CHAPTER VIII

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

8.1 Introduction

This chapter is devoted to recapitulate the main findings and conclusion of the study and to offer some suggestions for improving the commercial performance of public passenger road transport system in Kanyakumari district.

Road passenger transport plays a vital role in the socio-economic development of the people both in urban and rural areas. In Tamil Nadu, the growing demand for passenger transport is met by State Transport Undertakings, which are established under the Indian Companies Act 1956. The private bus services are also permitted by the Government to meet the passenger’s needs.

In Kanyakumari district, Tamil Nadu State Transport Corporation, Madurai (Division III) Limited is rendering passenger bus service to the public. Although private bus services are prohibited in this district, mini
buses and share auto rickshaws are also involved in the public passenger transport system.

The present study is taken up with the broad objective of evaluating the commercial performance of public passenger road transport system of Kanyakumari district with the following specific objectives:

- To analyse the cost and revenue related parameters to evaluate the commercial performance of public passenger road transport system in Kanyakumari district.
- To do profitability analysis of public passenger road transport system in Kanyakumari district.
- To examine the extent of passenger, crew and mini bus owners and share auto owners satisfaction and to identify the factors influencing satisfaction in transport services.

The study is based on both the primary and the secondary data. The primary data were collected with the help of pre-structured and tested interview schedules from passengers, workers of the transport sector and mini bus owners. To collect the primary data from the passengers, convenient area sampling units of 150 samples each for 4 taluks of the district amounting to 600 were taken. Similarly in order to collect the primary data from employees 500 persons were selected by following convenient random sampling technique. In the same way, to collect the primary data from the private owners of the passengers transport, 40
minibus owners and 10 share-auto owners were conveniently taken as sample units. The secondary data were collected mainly from the annual reports of the TNSTC–Madurai (Division–III) Nagercoil region from 2000–01 to 2010–11. Books, journals, reports and internet were the other sources of secondary data.

Statistical tools like averages, percentages, diagrams, trend analysis, compound growth rate, multiple linear regressions have been employed to analyse the data. Ratios, breakeven point, margin of safety are calculated to analyse the commercial viability of the state public transport corporations’ performance. Chi-square test is applied to find out the relationship of demographic factors of the passengers and employees with their level of satisfaction of the public passenger transport system. Likert’s scaling technique and Garret’s ranking technique are used to rank the opinion of the bus-stands and its facilities and the problems faced by the transport owners respectively.

8.2 Findings

The summary of research findings of this study is presented below: Motor bus transport was first introduced in this district for the purpose of transporting passengers and goods in the early 1960’s.

In Kanyakumari district, Tamil Nadu State Transport Corporation, Madurai (Division III) Ltd., is rendering passenger bus service to the public. Although private bus services are prohibited in this district, 242
private minibuses and 50 share auto-rickshaws are also involved in the public passenger transport system.

On 23.10.2010, Tamil Nadu State Transport Corporation Madurai Division was bifurcated and a new Tamil Nadu State Transport Corporation, Tirunelveli was formed with the area of operation of Tirunelveli, Thoothukudi and Kanyakumari districts. At present there are eight State Transport Corporations in Tamil Nadu.

The Tamil Nadu State Transport Corporation Ltd., Tirunelveli (Nagercoil region) is the only transport service in Kanyakumari district covering almost all villages, carrying nearly 2.90 crores passengers every month. It operates passenger services in 750 routes with a fleet strength of 876 buses. This district is well covered with bus transport facilities. Remote villages are also covered by 242 private minibuses.

The area selected for the present research study is Kanyakumari district. The fact that a wide geographical feature with lot of plains, beautiful hills and forests, natural tourist centres and long sea-shore villages had expanded the scope and significance of bus transport and its continuous development throughout the district. All the areas of the district are thickly populated which favours the continuous growth of the transport service throughout the year.

