CHAPTER VII

SUMMARY

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7.1 INTRODUCTION

Transport plays a very significant role in the overall development of any country. The contribution of road transport to the economy of our country is praise-worthy. Of all transport modes, road transport is the most popular with high utility value since it has various advantages such as flexibility, door-to-door service, reliability and competitive resources cost. Besides this, it opens avenues for large employment opportunities estimated at 160 persons for the investment of every one million rupees in the road transport sector. It is also a major source of huge revenue for the government in the form of excise duty, sales tax, road tax, permit charge, octroi and the like.

India’s passenger road transport for short and medium distances is essentially bus-oriented. Buses even compete with railways on certain long distance routes by offering night services. Buses enjoy a distinct edge over railways for short and medium distances because of their flexibility and linkage with a large number of towns and villages. Compared to personal modes of transport like cars and two-wheelers, buses per passenger yield noticeable economy in the use of road space, incur lesser fuel consumption and lower cost of operation. From the very beginning, buses have dominated the road based passenger movement. Bus travel currently represents around 80 per cent of the
road-based passenger travel. Both the private parties and the state vie with each other in providing bus transport service to the people.

Realising the importance of passenger bus transport, the government of India enacted the Road Transport Corporations Act in the year 1950. This legislation laid the foundation for nationalisation of the passenger bus transport Industry and at the same time provided for the unification of the industry under government monopoly. The provisions of the Road Transport Corporations Act enabled capital participation of both the central and state governments, with necessary powers to the state governments to form corporations, if necessary, for operating bus services in the public interest.

Tamil Nadu state presents a mixed transport scenario. Three-fourths of the total public passenger bus transport are in the hands of the state government and the private operators share the remaining one-fourth. The Tamil Nadu state started nationalising bus transport immediately after independence. But, the state could make a headway in this respect only from 1972. Since then, the state government formed many transport corporations for the easy, smooth and successful operations of city, metro, mofussil, express and ghat services. While the state owned corporation buses are operating city, metro, mofussil, express and ghat services, the private sector is operating only city and mofussil buses. The bus service in Kanyakumari and Nilgiris Districts is monopolised by the State
Transport Corporations. Also, in the two major cities namely, Chennai and Madurai, the city transport service is provided exclusively by the State Transport Corporations. In all other parts of Tamil Nadu, the passenger bus transport service (city & mofussil) is run both by the public sector and the private sector. It is to be noted that the maximum route length of the mofussil buses operated by the private sector is only 120 kms. as the routes above 120 kms. of length are nationalised.

Thus, the people of Tamil Nadu are much benefited by the efficient bus service provided by both the public and private sectors in all parts of the state. Thus, it becomes quite relevant and necessary to study the respective roles played by the State Transport Corporation buses and private sector buses in extending transport services to the people of Tamil Nadu.

The mini buses introduced in the feeder routes, operated exclusively by private operators have received enthusiastic reception from the public. The mini buses are operated in the so far unserved areas and thus, now, the nook and corner of the state is able to see the dawn of bus service. So, an analysis of the role played by mini buses in the bus transport market is also necessary, relevant and useful.

An exhaustive and in-depth study of the role of State Transport Corporation buses managed by 21 corporations, operating buses throughout Tamil Nadu has been made in respect of different service segments such as city, metro, mofussil
and express. The physical and financial performance of the different service segments of the Tamil Nadu State Transport Corporations are analysed in order to determine their respective efficiency or productivity levels. For this purpose, relevant data were collected for the year 1999-2000 from the head offices of the corporations concerned throughout Tamil Nadu. These data have been analysed and interpreted in Chapter IV. The implications of the subsidies and concessions to the travelling public on the financial performance of the TNSTCs are also studied in this chapter.

The State Transport Corporation buses face tough competition from the private sector buses mainly in city the segment. In the mofussil segment, the private sector buses are not considered competitive and parallel to the public sector buses, as maximum route length of the private sector buses is only 120 kms. as against 705 kms. in the public sector buses and more than 45 per cent of the total number of mofussil buses are operated in routes above 120 kms. of length. Therefore, it will be necessary, useful and also meaningful to study the respective roles of the public and private operators in the city segment only. To undertake such a study, the performance of the city buses of both the private and public sector plying in three important cities of Tamil Nadu has been evaluated. The physical and financial performance of these buses in the two competing sectors are evaluated in order to determine their respective efficiency or productivity levels.
For this purpose, all relevant data were collected from the operators for the year 1999-2000. These data have been analysed and the results discussed in Chapter V.

