

## CHAPTER - V

### PHYSICAL AND FINANCIAL PERFORMANCE

#### A COMPARATIVE ANALYSIS AMONG SRTCS

##### INTRODUCTION :

The chapters II and III have examined in detail the physical and financial performance of GSRTC and changes their in over a period of time. However it is also necessary to examine the performance of GSRTC in relation to various state road transport corporations. In the light of this, the present chapter attempts to examine the relative performance of various state road transport corporations both physical and financial. The relative performance has been examined for the period 1985-86 to 1994-95. The study takes into account performance of sixteen state road transport corporations viz. [1] Andhra Pradesh State Road Transport Corporation [APSRTC]; [2] Assam State Road Transport Corporation [ASMSTC]; [3] Bihar State Road Transport Corporation; [BSRTC]; [4] Calcutta State Transport Corporation [CSTC]; [5] Delhi Transport Corporation [DTC]; [6] Gujarat State Road Transport Corporation [GSRTC]; [7] Karnataka State Road Transport Corporation [KnsRTC]; [8] Kerala State Road Transport Corporation [KSRTC]; [9] Madhya Pradesh State Road

Transport Corporation [MPSRTC]; [10] Maharashtra State Road Transport Corporation [MSRTC]; [11] North Bengal State Road Transport Corporation [NBSRTC]; [12] Orissa State Road Transport Corporation [OSRTC]; [13] Pepsu State Road Transport Corporation [PRTC] [Punjab]; [14] Rajasthan State Road Transport Corporation [RSRTC]; [15] Uttar Pradesh State Road Transport Corporation [UPSRTC]; and [16] Tripura Transport Corporation [TRPTC]. The above said SRTCS are selected for a detailed study because under different forms of management of SRTUs, they are classified under corporation. Under this category about 21 corporations are covered including GSRTC. This study examines physical and financial performance of sixteen SRTCs instead of twenty one SRTCs because the required information could not be obtained for Himachal Road Transport Corporation [HRTC], Jammu and Kashmir State Road Transport Corporation [JKSRTC], Manipur State Road Transport Corporation, Meghalaya Transport Corporation and South Bengal State Transport Corporation.

#### **SIZE OF SRTCs :**

Before we examine the physical performance of various state road transport corporations, for the period 1985-86 to 1994-95, it is essential to throw light on size of various SRTCs in terms of number of buses held, strength of the Staff, number of effective kms. operated and number of passenger travelled.

The number of buses held and staff employed by the corporation mainly represent the size of the corporation. The Table - V.I makes it clear that the Maharashtra State Road Transport Corporation held the maximum number of buses i.e. 11042 and it employed 84754 persons in 1985-86. This is followed by APSRTC and GSRTC respectively. The TRPTC was the smallest corporation, during the same year in terms of number of buses held and staff employed.

On the same line, the MSRTC operated highest effective kms. [497.46 lakh kms.] in 1985-86 where as TRPTC operated only 23 lakh effective kms. Looking at the number of passenger travelled by various SRTCs one observes that around 17687 lakh passenger travelled by APSRTC in 1985-86 where as it was only 24 lakh for TRPTC in 1985-86.

In the year 1994-95 also Maharashtra State Road Transport Corporation stood first in terms of number of buses held and total staff employed. Not only that but Tripura State Road Transport Corporation continued to remain the smallest one among all SRTCs in India in terms of staff employed and number of buses held in 1994-95. The APSRTC operated maximum effective kms. amongst all SRTCs in 1994-95 where as minimum effective kms. was observed for TRPTC. The average number of buses held by majority of state road transport corporation has increased during a decade. The BSRTC, DTC, RSRTC and TRPTC show the fall in the number of buses held during the period under consideration. However, in 1994-95 the MSRTC continued to remain SRTC with

highest number of buses held as in the year 1985-86. Not only that but the number of buses held by APSRTC has increased significantly during the period under consideration. The corporations falling in the bottom group in terms of buses held and staff employed in 1994-95 have remained the same as in the year 1985-86. These are TRPTC, NBSTC, OSRTC and ASMSTC.

APSRTC stood second in terms of number of buses held. The effective Kms. operated by APSRTC was highest in 1994-95. On the other hand, TRPTC operated only 18.63 lakh kms during the same year which was minimum among all SRTC under consideration.

Thus the SRTCs like APSRTC, DTC, GSRTC, KnSRTC and MSRTC were bigger in size in terms of above mentioned parameters as compared to other SRTCs during both the years under study.

The coefficient of variation is estimated for each indicator for both the years to examine the extent of variation among various State Road Transport Corporation. The Tables - V.1 and V.2 reveal the same and it may be noted that the coefficient of variation has increased with respect to number of buses held, strength of staff, effective kms. operated and passenger carried in the year 1994-95 as compared to the year 1985-86. This tends to suggest that the size of various SRTCs have diverged in 1994-95 as compared to 1985-86 with respect to above said parameters. It is to be noted that the various SRTCs differ from each other significantly as the coefficient of variation is very high.

### PHYSICAL PERFORMANCE OF SRTCS :

In this chapter the physical performance of various SRTCs is examined with the help of those indicators, which are used in chapter II to examine the physical performance of GSRTC for example, bus staff ratio, percentage of fleet utilization, rate of accidents, rate of breakdowns, Kms. per litre of oil, Kms. per vehicle per day, Kms. per employee, passenger carried per bus per day.

The Tables - V.3 and V.4 reveal above indicators of physical performance of different SRTCs for the years 1985-86 and 1994-95 respectively.

Examining various indicators of physical performance it is observed that the bus staff ratio was lowest at 0.08 for NBSTC and highest at 0.18 for PRTC in 1985-86. In the year 1994-95, the minimum bus-staff ratio is observed for BSRTC and CSTC at 0.10 when highest ratio was 0.18 of PRTC.

The percentage of fleet utilization was highest in case of APSRTC which is followed by KnSRTC and PRTC respectively in 1985-86. In the year 1994-95, also APSRTC utilized about 96% of its total fleet, which was highest among all SRTCs where as minimum is observed for BSRTC at 38%.

The vehicle utilization per bus per day is also an important indicator of physical performance. In terms of vehicle utilization the performance of GSRTC turns out to be the best representing 305 kms. per bus per day, APSRTC performed more or

less same and it was followed by KnSRTC in 1985-86. The poor performance was observed in case of TRPTC, NBSTC and CSTC. In the year 1994-95 the performance of APSRTC was best in terms of vehicle utilization per bus per day where as least performance is observed for TRPTC. The performance of CSTC was excellent in terms of passenger carried per bus per day for both the years 1985-86 and 1994-95. It was equally good in case of DTC and KSRTC. It is to be noted that the passenger carried per bus per day was lowest in case of BSRTC in 1985-86 where as in 1994-95, TRPTC carried minimum passenger per bus per day.

Looking at the kms. per litre of oil, it has fluctuated between 2.51 for CSTC and 4.85 in case of GSRTC in 1985-86. In the year 1994-95 the highest kms. per litre of oil is observed by APSRTC and lowest by BSRTC. The number of breakdowns per 10,000 km. was as high as 15.25 in case of CSTC where as minimum breakdown per 10,000 kms. was 0.26 which was experienced by KnSRTC and RSRTC in 1994-95. In the year 1985-86, it was 25.07 in case of CSTC and minimum number of breakdowns was experienced by KnSRTC at 0.24. The number of accidents per one lakh km. stood at 2.20 in case of KSRTC and at 0.16 in case of UPSRTC in 1985-86. In the year 1994-95, the highest number of accidents per lakh km. has declined from 2.20 to 0.96 for CSTC and the minimum was 0.16 for APSRTC.

The above discussion makes it clear that during both the years 1985-86 and 1994-95, the relative performance of each SRTC differs with respect to various indicators of physical performance.

TABLE - V.1  
INDICATORS OF SIZE OF SRTCS- 1985-86.

Name of SRTCS	Average Buses Held	Total Staff	Effective Kms. Operated [In Lakhs]	Passenger Carried [In Lakhs]
1	2	3	4	5
APSRTC	8114	71830	8420.00	17687.43
ASMSTC	739	6200	353.48	527.95
BSRTC	1624	11089	472.35	219.86
CSTC	1177	14470	383.00	2575.74
DTC	5398	42183	3782.19	15939.73
GSRTC	7379	47919	6534.14	12150.88
KnSRTC	6510	44312	6234.00	14777.26
KSRTC	3155	32079	2303.18	2168.10
MPSRTC	2894	22564	2099.89	1839.81
MSRTC	11042	84754	9497.46	16928.71
NBSTC	320	4173	206.00	478.89
OSRTC	725	4863	473.45	362.01
PRTC	1056	5942	813.05	1314.09
RSRTC	2681	19120	2335.20	2109.43
UPSRTC	7175	48223	4443.75	3884.69
TRPTC	120	729	29.00	24.00
C.V.	87.08	86.03	100.24	109.61

Source : State Transport Undertakings; Profile & Performance, 1985-86, Published by the CIRT, Pune.

TABLE - V.2  
INDICATORS OF SIZE OF SRTC<sub>s</sub> - 1994-95

Name of SRTC <sub>s</sub>	Average Buses Held	Total Staff	Effective Kms. Operated [In Lakhs]	Passenger Travelled [In Lakhs]
1	2	3	4	5
APSRTC	15455	120632	17039.68	40461.09
ASMSTC	910	6454	407.00	703.33
BSRTC	1503	14664	359.39	155.32
CSTC	1250	12095	599.02	2775.24
DTC	3517	32808	2121.68	6362.77
GSRTC	8987	58732	9251.99	13381.00
KnSRTC	10086	62581	9826.90	22135.58
KSRTC	3498	26872	3197.70	9991.20
MPSRTC	2667	22805	1911.10	1183.04
MSRTC	15558	112820	15322.33	24953.00
NBSTC	971	6833	741.90	1183.40
OSRTC	834	7169	606.01	348.41
PRTC	1064	5851	1009.19	1291.98
RSRTC	4470	26214	4597.68	3050.34
UPSRTC	8230	55685	6343.97	3496.22
TRPTC	91	802	18.63	10.56
C.V.	101.06	100.59	116.10	117.33

Source : State Transport Undertakings: Profile & Performance,  
1994-95, Published by the CIRT, Pune.



