Thanthai Periyar Transport Corporation, Annai Sathiya Transport Corporation, Pattukottai Azhagiri Transport Corporation, and Rani Mangammal Transport Corporation have incurred loss, due to high operational cost such as increase in cost of diesel, spares, tyres, steel, aluminium, and wages of employees, and the uneconomic fixation of fare by the government.12

1.7 Rural Passenger Transport Scenario

In India, more than 70 per cent of people are engaged in agricultural sector, and nearly six lakh villages are scattered throughout an area of 33 million square kilometres. Non-availability of basic amenities in villages viz., education, health and medicare, drinking water, agricultural marketing, job opportunities, communication and transport facilities are common to the rural population, and they cause large scale migration to the cities.

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12 Transport Department, Capital outlay on Road Transport Services and Shipping: Road Transport Services and Shipping and Demand No.55, Transport Department, (Madras: Government of Tamilnadu, 1990) 18.
To quote Panduranga Rao,

In India, though primary education is within the reach of 64 per cent of villages, 50 per cent of them are at a distance of more than six kilometres to higher secondary school and only about 17 per cent of the villages are having fair price shops at present and nearly 60 per cent of the villages are at a distance of more than six kilometres to bank. 13

Improved road and efficient rural transportation facilities not only enable to increase the travel mobility but also reduce the shifting of people from villages to towns through fulfilment of their social and economic needs by transport.

S.G. Arasangovan is of the opinion that "only road transport which brings villages and towns close can render the vital economic services adequately and economically." 14 Vasant Patankar has explained rural transportation as a vital component, and it helps to achieve the sound national objectives like social integration, employment generation, removal of poverty, and rural development in general, and removal of regional imbalance in particular. 15


According to the 1977 Economic Census, only 1.27 per cent of Indian villages have railway stations, less than 18 per cent of them only have bus stop facility, and only about 24 per cent of total villages possess metalled roads. Of course, in the passenger transportation service, the way and the vehicle are the main influencing factors. Good road facility must be fundamental for the smooth running of vehicles. The bulk of the Indian roads in rural areas are either district roads or village roads. The Road Development Plan 1981-2001 envisages a total road network of 27 lakh kilometres and included 66,000 kilometres National Highways, 1,45,000 kilometres of State Highways, 3,00,000 kilometres of Major District Roads, and 21,89,000 kilometres of Rural Roads.

The Committee on Transport Policy and Co-ordination (1966) strongly recommended the development of rural roads and improvement of road communication in the economically backward areas.16

After independence, the government has formulated the Rural Road Policies under 20 year Road Development Plan. There are three plans, popularly called as Nagpur Plan 1941-61, Bombay Plan 1961-81, and Lucknow Plan 1981-2001. Currently, the Lucknow Plan (1981-2001) is under execution. The government adopted this policy mainly to develop the rural roads under these three plans. The details of the plans are explained in Table 1.2.

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Table 1.2
Rural Road Policies Under Three Road Development Plans

<table>
<thead>
<tr>
<th>Description of area</th>
<th>Maximum distance from main road in Km</th>
<th>Description of area</th>
<th>Maximum distance in Km</th>
<th>Density per 100 sq.km.</th>
<th>Villages with population</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed agricultural area</td>
<td>8</td>
<td>Developed and agricultural area</td>
<td>6.4</td>
<td>43.5</td>
<td>500 and above</td>
<td>Should be connected by all weather roads by 2001.</td>
</tr>
<tr>
<td>Non-agricultural area</td>
<td>32</td>
<td>Semi-developed area</td>
<td>12.8</td>
<td>18.6</td>
<td>Less than 500</td>
<td>Maximum distance from all weather roads kilometres</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under developed and uncultivable area</td>
<td>19.2</td>
<td>11.8</td>
<td></td>
<td>in plain areas ... 3 in hilly areas ... 5 (cluster approach)</td>
</tr>
</tbody>
</table>


Note: Villages located within radius of 1.6 kms and having an altitude difference of not more than 200 m can be considered as one cluster.
The Minimum Needs Programme for rural road construction envisages the linking of villages with population of 1,500 and above and 50 per cent of the villages with a population between 1,000-1,500 by the end of the Seventh Plan (1985-90). In case of hilly, coastal, tribal, and desert areas which are sparsely populated, the norms are relaxed. Accordingly, about 24,000 villages would need to be connected with roads during the Seventh Plan to achieve the national norms.17

Table 1.3 explains the number of villages connected with all weather roads on the basis of population size. The Annual Report of the Department of Rural Development indicates that as on 31st March 1985 in India, out of 5,92,095 villages, about 34.2 per cent have all weather road connections. If Tamilnadu is taken particularly it secures the sixth place with 55.10 per cent of villages having been connected with all weather roads.