In the last part of the analysis, the role of the mini buses has been assessed. The physical and financial performance data relating to mini buses were collected from the mini bus operators through a sample survey. Data were also collected from the Regional Transport Offices of the sample areas concerned and from the Transport Department of the Government of Tamil Nadu. These data are analysed and discussed in Chapter VI.

7.2 SUMMARY OF FINDINGS

The analysis carried out in chapters IV, V and VI has led to many findings. These findings are summarised in this section.

7.2.1 Findings in Respect of Public Sector Bus Transport – Segment-wise Performance

_Tamil Nadu State Transport – Segment-wise Market Share_

1. The TNSTCs operate five types of bus services such as city, metro, mofussil, express and ghat. Of the total fleet, 37.3 per cent belong to mofussil services; 37 per cent are on city services; 16.8 per cent are on metro services; 5.4 per cent are on express services and 3.5 per cent are on ghat services.
2. More than half the total routes (52%) in the study area are covered by the city segment. While the mofussil segment covers one-third of the routes (33.3%) the metro, ghat and express segments cover 9.4 per cent, 3 per cent and 2.3 per cent of routes respectively.

3. Regarding workforce, nearly three-fourths (73.9%) are employed in the city and mofussil segments jointly. 16.7 per cent of the total employees are employed in the metro segment while 7.2 per cent are in the express segment and 2.2 per cent in the ghat segment.

4. Nearly half the total kilometres operated (48.8%) are achieved by the mofussil segment. The city segment accounts for nearly 32 per cent of the total kilometres operated. The metro, express and ghat segments share 9.4 per cent, 8.3 per cent and 1.5 per cent respectively.

5. In the output parameters, the mofussil segment generates the highest revenue of 47.2 per cent with 32 per cent of passenger carriage while the city segment with its highest passenger carriage of 43.4 per cent is able to draw just one-third (31.5%) of the total revenue generation. While the metro, express and ghat segments have the passenger carriage of 21.7, 0.5 and 3.0 per cent respectively, these segments contribute 11.8, 8.0 and 1.5 per cent respectively to the total revenue.
City Segment - Daily Performance by Route Classification

6. The city service operates more than three-fourths of its total buses in the medium and long routes. The remaining share of one-fourth of city buses are operated in the short and very long routes.

7. In the same way, the city service performs nearly three-fourths of its trips, kilometerage and seat kilometerage in the medium and long routes.

8. In terms of passenger carriage 75 per cent of the total passengers travelling in the city buses are carried in the medium and long routes while the remaining 25 per cent of passengers are carried in the short and very long routes.

9. In terms of revenue generation, the city buses earn more than half of their fare revenue (53%) from the long routes alone. The remaining 47 per cent comes from the short, medium and very long routes.

Productivity of the City Segment

10. Every city bus on an average performs 16.35 trips, operates 250 kms, carries 1284 passengers and generates Rs.3770 per day.

11. While the very long route buses operate the maximum of 374 kms. per day per bus, the short route buses generate more revenue than the other routes (Rs.3936/day/per bus).
12. The city buses operate 21.38 kms, carry 79 passengers and generate Rs.231 per trip.

13. The very long routes of the city segment operate the maximum of 32.52 kms, carry 85 passengers and earn Rs.299 per trip.

14. On an average, the city buses perform 21.27 trips per route, operate 455 kms, carry 1670 passengers and generate Rs.4903 per route per day.

15. The short routes ply more number of trips and thus, serve more number of passengers, which in turn, results in generation of more revenue.

16. The financial productivity of the city segment is very alarming. The city service incurs a heavy loss of Rs.3.05 per km. of operation.

17. The medium route buses of the city segment cause great concern as these routes incur the maximum loss of Rs.4.07 per km. of operation.