TABLE - V.3

## INDICATORS OF PHYSICAL PERFORMANCE OF SRTC

[1985-86]

Name of SRTCs	Bus Staff Ratio	% of Fleet Utilization	Kms. Obtained Per Litre of Oil	Passenger carried Per Bus Per Day	No. of Break downs Per 10,000 Kms.	No. of Accidents Per 1 Lakh Km.	Vehicle Utilization Per Bus Per Day	Effective Km. Per Staff
1	2	3	4	5	6	7	8	9
APSRTC	0.11	93.00	4.75	639	0.62	0.20	304.00	0.12
ASHSTC	0.12	68.30	3.92	154	3.18	0.42	191.00	0.06
BSRTC	0.15	38.00	3.88	98	1.03	0.07	209.70	0.04
CSTC	0.08	55.20	2.51	1086	25.07	1.32	163.00	0.03
DTC	0.13	86.30	3.59	938	4.06	1.43	222.00	0.09
GSRTC	0.15	80.60	4.85	447	0.33	0.29	307.60	0.14
KnSRTC	0.15	90.90	4.12	684	0.24	0.28	288.70	0.14
KSRTC	0.10	73.30	3.66	885	1.60	2.20	273.00	0.07
MPSRTC	0.13	86.00	4.12	196	1.10	0.25	232.00	0.09
MSRTC	0.13	88.00	4.27	477	0.51	0.35	267.80	0.11
NBSTC	0.08	78.07	3.60	519	1.66	0.26	150.00	0.05
OSRTC	0.15	78.00	3.91	176	0.77	0.30	230.00	0.10
PRTC	0.18	90.40	3.93	374	1.08	0.34	233.00	0.14
RSRTC	0.14	89.80	4.59	240	0.34	0.25	266.00	0.12
UPSRTC	0.15	79.30	4.30	187	0.73	0.16	213.00	0.09
TRPTC	0.16	45.80	3.25	119	2.10	0.27	144.50	0.04
C.V.	20.86	21.11	14.21	67.20	83.45	80.03	21.56	40.79

Source : Estimated on the basis of data published in  
State Transport Undertakings: Profile & Performance,  
1985-86, Published by the CTRI, Pune.

TABLE - V.4

## INDICATORS OF PHYSICAL PERFORMANCE

[1994-95]

Name of SRTCs	Bus Staff Ratio	% of Fleet Utili- zation	Kms. Obtained Per Liter of Oil	Passenger carried Per Bus Per Day	No. of Break downs Per 10,000 Kms.	No. of Acci- dents Per 1 Lakh Km.	Vehicle Utiliz- ation Per Bus Per Day	Effective Km. Per Staff
1	2	3	4	5	6	7	8	9
APSRTC	0.13	96.60	5.03	743	0.36	0.16	302.10	0.14
ASMSTC	0.14	60.50	4.00	350	3.05	0.38	205.00	0.06
BSRTC	0.10	28.60	3.61	99	1.32	0.27	233.90	0.02
CSTC	0.10	68.80	3.86	884	15.25	0.96	131.30	0.05
DTC	0.11	65.80	3.98	754	0.43	0.61	165.30	0.06
GSRTC	0.15	85.80	4.84	418	0.64	0.29	331.00	0.16
KnSRTC	0.16	89.00	4.58	676	0.26	0.81	266.90	0.16
KSRTC	0.13	79.00	3.71	990	1.18	0.45	250.50	0.12
MPSRTC	0.12	81.50	4.17	149	1.26	0.17	196.30	0.08
MSRTC	0.14	91.50	4.61	480	0.38	0.28	269.80	0.14
NBSTC	0.14	78.80	3.91	424	2.37	0.28	209.30	0.11
OSRTC	0.12	72.90	4.00	157	0.63	0.17	199.10	0.08
PRTC	0.18	92.90	4.25	358	1.45	0.38	259.90	0.17
RSRTC	0.17	90.10	4.75	208	0.26	0.24	281.80	0.18
UPSRTC	0.15	87.50	4.51	133	0.40	0.19	211.20	0.11
TRPTC	0.11	63.70	4.00	88	4.95	0.43	56.10	0.02
C.V.	17.39	21.47	21.92	65.86	77.71	46.55	28.04	46.58

Source : Estimated on the basis of data published in  
State Transport Undertakings: Profile & Performance,  
1994-95, Published by the CIRT, Pune.

In the year 1994-95, the improvement in bus staff ratio is observed as compared to 1985-86 in case of ten SRTCs out of sixteen SRTCs under study. The SRTCs which experienced fall in the bus staff ratio are BSRTC, DTC, MPSRTC, OSRTC, UPSRTC & TRPTC.

Over a decade all SRTCs under study did not experience improvement in percentage of fleet utilization. The ASMSTC, BSRTC, DTC, MPSRTC & OSRTC, show fall in percentage of fleet utilization in 1994-95 as compared to 1985-86.

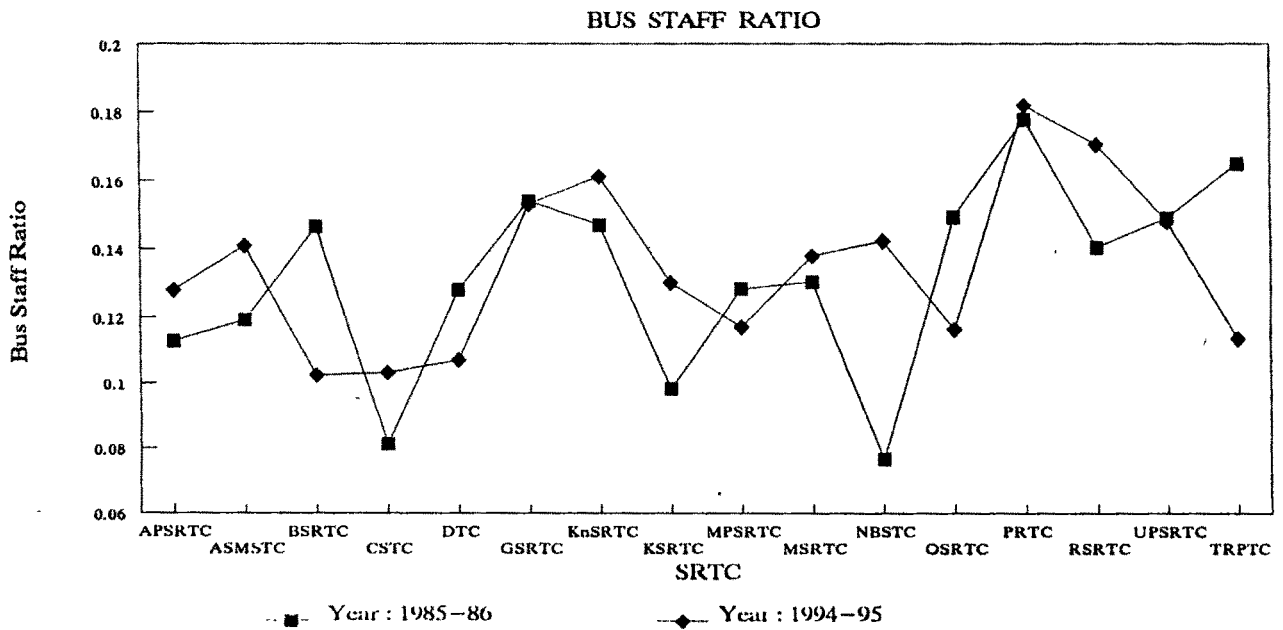
In case of kms. obtained per litre of oil only BSRTC experienced deterioration in 1994-95 as compared to 1985-86.

The performance of as many as seven SRTCs deteriorated in terms of breakdowns per ten thousand kms. in 1994-95 as compared to 1985-86. These SRTCs are BSRTC, CSTC, GSRTC, MPSRTC, NBSTC, PRTC & TRPTC. Moreover ASMSTC, KnSRTC, PRTC, UPSRTC experienced increase in accident rate during the period under consideration.

Looking at the performance of SRTCs in terms of vehicle utilization per bus per day, we observe that SRTCs like CSTC, DTC, GSRTC, KnSRTC and NBSTC experienced downward trend in it.

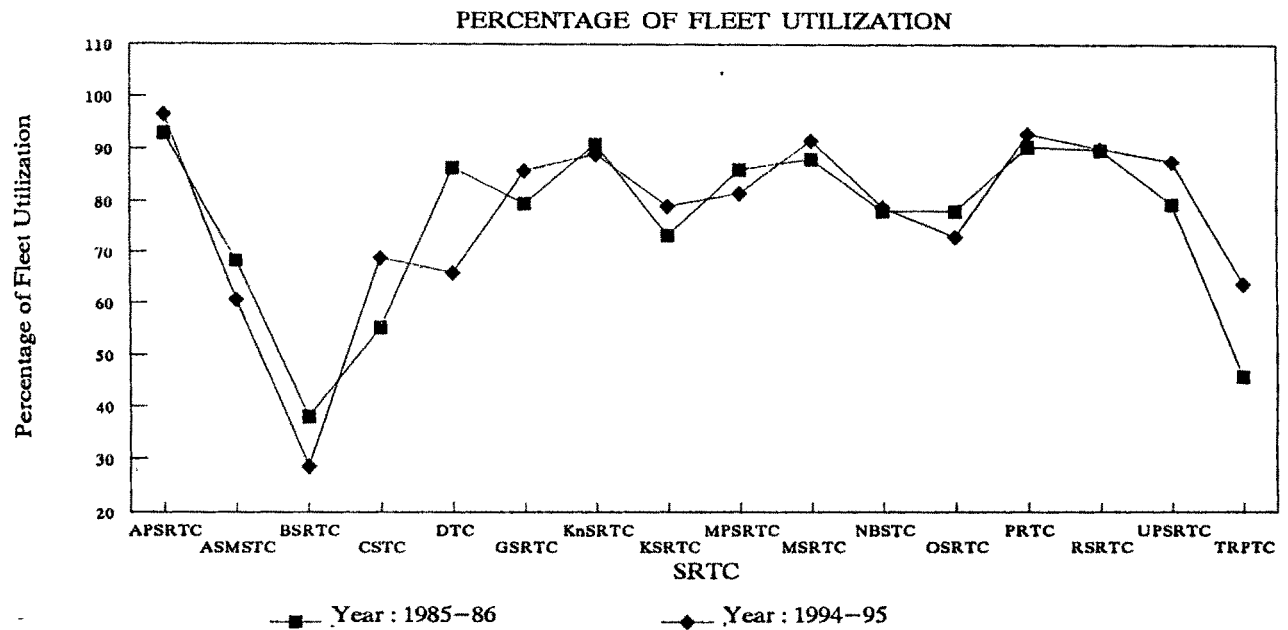
Moreover the effective kms. per staff has declined in 1994-95 as compared to 1985-86 in case of BSRTC, DTC, MPSRTC, NBSTC and TRPTC. At the same time MPSRTC and NBSTC experienced fall in passenger carried per bus per day during the period under consideration.