Kanyakumari district has a very good network of lengthy roadways in low-range, middle-range and mountain-range areas. The population of
the district is also very high and is continuously increasing with a birth rate of nearly 1.8 per cent per annum. The increase in the literacy level and the developments of schools, colleges, technical institutions, work spots, tourist centres, various offices and the expansion of various agricultural and industrial marketing centres have also increased the demand for bus transport in this district. Kanyakumari is also a very good fishing centre with a long coastal line of 68 kilometres. Out of the total population of 1,669,763, nearly one third of the population in this district are fishermen. From these facts it is clear that there is a continuous demand for passenger buses and buses exclusively to transport fishes in the district.

Another important major work of the present research study was the detailed Review of Literature, made strictly based on the research methods. It has covered the various studies conducted on public passenger transportation. The detailed, critical and elaborate review of the previous studies had shed more light on the significance and relevance of this study ‘Evaluation of Commercial Performance of Public Passenger Road Transport system in Kanyakumari District’. The detailed review was made on the following important headings such as passenger transport in India, rural transportation, urban transport, transport network, nationalization of passenger road transport, human resource development in State Road Transport Corporations, marketing of bus transportation, passenger transport in Tamil Nadu, quality in bus service, performance evaluation of
State Road Transport Corporations, financial performance evaluation of State Transport Undertakings and operational efficiency of State Transport Undertakings.

The cost analysis of public passenger Transport Corporation revealed that the fixed-cost recorded a compound growth rate of 8.55 per cent and the variable cost increased at a compound growth rate of 10.72 per cent. This shows that variable cost increased at a faster rate than the fixed cost. Moreover the total cost of the corporation recorded a compound growth rate of 9.37 per cent, which indicate that an average cost have grown in a year by 9.37 per cent over the preceding year.

Among the important cost factors such as cost per effective kilometre operation, cost per bus, cost per route, cost per worker and cost per passenger which are affecting the public passenger transport corporation to a larger extent, the factor, cost per worker recorded a high compound growth rate of 8.63 per cent followed by cost per route which show a compound growth rate of 6.89 per cent.

In order to identify the impact of cost factors level on the total cost, linear multiple regression analysis is made. Multiple regression equation shows that the variable cost per worker and the cost per route have higher impact on total cost. A unit change on the variable cost per worker makes a change of 768.678 units change on the total cost. Similarly a unit change
on the variable cost per route makes a change of 742.260 units change on total cost.

The revenue analysis of the Tamil Nadu State Transport Corporation Limited, Tirunelveli (Nagercoil region) which perform passenger transport services to the Kanyakumari district people shows that the corporation’s major revenue came from its operation. It account for more than 90 per cent every year during the study period. The total revenue comprises of operational revenue and other revenues or non-operational revenues. The total revenue increased at a compound growth rate of 7.06 per cent, which indicate that an average of total revenues have grown in a year by 7.06 per cent over the preceding year.

The factors such as revenue per effective kilometre, revenue per bus, revenue per route, revenue per worker and revenue per passenger affecting the total revenue were analysed with the help of compound growth rate and trend analysis. This analysis shows that the factor revenue per worker recorded a high compound growth rate of 6.32 per cent followed by revenue per route, which showed a compound growth rate of 4.63 per cent.

To study the level of impact of revenue factors affecting the total revenue, linear multiple regression is employed. In this present study the variable revenue per route has a maximum influence on the total revenue followed by the factor, revenue per worker. A unit change on the revenue
per route makes a change of 1552.043 units change on total revenue. Similarly a increase of one unit on revenue per worker makes an increase of 1382.843 units on the total revenue.

The profit or loss position of the Tamil Nadu State Transport Corporation Ltd., Madurai (Nagercoil region) was analysed with the help of compound growth rate and trend analysis. In the last 11 years (except 2002-2004, 2 years) the corporation has met a negative growth of 54.89 per cent. This analysis reveals that there is a higher growth rate of net loss in the corporation.

The important determinants of the profit or loss of the corporation such as profit or loss per effective kilometre operated, profit or loss per bus, profit or loss per route, profit or loss per worker and profit or loss per passenger are also analysed with the help of compound growth rate and trend analysis. This analysis shows that the factor profit or loss per route recorded a high negative compound growth rate of 38.79 per cent followed by profit or loss per bus, which also showed a negative compound growth rate of 38.57 per cent.

