

CHAPTER-V

PERFORMANCE EVALUATION OF
MAHARASTRA STATE ROAD TRANSPORT
CORPORATION AND IT'S COMPARISON
WITH N. B. S. T. C.

Maharashtra, a state in the Indian union, is situated in South West India. It is bounded on the North by Madhyapradesh and some part of the south east of Gujrat, on the East by Andhrapradesh, on the South by Karnataka and on the West by Arabian Sea. Maharashtra as is known today was a part of the Ashokan empire and was not very popular till the first or second century A. D. The region witnessed a well organised administration in the second century A. D. when it was ruled by the Salivahans from their capital at Paithen. Through a succession of dynasties, viz. the Salivahans, Vakatas, Rastrakutas, Chalukyas and the Jadavas, the administration of the area passed into the hands of the muslims in the early 14th century who ruled it from Delhi. Distance always created a barrier, and the short-lived administration of Delhi was over throne and a new muslim dynasty called the Brahmani dynasty was established in the Deccan. The Brahmani Empire disintegrated at the close of the 15th century, and the fall of the sultanate in the south saw the emergence of the Maratha power, which with all its ups and downs continued till the end of the 18th century when the Marathas were finally defeated and the region passed into the hands of the British with the rest of India.

The physiographic homogeneity is the cultural identity that prevails over the region. Maharashtra, also sometimes called, the land of Marathas, is a very distinct cultural region because of the identity of language, a typical social organisation based on the village as an economic unit and the robust historical traditions for which the Marathas are known. Irrespective of castes and professions the Maharastrians are forged into a society which speaks a common language finds a

unifying force in its recent history, in the glory of the Maratha rule, and above all in Shivaji who brought the conflicting elements of Maharashtraian society together welding them into a formidable force. The capital city is Mumbai. It is situated beside the Arabian sea. The present state of Maharashtra consists of 3,07,713 square kilometres of area, with a population of 890.87 Lakhs as on 31.3.96.¹

In the open democratic system investment in infrastructure, both physical and welfare, is of central importance in promoting economic growth. In the case of Maharashtra, it holds the key to explain much of its economic achievement. Apart from its considerable lead over all other states in the efficient management and utilisation available resources, Maharashtra has always accorded a priority of generation of power, extension of roads and road transport and human resources development programmes.

It is found in Maharashtra that Government has given more importance in road transport and it is continuous trend in the development plans of the state. A net work of roads has been spread all over the state, linking cities and towns with the state capital (Mumbai), villages, district head quarters, railway stations, marketing centres, industrial towns and the major National Highways. By March, 1995 the state had 70.43 kilometres of roads per 100 square kilometres of area and above 70 percent of the all inhabited villages had been provided with all season roads, thus opening the country side to trade and commerce by fastening outflow of various cash corps, consumer goods and outflow of capital goods² The total road length in March, 1995 was 2,16,733 kilometres of which major roads comprised black top surfaced roads. The state has seven public Transport undertakings. Among them the fleet strength of Maharashtra State Road Transport Corporation alone, was 17,679 as on March, 1996.³

The state is served by two airlines, Indian Airlines and Air India (an international airlines) owned by the Union Government, and other private airlines through various airports. The inter- regional circulation is aided by railways, roads and to some extent by airways. Irregular and dissected terrain with all the limitations of relief have rendered the laying of railways difficult and even uneconomic in less developed areas, with the result that the roads have become the most important

channels of transport. Though railways are suitable as long distance transport medium, for short distance transport, roads are very effective. The railways a nationalised public enterprise with their uniform policy do not take an intensive network in the region. Mumbai-Calcutta, Mumbai-Chennai, Mumbai-Delhi, Mumbai-Howrah, are the only major railways that take such of long distance transport load. These are supplemented by several other less- important routes and cord lines. The region has about six thousand of kilometres of railways.

The road system consist of National Highways, State Highways, Major district roads, and other minor roads. Maharashtra as a state has 2,16,733 kilometres of road of which major roads are classed as National & State Highways unlike the great plains of North India, roads are more important than railways in handling the passenger traffic in this part.⁴

Road transport is almost completely nationalised. The Maharashtra State Transport Corporation has the virtual monopoly of transport . It has a fleet of 16,701 buses as on March, 1996 carrying more than 26,531.00 lakhs passengers every day. The city service in Maharashtra State Transport is 4.96%, district service is 95.04% to total kilometres of 6, 15, 726.00 (in lakhs). It has 233 depots, 30 divisions, 6 regional, 3 central workshops, 30 divisional workshops, 8 tyre retreading shops (Hot), 526 permanent bus stations as on 31.3.96.⁵ It must be admitted that the road transport services though nationalised, are quite efficient and the corporation has improved the accessibility to many neglected parts of the state. The under developed middle godvari vally, the Maharashtra area and the forested lower main ganga basin, however still suffer from inadequate transport and relatively poor accessibility.

Operational efficiency of the road transport system is considerably restricted because of poor road conditions in rural area. The National Highways are no better than the State Highways and in some parts are even worse. Not much been done to improve these roads despite a heavy increase in vehicle population. A drive on some of these National Highways and State Highways is a most disappointing experience quite often the roads are slippery with thin paste of clay material during monsoon while one finds the vehicles lost in cloud of dust during summer. Narrow bridges and culverts built a hundred year ago stand un-widened and present a serious menace to

the motorists. All the roads are not properly surfaced and are sometimes a mere apology for roads, cause ways on smaller streams are more common than bridges and not infrequently during rainy seasons the motorists had to wait for flood water to recede, before crossing the river. Negotiating the hazardous curves in the ghats is an exercise in driving. Only a few cities of the region are linked by air Pune, Mumbai, Ourangabad and some other cities are linked with Mumbai by air services operated by the Indian Airlines and other private airlines. Along with agriculture industries form an important element in the economy of Maharashtra. These are extractive industries like mining or processing plants manufacturing finished products, minerals of the region improved coal, manganese, limestone, chromite, bauxite, iron ore and ilmenite. The older rocks of the area bearing mineral deposits being buried under trap, the minerals occur only in the eastern and Southern peripheral zones where these rocks are exposed. The region of Maharashtra does not present a very bright picture of its industries and fades into insignificance when juxtaposed with the industrial landscape of Mumbai metropolitan region, which overshadows the industrial development on the plateau. With a few exceptions, the industries are often resource based and concentrated in a few places like Pune, Nagpur, Solapur, Nasik, Satara and Kolhapur. Among them Pune has developed a sound industrial base with its metallurgical, chemical and other few diversified industries. All of which use very little local resource and have chosen Pune as the second best place after Mumbai. The place, besides being located at the threshold of peninsular India is the focal point of transport and commands a high degree of accessibility. Cheap land, as compared to Mumbai and adequate power supply from Kayna project, with a tradition of its own that provides the necessary skilled personnel, are some of the factors that have attracted industries in Pune. A good climate and the reputation that the city has as a centre of educational and a cultural seat, have attracted people from all parts of country and particularly from Maharashtra. A phenomenon that has saved the industrial enterprises from the crisis of skilled man power. Most other industrial centres use local raw materials. The most important industry of Maharashtra is cotton textile, both in terms of employment and production. Textile Industry relying heavily on local cotton. Textile mills and subordinate sector are included in the textile industry which also includes powerlooms and handlooms. The largest textile centre Solapur lying in the cotton area and which is