_Metro Segment - Daily Performance by Route Classification_

18. The metro bus service deploys more than four-fifths of its buses (83%) in the medium and long routes to cover almost the same proportion of the total metro routes under these route classifications.
19. In kilometerage also, 80 per cent of the total kilometres are operated by the medium and long route buses.

20. More than half the total trips are performed by the medium routes. One-third of the trips are performed by the long routes.

21. In the output parameters also, more than four-fifths of the passenger carriage and revenue generation are achieved in the medium and long routes.

**Productivity of the Metro Segment**

22. Every metro bus on an average performs 11.83 trips, operates 222 kms., carries 479 passengers and generates Rs.3129 per day.

23. The very long route buses operate the maximum of 285 kms. per day per bus and earn a high of Rs.3610 per day per bus.

24. The average trip length of the metro buses is 18.77 kms. and it carries 40 passengers per trip and generates Rs.264 per trip.

25. The short route buses carry more number of passengers per trip (47 passengers/trip).

26. The metro buses perform 36.40 trips, operate 684 kms. serve 1474 passengers and generate Rs.9637 per route per day.
27. The short routes ply more number of trips and carry more number of passengers. But, high revenue generation is achieved in the very long routes.

28. The financial performance of the metro segment is very low. Every metro bus incurs a loss of Rs.2.71 per kilometre of operation.

29. The short route metro buses incur a high loss of Rs.3.25 per km. of operation. It is to be noted that the loss in the very long routes is just Rs.1.49 per km. of operation which is much less compared to short routes.

*Mofussil Segment - Daily Performance by Route Classification*

30. The mofussil segment operates nearly two-thirds of its buses (64%) in the short routes, while the remaining one-third of buses (34%) are operated in long routes.

31. Likewise, 82 per cent of trips, 71 per cent of routes and 59 per cent of kilometerage are performed under short routes.

32. In the output parameters, more than two-thirds (68%) of the total passenger carriage and 58 per cent of the revenue generation are effected in short routes.

33. Thus, the key performer in the mofussil segment is the short routes.
Productivity of the Mofussil Segment

34. The very long route buses on an average operate a high of 658 kms. per day per bus which is 196 kms. and 96 kms. more than the short and medium route buses respectively.

35. In the same way, the very long route buses earn the maximum revenue of Rs.7037 every day per bus.

36. The mofussil buses on an average operate 91 kms per trip, carry 185 passengers and earn Rs.992 per day per bus.

37. The overall kilometerage per trip (91 kms.) by mofussil segment shows that most of the mofussil buses are operated on short routes only.

38. Regarding route performance, the medium routes are more productive as these route buses serve 668 routes with just 1762 buses.

39. Even though the overall financial productivity of the mofussil segment is not so encouraging, this segment could make profit in some of its routes.

40. The short route buses, especially the buses with less than 50 kms. of route length are mainly responsible for a heavy loss in this section.
Express Segment - Daily Performance by Route Classification

41. The express segment deploys major share of its input facilities in the short routes except with regard to number of routes.

42. While nearly half the express routes are covered by long route buses, the short route buses cover less than 5 per cent of the total routes of the express segment.

Productivity of the Express Segment

43. On an average, the express services perform 1.36 trips, operate 582 kms., carry 49 passengers and earn Rs.6017 per day per bus.

44. The long route buses in the express segment perform higher than other route buses in terms of kilometerage and revenue generation. These route buses on an average run 620 kms. and earn a revenue of Rs.6241 per day per bus.

45. The average trip length of the express buses is 428 kms. It performs 17,707 seat kilometres, carries 36 passengers and generates Rs.4424 per trip.

46. The long route express buses of 700-800 kms. route length achieve the highest of 718 kms per trip.
47. The express buses perform on an average 5.43 trips, operate 2321 kms, carry 195 passengers and generate Rs.24009 per route per day.

48. The short route express buses are more productive as these route buses serve only 11 routes with 63 buses.

49. The express segment also does not make any profit in its operation; on the contrary, it incurs a loss of Rs.2.27 per kilometre of operation.

50. While the short route buses earn more revenue (Rs.11.53/km), the medium route express buses make high cost of operation (Rs.13.94/km).

Tamil Nadu State Transport – An Inter-Segment Comparison

51. Of all the segments, the performance of the express service is the highest in terms of kilometerage and revenue generation.