The determinants’ relationship with profit or loss is identified by Linear Multiple Regression analysis and it was found that the variable, profit or loss per worker and profit or loss per route have greater impact on profit or loss. A unit change on the variables, namely, profit or loss per
worker and profit or loss per route makes a change of 1751.217 and 1576.103 units on total profit or loss respectively.

The total cost, income, profit or loss are also analysed with mean, standard deviation and co-efficient of variation and it was found that the cost is increasing at a faster rate (28.98 per cent) than the rate of the growth of the revenue (20.87 per cent). Hence there is net loss except the two years (2002–2004). The loss also shows an increasing trend year by year.

The profitability of the corporation is also judged with the help of revenue to cost ratio. The proportion of revenue raised by the corporation in relation to the cost incurred show a declining trend (except the two years 2002–2003 and 2003–2004). This calls for major efforts on the part of the corporation to reduce the costs.

The bus transport corporation of Kanyakumari district incurred a continuous loss except the two years (2002–2003) and (2003–2004) during the study period. Every year the loss of the corporation is increasing. But, for the sake of public welfare, the corporation is rendering its service to the people. Hence it is highly essential to analyse the Break Even point and also the Margin of Safety for future policy implications. It is inferred that the corporation is not even achieving the break even sales except the years 2002–2003 and 2003–2004. It is highly deficient. The deficit amount increased from Rs.2951.35 lakhs in 2000–2001 to Rs.13,894.66 lakhs in 2010–2011. This analysis reveals that the corporation is unable to reach
even, break even sales except the 2 years (2002−2003) and (2003−2004) during the study period.

Since the passengers, employees and private owners are also part and parcel of the public passenger transport system of the Kanyakumari district, their views are analysed and the results are given below to judge the commercial performance of public passenger road transport system of Kanyakumari district.

**8.2.1 Analysis of Passengers**

As regards the demographic background of the respondents 54.17 per cent of them are under the age group of below 30 years, 53 per cent are female, 55.83 per cent are married people, 35 per cent are having educational qualification up to HSC, 32 per cent are employed in private concerns, 45 per cent are residing in rural area and 43 per cent are having a monthly income up to Rs.5000.

Out of the 600 respondents 240 (40 per cent) own other vehicles. Among the 240, 73 per cent own two wheelers.

81 per cent of the respondents prefer town service buses for their travel, 64 per cent travels up to 20 kms per day, 59 per cent travel up to 3 hours, 35 per cent of them travel for their education purposes, 46 per cent prefer bus travel for economic reasons and 58 per cent travel by bus daily.

Out of the 600 respondents 60 per cent said that the frequency of buses in their route is sufficient, 41 per cent said that the buses in their
route were always overcrowded, 56 per cent of them said that the bus fare is moderate, 81 per cent of them preferred the introduction of fixed fare for town limit buses, 41 per cent of them are availed some concessions and out of that 69 per cent are students.

Out of the 600 respondents 43 per cent experienced undue delay in the arrival-time of the buses, 72 per cent experienced inconvenience due to non-stopping of bus, 54 per cent are preferred night bus service, 56.67 per cent of them wants to increase the frequency of night buses, 66 per cent of them do not prefer dual fare for night services, 64 per cent of the passengers are not satisfied with the present condition of the buses, 32 per cent of them are neither satisfied nor dissatisfied with the behaviour of drivers and conductors, 76 per cent of the passengers want the conductors to announce the names of the bus-stop and 58 per cent of them are in favour of placing the name boards which displays the name of the next stop and approximate time required to reach the next stop, both in English and regional language.

51 per cent of the 600 respondents did not give exact fare for getting tickets. Of the 51 per cent, 196 (61 per cent) respondents said that the conductors are returning the balance amount promptly, 78 per cent of the passengers are recommended automatic ticketing system, 59.17 per cent of them said that the passengers in bus should not be within the permitted
capacity and 49 per cent of them said that the buses do not arrive at the right time.