located on Mumbai-Chennai railway roads. Nagpur has also the similar textile centres in Maharashtra. The district Vidarva guided by excellent transport have developed the textile mills at Hingona ghat (Wordha), Pulgaon, Aloka and Badnera. The other textile units are established where the efficient transport network is-existed. Thus a large number is tethered to the Mumbai-Calcutta or Mumbai-Chennai railways, both of which traverse a large territory. The smaller centres of textiles are Ichalparanji, Kolhapur, Sangli and Miraz and in north side of Maharashtra such as Amalner, Dhulian and Jalgaon. The industry of Sugar-refining is also a major industry in this area which is based on agricultural raw materials. The most of the sugarcane industries are raw-materials oriented which is concentrated in the irrigated tracks of Godavari and Krishna valleys. The factories are located in the cane producing areas of Ahmed nagar, Pune, Satara, Kolhapur and Sangali districts. Most of the sugar-cane factories are running on co-operative basis. The percentage recovery of sugar from the factories are the cane-yield from the fields, both is highest in our country. Oil mills are diffused all over the region in the areas producing ground nut, particularly in Tapi and Wordha basins. The oil produced in these mills provides the necessary base and the impetus to the growth of hydrogeneration plants which are located in the districts of Jalgaon, Buldana & Akola, all of which have a large acreage under ground nut. The forest of the region supports several industries by providing raw-materials of which paper and paper board ran first. The biggest paper plant located at Ballarpur in Chanda district which utilises bamboo as raw materials. The processing of tan extract from Birda in Kolhapur and distillation of essential oil from Rosagrass in Dhulian and other industries supported by forest. The most common and ubiquitous are the saw mills started with very little capital and spread all over, where forest stands can make feasible.⁶

Machine manufacturing quite unrelated to the raw-material and sometime guided by the locations of market is centered in the two large cities, Pune & Nagpur, where the demand from other industries, and the facilities for banking and finance, with a better possibility of getting skill personels attract such industries. Machine manufacturing at Pune is highly diversified and has a wide range including oil engines, electric motors, automobile fitting and fixtures, dairy equipments and a large variety of small machines. Besides Pune & Nagpur, Kirloskarwady in Satara district is an important place that

has specialised in the manufacture of agricultural implements. The metal based industries are first developing in important industrial centres. Another industry which developed without their being adequate local raw-materials in the region is glassware industry located at Pune, Nagpur, and Ogalewadi. Local market has compensated for the transport of silica from the other parts of the country.⁷

Concentration of industries in a few centre and the consequent regional imbalance in economic growth have promoted regional rivalries and discord. Marathawada, the middle gadavari valley, appears least favoured. Tapi valley is equally neglected and does not enjoy an industrial growth comperable to Pune & Nagpur regions. There is a growing belief in the less developed areas that the development is a politically motivated process and no thought is given to inadequacy of other locational factors. It may, however, be considered that locational decisions are sometimes influenced by political considerations though left to themselves the industries, particularly in the private sector always look for the best locations. Special decentralisation of capital investment and the regional dispersal of industries, though in themselves plattsible are not to be pressed too far against the odds of economic inviability. What is important is to create conditions that may offer comparable location to industries in terms of Economics of location.

Though Maharastra has good accessibilities, rapid industrialisation and ever-increasing movement of consumer goods and capital goods from Maharastra to other states will create demand for additional transport capacity both by road and railways. The capacities of the major roads will have to be increased to meet the additional demand. The traffic originating and terminating with in the boundaries of Maharastra is by and large moved by road, while external transportation of goods mainly carried out by the Mumbai port and inter-state transportation of goods and passengers are mainly carried out by roads and railways. The major commodities traded from Maharastra to other states are cotton, oilcakes, various consumer products, Coal, Ironors, Manganese, Limestone, Salt, Footwears, Jowar, Rice, Wheat, Pulses, Ground-nut, Suger and other products. The state economic activities and industrialisation are going rapidly and it will increase further with the passage of time. Though the cargo-carrying capacity of Maharastra is increasing rapidly.

In Maharashtra, most of the passenger are going from one place to another place by both railways and roadways. However, intra and inter-state mobility of the people of Maharashtra is on the increase. It is possible due to good road transport carriers and a large share of passenger traffic within the state. The rapid economic growth and industrialisation of Maharashtra, passenger traffic may grow faster rate than population. Hence passenger transport facility will have to be augmented. Due to rapid industrialisation, urbanisation is growing rapidly and therefore the demand for passenger traffic is growing day by day in and around them. Efficient intra-city and inter-city transport system will become necessary to meet the growing demand. These demand can be fulfilled by the good road net work in Maharashtra.

It is clear that during 1975-76, Maharashtra has 1,13,053 kms. of road length. From 1980-81 onwards, it has shown stedy and continuous increase in road length. As a result upto 1996 road length was 2,16,733 kms⁸. Overall, the roads have shown a compound rate of growth.

The process of nationalisation of passenger road transport in Maharashtra began on 1.4.1948 from Pune city and the route between Pune and Ahmednagar came under State ownership first and then, the process of nationlisation spread throughout the country. ⁹

Since then, two Bus Depots of Maharashtra State Road Transport Corporation (MSRTC), Shivajinagar and Swargate in Pune city have been operating inter-state, intercity, district and village services. Bus services from all over Maharashtra and also from neighbouring state are operated from the bus stations under these two depots.

Organisational structure of Maharashtra State Road Transport Corporations :

Three-tier set up

Boardly, the existing MSRTC set up consists of three-tiers corresponding to

— Head Office

— Regional Office

— Divisional Office.

Head Office :

Maharashtra State Road Transport Corporation is headed by the vice Chairman and Managing Director, located at the head office in Mumbai. He is assisted by the five officers. DGM (Operation), DGM (Planning), DGM (Pand IR), DGM (Sand P) and DGM (Civil Eng.)