About 36 per cent of the villages in the country are still without any road connection, and as much as 65 per cent without an all-weather road. Rural roads are also constructed under other programmes such as the Rural Landless Employment Guarantee Programme (RLEGP), National Rural Employment Programme (NREP), and Command Area Development (CAD). (Growth of road length in India and Statewise density of rural roads are shown in appendices II & III).

### Table 1.3

Number of Villages Connected with All Weather Roads as on 31st March 1985

<table>
<thead>
<tr>
<th>Population size</th>
<th>Total number of villages</th>
<th>Villages connected with all weather roads</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 1500</td>
<td>69,408</td>
<td>48,921</td>
<td>70.48</td>
</tr>
<tr>
<td>1000 - 1500</td>
<td>56,609</td>
<td>28,967</td>
<td>51.17</td>
</tr>
<tr>
<td>Less than 1000</td>
<td>4,66,076</td>
<td>1,24,611</td>
<td>26.74</td>
</tr>
<tr>
<td>Total</td>
<td>5,92,093</td>
<td>2,02,499</td>
<td>34.20</td>
</tr>
</tbody>
</table>

In spite of these developments, the length of rural roads is inadequate to meet the requirement of the growing rural population living in widely spread rural areas. Poor growth of rural road network in India results in the poor mobility and accessibility in rural areas.

According to the 1978 Economic Survey, 73 per cent of rural households did not own any type of vehicle. The people living in villages entirely depend on the passenger transport services for their external movement, i.e., home to work, market, town, school, social trips, visit to other village and back trips. Short distance internal movement is being carried out by foot or bicycle.

Rural transport helps agriculture in getting fertilizers and manures and carry the harvested crop to the markets. The provision of cost effective and efficient rural transportation improves the mobility of rural manpower and material, and generates developments in the village economy.

Rural transport not only increases the agricultural production rapidly in rural areas but also helps to start agro-based rural and cottage industries like poultry and dairy. Easy market accessibility motivates and raises farmers’ involvement in their productivity. In addition to the economic benefit, the social benefits like improved communication and movement to different places for different purposes accrue from transport. In short, rural development will be incomplete without proper rural link roads.
Realising the necessity of transport, the government launched a number of rural development programmes and has now achieved its goal successfully. The successful rural road development plans now obviously changed this poor rural situation through the provision of good transportation facilities.

1.8 Rural Transport by State Transport Undertakings in Tamilnadu and Salem District

In Tamilnadu, private bus operators with profit motive are not willing to ply their services in substandard roads and sparsely populated rural areas due to uneconomic service. Though ignored by private bus operators, most of the villages in Tamilnadu enjoy the bus transport facilities offered by the State Transport Undertakings. All State Transport Undertakings in Tamilnadu provide transport facilities to the villages with a population of 1,500 and above, and at present they have started to render services to the villages even with a population of 1,000 and above. At the same time, these State Transport Undertakings are providing special fairs and festivals services, and also allow commuters in rural areas to carry their luggage with them.

The district of Salem is the fifth urban agglomeration in Tamilnadu, and it can be said to be a relatively developed one among the industrially backward districts of the state. This district is noted for its mineral wealth especially steel and magnesite.
According to the 1991 Census Report, 71 per cent of the people in Salem district are living in rural areas. They are mainly engaged in industries like mines, textiles, chemicals, glass, sugar, cement, paper, motor body building, sago, dairy, flour, and others which are located in and around Salem town. The need for employment not only pushes the rural people to urban areas but also the lack of other facilities like standard and higher education, markets, etc., are the reasons for the rural people travelling to towns.

These large magnitude of rural people's transport needs in Salem district are met by the Anna Transport Corporation (ATC). In Tamilnadu the ATC is the only Corporation which is operating about 60 per cent of town buses to cater to the needs of the rural public even though it is uneconomical, and about five lakh rural passengers per day are benefitted in Salem district by this transportation. Therefore the researcher is interested to study rural transport services offered by ATC.

1.9 Statement of the Problem

While considering rural transport as a vital instrument for the overall success of the country's economic development, there are many problems to be faced by the commuters with respect to corporation and crew.