Graph - V.1



F-1 CGM

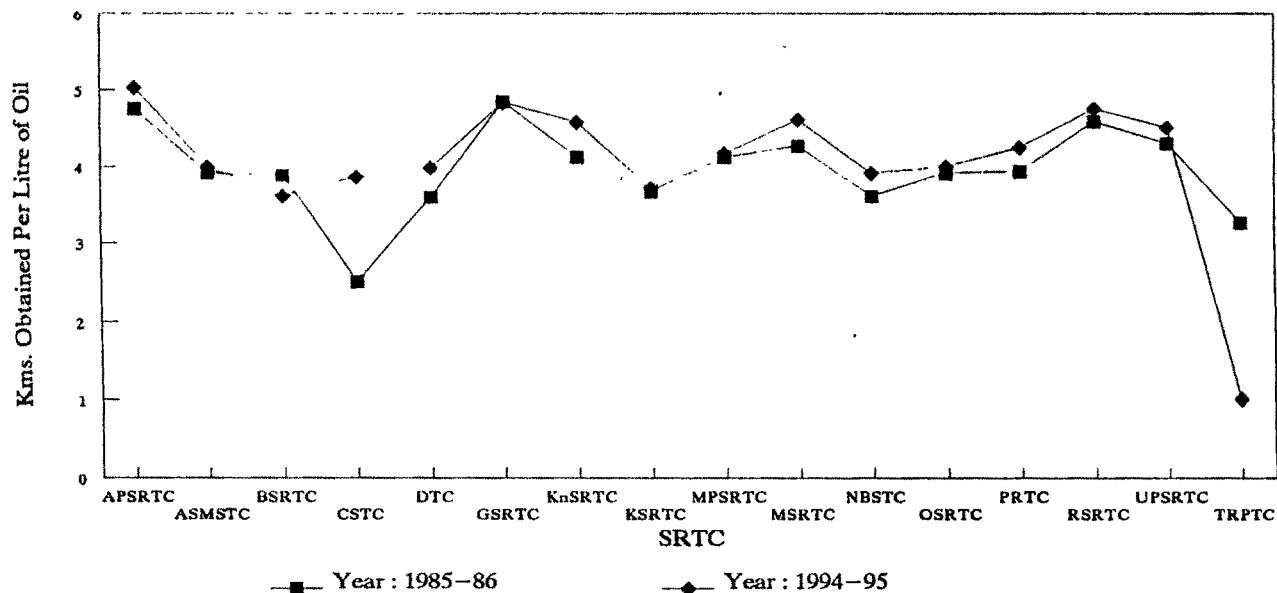
Graph - V.2



F-2.CGM

## Graph - V.3

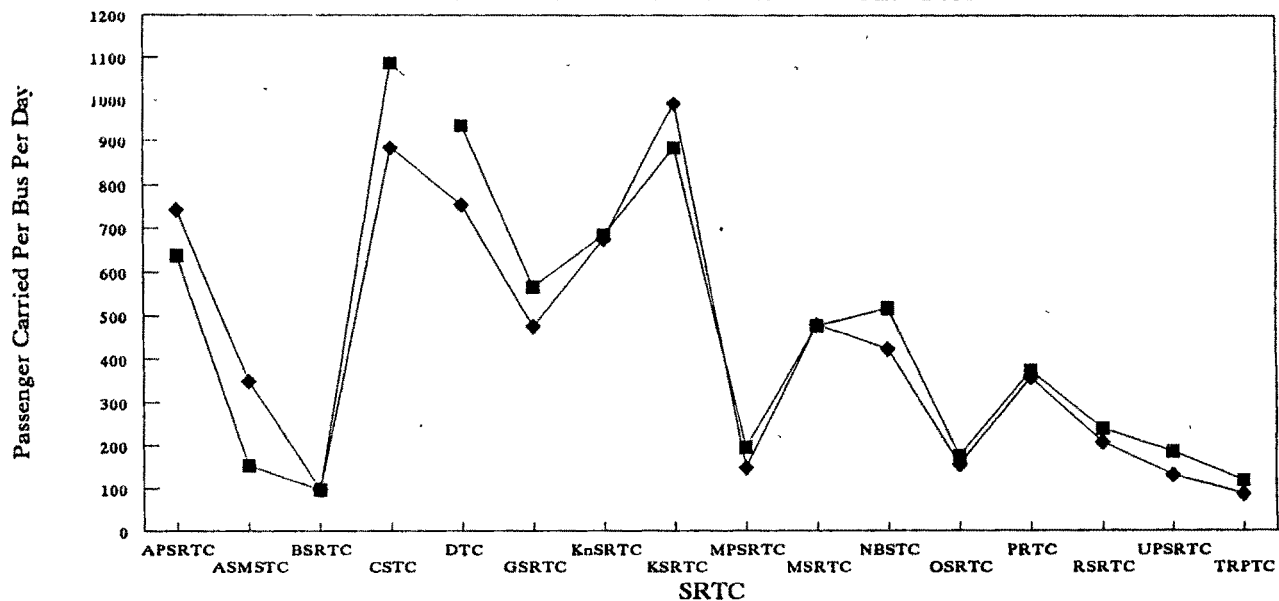
KMS. OBTAINED PER LITRE OF OIL



F-3.CGM

## Graph - V.4

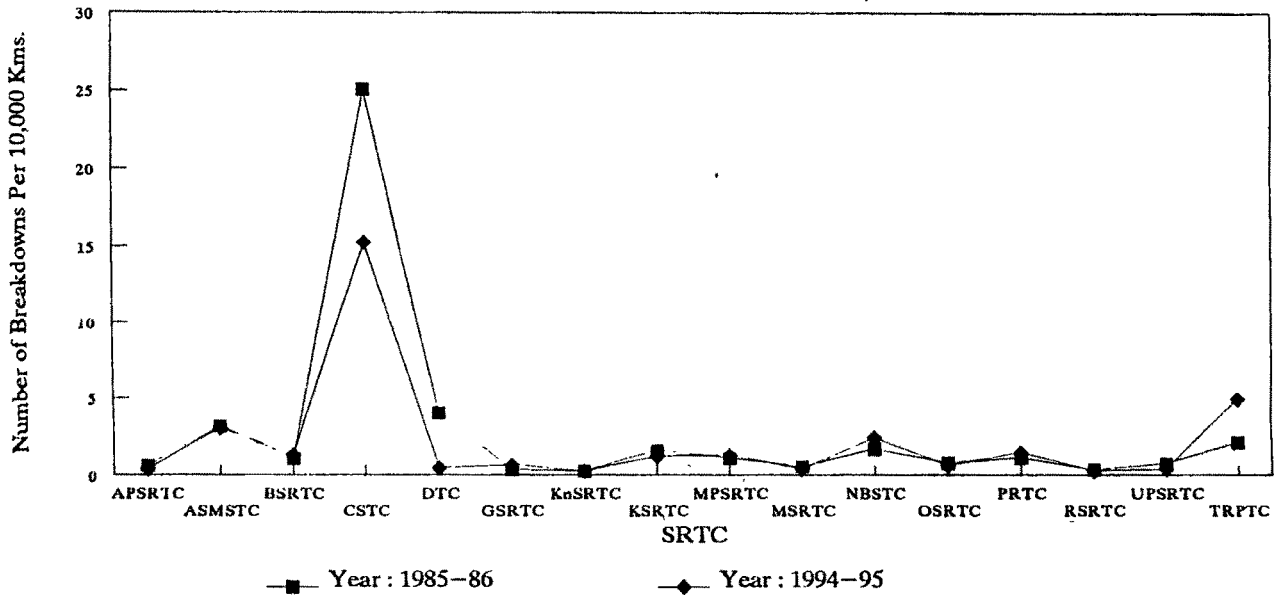
PASSENGER CARRIED PER BUS PER DAY



F-4.CGM

## Graph - V.5

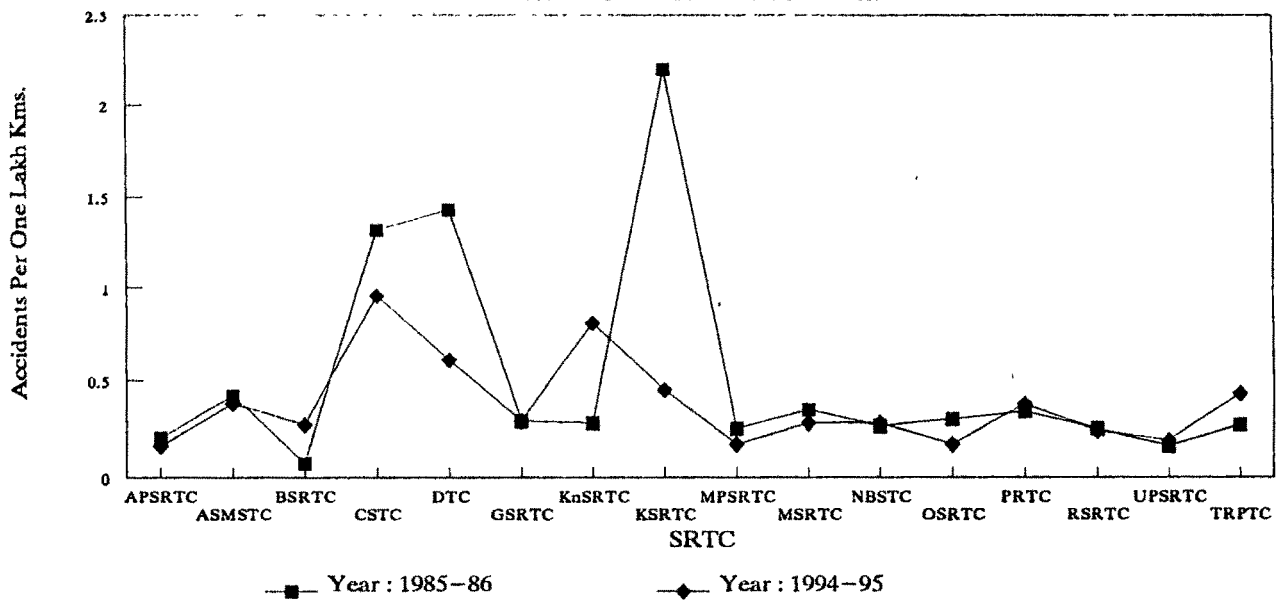
NUMBER OF BREAKDOWNS PER 10,000 KMS.