Regional Office :

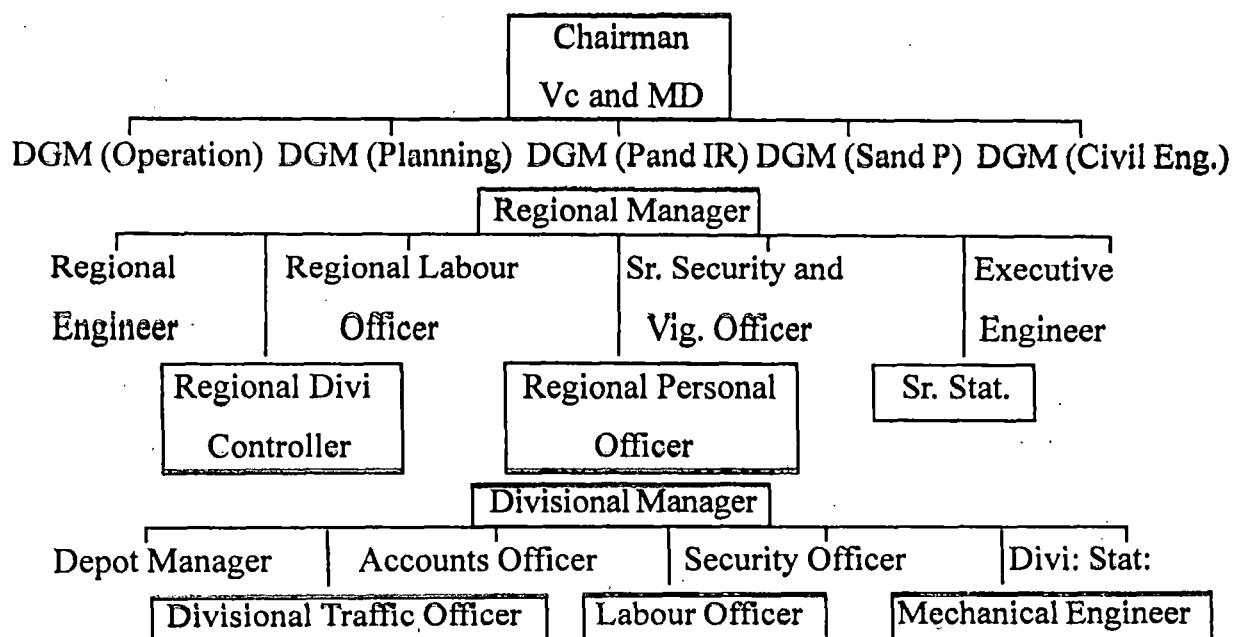
The Regional Offices represent the second-tier of the administration. These offices are located in Mumbai, Pune, Aurangabad and Nagpur. The Regional Manager is assisted by the Regional Engineer, Regional Divisional Controller, Regional Labour Officer, Regional Personnel Officer, Senior Security and Vigilance Officer, Senior Statistics Officer and Executive Engineer.

Divisional Office :

The third-tier in the set up is the Divisional Office. It is under the charge and control of the Divisional Manager. he is assisted by the Depot Manager, Divisional Traffic Officer, Accounts Officer, Labour Officer, Security Officer, Mechanical Engineer and Divisional State.

Below is the organisational chart of the MSRTC.

ORGANISATIONAL CHART OF MSRTC



The Regional and Divisional Office is the basic functional unit of MSRTC. As mentioned earlier, each officer such as Depot Manager, Divisional Traffic Officer, Accounts Officer, Labour Officer, Security Officer, Mechanical Engineer and Divisional statistician is under the charge of a divisional manager.

Few depots were in operation during 1980-81. But now there is 233 depots during the year 1996-97¹⁰.

To carry out the Minor/major repairs three central workshops is functioning in the State Transport Department. Regional Engineer and Mechanical Engineer work under the DGM (operation). The DGM (Operation) is head of the office of three central workshops. The budget of the three central workshop is met from the budget of the MSRTC.

Performance Appraisal

There is mainly two types of appraisal which can be attempted in respect of Road Passenger Transport undertakings.

- i) Operational Performance
- ii) Financial Performance

The object of this chapter is to compare the performance of NBSTC with MSRTC. MSRTC ply its buses in plain areas of Maharashtra and adjoining areas and NBSTC also ply its buses in plain areas of West Bengal and adjoining areas. Maharashtra is industrially developed. NBSTC is in corporation Form, MSRTC is also in corporation Form. MSRTC is a profit making organisation (before Tax) during the study period. NBSTC is in eastern zone and MSRTC is in western zone. Considering all these points the comparison is made to locate the weak areas of NBSTC with reference to the said organisation.

Comparative performance Evaluation of Maharashtra State Road Transport Corporation and North Bengal State Transport Corporation.

The physical and financial performance of maharashtra S.R.T.C. has been evaluated in this chapter and the performances of North Bengal State transport

Corporation has been evaluated in chapter number IV, on the basis of data. Since both these undertakings run their buses mainly in plain areas, it will be proper and analytically useful if their performance is compared with each other. So, in this chapter, M.S.R.T.C. has been compared with N.B.S.T.C. in terms of the following two parameters.

- a) Efficiency trends in terms of physical parameters.
- b) Efficiency trends in terms of financial parameters.

a) Efficiency trends in terms of physical parameters.

1. Bus-Staff Ratio

Table 5.1 highlights that the staff bus ratio has been constantly in favour of MSRTC which has utilised less staff per bus during the period 1980-81 to 1997-98. Staff bus ratio has exhibited a declining trend in MSRTC where as it has been higher and almost constant in NBSTC. So that MSRTC is spending less on its staff as compared to NBSTC, though the structure of salary is almost identical. When compared to all India average of 8 persons employed per bus than Maharashtra SRTC has been able achieve referred target but NBSTC not. The target has been referred in the earlier chapter.

Table - 5.1

Staff Bus Ratio in MSRTC and NBSTC

Year	MSRTC	NBSTC
1980 - 81	9.02	14.20
1981 - 82	9.26	15.20
1982 - 83	9.71	14.20
1983 - 84	N.A.	15.70
1984 - 85	9.68	16.40
1985 - 86	8.88	12.00
1986 - 87	8.91	12.00

Table contd. next page

Table 5.1 Contd.

1987 - 88	9.13	10.80
1988 - 89	N.A.	N.A.
1990 - 91	8.73	8.35
1990 - 91	8.99	8.01
1991 - 92	8.68	8.18
1992 - 93	7.83	8.93
1993 - 94	7.72	9.05
1994 - 95	7.36	8.93
1995 - 96	7.45	10.30
1996 - 97	7.58	11.04
1997 - 98	7.48	10.87

Source : Calculated.

[The all India average in respect of staff-bus ratio is 8. As has been calculated by the CIRT (Research and Training), Pune, India.]

However, staff-bus ratio is deceptive and does not reflect the true position. Staff employed per 100 kilometres of operation is a better index, which is shown in Table 5.2. The second criteria used, i.e., staff employed per 100 kilometres of operation spotlights that Maharashtra State Transport Corporation has performed better than North Bengal State Transport Corporation. In the case of Maharashtra SRTC, beginning with the year 1992-93, staff employed per 100 kilometres of operation has been less than 3, exactly equal to 2.46 in the last three years, 1995-96 to 1997-98, while in the case of North Bengal State Corporation it has never been less than three and has been as high as 8.20 during 1984-85 and 3.84 during 1995-96. Thus, Maharashtra State Transport Corporation has been consistently employed less staff and hence has been more economical. Thus, it is clear from the table that during the year from 1980-81 to 1987-88 and at the end of the study period i.e., from 1996-97 to 1997-98, the difference between Maharashtra State Transport Corporation and North Bengal State Transport Corporation has been higher i.e. the later is using more persons per 100 kilometers of operation and is thus less efficient. The Maharashtra SRTC would more efficient and higher labour

productivity if we take equal wage per employee.