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The rural commuters need to go to the nearby towns for various purposes. At present the transport services in rural areas do not meet all the requirements of the rural commuters up to the expected level due to many reasons, and passengers face a number of problems caused by corporation, crew, co-passengers, and general public in connection with their travelling. Passengers' problems with regard to corporation are inadequate services, poor condition of buses, and undue waiting time at bus stops. Untimely services dissatisfy the rural passengers. Many times the rural commuters have to face a belated or no bus arrival. The passengers also face many problems from crew, such as non-refund of balance amount, failure to stop buses at scheduled places, and also not picking up concessional travellers, inadequate time for boarding and alighting, negligence to provide handicapped passengers seats reserved for them, bad crew courtesy, and so on. Besides, the commuters also face some problems from their co-passengers, such as smoking inside the bus, spitting and vomiting in the buses, and quarrels among the passengers etc. The other main problem of passengers is the poor condition of roads in rural areas which results a tedious journey.

Rural bus services connect the villages with the towns. Generally the corporations have to encounter a lot of problems in running rural services. The rural road conditions are not as good as towns. Moreover, plying of services in sparsely populated rural areas result in low efficiency and in uneconomical return to the corporation. Generally, private transport operators do not come forward to operate buses in rural areas due to
these reasons. However, a welfare government must run its bus services in these areas.

The varied problems faced by the passengers in the rural areas lead to the following questions:

1. Are the commuters satisfied with the existing rural transport facilities?
2. What types of problems are faced by the commuters in rural bus services?
3. How could these problems be solved?

This study aims to find answers to these questions.

1.10 Objectives of the Study

The objectives of the study are as follows:

1.10.1 To study the general performance of Anna Transport Corporation;

1.10.2 To make an evaluation of road passenger transport services in rural areas from the passengers’ point of view;

1.10.3 To identify the problems faced by the rural passengers;

1.10.4 To offer important suggestions and conclusions to improve the rural passenger transport services.
1.11 Hypotheses

The following hypotheses have been framed and tested in this study.

1.11.1 Age influences passengers’ satisfaction.

1.11.2 There is relationship between sex and passengers’ satisfaction.

1.11.3 Marital status influences passengers’ satisfaction.

1.11.4 Passengers with larger families are less satisfied with their travel than the others.

1.11.5 Difference in occupation leads to difference in passengers’ satisfaction.

1.11.6 Educational qualification influences passengers’ satisfaction.

1.11.7 Income influences passengers’ satisfaction.

1.11.8 There is relation between frequency of travel and passengers’ satisfaction.

1.11.9 Distance travelled by the passengers influences passengers’ satisfaction.

1.11.10 Duration of journey influences passengers’ satisfaction.
1.11.11 Other modes used, before boarding to and/or after alighting from bus influences passengers' satisfaction.

1.11.12 Bus fare paid influences passengers' satisfaction.

1.11.13 There is significant relationship between purpose of travel and passengers' satisfaction.

1.12 Operational Definitions

1.12.1 Passengers

The term "passengers" means the people who travel by any mode of transport such as rail, road, air or sea. In this study, this term has been used to refer to the passengers travelling by bus. Some times they have also been referred to as commuters.

1.12.2 Passengers' Satisfaction

"Passengers' Satisfaction" means the extent of satisfaction derived by passengers from their travel by bus. In this study travel by bus on rural routes alone has been studied.

1.12.3 Rural Routes

There is no common definition for rural routes. Hence the researcher has defined the rural routes as follows:
They are specific bus routes originating from the town or otherwise covering a maximum distance of 30 kilometres and at least 50 per cent of which lies outside the municipal limit.

1.12.4 Service

The term "Service" has been used in this study in a limited sense to mean plying buses.

1.12.5 Trip

Driving buses from one place of origin to a destination point is called "trip".

1.12.6 Single Trip

The term "Single Trip" means driving a bus from one place of origin to a destination point once.

1.13 Methodology

This study is an empirical one, using both primary and secondary data. Field work was carried on by the researcher during the month of October and November 1991. Primary data were collected from passengers in selected sample routes through an interview schedule for passengers. (See Appendix I)

The passenger respondents were interviewed by the researcher individually. Their responses were recorded in the respective interview
schedules. The interviews were conducted at the bus stops, during travel and rest times. Rapport was created between the researcher and the respondents before each interview. The interviews were held in cordial conversational style. Generally the responses were good, and the respondents were free and relaxed at the time of the interview.

Secondary data were collected from the records and annual reports of ATC, books, journals, and government reports.

1.14 Sampling Scheme

1.14.1 Selection of Sample Rural Routes

Stratified random sampling was adopted to select the routes as explained below:

(i) 10 depots which cover exclusively town services out of the total 15 depots of ATC have been taken for the study.