F-5.CGM

## Graph - V.6

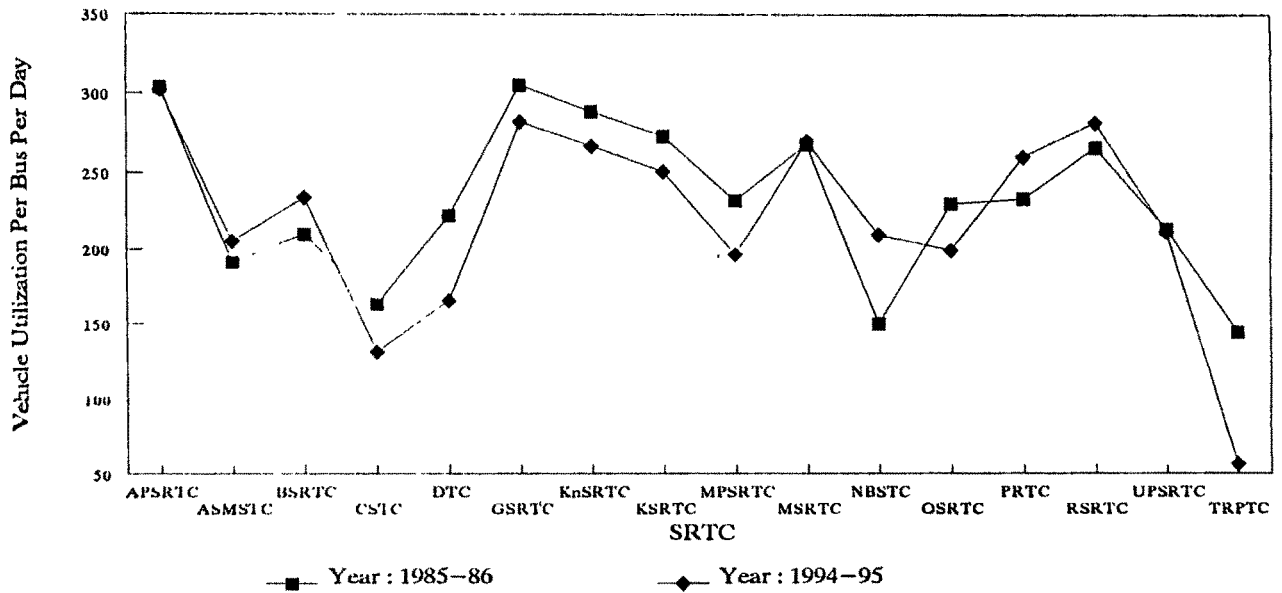
ACCIDENTS PER ONE LAKH KMS.



F-6.CGM

# Graph - V.7

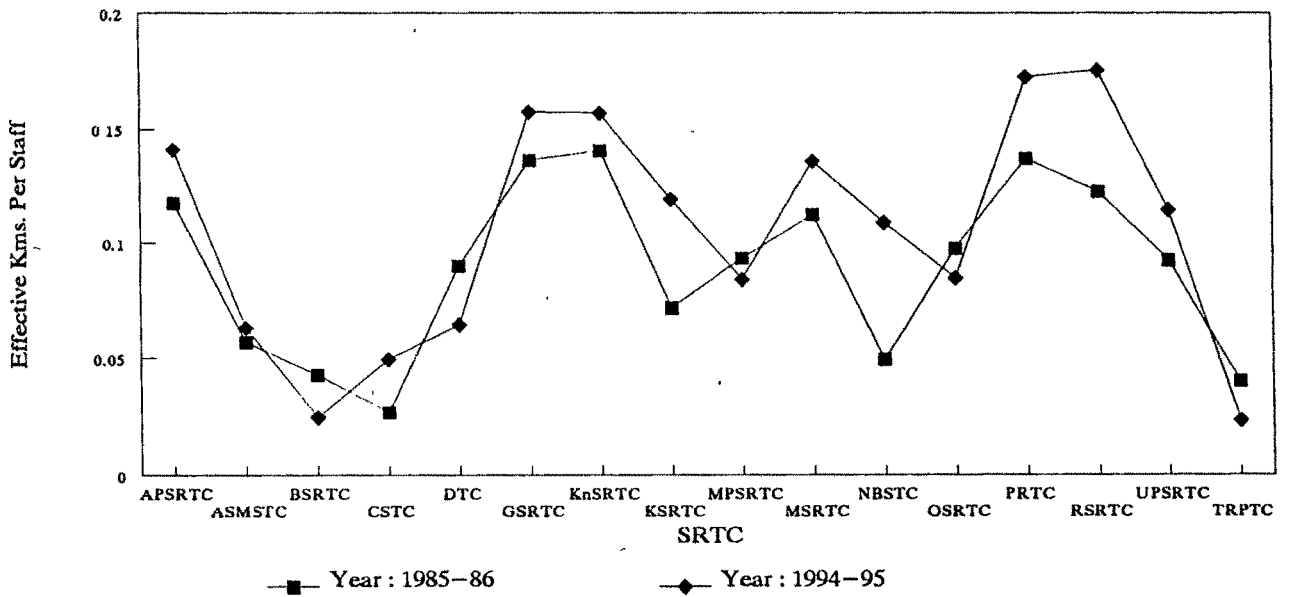
VEHICLE UTILIZATION PER BUS PER DAY



F-7.CGM

# Graph - V.8

EFFECTIVE KMS. PER STAFF



F-8.CGM

The Graphs V.1 to V.8 also make it clear that not even for a single indicator of physical performance, all SRTCs have experienced improvement in 1994-95 as compared to 1985-86.

Analysing the relative positions of SRTCs in terms of various indicators we find that in 1994-95 PRTC stood first in terms of bus staff ratio as against TRPTC in 1985-86. APSRTC continued to stand first in terms of percentage fleet utilization and kms. per litre of oil, accidents and vehicle Utilization per bus per day. In 1994-95, RSRTC, ranked first in terms of effective kms. per staff where as KSRTC carried highest number of passenger per bus per day.

TABLE - V.5  
RANK CORRELATION COEFFICIENT OF INDICATORS  
OF PHYSICAL PERFORMANCE

Indicator	RCC	t Value
Bus Staff Ratio	0.4588	1.6617
Percentage of Fleet Utilization	0.8588	6.2729
Kms. Per Litre of Oil	0.8495	6.0254
Inverse of Breakdowns per 10,000 kms.	0.6118	2.8937
Inverse of Accidents per 1 lakh km.	0.7868	4.7692
Vehicle Utilization Per Bus Per Day	0.8618	6.3559
Effective Kms. Per Staff	0.8838	7.0688
Passenger Carried Per Bus Per Day	0.9618	13.1394
Over All Index	0.8659	6.4765



The rank correlation coefficient for each indicator between two different years is estimated to examine whether the relative position of SRTC in 1994-95 differs significantly from the same in 1985-86 or not.

Looking at the estimated values of rank correlation coefficients with respect to each indicator of physical performance between 1985-86 and 1994-95 it is found that it is significantly high and statistically significant for all indicators except bus staff ratio. In case of bus staff ratio, the coefficient is very low i.e. 0.4588 and statistically insignificant which suggests that the ranking of various SRTCs in terms of bus staff ratio has changed significantly over a period of time. In case of remaining indicators, though value of rank correlation coefficient is very high ranging between 0.611764 and 0.961765, it is different from one implying there by some change in the ranking of SRTCs over a period of time.

#### **DEGREE OF VARIATIONS AMONG SRTCS :**

The above discussion makes it clear that the relative performance of various SRTCs vary with respect to each indicator. In the light of this it is essential to examine the degree of variations among SRTCs as far as these indicators are concerned. It is examined in terms of coefficient of variation. It is obvious from Tables - V.3 & V.4 that the variations are least

among SRTCs in 1985-86 in case of kms. per litre of oil where as severe disparities have been observed in case of number of breakdowns per ten thousand kms., accidents per one lakh km. and passenger carried per bus per day. The variations have declined among SRTCs with respect to bus staff ratio, passenger carried per bus per day, number of breakdowns per 10,000 kms., and number of accidents per lakh km. This shows that for remaining indicators the dispersion has increased among SRTCs with the passage of time.

#### **GROWTH RATES OF INDICATORS OF PHYSICAL PERFORMANCE :**

The trend in each indicator of physical performance has been estimated for each SRTC and Table - V.6 reveals their trend coefficients. As far as bus staff ratio is concerned, all divisions did not experience positive trend. The positive trend coefficient was statistically significant in case of APSRTC, ASMSTC, CSTC, KnSRTC, KSRTC, MSRTC, NBSRTC. Where as negative trend coefficients was statistically significant for DTC, MPSRTC and UPSRTC respectively out of eight indicators.

The positive growth rate of percentage of fleet utilization is observed by GSRTC and UPSRTC where as negative significant growth rate is realised by ASMSTC, MPSRTC and OSRTC. As far as kms. per litre of oil is concerned CSTC, KnSRTC, MSRTC, PRTC, RSRTC, UPSRTC and TRPTC found significant positive growth rate over a period of time. None of the SRTC experienced negative growth rate of kms. per litre of oil.