Table - 5.2

Staff Employed per 100 Km. of operation per day in MSRTC and NBSTC

Year	MSRTC	NBSTC
1980 - 81	3.57	6.45
1981 - 82	3.79	7.14
1982 - 83	3.90	6.40
1983 - 84	N.A.	7.13
1984 - 85	3.75	8.20
1985 - 86	3.31	7.36
1986 - 87	3.25	5.74
1987 - 88	3.28	5.16
1988 - 89	N.A.	N.A.
1989 - 90	3.11	3.28
1990 - 91	3.26	3.28
1991 - 92	3.10	3.12
1992 - 93	2.77	3.64
1993 - 94	2.66	3.42
1994 - 95	2.49	3.36
1995 - 96	2.48	3.84
1996 - 97	2.51	4.07
1997 - 98	2.46	4.11

Source : Calculated

[The all India average in respect of staff employed per 100 Kms. of operation per day is 2. As has been calculated by the CIRT (Training and Research), Pune, India.]

ii) Fleet Utilisation :

This is another criteria for measuring the efficiency/productivity of State Transport undertakings. This is the percentage of buses on road to the buses held. Table 5.3 shows the comparative position of both corporation i.e. Maharashtra SRTC

and NBSTC in terms of percentage of buses on road. Maharashtra State Transport Corporation has increased its performances from 85.10 percent buses in use during 1980-81 to 91.7 percent during 1997-98, the lowest being 83.1 percent during 1982-83, compared to all India average of 85 to 90 percent, while in the case of NBSTC, it has not been able to increased its performance from 68 percent buses in use during 1980-81 to 66.3 percent during 1984-85. Which is far below of the all India average. But NBSTC has increased its performance only in 1989-90, 1990-91 and 1991-92 during the period of our study. One thing is also clear from table that only those three years NBSTC has done better than MSRTC in respect of fleet utilisation. However, Maharashtra State Transport Corporation has a very consistant performance and more above the all India average during the year 1996-97 to 1997-98. So, we can say, on this respect, Maharashtra State Road Transport Corporation has performed better than North Bengal State Transport Corporation.

Table - 5.3

Number of Buses on Road in MSRTC and NBSTC (percentage)

Year	MSRTC	NBSTC
1980 - 81	85.10	68
1981 - 82	84.02	64
1982 - 83	83.1	57
1983 - 84	85.9	59
1984 - 85	87.0	55
1985 - 86	88.0	85
1986 - 87	89.10	86
1987 - 88	87.2	N.A.
1988 - 89	N.A.	N.A.
1989 - 90	88.5	93.4
1990 - 91	83.5	90.9
1991 - 92	86.7	88.2
1992 - 93	87.7	81.4

Table contd. next page

Table 5.3 Contd.

1993 - 94	88.5	78.2
1994 - 95	91.5	78.8
1995 - 96	91.7	67.4
1996 - 97	91.4	67.4
1997 - 98	91.7	66.3

Source : Annual Administrative Reports of MSRTC and NBSTC, 1980-81 to 1997-98.

[The all India average in respect of fleet utilisation is 90 percent. As has been calculated by the CIRT (Training and Research), Pune, India.]

iii) Consumption of Diesel, Lubricants and Oils.

To judge the efficiency of both corporations, another parameter used is kilometres obtained per litre of oil. table 5.4 shows the comparative performance of the undertakings in terms of kilometres obtained per litre of oil. High consumption of oil indicates no economy in fuel consumption, low efficiency/productivity and poor performance. maharashtra State transport Corporation has been showing better efficiency throughout, the period of our study viz. 1980-81 to 1997-98. The performance of North Bengal State Transport Corporation in terms of kilometres obtained per liter of oil has been quite consistent, hovering around 3.8 since 1986-87. The table 5.4 clearly shows that NBSTC has obtained 3.70 kilometree per litre of oil during the year 1980-81 and reached 4.0 kilometres per litre of oil during the year 1989-90. But again its performance decreased to 3.97 kilometre per litre of oil during the year 1990-91 and reached to 3.88 kilometre per litre of oil during the end of the study period (1997-98), it has been the maximum during 1987-88 and 1989-90. But even an average of 3.5 kilometres per litre of oil is bad. Specially, when we compare it with Mahatashtra State Transport Corporation it does not look impressive. Maharashtra State Transport Corporation has obtained 4 and above and has been consistant at 4.41. So on this account also maharashtra State Transport Corporation has performed better than North Bengal State Transport Corporation.

Table - 5.4

Kilometres obtained per Litre of oil in MSRTC and NBSTC

Year	MSRTC	NBSTC
1980 - 81	4.16	3.70
1981 - 82	4.16	3.60
1982 - 83	4.20	3.60
1983 - 84	4.25	3.50
1984 - 85	4.26	3.60
1985 - 86	4.27	3.70
1986 - 87	4.30	3.85
1987 - 88	4.32	4.00
1988 - 89	N.A.	N.A.
1989 - 90	4.35	4.00
1990 - 91	4.41	3.97
1991 - 92	4.56	3.79
1992 - 93	4.59	3.70
1993 - 94	4.62	3.75
1994 - 95	4.61	3.91
1995 - 96	4.62	3.90
1996 - 97	4.63	3.89
1997 - 98	4.64	3.88

Source : Annual Administrative Reports of MSRTC and NBSTC

[The all India average in respect KMPL (HSD) is 4.48. As has been calculated by the CIRT (Training and Research), Pune, India.]

iv) Breakdowns :

This is another indicator for measuring the operational efficiency of a State Transport undertaking during a given period of time. The relationship between the number of breakdowns and operational efficiency appears to be inverse. Table 5.5 clearly shows that the position of NBSTC in respect of breakdowns is not good. At the beginning of the study period (1980-81), breakdowns per 10,000kilometres was 1.41, which rose to

2.17 during the end of the period of our study 1997-98. While in the case of Maharashtra State Transport Corporation it has an impressive record of avoiding breakdowns starting with less than one breakdowns per 10,000 kilometres and coming down to half in 1997-98. Therefore, MSRTC has been more efficient, then NBSTC in respect of breakdowns per 10,000 kilometres. From the beginning of the study period during the year 1980-81 in case of MSRTC, it was 0.76 per 10,000 kilometres, than till to 0.60 in 1982-83, from 1989-90 onwards, it has shown a continuous downward course and finally decrease to 0.35 during the end of the syudy period. This confirms the hypothesis that the higher the breakdowns, the lower the efficiency of the undertaking. By this hypothesis, MSRTC has performed better than NBSTC. If we will look about the total number of breakdowns of both undertakings, in this case also, MSRTC has done better than NBSTC. So we can say that on the above parametre also MSRTC has been more efficient.

Table - 5.5

Breakdowns per 10,000 kms. Run in MSRTC and NBSTC.