52. The kilometerage of the metro service (222 kms/day/per bus) is the lowest of the kilometerage of all other services. In comparison with the kilometerage of city services, the metro services perform 128 kms less per day per bus.

53. In the revenue generation also the metro segment’s achievement (Rs.3,129/day/per bus) is the lowest of all the services. In comparison with the revenue generation of the city buses, the metro buses earn Rs.641 less per day per bus.
54. Regarding passenger carriage while the city segments carry the highest number of passengers (1284/day/per bus), the metro segment carries only 479 passengers per day per bus which is just 37 per cent of the passenger carriage of the city segment.

55. The average kilometres operated per trip by the express segment is 427 kms. But it is only 90.74 kms. in the mofussil segment.

56. Regarding passenger carriage, while the mofussil segment carries 185 passengers per trip, the express buses carry only 36 passengers. Also, while the city segment carries 79 passengers per trip, the metro segment carries 40 passengers only.

57. The ratio of number of employees per bus in the city, metro and mofussil services are almost equal (around 7.6). But in the case of express service, it is 10.24.

58. Every employee in the mofussil segment effects more kilometers (66.65kms) and revenue generation (Rs.728) than what his counterparts in city, metro and express segments achieve.

59. All the four segments of the public sector bus transport -city, metro, mofussil and express - invariably run on a loss basis only.
60. The city segment incurs the highest loss of Rs.3.15 per kilometre of operation

61. The mofussil segment makes profit in some of its route classifications.

Implications of Subsidies and Concessions

62. Students studying upto XII standard in schools are allowed 100 per cent free travel facility and students studying in colleges and other institutions are allowed 50 per cent concessional travel facilities in the State Transport Buses.

63. Nearly 20 lakh students were benefited during the year 1999-2000 availing concessional or free travel facility in the State Transport buses.

64. Student concessions during the year 1999-2000 resulted in a heavy loss of Rs.70.95 crores to the TNSTCs.

65. The Tamil Nadu Government has made a partial reimbursement of loss caused by the grant of concessional or free travel facility to students in the buses of TNSTCs.

66. Had the state government fully reimbursed the traffic revenue loss due to student concessions, the TNSTCs would have registered a reduction in its overall loss by 23 per cent in the year 1999-2000.
7.2.2 Findings in Respect of Sectoral Performance
(Public and Private Sector Comparison)

*Market Share*

67. In the study area, the share of the public sector is greater than that of the competing private sector put together in terms of all the four input variables namely, fleet strength, trip rate, kilometerage and manpower and all the two output variables namely, passenger carriage and revenue generation.

68. In terms of input parameters, the public sector operator enjoys 60 per cent of fleet strength 60 per cent of trip rate, 58 per cent of kilometerage and 68 per cent of the workforce. The remaining 40 per cent of fleet, 40 per cent of trips, 42 per cent of kilometerage and 32 per cent of workforce rest with the private sector.

69. In terms of output parameters, both the public sector and private sector sail the same boat in both the passenger carriage and revenue generation by achieving 58 and 42 per cent respectively.

*Bus Performance and Bus Productivity*

70. Both the public sector and private sector operate more of their buses (78% & 87% respectively) in the medium and long distance routes. At the same time, it is clear that the public sector prefers medium routes to long routes as it
operates nearly half of its buses (45%) in medium routes and the private sector prefers long routes to medium routes as it operates more than half of its buses (55%) in the long routes.

71. In terms of trip rates also both the public and private sector operator performs more number of trips (78% & 85% respectively) by allocating more number of buses in the medium and long distance routes.

72. The public sector buses operate 47 per cent of total kilometerage in short and medium distance routes and 53 per cent in the long and very long distance routes. But, the private sector buses operate only 35 per cent of total kilometerage in the short and medium routes and 65 per cent in the long and very long distance routes.

73. Regarding passenger carriage, while nearly half of the total passenger carriage (49%) in public sector is from medium routes, the private sector achieves nearly same proportion (52%) of the passenger carriage from long routes.