TABLE - V.6  
GROWTH RATE OF INDICATORS OF PHYSICAL PERFORMANCE

SRTC	Bus Staff Ratio	Percentage of Fleet Utilization	Km. Per Liter of Oil	Passenger Carried Per Bus/Day	Inverse of Breakdown Per 10,000 Kms.	Inverse of Accidents Per 1 lakh Km.	Vehicle Utilization Per Bus/Day	Effective Kms. Per Staff
1	2	3	4	5	6	7	8	9
APSRTC	0.001771* [16.83506]	0.205556 [0.817894]	0.024722 [1.822616]	12.02778* [4.533017]	-0.01764 [-1.9877]	-0.00014 [-0.01472]	1.35 [1.214105]	0.002471 [4.815351]
ASMSTC	0.002095* [5.484974]	-0.97986* [-3.19266]	0.001111 [0.050276]	19.25* [4.309578]	-0.02097 [-0.29078]	-0.01819 [-1.09785]	3.89611 [1.234244]	0.000363 [1.269689]
BSRTC	-0.00217 [-1.37707]	-1.64306 [-2.27081]	-0.02542 [2.04676]	0.555556 [0.83192]	0.04 [1.017913]	0.021806* [3.47065]	-2.14722 [-1.86866]	-0.0017 [-2.40368]
CSIC	0.002100* [3.090585]	1.733333 [1.988815]	0.125139* [5.017663]	11.91667 [0.31344]	-0.95597* [-2.47062]	-0.03708* [-2.57584]	0.099922 [0.040044]	0.002607* [15.57417]
DTC	-0.00254* [-3.49167]	-1.09444 [-1.2929]	0.033056 [1.687674]	-23.375 [1.12893]	-0.45883* [-4.97673]	-0.1044* [-10.2818]	-3.16111 [-2.51082]	-0.00264* [6.36587]
GSRTC	-0.00054 [-1.47348]	0.5625* [2.790086]	1.012639 [1.232226]	-11.875* [-3.46609]	0.021111* [2.404584]	-0.00083 [-0.1867]	4.123611* [4.406217]	0.001834* [4.028348]
KnSRTC	0.01369* [5.090428]	-0.05972 [-0.36017]	0.0043611* [6.710025]	-0.90278 [-0.25006]	0.00875 [1.602789]	0.072917* [4.077124]	0.330556 [0.202395]	0.001804* [4.316106]
KSRTC	0.013304* [8.58156]	-0.05972 [1.850966]	0.004583 [0.098398]	8.152778 [1.375784]	0.03042 [-1.25993]	-0.17944* [-5.12419]	4.872222 [5.249028]	0.004727* [9.7065]
MPSRTC	-0.0012* [-2.75143]	-0.84028* [-2.93008]	0.010139 [1.966282]	-3.15278 [-2.09305]	0.00513 [-0.15675]	-0.00486 [-0.25911]	-0.26806 [-0.38297]	-0.00087 [-1.64671]
MSRTC	0.001173* [4.696513]	0.720833 [0.42079]	0.044306* [6.017975]	1.069444 [0.46576]	-0.01625* [-2.90286]	-0.00611* [-2.4450]	2.581944 [2.218769]	0.002327* [3.80903]
NBSTC	0.007194* [6.299652]	-0.02153 [-0.02793]	0.062222 [0.467742]	- -	0.06667 [0.935350]	0.008611 [0.740311]	4.480556 [1.631789]	0.00672* 3.811995]
OSRTC	-0.00281 [1.7436]	-0.60889* [2.66368]	0.0175 [0.423702]	-1.55556 [-1.35035]	-0.01222* [-3.50786]	-0.01472 [-1.41625]	2.923611* [2.360744]	-0.00049 -0.55273]
PRTC	0.003 [0.918435]	0.329776 [1.272173]	0.032361* [6.74348]	-6.63889 [1.57491]	- -	1.026111 [1.628128]	2.756944* [3.786115]	0.003785* [5.622344]
RSRTC	0.002331 [0.906830]	0.02639 [-0.03845]	0.22361* [3.148802]	-1.88889 [-1.79573]	-0.00278 [-0.46159]	-0.00125 [-0.5447]	4.638889 [1.754662]	0.004776 [1.509394]
UPSRTC	-0.00027 [-0.52885]	0.819444* [3.026882]	0.027639* [5.211937]	-6.19444* [5.79958]	-0.02389 [-1.64326]	0.005417 [1.729414]	4.427778* [3.243982]	0.002326* [6.075458]
TRPTC	-0.08702 [-1.50252]	0.465 [0.39847]	0.02125* [3.0625939]	-4.84722* [-2.56629]	1.33444* [6.305494]	0.050417* [2.348003]	-2.13056 [-1.74758]	-0.00211 [2.71925]]

[i] Figures mark with the \* are statistically significant.  
[ii] Figures in the brackets are estimated 't' values.

The positive significant growth rate of passenger carried per bus per day is observed by APSRTC and ASMSTC and the negative significant growth rate by GSRTC and UPSRTC. The number of breakdowns per ten thousand km. has declined significantly in case of CSTC, DTC, MSRTC, OSRTC where as the same has increased significantly for GSRTC. Looking at the accidents per one lakh kms., the positive significant trend coefficient is observed by BSRTC and TRPTC where as negative trend coefficient was significant for CSTC, DTC, KSRTC and MSRTC. The positive trend coefficient of vehicle utilization per bus per day was significant for KSRTC, OSRTC, PRTC and UPSRTC where as negative significant trend coefficient was realised by BSRTC and DTC. Examining the trend coefficient of effective kms. per staff, it is observed that the positive significant trend coefficient was found for APSRTC, GSRTC, KnSRTC, KSRTC, MPSRTC, NBSRTC, PRTC, UPSRTC where as the negative trend coefficient was significant for BSRTC, DTC and TRPTC.

On the basis of this, it may be concluded that none of the SRTC experienced positive significant trend coefficient with respect to each indicator of physical performance and there by improvement in overall physical performance of SRTC. Moreover the sign of trend coefficient of each indicator with respect to different SRTCs did not remain same.

It should be noted here that the load factor is also an important indicator of physical performance. It is defined as

the percentage of passenger kms. to capacity kms. Higher the load factor, better the performance of SRTCs. The passenger km. is defined as Average Seating Capacity x Load Factor x Effective Kms. and therefore it is not included in the estimation of the single index of physical performance. However, it is to be noted here that in the year 1985-86 the load factor was 54% for OSRTC where as it was as high as 89.8% for TRPTC. It fluctuated between 50% and 70% for SRTCs like BSRTC, GSRTC, KnSRTC, MPSRTC, MSRTC, OSRTC and UPSRTC. For SRTCs like APSRTC, ASMSTC, CSTC, DTC and RSRTC it fluctuated between 70% to and 80%, where as it was more than 80% for DTC, KSRTC and TRPTC. During the year 1994-95 the load factor has improved for APSRTC, CSTC, KnSRTC, KSRTC, MPSRTC, OSRTC, RSRTC and UPSRTC. It was as high as 89.56% for CSTC and as low as 47.99% for GSRTC.

#### SINGLE INDEX OF PHYSICAL PERFORMANCE :

In order to arrive at the overall physical performance of various SRTCs, the single index of physical performance is estimated through method of ranking, method of indexing and method of principal component. Considering the single index of physical performance based on method of ranking, in 1985-86. KnSRTC stood first which was followed by GSRTC, APSRTC, RSRTC and MSRTC respectively. In 1994-95 APSRTC, GSRTC, RSRTC, PRTC and RSRTC occupied first five ranks respectively. This show that in the upper group SRTCs remain more or less same during both the years under consideration. Similarly SRTCs performing

TABLE - V.7  
SINGLE INDEX OF PHYSICAL PERFORMANCE

Name of SRTC's	1985-86				1994-95			
	Method of Rank	Method of Indexing	Method of Principal Components		Method of Rank	Method of Indexing	Method of Principal Components	
	Rank	Rank	Compo- site Index	Rank	Rank	Rank	Compo- site Index	Rank
1	2	3	4	5	6	7	8	9
APSRTC	3	3	3.90	4	1	1	5.10	2
ASMSTC	15	15	-2.96	12	13	13	-2.67	13
BSRTC	12	6	-2.98	13	14	15	-5.89	15
CSTC	16	14	-7.96	16	15	14	-4.81	14
DTC	11	10	-1.29	10	12	9	-2.62	12
GSRTC	2	2	5.72	1	3	5	3.67	4
KnSRTC	1	1	5.65	2	5	3	4.71	3
KSRTC	10	12	-1.52	11	8	7	0.17	8
MPSRTC	8	11	0.44	7	11	12	-1.19	10
MSRTC	6	5	2.67	5	4	4	3.34	6
NBSTC	13	13	-4.46	14	9	11	-0.59	9
OSRTC	9	9	0.49	9	10	10	-1.27	11
PRTC	5	7	2.32	6	6	8	3.53	5
RSRTC	4	4	4.43	3	2	2	5.92	1
UPSRTC	7	8	0.84	8	7	6	2.03	7
TRPTC	14	16	-5.28	15	16	16	-9.45	16

TABLE - V.8

RELATIVE PHYSICAL PERFORMANCE OF SRTCS  
[1985-86]

Method of Ranking First Five	Method of Indexing First Five	Principal Component First Five
1985-86		
KnSRTC	KnSRTC	GSRTC
GSRTC	GSRTC	KnSRTC
APSRTC	APSRTC	RSRTC
RSRTC	RSRTC	APSRTC
PRTC	MSRTC	MSRTC
1994-95		
APSRTC	APSRTC	RSRTC
RSRTC	RSRTC	APSRTC
GSRTC	KnSRTC	KnSRTC
MSRTC	MSRTC	GSRTC
KnSRTC	GSRTC	PRTC
Method of Ranking Bottom Five	Method of Indexing Bottom Five	Principal Component Bottom Five
1985-86		
CSTC	TRPTC	CSTC
ASMSTC	ASMSTC	TRPTC
TRPTC	CSTCTC	NBSTC
NBSTC	NBSTC	BSRTC
BSRTC	KSRTC	ASMSTC
1994-95		
TRPTC	TRPTC	TRPTC
BSRTC	CSTC	BSRTC
CSTC	BSRTC	CSTC
ASMSTC	ASMSTC	ASMSTC
DTC	MPSRTC	DTC

very poorly in 1985-86 were TRPTC, BSRTC, UPSRTC, OSRTC & ASMSTC. In 1994-95 the SRTCs performing very poorly were TRPTC, ASMSTC, BSRTC, CSTC & DTC. The estimated rank correlation coefficient between ranking of SRTCs at two different point of time shows that though there are some minor changes in the relative position of various SRTCs, there are not significant changes because value of rank correlation coefficient is very high i.e. 0.86588 which is also significant.

The method of indexing shows that in 1985-86 KnSRTC stood first which was followed by GSRTC, APSRTC, RSRTC, & PRTC respectively where as SRTCs performing very poorly were TRPTC, BSRTC, CSTC, ASMSTC and MPSRTC. In 1994-95 the five SRTCs belonging in upper group remain more or less same though we observe changes in their ranking within the group. Similarly SRTCs performing very poorly were CSTC, ASMSTC, TRPTC, NBSTC & BSRTC in 1985-86. In the year 1994-95 the same SRTCs continued to remain in bottom group.

The Table - V.7 mirrors the relative physical performance of various State Road Transport Corporations in the light of composite index estimated through Principal Component for the years 1985-86 and 1994-95. It is obvious from the table that in 1985-86. Gujarat State Road Transport Corporation appeared with highest composite index i.e. 5.821899 followed by Karnataka Road Transport Corporation i.e. 5.045126. It tends to suggest that the among all SRTCs, the physical performance of



GSRTC was the best which was followed by Karnataka Road Transport Corporation. The third and the fourth positions were occupied by Rajasthan Road Transport Corporation and Andhra Pradesh Road Transport Corporation respectively. The Calcutta State Transport Corporation performed very poor as its index was minimum occupying 16th rank. The bottom group includes BSRTC, TRPTC, ASMSTC and NBSRTC.