Year	MSRTC	NBSTC
1980 - 81	0.76	1.42
1981 - 82	0.71	1.40
1982 - 83	0.60	1.50
1983 - 84	0.62	1.50
1984 - 85	0.55	1.60
1985 - 86	0.51	1.50
1986 - 87	0.45	1.50
1987 - 88	0.50	1.50
1988 - 89	N.A.	N.A.
1989 - 90	0.52	N.A.
1990 - 91	0.49	1.80
1991 - 92	0.39	2.02
1992 - 93	0.37	2.03
1993 - 94	0.35	2.37

Table contd. next page

Table 5.5 Contd.

1994 - 95	0.38	N.A.
1995 - 96	0.35	N.A.
1996 - 97	0.35	2.17
1997 - 98	0.35	2.17

Source : Statistical Abstracts of MSRTC and NBSTC from 1980 - 81 to 1997-98 and profile and performance of State Transport undertaking, publish by the CIRT, Pune, from 1980-81 to 1997-98.

[The all India average in respect of Breakdowns per 10,000 kms. (gross) is 0.65. As has been calculated by the CIRT (Training and Research) Pune, India.]

v) Accidents :

This is also one of the criteria for measuring the operational efficiency/performance of State Transport undertaking. The relationship of accidents with efficiency is inverse. Tabel 5.6 shows the comparative position of both undertaking in respect of accidents per lakh kilometres from 1980-81 to 1997-98. The table clearly shows that NBSTC has performed better then MSRTC during the period of our study. In the case of NBSTC, the accident per lakh kilometres was 0.23 during the year 1980-81 and at the end of the period, it has decreased to 0.19 during the year 1997-98 while, in the case of MSRTC, the accidents per lakh kilometres was 0.38 during the year 1980-81 and at the end of the study period, it has decreased to 0.24 during the year 1997-98. However, it is also clear from the table that during the whole of the period of our study NBSTC has performed better than MSRTC. Though after 1982-83 Maharashtra State Road Transport Corporation has been able to reduce accidents per lakh kilometre to a considerable extent during the period of our study. Therefore, on this parameter, NBSTC has been more efficient.

Table - 5.6

Accidents per Lakh Kilometres in MSRTC and NBSTC

Year	MSRTC	NBSTC
1980 - 81	0.38	0.23

Table contd. next page

Table 5.6 Contd.

1981 - 82	0.37	0.24
1982 - 83	0.40	0.20
1983 - 84	0.36	0.20
1984 - 85	0.35	0.21
1985 - 86	0.35	0.21
1986 - 87	0.29	0.19
1987 - 88	0.28	0.27
1988 - 89	N.A	N.A
1989 - 90	0.27	0.16
1990 - 91	0.27	0.15
1991 - 92	0.26	0.11
1992 - 93	0.27	0.14
1993 - 94	0.27	0.19
1994 - 95	0.28	0.29
1995 - 96	0.27	0.18
1996 - 97	0.26	0.13
1997 - 98	0.24	0.19

Source : Statistical Abstracts of MSRTC and NBSTC from 1980-81 to 1997-98 and profile and performances of State Transport undertaking, publish by CIRT, Pune, India.

[The all India average in respect of accidents per lakh kms. is 0.33. As has been calculated by the CIRT (Training and Research), Pune, India.]

vi) Vehicles Utilisation :

This is another criteria for measuring the operational efficiency of the State Transport undertaking. It shows the volume of operation in terms of Kms. operated Table 5.7 shows the comparative analysis of vehicle utilisation of MSRTC and NBSTC.

The table clearly shows that Bus utilisation per day (Kms) on road, Maharashtra State Road Transport Corporation has performed better than North Bengal State Transport Corporation over the period of our study. From the table, it

is clear that at the beginning of the study period (1980-81), the vehicle utilisation was 220.0 (KMs) per day on road in the case of NBSTC. then it decreased to 163.0 (Kms) per day on road during the year 1985-86. Again vehicle utilisation increased from 1992-93 to 1995-96. i.e. 244.8 (Kms) to 271.2 (Kms) and finally at the end of the study period, the vehicle utilisation was 264 (kms) per day on road during the year 1997-98. While in the case of Maharashtra State Transport Corporation, it has done better than NBSTC. At the beginning of the study period the vehicle utilisation was 252.10 (Kms) per day on road during the year 1980-81. But after that period it has increased upto 1980-83. Again it has decreased in the year 1983-84. But after that it has increased upto end of the study period except in the year 1989-90. At the end of the study period it was 303.6 (Kms) per day on road during the year 1997-98. An another thing is also clear from the table that MSRTC has performed better than NBSTC in each and every year during the study period in respect of vehicle utilisation. Therefore, on this parametre also Maharashtra State Road Transport Corporation has been more efficient than NBSTC.

Table - 5.7

Performance of MSRTC and NBSTC for vehicle utilisation per day on Road in terms of Kms.

Year	MSRTC	NBSTC
1980 - 81	252.10	220.00
1981 - 82	253.20	210.00
1982 - 83	271.10	215.90
1983 - 84	235.73	220.00
1994 - 85	257.80	200.00
1985 - 86	267.90	163.00
1986 - 87	273.50	209.00
1987 - 88	277.80	209.00
1988 - 89	N.A.	N.A.
1989 - 90	280.10	254.20

Table contd. next page

Table 5.7 Contd.

1990 - 91	275.20	243.70
1991 - 92	279.80	246.80
1992 - 93	282.60	244.80
1993 - 94	289.60	264.10
1994 - 95	294.90	265.70
1995 - 96	299.40	267.70
1996 - 97	301.70	371.20
1997 - 98	303.60	264.00

Source : Calculated.

[The all India average in respect of vehicle utilisation per day on road (in terms of km) is 308. As has been calculated by the CIRT (training and Research), Pune, India.]

vii) Passenger carried :

It is also one of the criteria for measuring the operational efficiency of the State Transport undertaking. Table 5.8 shows the comparative analysis of two undertakings.

The table 5.8 clearly shows that, North Bengal State Transport Corporation has performed better than Maharashtra State Transport Corporation during the year from 1980-81 to 1987-88. But after that period Maharashtra State Transport Corporation has done better than North Bengal State Transport Corporation upto end of the period of our study, i. e. MSRTC has performed better than NBSTC during the year from 1989-90 to 1997-98. The table also clears that NBSTC has achieved 400 passenger carried per day per bus during the whole period of our study, except it has not been able to reach the mark 400 only during the year from 1989-90 to 1992-93. While in the case of Maharashtra State Transport Corporation has been able to achieve a target of 400 passengers per bus per day during whole of the period of our study. It has carried 408 passengers per bus per day during the year 1080-81 and at the end of the study period. It has carried 476 passengers per bus per day during the year 1997-98 so, we can say that, on this parameter also Maharashtra State Transport Corporation has better efficiency than NBSTC.

We draw the conclusion by saying that the Maharashtra State Transport Corporation has done far better than North Bengal State Transport corporation by analysing the efficiency trends with the help of six criterias. The opinion of the Planning Commission is that it is possible due to better management and also the operational efficiency has been improved due to the right assessment of extra traffic demand.