438 (73 per cent) respondents experienced breakdown of buses while travelling and out of the 438, 64 per cent preferred alternate bus, 40 per cent of the passengers made complaint to the authorities for various reasons and of the total complaints, non-stopping of the bus stands first and non-arrival of bus in time stands second and out of the total complaint, 64 per cent received proper response for their complaint.

Out of the 600 respondents, 45 per cent preferred minibus as other mode of transport and 30 per cent preferred private van as other mode of transport, 64 per cent respondents preferred the operation of minibuses in their area, 68 per cent prefer the operation of private buses in their route and the reason is they stopped at any place on request (35 per cent) and the buses arrived on time (30 per cent), 75.83 per cent of the respondents are satisfied with the reservation system followed in our district, 39 per cent of the respondents opinion regarding the road condition is bad and 24 per cent respondents opinion is very bad and with regard to the overall opinion of the bus-stand and its facilities the passengers are highly satisfied with the toilet facilities available in bus-stands and it scores high and holds the first rank, the seating facilities and the drinking water facilities holds the second and third rank respectively.
The study also reveals that out of the 600 respondents, only 74 (12.3 per cent) have high-level of satisfaction, 481 (80.2 per cent) have medium-level of satisfaction and 45 (7.5 per cent) have low-level of satisfaction towards the passenger transport system of Kanyakumari district.

It is observed from the study that there is significant relationship between the demographic factors such as age, gender, marital status, occupation, monthly income, area of residence of the respondents and their level of satisfaction towards the passenger transport system of Kanyakumari district. However there is no relationship exist in between the educational qualification of the sample respondents and their level of satisfaction towards the transport system.

### 8.2.2 Analysis of Employees

With regard to the demographic background of the sample employees, 49.6 per cent are in the age group of 36–50 years, 100 per cent of the respondents are male, 77 per cent of them are married, 38.4 per cent are having the educational qualification of graduation and above level, 56 per cent of them have the family size of 5–6 members, 52 per cent of the respondents are drivers and 40.8 per cent of the respondents earn a monthly income of Rs.10,001 to Rs.15000 and 62.8 per cent of them are permanent employees.

Out of the 500 sample employees, 54.4 per cent have heavy license, 73 per cent are working in transport buses, 72.4 per cent of them are
working within the district, 37.2 per cent of them are having 2–5 years of experience and 44 per cent of the respondents are working 8 hours per day.

240 (48 per cent) employees are provided with some kind of incentives and within the 240, 75 per cent of them are provided with monetary incentives. 88.4 per cent of the employees are satisfied with their job and 74.8 per cent of them are willing to work under the same owner.

39.6 per cent of the employees said that in most of the trips their vehicle is overcrowded, 47.2 per cent of the employees said vehicles are overcrowded in the morning time. Out of 500 employees, 144 (28.8 per cent) employees met with an accident and within the 144, 45.8 per cent said that accidents are due to mechanical failure. From the total employees, 314 (62.8 per cent) employees were affected with health problems and within the 314, 27.4 per cent and 24.8 per cent of them were affected by chest pain and stomach disorder respectively.

The study reveals that out of the 500 sample respondents, 15.6 per cent have high-level of satisfaction, 72.8 per cent have medium-level of satisfaction and only 11.6 per cent of them have low-level of satisfaction towards their job.

It is also observed from the study that there is significant relationship between the demographic factors of the employees such as age, marital status, educational qualification, occupation, income, nature of job and their level of satisfaction towards the job.
8.2.3 Analysis of Private Owners

As regards the demographic background of the private owners, from the 50 respondents 52 per cent comes under the age group of 36−50 years, all the 50 owners are male, 88 per cent of them are married and 32 per cent of them have the educational qualification of HSC level and 52 per cent of the owner’s monthly income is Rs.20001−Rs.40000.

60 per cent of the respondent’s inspiration to start the business is profitability, 70 per cent of them have employed drivers for their buses, and 64 per cent of them owned up to 5 vehicles and 92 per cent of the respondents said that minibus is a profitable vehicle.