Looking at the relative position of various State Road Transport Corporations in 1994-95, the first five road transport corporations in terms of physical performance have remained the same. These are APSRTC, GSRTC, KnSRTC, PRTC and RSRTC. However in 1994-95 the relative position of these five SRTCs have changed. In 1994-95 RSRTC performed well and it occupied the 1st Rank with composite index of 5.918574 as against GSRTC in 1985-86, which occupied the 4th rank in 1994-95. Similarly BSRTC, ASMSTC, CSTC & TRPTC remained in the bottom group during both these reference years.

On the basis of these three methods i.e. method of ranking, method of indexing and method of principal component of estimating single index of physical performance it may be said that though there are minor variations in the relative position of various SRTCs, the first four SRTCs remain the same in 1985-86 with respect to three different methods and they are GSRTC, KnSRTC, RSRTC and APSRTC. Not only that but in 1994-95, these SRTCs continue to occupy first four positions when the method of principal component is followed.

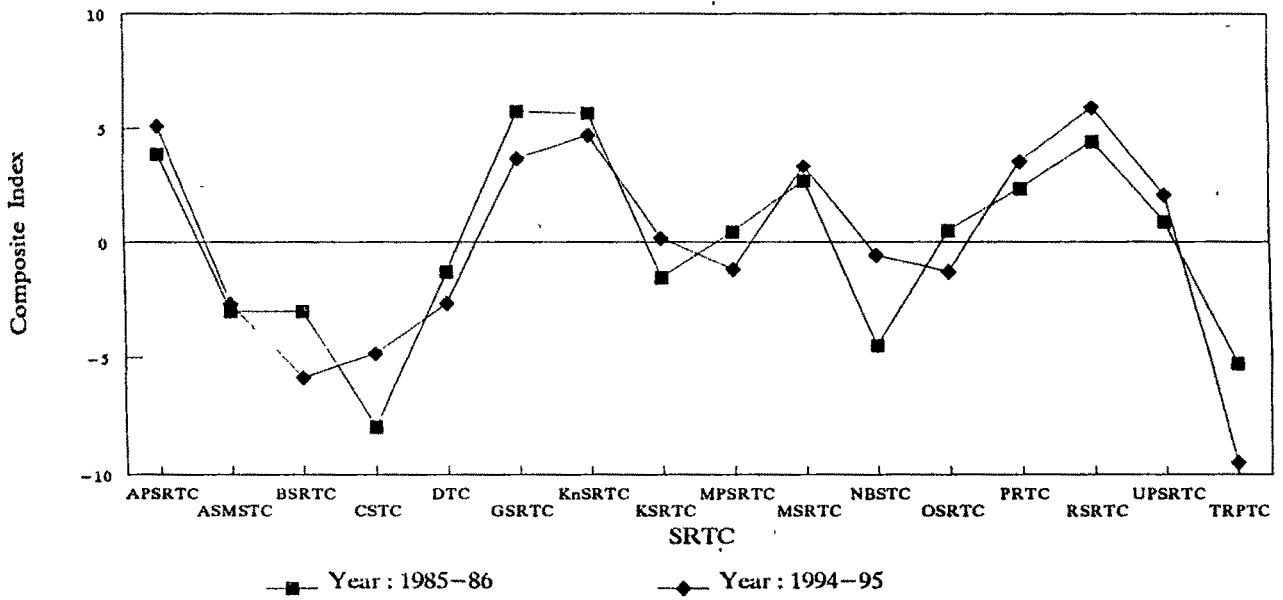
On the estimation of Rank correlation coefficients for 1985-86 between different methods of deriving single index of physical performance, it is found that it was as high as 0.967647, 0.873529 and 0.905882 between method of ranking and method of indexing, between method of ranking and method of principal component and method of indexing and method of principal component respectively.

In the year 1994-95, the estimated rank correlation coefficients were 0.947059, 0.955882 and 0.976471 between method of ranking and method of indexing, method of ranking and method of principal component and method of indexing and method of principal component. It is clear that all these rank correlation coefficients are very high and statistically significant though all are less than one. This implies that the one to one relation is missing with respect to various methods applied to arrive at the single index of physical performance but ranking of various State Road Transport Corporation with respect to the physical performance does not differ significantly with the change in the method applied.

It is also important to note here that the relative position of various State Road Transport Corporations have not changed significantly over a period time. The rank correlation coefficients are estimated between ranking of SRTC for different years with respect to each method of estimating the single index

# Graph - V.9

## SINGLE INDEX PHYSICAL PERFORMANCE



F-9.CGM

of physical performance. The estimated rank correlation coefficients are 0.891177, 0.7882353 and 0.972059 with respect to method of ranking, method of indexing and method of principal component. It is obvious that these coefficients are high and therefore it can be said that the relative position of SRTC has not changed significantly over a period of time.

The Graph - V.9 makes it clear that the overall physical performance of all SRTCs did not improve in 1994-95 as compared to the year 1985-86. The SRTCs like APSRTC, CSTC, MSRTC, NBSTC, PRTC, RSRTC and UPSRTC registered an improvement in overall physical performance in 1994-95 as compared to the year 1985-86.

#### **THE STRUCTURE OF THE STAFF EMPLOYED :**

In this chapter an attempt is also made to examine the structure of staff employed in various State Road Transport corporations. The structure of the staff is mainly examined in terms of traffic staff, workshop staff and administrative staff. Looking at the Table - V.9 and V.10 it is observed that it differs significantly from one SRTC to another. However it should be noted here that the share of the traffic staff in total staff employed was highest during both the years under study for all SRTCs. It was 42.5% in case of MPSRTC and 71.33% in case of CSTC in 1985-86. The share of traffic staff has declined during

TABLE - V.9  
BREAK UP OF STAFF

[1985-86]

Name of SRTC	Traffic Staff	Workshop & maintenance Staff	Administ- rative Staff	Total Staff
1	2	3	4	5
APSRTC	41493 [60.77]	16216 [23.75]	10571 [15.48]	68280
ASMSTC	3129 [57.29]	1572 [28.78]	761 [13.93]	5462
BSRTC	7672 [61.87]	2920 [23.55]	1808 [14.58]	12400
CSTC	1187 [71.33]	363 [21.81]	114 [6.85]	1664
DTC	26421 [64.74]	8112 [19.88]	6277 [15.38]	40810
GSRTC	31878 [65.60]	12763 [26.26]	3956 [8.14]	48597
KnSRTC	23296 [59.94]	9751 [25.09]	5816 [14.97]	38863
KSRTC	19097 [59.88]	8033 [25.19]	4764 [14.94]	31894
MPSRTC	9239 [42.50]	8146 [37.47]	4354 [20.03]	21739
MSRTC	50395 [57.93]	23079 [26.53]	13520 [15.54]	86994
NBSTC	N.A.	N.A.	N.A.	N.A.
OSRTC	2528 [51.98]	1177 [24.20]	1158 [23.81]	4863
PRTC	3748 [62.14]	1291 [21.40]	993 [16.46]	6032
RSRTC	10698 [60.71]	4304 [24.43]	2619 [14.86]	17621
UPSRTC	32009 [65.74]	13648 [28.03]	3033 [6.23]	48690
TRPTC	N.A.	N.A.	N.A.	N.A.

Source: State Transport Undertakings : Profile and Performance-1985-86, Published by the CIRT, Pune.

TABLE - V.10  
BREAK UP OF STAFF

[1994-95]

Name of SRTC	Traffic Staff	Workshop & maintenance Staff	Administ- rative Staff	Total Staff
1	2	3	4	5
APSRTC	86124 [71.39]	18669 [15.48]	15839 [13.13]	120632
ASMSTC	N.A.	N.A.	N.A.	N.A.
BSRTC	5211 [51.55]	2276 [22.51]	2622 [25.94]	10109
CSTC	7009 [57.95]	2364 [19.55]	2722 [22.51]	12095
DTC	20766 [63.30]	6918 [21.09]	5124 [15.62]	32808
GSRTC	42593 [72.52]	10529 [17.93]	5610 [9.55]	58732
KnSRTC	43676 [69.79]	12004 [19.18]	6901 [11.03]	62581
KSRTC	16522 [61.48]	6431 [23.93]	3919 [14.58]	26872
MPSRTC	11125 [48.78]	6231 [27.32]	5449 [23.89]	22805
MSRTC	72014 [63.83]	21897 [19.41]	18909 [16.76]	112820
NBSTC	4450 [65.13]	1704 [24.94]	679 [9.94]	6833
OSRTC	4106 [57.27]	1441 [20.10]	1622 [22.63]	7169
PRTC	3558 [60.81]	1111 [18.99]	1182 [20.20]	5851
RSRTC	17672 [67.41]	4802 [18.32]	3740 [14.27]	26214
UPSRTC	37323 [67.03]	14936 [26.82]	3426 [6.15]	55685
TRPTC	440 [54.86]	192 [23.94]	170 [21.20]	802

Source: State Transport Undertakings; Profile & Performance  
- 1994-95, Published by CIRT, Pune.

1994-95 in case of BSRTC, CSTC, DTC and PRTC. The share of administrative staff was minimum i.e. 6.23% for UPSRTC in 1985-86 and it was as high as 23.81% in case of OSRTC. During the period 1994-95 the share of administrative staff employed was as high as 26% for BSRTC. This shows that the relative staff employed varies from one SRTC to other.

#### FINANCIAL PERFORMANCE OF SRTCS :

##### Expenditure of SRTCs

The financial performance of SRTCs is examined in terms of total expenditure, structure of expenditure, total revenue, structure of total revenue, revenue, expenditure and margin per effective kms, elasticity of earnings, social surplus, value added etc. The Tables - V.11 and V.12 reveal total expenditure incurred by different SRTCs during 1985-86 and 1994-95 respectively. In the year 1985-86 the expenditure of MSRTC was Rs. 46915.26 lakhs which was highest and it was followed by APSRTC where as minimum expenditure was incurred by TRPTC. In the year 1994-95, the similar picture arises.