74. In financial terms, the medium and long routes prove a perennial source of income for both the public and private sectors as a high of 78 and 86 per cent of total revenue is generated from these by public and private sectors respectively.
75. Every private sector bus performs 7 per cent of more kilometerage, carries 7 per cent of more number of passengers and earns 9 per cent of more revenue than what every public sector bus does every day. Thus, the private city buses outperform the state owned city buses in almost all the service variables except in trip rate, where the performance of both the state-owned and private city buses is equal.

*Trip performance and Trip Productivity*

76. The average trip length (18.4 kms) is shorter for the public sector buses than what it is for the private sector buses (19.7 kms). But both the public and private sector buses perform equal number of trips in a day.

77. The private city buses operate 7 per cent more kilometerage, carries 7 per cent more passengers and earns 9 per cent more revenue for every trip than the public sector buses.

78. In the route-wise trip performance, with regards to passenger carriage, while the private sector outperforms the public sector in the short routes, the public sector carries more number of passengers per trip than the private sector in the long and very long routes.
79. In the case of revenue generation, the trip-wise performance of the private sector earns higher returns in all the routes except in the very long routes, where the public sector has an edge over the private sector.

Route Performance and Route Productivity

80. In the route-wise performance, the private sector outperforms the public sector in all the route categories.

81. In route productivity, the private buses are more productive than the public sector buses as the private buses operate more number of buses in a route.

Employee Productivity

82. The private sector performance excels the public sector performance in terms of employee productivity.

83. The bus - staff ratio in the public sector is 7.2, while in the private sector it is 5.1. Thus, employee bus ratio is nearly 30 per cent less in the private sector in comparison with the public sector.

Financial Productivity

84. Financial performance is far more impressive in private sector than in the public sector. While the private sector satisfies both the operator and the
public by way of financial profit and efficient service respectively, it is almost the other way round with the public sector. The public sector is almost always shrouded in loss and seldom showed the signs of financial profit.

85. The financial efficiency of the private sector over the public sector is only 2 per cent more in terms of earnings per kilometre, but 28 per cent less in terms of cost of operation and consequently 141 per cent more in terms of profit earning capacity.

Relative Performance Productivity

86. The Relative Performance Productivity Index (RPPI) for city transport is 1.14. It indicates that private sector’s operating efficiency is 14 per cent better than public sector in the study area.

7.2.3 Findings in Respect of Mini Bus Operations

Route Length - Overlapping Level

87. The average route length of mini buses is 10.7 kms; out of which a mini bus on an average operates 3.7 kms in the served area and the remaining 7 kms in the unserved area.
88. While just 53.5 per cent of the permitted (and also expected) length is actually served, as high as 93 per cent of the permitted distance of overlap is being utilised by the mini bus operators.

89. A great share of the total mini buses (26%) overlap 30-40 per cent of their total route length in the served area; only 10 per cent overlap less than 20 per cent in the served area.

*Route Length- High Overlapping Level*

90. 92 per cent of the total number of mini buses in 92 per cent of routes are found in the high overlap segment of 3-4 kms.

91. Of the high overlapping buses and routes, more than half the buses (53%) in almost half the routes (49%) are operated in the route category of 5-10 kms.

92. More than four-fifths of the total high overlapping buses in more than four-fifths of the routes are operated in the routes upto 15 kms. of length only.

*Performance of Mini Buses in terms of Route Category*

93. Among the four route classifications, the medium category of routes (5-10 kms.) is the predominant performer both in terms of input and output parameters.
7.3 CONCLUSIONS

The various findings of the study with reference to the public sector passenger bus transport in Tamil Nadu lead to the conclusion that the TNSTCs with its large scale operation is doing a yeo-man service to the people of Tamil Nadu. They have the requisite operational efficiency and managerial proficiency. The physical performance of these State Transport Undertakings has been consistently appreciable.

In spite of all the commendable contributions, the harsh reality is that the TNSTCs incur losses. None of the service segments of TNSTCs - city, metro mofussil and express - are free from the clutches of financial loss. Thus, the STUs in Tamil Nadu are under severe financial crunch. The obvious reasons for such a poor financial performance are the social obligations of the TNSTCs - operating buses in the mostly unviable routes, operating buses during least remunerative time schedules, free or concessional travel facility offered to many sections of the society and the like. High establishment cost, high operational cost and non-revision of fare structure as and when required are the other significant reasons for the poor financial performance of the STUs in Tamil Nadu. Recurring loss cannot be sustained for long. It is high time the causes for losses of TNSTCs be deeply and impartially analysed and remedial steps be found and implemented. Otherwise, the TNSTCs would not be in a position to provide efficient and
beneficial service to the people of Tamil Nadu, which, it has been hither to offering.