Table - 5.8

Passenger carried per bus per day by MSRTC and NBSTC.

Year	MSRTC	NBSTC
1980 - 81	408	446
1981 - 82	404	465
1982 - 83	406	547
1983 - 84	434	611
1984 - 85	450	684
1985 - 86	477	815
1986 - 87	496	671
1987 - 88	512	643
1988 - 89	N. A.	N. A.
1989 - 90	510	200
1990 - 91	519	200
1991 - 92	505	253
1992 - 93	496	365
1993 - 94	497	410
1994 - 95	472	424
1995 - 96	500	488
1996 - 97	508	493
1997 - 98	476	450

Source: Calculated.

[The all India average in respect of passenger carried per bus per day is 650. As has been calculated by the CIRT (Training and Research), Pune, India.]

b) Efficiency Trends in terms of Financial Parameters.

The efficiency of financial performance can be measured in terms of the following variables.

- i) Growth of total revenue per effective kilometre.
- ii) Total expenditure / cost per effective kilometre.
- iii) Net profit / loss per kilometre.
- iv) Impact of taxation.
- v) Return on investment.

i) Growth of Total Revenue per Effective Kilometre.

Revenue are mainly collected by these undertakings through their selling of tickets and luggage fare from the passengers travelling in their buses. Table 5.9 reveals revenue per effective kilometre for both undertakings. The performance of Maharashtra State Transport Corporation is far better than North Bengal State Transport Corporation from the beginning of the study period (1980-81) and the difference has increased in favour of Maharashtra State Transport Corporation. The revenue per effective kilometre has been on the increase for both the undertakings during the period from 1980-81 to 1997-98. In absolute terms, Maharashtra State Road Transport Corporation has earned 1083.05 paise per effective kilometre as compared to 693.5 paise per kilometre of North Bengal State Transport Corporation during 1997-98. The compound growth rates in the case of MSRTC and NBSTC have been 21.55 and 1.46 percent per annum respectively. Thus on the above parametre also, MSRTC has been more efficient than NBSTC.

Table - 5.9

Growth of Total Revenue per EKM in MSRTC and NBSTC (paise/km.)

Year	MSRTC	NBSTC
1980 - 81	285.66	209.00
1981 - 82	360.42	203.00
1982 - 83	416.50	209.00

Table contd. next page

Table 5.9 Contd.

1983 - 84	444.00	237.00
1984 - 85	464.20	251.00
1985 - 86	476.20	280.00
1986 - -87	494.20	289.00
1987 - 88	530.30	313.00
1988 - 89	N. A.	N. A.
1989 - 90	579.70	N. A.
1990 - 91	754.00	498.60
1991 - 92	806.40	551.30
1992 - 93	828.10	603.70
1993 - 94	918.00	703.80
1994 - 95	933.80	585.70
1995 - 96	973.60	637.50
1996 - 97	891.40	683.50
1997 - 98	1083.50	693.50

Source: Calculated.

[The all India average in respect of Total Revenue per EKM (paise) is 1026. As has been calculated by the CIRT (Training and Research), Pune, India.]

ii) Total Expenditure / Cost per Effective Kilometre.

Cost or expenditure means are the cost of operation for running the buses to the public per effective kilometre. Table 5.10 shows the relative performance of total expenditure /cost per effective kilometre of both undertakings.

Table - 5.10 spotlights that, from 1980-81 to 1985-86, North Bengal State Transport Corporation has been incurring higher cost per effective kilometre, whereas from 1990-91 to 1994-95 Maharashtra State Road Transport Corporation has been incurring higher cost. The cost has been higher in the case of MSRTC due to imposition of heavy taxes. But the cost has been higher in the case of NBSTC due to various reasons viz. excess employees, bad road conditions, excess maintenance cost, leakage of revenue, maintenance of improper traffic demand

and to competition from private operators.

One thing is also clear from the table 5.10 that though heavy taxes have been imposed in the case of MSRTC but it has able to maintain lower cost than NBSTC from 1995-96 to 1997-98.

So, we can say on this parametre also, MSRTC has ben more efficient than NBSTC.

Table - 5.10

Total Expenditure / cost per EKM in MSRTC and NBSTC (paise/KM)

Year	MSRTC	NBSTC
1980 - 81	336.71	385.0
1981 - 82	400.31	447.0
1982 - 83	427.90	486.0
1983 - 84	451.60	N. A.
1984 - 85	468.40	469.0
1985 - 96	494.00	522.0
1986 - 87	512.80	440.0
1987 - 88	529.60	543.0
1988 - 89	N. A.	N. A.
1989 - 90	631.50	N. A.
1990 - 91	749.60	562.5
1991 - 92	826.60	638.1
1992 - 93	809.40	773.1
1993 - 94	883.10	814.4
1994 - 95	931.00	896.5
1995 - 96	975.60	1080.8
1996 - 97	1065.00	1247.4
1997 - 98	1160.60	1313.2

Source: Calculated.

[The all India average in respect of total expenditure per EKM (paise) is 1140. As has been calculated by the CIRT (Training and Research), Pune, India.]

iii) Profitability :

Net profit, it is the difference between revenue per kilometre and cost per kilometre. The State Transport undertakings calculated net profit on the basis of above way. It is called net profit per kilometre and it includes also taxes, depreciation and interest payments.

Table- 5.11 shows the profitability of MSRTC and NBSTC. The table -5.11 spotlights that the Maharashtra State Road Transport Corporation has made profits (before tax) 18 years of its operation during the period under study i. e. during 1980-81 to 1997-98, while NBSTC has suffered losses (before tax) for 18 years of its operation during the period of our study i.e. during 1980-81 to 1997-98. This implies that over a period of 18 years, Maharashtra State Road Transport Corporation has made profit during whole of the study period. Whereas, NBSTC has been suffering continuous losses since beginning of the study period and the loss has been moving upsewing each year. MSRTC has been making profits from 1980-81 to 1997-98. It has earned profit of 187.20 paise per effective kilometre (before tax) during the year 1993-94. Maharashtra State Road Transport Corporation has been one of the few undertaking to have made a profit in our country. Thus we can say that, the performance of MSRTC is better than NBSTC.

Table - 5.11

Net profit / loss (Before Tax) per Effective Kilometre of operation in MSRTC and NBSTC (in paisa)

Year	MSRTC	NBSTC
1980 - 81	1.17	(-) 179.70
1981 - 82	24.7	(-) 230.00
1982 - 83	62.20	(-) 275.00
1983 - 84	69.90	N. A.
1984 - 85	75.70	(-) 415.00
1985 - 86	63.50	(-) 241.70

Table contd. next page

Table 5.11 Contd.