The Tables - V.11 and V.12 also reveal structure of expenditure of various SRTCs for the years 1985-86 and 1994-95. The structure of expenditure varies significantly from one SRTC to other. The total expenditure of SRTC consists of personnel expenditure, expenditure on material, taxes, payment of interest, depreciation and miscellaneous expenditure. The share of personnel expenditure in total expenditure has fluctuated

TABLE - V.11

STRUCTURE OF EXPENDITURE OF SRTCS

1985-86

[Rs. in Lakhs]

Name of SRTCs	Personnel Expendi- ture	Mate- rial Cost	Total Taxes	Interest Paid on Capital	Misc. Expe.	Deprec- iation Cost	Total Cost
1	2	3	4	5	6	7	8
APSRTC	12743.30 [36.58]	11446.12 [32.85]	4089.40 [11.74]	1302.77 [3.74]	1621.97 [4.66]	3637.54 [10.44]	34841.30
ASMSTC	889.83 [45.22]	634.07 [32.22]	42.90 [2.18]	180.13 [9.15]	54.51 [2.77]	166.23 [8.45]	1967.67
BSRTC	1102.56 [33.40]	777.78 [23.56]	172.36 [5.22]	740.45 [22.43]	161.23 [4.88]	346.76 [10.50]	3301.14
CSTC	2098.37 [45.64]	1301.59 [28.31]	43.37 [0.94]	485.32 [10.56]	106.31 [2.31]	562.79 [12.24]	4597.75
DTC	7968.49 [30.47]	4893.91 [18.71]	337.74 [1.29]	8855.54 [33.86]	3031.01 [11.59]	1068.25 [4.08]	26154.94
GSRTC	8764.85 [31.10]	7820.99 [27.74]	5707.07 [20.25]	1111.20 [3.94]	2333.29 [8.28]	2449.20 [8.69]	28186.21
KnSRTC	7954.84 [29.43]	10958.61 [40.55]	3153.31 [11.67]	1278.39 [4.73]	1181.57 [4.37]	2499.06 [9.25]	27025.78
KSRTC	4797.82 [39.38]	4335.94 [35.58]	940.73 [7.72]	808.54 [6.64]	612.12 [5.02]	689.71 [5.66]	12184.91
MPSRTC	2343.29 [24.77]	4091.12 [43.24]	1347.95 [14.25]	791.03 [8.36]	298.77 [3.16]	589.16 [6.23]	9461.32
MSRTC	16513.06 [35.20]	15121.33 [32.23]	7723.72 [16.46]	1207.39 [2.57]	1842.13 [3.93]	4507.63 [9.61]	46915.26
NBSTC	N.A.	N.A.	N.A.	N.A.	N.A.	-	N.A.
OSRTC	536.00 [22.42]	794.00 [33.21]	197.00 [8.24]	227.00 [9.49]	502.00 [21.00]	135.00 [5.65]	2391.00
PRTC	1081.40 [30.26]	1387.31 [38.82]	270.43 [7.57]	437.19 [12.23]	198.09 [5.54]	199.48 [5.58]	3573.90
RSRTC	2779.97 [27.50]	3274.09 [32.39]	2370.03 [23.44]	344.81 [3.41]	862.30 [8.53]	477.87 [4.73]	10109.07
UPSRTC	5383.99 [31.56]	5241.84 [30.72]	373.05 [2.19]	1301.32 [7.63]	3132.10 [18.36]	1628.53 [9.55]	17060.83
TRPTC	93.43 [42.93]	63.00 [28.95]	2.25 [1.03]	13.95 [6.41]	18.92 [8.69]	26.10 [11.99]	217.65

- Figures in the brackets represent percentage share.

Source : State Transport Undertakings Profile & Performance -  
1985-86 published by the CIRT, Pune.



TABLE - V.12

STRUCTURE OF EXPENDITURE OF SRTCS

1994-95

[Rs. in Lakhs]

Name of SRTCS	Personnel Expendi- ture	Mate- rial Cost	Total Taxes	Interest Paid on Capital	Misc. Expe.	Deprec- iation Cost	Total Cost
1	2	3	4	5	6	7	8
APSRTC	57011.00 [42.08]	44610.00 [32.93]	12678.00 [9.36]	2259.00 [1.67]	5492.00 [4.05]	13435.00 [9.92]	135485.50
ASMSTC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BSRTC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
CSTC	5478.00 [55.92]	2925.00 [29.86]	34.00 [0.35]	260.00 [2.65]	360.00 [3.67]	740.00 [7.55]	9797.00
DTC	15228.29 [30.95]	6805.48 [13.83]	2033.28 [4.13]	22511.53 [5.75]	1032.40 [2.10]	1590.88 [3.23]	49201.86
GSRTC	28636.15 [37.51]	22823.05 [29.90]	10814.89 [14.17]	2466.2 [3.23]	7585.60 [9.94]	4004.82 [5.25]	76330.80
KnSRTC	30130.80 [36.23]	28642.13 [34.44]	10443.75 [12.56]	3470.90 [4.17]	3555.42 [4.28]	6916.42 [8.32]	83159.42
KSRTC	10997.91 [38.15]	10393.74 [36.06]	2269.80 [7.87]	2316.70 [8.04]	1109.96 [3.85]	1737.72 [6.03]	28825.83
MPSRTC	6513.53 [33.42]	8040.34 [41.26]	1958.59 [10.05]	1166.27 [5.98]	895.50 [4.60]	913.74 [4.69]	19487.97
MSRTC	55168.77 [39.22]	43779.06 [31.12]	23666.24 [16.82]	2317.45 [1.65]	5172.68 [3.68]	10563.01 [7.51]	140667.20
NBSTC	2725.38 [40.98]	2333.70 [35.09]	2.18 [0.03]	560.00 [8.42]	479.56 [7.21]	550.00 [8.27]	6650.82
OSRTC	1970.00 [39.15]	1990.00 [39.55]	333.00 [6.62]	297.00 [5.90]	102.00 [2.03]	340.00 [6.76]	5032.00
PRTC	3064.61 [33.12]	2715.64 [29.35]	2512.57 [27.16]	42.28 [0.46]	382.70 [4.14]	533.87 [5.77]	9251.67
RSRTC	11261.66 [30.68]	12044.78 [32.82]	6477.94 [17.65]	1213.07 [3.30]	2972.84 [8.10]	2734.29 [7.45]	36704.58
UPSRTC	22445.45 [39.81]	17702.83 [31.40]	8046.21 [14.27]	1701.65 [3.02]	3018.60 [5.35]	3464.66 [6.15]	56379.40
TRPTC	310.90 [68.98]	68.14 [15.12]	2.00 [0.44]	0.00 [0.00]	19.64 [4.36]	50.00 [11.09]	450.68

- Figures in the brackets represent percentage share.

Source : State Transport Undertakings Profile & Performance -  
1994-95 published by the CIRT, Pune.

significantly between 22.42% in case of OSRTC and 45.64% for CSTC. As far as material cost is concerned, its share was as low as 18.71% for DTC and highest at 43.24% for MPSRTC. But the dispersion is narrowed down, when the combined share of material expenditure and personnel expenditure in total expenditure is examined. The burden of tax also differs from SRTC to SRTC. It was as low as 1.03% in case TRPTC, where as highest tax share is observed for RSRTC.

In the year 1994-95, the relative share did not remain constant. The important thing to be noted in this connection is that the share of personnel expenditure in total expenditure has increased significantly in 1994-95 as compared to the year 1985-86 for majority of SRTCs. It was as high as 68.98% for TRPTC where as lowest share is observed at 30.95% for DTC. The maximum share of taxes has increased from 23.44% in case of RSRTC in 1985-86 to 27.16% for PRTC in 1994-95, where as minimum share stood at 0.03% for NBSRTC. The burden of tax has increased for DTC, KnSRTC, KSRTC, MSRTC, PRTC and UPSRTC during the period under consideration where as it has declined for remaining SRTCs under study..

This makes it obvious that the structure of expenditure varies with respect to various SRTCs and it has also under gone a change with the passage of time for a given SRTC.

#### **REVENUE OF SRTCS :**

The revenue of various SRTCs have been examined at two different point of time and it is observed from Table - V.13

that the total revenue of MSRTC was highest in 1985-86 which stood at Rs. 45224.61 lakhs where as the minimum revenue is observed in case of TRPTC of Rs.108.56 lakhs. In the year 1994-95 the total revenue of all SRTCs have increased by significant amount. Looking at the share of operating revenue and non-operating revenue in total revenue, the more or less similar picture emerges for all SRTCs for both the years 1985-86 and 1994-95. The share of operating revenue is very high which varies between 78% and 98% in 1994-95. In the year 1985-86, the share of non-operating revenue was as high as 22% in case of CSTC where as in 1994-95 it was again around 22% in case of TRPTC. On the basis of this, one would like to conclude that the operating revenue constituted the major share in the earning of SRTCs.

The Table - V.15 represents profit/loss incurred by SRTCs for the years 1985-86 and 1994-95. It is observed that in 1985-86. APSRTC and RSRTC incurred profit where as remaining SRTCs incurred losses. In the year 1994-95 the profit making SRTCs were APSRTC, KSRTC and RSRTC. The profit/loss before tax is estimated for all SRTCs for the years 1985-86 and 1994-95. The profit before tax is also negative for many of the SRTCs i.e. ASMSTC, BSRTC, CSTC, DTC, KSRTC, OSRTC, PRTC, and TRPTC. This indicates poor financial performance of SRTCs. The highest amount of profit was earned by MSRTC in 1985-86 which was followed by APSRTC. In the year 1994-95 the above said SRTCs continued to show negative profit, and losses were maximum for DTC during both the years under study.

TABLE - V.13  
OPERATING & NON-OPERATING REVENUE OF SRTCS  
1985-86 [Rs.in Lakhs]

Name of SRTC	Operating Revenue	Non Operating Revenue	Total Revenue
1	2	3	4
APSRTC	34903.31 [97.03]	1068.01 [2.97]	35971.32
ASMSTC	1267.91 [94.54]	73.21 [5.46]	1341.12
BSRTC	1529.16 [93.11]	113.08 [6.89]	1642.24
CSTC	1421.63 [77.12]	421.88 [22.88]	1843.51
DTC	8078.33 [95.46]	383.90 [4.54]	8462.23
GSRTC	22334.14 [93.80]	1476.69 [6.20]	23810.63
KnSRTC	24860.73 [97.07]	751.54 [2.93]	25612.27
KSRTC	9982.36 [97.87]	217.06 [2.13]	10199.42
MPSRTC	7938.89 [97.32]	218.95 [2.68]	8157.84
MSRTC	44009.46 [97.31]	1215.15 [2.69]	45224.61
NBSTC	N.A. -	N.A. -	N.A.
OSRTC	1633.00 [95.50]	77.00 [4.50]	1710.00
PRTC	2059.12 [96.58]	72.82 [3.42]	2131.94
RSRTC	10092.70 [98.28]	176.75 [1.72]	10269.45
UPSRTC	15478.80 [96.74]	522.20 [3.26]	16001.00
TRPTC	97.00 [89.35]	11.56 [10.65]	108.56

- Figures in the brackets represent percentage share.  
Source : State Transport Undertakings Profile & Performance-  
1985-86 published by the CIRT, Pune.