From the 50 respondents, 52 per cent of them purchased first-hand vehicles, 80 per cent respondents vehicle’s cost comes up to 10 lakhs, 40 per cent of the respondents vehicle life period is up to 5 years, all the respondents insured their vehicles, 84 per cent of them have experience in purchasing vehicles, 64 per cent of the owners are proprietors, 44 per cent of them seek the help of financial institutions to purchase their vehicle, 76 per cent of the owners used their vehicles for hire only and 60 per cent of the vehicle owners operate their vehicles within their taluk only.

Out of the 50 sample private owners, 72 percent of them operated up to 3 buses in a single permit route, 48 percent have the permit of up to 3 routes, 64 percent of the respondents spent Rs.20001−Rs.40,000 for the maintenance of the vehicles, 80 percent of them did not have their own
workshops and 36 percent of the owners are doing this business in 1–3 years period of time.

In this study the various problems faced by the private vehicle owners while conducting the business are ranked with the help of Garrett ranking technique. This study highlight that the higher maintenance cost holds the rank first, severe competition holds the second rank, non-availability of good employees holds the third rank, strict rules and regulations of the Government holds the fourth rank, finance and higher risk holds fifth and sixth rank respectively.

Out of the 50 owners, 68 percent said that there is proper demand for their business, 62.5 percent persons’ opinion is that large number of competition is the reason for the low demand for their private transport business and 44 percent of them felt that their major portion of income goes towards the repairs and maintenance of the vehicles.

The various reasons for the repair of vehicles are ranked with the help of Garrett ranking technique. It is observed that poor quality spare parts holds the first rank, bad road condition holds the second rank, poor quality of fuel holds the third rank, improper handling by drivers holds the fourth rank overloading and other reasons holds the fifth and sixth rank respectively.

8.3 Suggestions

In this section some suggestions are offered to improve the
commercial performance of public passenger road transport system in Kanyakumari district. They are mainly based on the findings of the study and suggestions offered by the sample respondents.

1. The State Government should maintain better roads throughout the district in order to avoid heavy wear and tear and also to reduce the depreciation cost. An improvement in road conditions can also reduce at least 10–15 percent of diesel consumption.

2. A permanent Bus fare fixation committee could be constituted to monitor the periodical increase in input costs and modify the fare level accordingly to avoid possible loses in earnings.

3. To reduce the losses of the corporation, it is suggested that the fare revision should be linked with the Annual Budget proposals presented in the Assembly on the analogy of the Railway Budget presented in the Parliament every year.

4. One of the reasons for the poor performance of the State Road Transport Corporation in our district is its higher operation cost especially the personal cost. The authorities should take immediate measures to control the operating cost by the introduction of ‘automations’ and the optimum utilisation of manpower at the corporation.

5. The study reveals that except 2 years (2002–2004) the TNSTC – Madurai (Division III) Nagercoil region incurred loss. This can be
minimized by controlling costs related to establishment, personnel, fuel etc., which contributes nearly 80 percent of the total cost. Establishment and personnel cost can be controlled by reducing bus-staff ratio and by appointing multi-skilled personnel cadre. Increasing fuel efficiency through proper maintenance and ensuring optimum speed of the vehicles, de-rating of fuel pumps, avoiding spoilage and leakage of diesel oil and utilisation of genuine spares can reduce fuel oil cost.

6. To reduce the losses to a great extent, the Government should convert a major portion of its interest bearing loans into equity. Unlike interest, dividend is not a fixed charge and if there is no profit, it need not be paid.

7. To improve the profit position of the corporation, the state government should always reimburse the losses suffered by the corporation on account of free and concession travel facilities extended to certain section of the society. Likewise the state government should give Block grants to the corporation every year for replacement of old buses as well as to strengthen their working capital position.

8. Revenue through other sources like advertisements, cloak room facilities etc., should be maximized.

9. Mini buses with more frequent services are suitable for rural areas. But the private operators who are allowed to operate mini buses neglect
inaccessible rural area, hence the corporation has to introduce mini bus services.

10. The extra costs that are incurred by the Transport Corporation in the fields of excess fuel consumption, material cost and depreciation cost have greatly affected the profit margins of the Transport Corporation. Therefore, efforts can be made to introduce new buses and also by giving proper training to the drivers, technicians and mechanics to keep the Transport Corporation highly viable and economic.