1986 - 87	65.30	(-) 150.20
1987 -88	91.00	(-) 229.50
1988 - 89	N. A.	N. A.
1989 - 90	48.00	(-) 55.00
1990 - 91	130.80	(-) 62.00
1991 - 92	114.60	(-) 86.20
1992 - 93	155.80	(-) 167.701
1993 - 94	187.20	(-) 113.80
1994 - 95	156.80	(-) 310.50
1995 - 96	158.30	(-) 442.90
1996 - 97	74.80	(-) 563.40
1997 - 98	101.10	(-) 619.40

Source : Calculated.

[The all India average in respect of net profit/loss. (Before Tax) is 5.8 paise. As has been calculated by the CIRT (Training and Research), Pune, India.]

iv) Impact of Taxation :

There are many reasons for loses of State Transport Undertakings. Among them taxation is one of them. It has an adverse feature. Heavy burden of taxes on various State Transport Undertakings causing a drag on the financial viability of State Road Transport Undertakings. The rates of various taxes levied by the Government of Maharastra from time to time have been quite high as compared to the tax rates applicable on other states as is shown in table 5.12. It is clearly understood from the table that the total taxes per km. (paise) of MSRTC is more than NBSTC. Because, where total taxes per km. of NBSTC 0.3 paise and the total taxes per km. of MSRTC is 178.8 paise. So it is clear that MSRTC pays more taxes than NBSTC to the State Government per kilometre.

In other way, we can compare the impact of taxation on the basis of total taxation per bus per year of both undertakings. Again, table 5.12 shows that Maharastra State Road Transport Corporation has contributed more tax for per

bus held per year than North Bengal State Transport Corporation. Though there are many state Road Transport undertakings who paid more taxes per bus held per year than MSRTC and NBSTC. The table also reveals that, there is no parity between the undertakings in respect of tax structure. So, it is necessary to review the tax system. Thus, high incidence of taxation, mainly influenced for transfer of revenues from the State Transport undertakings and as a result most of the State Transport undertakings has been incurring losses in each year.

so, it is necessary to review the present system of taxation in relation to state road transport undertakings, so as to make it more viable and relevant in present times.

The table also spotlights that though the Maharashtra State Road Transport Corporation has paid more taxes for per bus held per year than NBSTC. But it has not been making losses year after year during the period of our study.

So, here, we may conclude that the performance /efficiency of Maharashtra State Road Transport Corporation is better than NBSTC.

Table - 5.12

Incidence of Taxation in STU's 1997-98.

S.L.	Undertakings	Total Taxes per Km. (paisa)	Total Tax paid per Bus held per year (Rs.)
	1	2	3
1.	Maharashtra SRTC	178.8	1,64,312
2.	Andhra Pradesh SRTC	143.9	1,63,531
3.	Karnataka SRTC	66.8	69,948
4.	Gujrat SRTC	139.3	1,52,700
5.	U.P SRTC	50.0	39,660
6.	Kerala SRTC	21.0	20,389
7.	S.T. Haryana	307.1	3,28,249

Table contd. next page

Table 5.12 Contd.

8.	Rajasthan SRTC	147.4	1,50,213
9.	M.P. SRTC	219.5	1,66,955
10.	S.T. Punjab	305.0	2,45,758
11.	Bihar SRTC	95.3	5,612
12.	Cheran TCL	75.0	1,03,319
13.	Pepsu RTC	316.5	2,88,112
14.	KUM - I	72.0	1,12,934
15.	KUM - II	70.5	1,04,059
16.	N.B.S.T.C.	0.3	208
17.	SLM - I	73.0	1,07,529
18.	VPM - I	73.0	1,11,791
19.	CBE - II	70.0	1,07,000

Source : Performance statistics of S.T.U's 1997-98 compiled by CIRT Pune, India.

[In the case of MSRTC, Total Taxes per Kilometer (paise) and total tax per bus held per year (Rs.) is high in compare with NBSTC. This is observed in performance statistics, Published by CIRT, Pune. (Date - 31.03.98). P. 101, 102 and 103.]

v) Return on Investment :

It is also one of the criteria for measuring the financial performance of State Transport undertaking. It is calculated by the planning commission.

Table 5.13 shows that Maharashtra State Road Transport Corporation has showed positive return on investment i.e. 26.03 percent during 1997-98, while North Bengal State Transport Corporation has showed negative return on investment i.e.- 293.96 percent during the year 1997-98.

Table - 5.13

Return on Investment for MSRTC and NBSTC (in percent)

Year	MSRTC	NBSTC
1980 - 81	16.8824	-122.05845
1981 - 82	28.6936	-91.02597
1982 - 83	97.9900	-99.73045
1983 - 84	109.4170	N.A.
1984 - 85	108.1175	-168.08127
1985 - 86	36.0897	-161.40381
1986 - 87	36.5496	-162.16484
1987 - 88	40.1163	-156.03849
1988 - 89	N.A.	N.A.
1989 - 90	30.4648	N.A.
1990 - 91	43.1120	7.7769
1991 - 92	45.4887	4.9826
1992 - 93	40.0232	N.A.
1993 - 94	42.2425	N.A.
1994 - 95	38.1190	N.A.
1996 - 96	34.6722	-226.9071
1996 - 97	23.2529	-269.7485
1997 - 98	26.0362	-293.9681

Source : Calculated

[Negative ROI (percent) means lower the financial performance and positive ROI (percent) means better the financial performance. It is recommended by the Government of India, Report on the performance of State Road Transport undertaking, planning commission, New Delhi, 1989, P.79]

SUMMARY

Maharashtra a State in the Indian union, is situated in west India. MSRTC provides its services in Maharashtra and its adjoining areas. It is highly industrially developed. MSRTC run on corporation Form and made profit (Before Tax) during

the study period. Where as NBSTC provides its services in West Bengal and adjoining plain areas. It also runs on corporation Form Considering all these points we have made comparison between MSRTC and NBSTC to locate the weak areas of NBSTC with reference to the said organisation. Both organisation ply their buses in plain areas. The performance of NBSTC has been evaluated in chapter number IV on the basis of available date. Therefore it will be proper and analytically useful if their performance is compared with each other. So the comparison can be made with each other with the help of following two parametres.

- a) Efficiency Trends in terms of Physical Parameters.
- b) Efficiency Trends in terms of Financial Parameters.

a) Efficiency Trends in terms of Physical Parameters.

i) Bus-staff ratio :

Table 5.1 shows the comparative ratio of MSRTC and NBSTC. The table clearly reveals that the Bus-staff ratio has been constantly in favour of MSRTC, which has utilised less staff per bus during the study period (1980-81 to 1997-98). Where as it has been higher and constant in NBSTC. During the begining of the study period (1980-81), it is 9.02 in the case of MSRTC, while it is 14.20 in the case of NBSTC. Again at the end of the study period (1997-98), it is 7.48 in the case of MSRTC, where as it is 10.87 in the case of NBSTC. So MSRTC is spending less on its staff as compared to NBSTC, though the structure of salary is almost identical. The all India Average is 8 person per bus, and in this respect MSRTC has been able to achieve referred target but NBSTC not.

ii) Staff Employed per 100 kms. of operation per day in MSRTC and NBSTC :