The private sector in the city segment of passenger bus transport is significantly more efficient than the public sector. It is mainly because of a committed labour, less labour per unit and less labour cost per unit as compared to the public sector. Also, the private sector is totally free from the shackles of social obligations which obstruct the financial profitability of the public sector. Nevertheless, the operational efficiency of the public sector city passenger bus transport is in no way less than that of the private sector particularly in terms of non-financial parameters. However, the difference lies in the operational cost. While the earnings per kilometre of operation (EPKM) in the city segment of the public sector and private sector is almost equal, the cost per kilometre of operation (CPKM) in the public sector is exceptionally higher than in the private sector. This is mainly due to the aforementioned reasons. If the cost of operation of the public sector city transport is controlled and reduced by adopting suitable means, these buses would also extend an equally efficient performance in financial terms to the level of the private sector buses.

The mini buses have received an overwhelming reception from the people of Tamil Nadu. The remote areas of the state in particular are much benefited by the introduction of these mini buses as these hamlets are experiencing for the first
time, entry into the road-transport-map of Tamil Nadu. The findings of the study show that the purpose of introduction of mini buses is yet to be achieved fully and the mini buses need to make still more penetration. Also, the financial performance of the mini buses is not so impressive as the operation of mini buses makes only a little profit.

7.4 SUGGESTIONS

A good doctor and a researcher are alike in the sense that their duty does not end with the diagnosis of the malady but they are shouldered with the responsibility of prescribing the remedy too. Hence, the following remedial measures are recommended on the basis of the findings of the study for achieving a better performance, a higher proficiency and a greater profitability for the operators.

1. There should be fare revision for the passenger bus transport at regular intervals. A small increase in the bus fare may be announced every year by the government during the budget session of the assembly.

2. It is suggested that the government forms a single corporation as in the neighboring states. This would not only enable formation of common policy decisions, but also render a uniform working pattern. It would also bring down administrative expenses and expedite development works.
3. A considerable reduction in the staff-bus ratio in the TNSTCs will also naturally lessen the establishment cost.

4. Steps should be taken for the total re-imbursement of revenue loss incurred by TNSTCs due to free or concessional travel facility to different sections of the society.

5. Plying of buses on uneconomical routes on the basis of political considerations may be resorted to only when the government comes forward to compensate the loss, if any.

6. Transfer of the uneconomic routes to the private sector for the operation of mini buses in such routes may help in reduction of loss in the city segment of the public sector which hitherto has been facing acute financial crisis.

7. To ensure a high level of penetration, the government should fix the minimum distance of operation of mini buses and should also prescribe the standard ratio of overlapping and non-overlapping components in the approved route length. In this context, it is suggested that a mini bus route should not be less than 15 kms. in length (presently no such minimum distance prescription is available) and the minimum non-overlapping proportion should be 75 per cent of the approved length (presently, there is no such proportion and only a
maximum overlapping distance is prescribed). This shall ensure proportional overlapping.

8. The government should also make necessary arrangements for the effective monitoring of the operations of mini buses. For this purpose, it is suggested that a self regulatory body may be promoted with members from among the operators of mini buses, operators of city/town buses, local body authorities and the public in the region concerned.

9. With a view to ensuring greater coverage of unserved areas, it is further suggested that the government can still increase the maximum length of route to be operated by a mini bus and make the maximum distance not obligatory for operation. It is suggested that the present maximum route length of 20 kms. may be doubled so as to permit the operation of mini buses upto a length of 40 kms. Wherever the long distance unserved routes are not remunerative, the operator can be given a flexible permit of a mix of service of long and medium trips within the same route. This is because almost all the mini buses operate like city buses either originating from or terminating at the core parts of the city/town. This will ensure the economic viability of the operations of mini buses.