11. It is said that the Transport Corporation is using low-quality spare parts and other equipments which always lead to accidents, break-downs, heavy damages and loss to the Transport Corporation. Therefore, new and high quality spare parts and equipments should be always used by the Transport Corporation. This will provide a smooth, safe, comfortable and uninterrupted transport service in the district.

12. To make a steady growth of Bus Transport in Kanyakumari district, new and modern type of buses can be introduced to attract the passengers on the one side and to reduce the cost and increasing the excess capacity on the other side. Similar type of indoor comforts can be made in the Government buses as in the case of private and omni buses. This will certainly improve the revenue conditions of the Bus Transport Corporation.
13. Separate and special buses can be operated in all sea-shore villages and remote hilly regions for transporting essential and perishable commodities like fish, fruits, vegetables, flowers and other important commercial products like rubber. Besides, special buses can also be operated in the busy routes of the district in order to earn extra revenue.

14. The TNSTC rendering transport service to the public in this district is inefficient due to the problem of old vehicles, (present age of the bus is 7–8 years) which consume more fuel and give lesser mileage. Therefore, adequate funds must be provided to the corporation to replace old vehicles in time.

15. The Government may allow the private corporate to participate in the equity capital and the management of the corporation. It would avoid the deterioration of the public property to a maximum level.

8.4 Scope for further Study

The following areas of research are suggested for the further research works on passenger transport services:

1. A study on passengers’ attitude towards the minibus services in Kanyakumari district.

2. Employees’ job satisfaction towards HRM practices in Tamil Nadu State Transport Corporation.

3. Passengers perception on the quality of services of State Road Transport Corporations – An assessment.
4. Profitability analysis of State Road Transport Undertakings.

5. Performance evaluation of SRTVs with specific reference to cost management.


8.5 Conclusion

Commercial viability is a situation in which an enterprise is managed in such a manner as to ensure the value of its output reasonably more than the combined total value of the inputs employed. This is necessary to keep the enterprise growing and becoming stronger and healthy. As per the above concept the Tamil Nadu State Transport Corporation Madurai (Division III) Ltd., Nagercoil which render passenger service to the people of Kanyakumari is not commercially viable, because it incurred losses or it earn very low profits during the study period of 11 years.

The key indicator of commercial viability is profit. The profit or loss analysis of the transport corporation in Kanyakumari district discloses a dismal picture. In the last 11 years (from 2000–2011) except 2002 to 2004 (2 years) in all other years invariably the corporation has incurred loss. In recent years the corporation has been incurring heavy loss. It is especially very high in the year 2010–2011 with an amount of Rs.6751 lakhs. It is mainly caused by the mismanagement of the resources and the
uneconomic fares. The management of the corporation ignores the linkage between the commercial performance and the influencing factors like the service climate, the supportive management, the work efforts, the job satisfaction and the quality of employee’s service.

There are arguments in favour of low profitability and losses of the public passengers Transport Corporations. Since they are public enterprises they serve the public and do all those works which are not done by private operators like, social security measures, welfare measures, looking after the standard of living of the employees and the like. But that does not mean that they do not fulfil basic principles of business. The terms business principle clearly indicates that public transport corporations have to be self-financing and growing. This in turn, imposes upon them the responsibility of earning profit adhering to the ethics of business. The continued indulgence of any business concern in loss is detrimental for its survival.

In this study the researcher has attempted to evaluate the commercial performance of public passenger transport system in Kanyakumari district from 2000–2011 with the help of compound growth rate, trend analysis, multiple linear regression and ratio of revenue to cost. The breakeven point and margin of safety are also calculated for future policy implications. The passengers, employees, of the bus transport corporation, private minibus owners and share auto rickshaw owners
opinion regarding their satisfaction towards the transport system are also analysed since they are also part of the public passenger transport. If the suggestions mentioned in the study are implemented properly then the public passenger transport system in Kanyakumari district can work more efficiently, give better results and become commercially viable.