Table 5.2 clearly reveals that MSRTC has performed better than NBSTC during the period of our study. Some times Bus-staff ratio is deceptive and does not reflect the true position. But the above criteria is a better Index for measuring the efficiency of MSRTC and NBSTC. In the case of MSRTC, staff employed per 100 kms. of operation is less than 3 during the year 1995-96 to 1997-98, while in the case of NBSTC, it has never been less than 3 and has been as high as 8.20 during the year

1984-85. Thus, we can say that MSRTC is more efficient than NBSTC.

iii) Fleet Utilisation :

Table 5.3 clearly reveals that MSRTC has increased its performance from 85.10 percent buses to 91.7 percent buses in use on the road during the study period, while in the case of NBSTC fleet utilisation was 68 percent during the year 1980-81 and at the end of our study period (1997-98), it was only 66.3 percent. So it is clear that NBSTC has not been able to achieve referred target 90 percent, but MSRTC has been able to achieve the referred target, which is mentioned in the earlier chapter. So we can say that MSRTC has performed better than NBSTC.

iv) Consumption of Diesel, Lubricants and Oils :

Table 5.4 reveals the comparative performance of consumption of Diesel, Lubricants and Oils of MSRTC and NBSTC. The table clearly shows that MSRTC has obtained above 4 kms. per litre of Oil during the study period but NBSTC obtained only below 4 kms. per litre of oil during the study period. So we can say that, in this respect also, MSRTC has done better than NBSTC.

v) Breakdowns :

Table 5.5 highlights that NBSTC has not an impressive record of avoiding breakdowns. It was starting with 1.41 breakdowns per 10,000 kms. and increased to 2.17 at the end of our study period, while in the case of MSRTC, it has an impressive record of avoiding breakdowns, starting with less than one breakdowns per 10,000 kms. of operation and coming down to half in 1997-98. Therefore, MSRTC has been more efficient than NBSTC in respect of breakdowns per 10,000 kms.

vi) Accidents :

Table 5.6 shows the comparative position of both undertakings in respect of accidents per lakh kms. from 1980-81 to 1997-98. The table clearly shows that NBSTC has performed better than MSRTC during the period of our study. It was 0.23, the accidents per lakh kms. during the year 1980-81 and at the end of the study period it has decreased to 0.19 during the year 1997-98. While in the case of MSRTC, it was 0.38 and 0.24 during the year 1980-81 and 1997-98 respectively.

Therefore, we can say that on this parameter NBSTC has done better than MSRTC.

vii) Vehicle utilisation :

Table 5.7 reveals that vehicle utilisation (in terms of kms.) per day on road, MSRTC has done better than NBSTC during the period of our study. In the case of NBSTC, average bus utilisation per day (in terms of kms.) is 232.81, while in the case of MSRTC average bus utilisation per day (in terms of kms.) is 252.31. Thus MSRTC has done better than NBSTC and in the other way, we can say that the performance of MSRTC, is better than NBSTC.

viii) Passenger carried :

Table 5.8 shows the passenger carried of both undertaking per bus per day. It is clear from the table that MSRTC has carried more passengers per bus per day than NBSTC during the study period, MSRTC has carried 408 passengers per bus per day, during the year 1980-81, at the same time, NBSTC carried 446 passenger per bus per day. During the year 1997-98, MSRTC carried 476 passengers per bus per day and at the same time NBSTC carried 450 passengers per bus per day. Though the NBSTC has achieved the referred target 400 passengers per bus per day in few years of the study period, but MSRTC carried more than 400 passengers per bus per day and achieved the referred target during whole of the study period. So, we can say that MSRTC's performance is better than NBSTC.

We draw the conclusion by saying that MSRTC has done far better than NBSTC by analysing the efficiency trends with the help of six criterias. The opinion of the planning commission is that it is possible due to better management and also operational efficiency has been improved due to the right assessment of extra traffic demand.

b) Efficiency trends in terms of financial performance :

The efficiency of financial performance can be measured in terms of the following variables.

- i) Growth of total revenue per effective kms.
- ii) Total Cost/expenditure per effective kms.

- iii) Net profit/loss per Kms.
- iv) Impact of Taxation.
- v) Return on investment.

i) Growth of total revenue per effective kms. :

Table 5.9 reveals the comparative analysis of both undertakings. Table clearly reveals that the performance of MSRTC is better than NBSTC. The revenue per effective kilometre has been on the increase for both the undertakings during the study period. In absolute terms, MSRTC has earned 1083.5 paise per effective kilometre as compared to 693.5 paise per effective kilometre of NBSTC during the year 1997-98. The compound growth rates in the case of MSRTC is 21.55 and NBSTC is 1.46 percent per annum respectively. Therefore, we can say that the financial performance of MSRTC is better than NBSTC.

ii) Total Expenditure/cost per Effective kilometre of MSRTC and NBSTC :

Table 5.10 spot lights that, both undertaking has been incurring higher cost during the study period. The cost is higher in MSRTC, due to imposition of heavy taxes, while in the case of NBSTC, it has been incurring higher cost due to excess employee, bad road condition, excess maintenance cost, bad quality spare parts, leakage of revenue and maintenance of improper traffic demand. So it is clear from the table that though there is a burden of heavy taxes in MSRTC, but it has been able to maintain lower cost per effective kilometre than NBSTC from 1995-96 to 1997-98. Thus, we can say that the performance of MSRTC is better than NBSTC.

iii) Profitability :

Table 5.11 shows the profitability of MSRTC and NBSTC. The table clearly spotlights that MSRTC has made profits during whole of the study period, while, NBSTC has suffered losses during whole of the study period and the loss has been moving upsewing each year. MSRTC has been one of the undertaking to have made a profit in our country. Thus, we can say that, the performance of MSRTC is better than NBSTC.

iv) Impact of Taxation :

Table 5.12 shows the impact of taxation on various State Transport undertakings. The table clearly reveals that the Government of Maharashtra levied various taxes on their undertakings from time to time. The table also indicates that MSRTC's position is 5th in respect of total taxes per km. (paise) among all other STU's. The position of NBSTC in compare with MSRTC is much lower in respect of total taxes per km. (paise). In spite of that MSRTC has made profits during the study period. The rate of taxes not only influences the profitability of the undertakings but also influences on day to day affairs of the undertakings. Thus, taxes paid per bus per year should be the another basis for comparison. Again, the table 5.12 reveals that MSRTC has paid more taxes per bus per year than NBSTC. In spite of that, MSRTC has made profit during the study period. Thus, we can say that the performance of MSRTC is better than NBSTC.

v) Return on Investment :

Table 5.13 shows the comparative analysis of both undertakings. It reveals that, in the case of MSRTC, ROI was positive (16.8824) during the beginning of the study period (1980-81) while in the case of NBSTC, it was negative (- 122.0584) in the year 1980-81. The table also indicates that MSRTC has made positive ROI during all the years of our study, where as NBSTC has made positive ROI only during the year 1990-91 and 1991-92 of our study period. Therefore, we can say that the performance of MSRTC is better than NBSTC.

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