(ii) Those routes which cover a maximum distance of 30 kilometres and 50% of the distance covered lying outside the municipal limits were identified as rural routes.

(iii) Ten percent of the total number of rural routes covered by each depot was selected at random drawing lots. Thus, out of 403 rural routes covered by 10 depots, 40 routes were selected.
1.14.2 Selection of Sample Passengers

As the passenger population was infinite, ten passengers were selected at random from each sample route for this study. Totally 400 (40 x 10) commuters were chosen throughout the Salem district. The passengers were contacted at different bus stops in selected routes.

1.15 Tools for Collection of Data

1.15.1 Interview Schedule for Passengers

In this schedule the responses of the respondents as to their transport usage profile such as available services, the starting and finishing times, distance, purpose of travel, other modes of travel, and the different problems in their journey were recorded. At the end of the interview schedule, the passengers' satisfaction scale has also been attached, and the respondents were requested to express their travel satisfaction for about 50 components under the five main heads, such as passengers' comforts, punctuality and regularity, safety and reliability, satisfaction with crew, and social responsibility. A five point Likert type scale was used to record their responses to the various items of satisfaction under these heads.

1.15.2 Interview with the Operator (Corporation)

Officials of ATC were interviewed to express their opinion about passenger transport services provided by the ATC in rural areas.
1.16 Framework of Analysis

The main theme of the study is to measure the passengers' satisfaction of the rural commuters and the variables influencing that satisfaction. Thus the passengers' satisfaction is the dependent variable of the study. This variable is abstract. This can be measured only indirectly. Scaling technique was used to measure this variable. A Likert type five point scale by name "Passengers' Satisfaction Scale" was constructed. This scale contained 50 items under five heads, passengers' comforts, punctuality and regularity, safety and reliability, satisfaction with crew, and social responsibility. The responses of the respondents were recorded on this scale and scores were given to each response. The total score for all the 50 items constituted the passengers' satisfaction score.

The demographic and transport usage profile variables of the passenger respondents constituted the independent variables. In order to find out the relationship between the independent variables and the dependent variable first, the respondents were grouped on the basis of the factors. The validity of the assumption regarding the homogeneity of the variance is tested first by using the Bartletts' Test. Then average passengers' satisfaction score was calculated for each factor group.

In order to examine variation of passengers' satisfaction score with regard to different classification in each of the selected demographic and transport usage profile variables, the Analysis of Variance (ANOVA) technique is found to be more appropriate. It is the simplest analysis that
can be conceived through the Additive Model. It has been used to find out the inter-group and intra-group variations of the satisfaction score of the passengers who utilise the benefits of transport system in rural areas. If "F" value is found to be statistically significant in the factors, the mean difference of the satisfaction scores of the passengers between the pair of variables in each of the categories of demographic and transport usage factors have been calculated by using students "t" test and the hypothesis was accepted and inferences were drawn therefrom.

1.17 Limitations of the Study

In spite of the researcher's best efforts, the following limitations have become unavoidable in the study. Even though private operators are also plying services in Salem district, the researcher has selected only the ATC for the study because ATC provides more rural services than the former.

According to the researcher's observation, more than 60 per cent of fleet in town bus services cover more rural areas than urban areas. So the researcher has taken only the town bus services for this study.

1.18 Chapter Scheme

The first chapter contains the introduction to road transport, role of road transport, nationalisation of road passenger transport, State Transport Undertakings' general performance, establishment of State Transport Undertakings in Tamilnadu and their operations, rural passenger
transport scenario with regard to rural road development in India and its importance, and rural transport by State Transport Undertakings in Tamilnadu and Salem district. It also contains the statement of the problem, objectives of the study, hypotheses, operational definitions, methodology, framework of analysis, limitations of the study, and the chapter scheme.

The second chapter deals with the review of the previous studies on rural passenger transport with regard to occupancy, road condition, operating cost, travel behaviour, mode of selection, scaling technique, passenger problems, and suggestions about rural transport.

The profile and general performance of ATC in terms of fleet, traffic, maintenance, fuel, personnel, safety, financial management, public service, and passengers carried by the ATC for the period of 10 years from 1980-81 to 1989-90 have been dealt with in the third chapter.

The extent of passengers' satisfaction, and its relationship with demographic and transport usage factors have been discussed in the fourth chapter.

The fifth chapter identifies and analyses the different kinds of travel problems faced by the commuters.

The last chapter contains a summary of the findings and offers suggestions for increasing passengers satisfaction.