TABLE - V.14  
OPERATING & NON-OPERATING REVENUE OF SRTCS  
1994-95 [Rs.in Lakhs]

Name of SRTC	Operating Revenue	Non Operating Revenue	Total Revenue
1	2	3	4
APSRTC	131692.00 [96.30]	5063.00 [3.70]	136755.00
ASMSTC	N.A.	N.A.	N.A.
BSRTC	N.A.	N.A.	N.A.
CSTC	4159.89 [97.16]	121.79 [2.84]	4281.68
DTC	16851.62 [92.22]	1421.20 [7.78]	18272.82
GSRTC	66113.69 [97.17]	1923.45 [2.83]	68037.14
KnSRTC	70409.23 [92.41]	5785.03 [7.59]	76194.26
KSRTC	28033.91 [97.22]	801.76 [2.78]	28835.67
MPSRTC	15436.27 [97.24]	438.28 [2.76]	15874.55
MSRTC	139310.90 [97.37]	3761.60 [2.63]	143072.00
NBSTC	4311.26 [99.22]	33.93 [0.78]	4345.19
OSRTC	3790.00 [89.64]	438.00 [10.36]	4228.00
PRTC	8935.79 [97.33]	245.56 [2.67]	9181.35
RSRTC	37852.77 [97.13]	1117.23 [2.87]	38970.00
UPSRTC	51977.99 [97.87]	1129.56 [2.13]	53107.55
TRPTC	123.96 [78.08]	34.80 [21.92]	158.76

- Figures in the brackets represent percentage share.  
Source : State Transport Undertakings Profile & Performance  
- 1994-95, published by the CIRT, Pune.

TABLE - V.15  
PROFIT OF SRTCS

[Rs. in lakhs]

Name of SRTCS	Profit/Loss of SRTCS		Profit/Loss of SRTCS Excluding Tax	
	1985-86	1994-95	1985-86	1994-95
1	2	3	4	5
APSRTC	1130.22	1270.00	5219.62	13948.00
ASMSTC	-626.55	-1985.32	-583.65	-1985.32
BSRTC	-1658.90	-3105.68	-1486.54	-3105.68
CSTC	-2754.24	-5515.52	-2710.87	-5481.52
DTC	-17692.70	-30929.04	-17354.96	-28895.76
GSRTC	-4375.58	-7755.58	1331.49	3059.31
KnSRTC	-1413.51	-6965.16	1739.80	3478.59
KSRTC	-1985.48	9.84	-1044.75	2279.64
MPSRTC	-1303.48	-3613.42	44.47	-1654.83
MSRTC	-1690.65	2405.31	6033.07	26071.55
NBSTC	N.A.	-2305.63	N.A.	-2303.45
OSRTC	-681.00	-804.00	-484.00	-471.00
PRTC	-1461.98	-70.32	-1191.55	2442.25
RSRTC	160.38	2265.42	2530.41	8743.36
UPSRTC	-59.83	-3271.85	313.22	4774.36
TRPTC	-109.09	-291.72	-106.84	-289.72

REVENUE, COST AND MARGIN PER KM. :

The comparison of total revenue, total cost and margin is not justified as the size of SRTCs differ from each other. In order to have the comparative study revenue, total expenditure and profit/loss per effective kms. are estimated for 1985-86 and 1994-95. Though revenue per km. was highest in case of MSRTC in 1985-86, it incurred loss in 1985-86 as the cost per km. was very high. The revenue per km. was minimum for DTC in 1985-86 and its loss per km. was maximum in 1985-86. In the year 1994-95, though RSRTC did not earn maximum revenue per km.. The cost per km. was minimum and it incurred maximum profit per km. The SRTCs like CSTC, DTC, MPSRTC, TRPTC, BSRTC experienced higher cost per km. as compared to other SRTCs under study and this tends to suggest that these SRTCs require to bring about improvement in productivity and there by the fall in the cost per km. It is also observed that the coefficient of variation of revenue per km. in 1985-86 and 1994-95 was 17.43 and 4.44 respectively where as the same with respect to cost per km. was 22.18 and 47.18 for 1985-86 and 1994-95 respectively. It implies that the variations are more with respect to cost per km. as compared to earning per km. It also suggests that variations in earning per km. among SRTCs have declined with the passage of time where as the same has increased in case of cost per km. It is to be noted that the variation in margin per km. among SRTCs are very high during both the years.

TABLE - V.16

REVENUE, COST AND MARGIN PER EFFECTIVE KM.

[in Paise]

Name of SRTC's	1985-86 Revenue	1994-95 Revenue	1985-86 Cost	1994-95 Cost	Margin	1994-95 Margin	1985-86 Margin Exclud- ing Tax	1994-95 Margin Exclud- ing Tax
1	2	3	4	5	6	7	8	9
APSRTC	427.20	813.60	413.80	806.10	13.40	7.50	0.61	0.82
ASMSTC	380.00	N.A.	557.00	N.A.	-177.00	N.A.	-1.65	N.A.
BSRTC	347.70	N.A.	698.90	N.A.	-351.20	N.A.	-3.15	N.A.
CSTC	N.A.	714.80	N.A.	1635.50	N.A.	-920.70	-7.08	-9.15
DTC	223.70	861.20	691.50	2319.00	-467.80	-1457.80	-4.59	-13.62
GSRTC	364.40	735.40	431.40	819.20	-67.00	-83.80	0.20	0.33
KnSRTC	410.80	774.40	433.50	846.20	-22.70	-71.80	0.28	0.35
KSRTC	442.00	901.80	529.00	901.50	-87.00	0.30	-0.45	0.71
MPSRTC	388.50	830.60	450.60	1019.70	-62.10	-189.10	0.02	-0.87
MSRTC	476.20	933.80	494.00	918.10	-17.80	15.70	0.63	1.78
NBSTC	N.A.	585.70	N.A.	896.50	N.A.	-310.80	-	-3.10
OSRTC	361.20	697.70	504.90	830.30	-143.70	-132.60	-1.02	-0.78
PRTC	262.20	909.80	439.60	916.70	-177.40	-6.90	-1.46	2.42
UPSRTC	361.00	837.10	377.00	888.70	-16.00	-51.60	0.07	0.75
TRPTC	374.30	852.20	750.50	2419.10	-376.20	-1566.90	-3.68	-15.55
C.V.	17.43	11.44	22.18	47.18	-121.09	-158.67	-116.43	186.57



### EFFECT OF PHYSICAL PERFORMANCE

#### ON FINANCIAL PERFORMANCE OF SRTCS :

It is obvious that with the improvement in physical performance of SRTC, the cost per km. has a tendency to fall and it may bring about improvement in margin per km. and there by improvement in financial performance of SRTC. In the light of this the margin per km. is regressed on single index of physical performance [composite index] using the model

$Y = a + bx + u$  where Y is the margin per km and X is the composite index for both the years 1985-86 and 1994-95 and following results are obtained.

$$Y = -159.178 + 32.75879 X \quad R^2 = 0.4681.9 \dots \dots 1985-86 \\ [3.250301]$$

$$Y = -402.9 + 107.9516 X \quad R^2 = 0.7040 \dots \dots 1994-95 \\ [5.342756]$$

It is obvious from the above two equations that the coefficient associated with X is positive and statistically significant. Not only that but value of  $R^2$  is very high especially in 1994-95. This suggests that improvement in financial performance requires improvement in physical performance of SRTCs.

#### ELASTICITY OF EARNING :

The financial performance of SRTCs is also reflected in elasticity of earning. If the elasticity of earning is positive and exceeds one, it can be said that the SRTC is performing well

TABLE - V.17  
ELASTICITY OF EARNING

Name of SRTC's	1985-86	1994-95
1	2	3
APSRTC	-2.53	1.08
ASMSTC	8.00	--
BSRTC	1.12.	--
CSTC	0.35	0.22
DTC	1.52	0.36
GSRTC	1.20	0.11
KnSRTC	1.53	3.22
KSRTC	1.47	1.56
MPSRTC	0.93	0.45
MSRTC	0.96	0.52
NBSTC	-	-1.51
OSRTC	-2.73.	0.65
PRTC	0.60	-0.62
RSRTC	1.07	0.84
UPSRTC	-20.00	0.80
TRPTC	0.50	0.61

because earning per km. exceeds the cost per km. The same is estimated for all SRTCs under study at two different point of time i.e. 1985-86 and 1994-95. In the year 1985-86 the elasticity of earning was negative for APSRTC, OSRTC and UPSRTC, where as it was positive for remaining SRTCs. The same was positive and greater than one for ASMSTC, BSRTC, DTC, GSRTC, KnSRTC, KSRTC and RSRTC which reflects better financial performance of these SRTCs. The elasticity of earning was as high as eight for ASMSTC which indicates that with the increase in cost per km. by one rupee, the earning per km. increases by eight rupees. In the year 1994-95, the negative elasticity of earning is observed in case of only two SRTCs i.e. NBSTC and PRTC. For remaining SRTCs it was positive but less than one except APSRTC, KSRTC and KnSRTC. This tends to suggest that the majority of SRTCs are not performing well because increase in cost per km. exceeds increase in earning per km., thus resulting in loss on the part of SRTCs.

#### **SOCIAL SURPLUS GENERATED BY SRTCS :**

It is already mentioned in Chapter - III that the financial performance of SRTC can be examined in terms of social surplus produced by SRTC. Higher the social surplus, better the performance of SRTC. However with the change in the size of SRTC, the social surplus produced by SRTC in absolute term is bound to differ and therefore social surplus per employee is estimated in order to have a comparative study. The Table - V.18

TABLE - V.18  
SOCIAL SURPLUS PRODUCED BY SRTCS

[At Current Price] [Rs. in lakhs]				
Name of SRTC	1985-86		1994-95	
	Social Surplus	Social Surplus Per Employee	Social Surplus	Social Surplus Per Employee
1	2	3	4	5
APSRTC	10159.93	0.15	29642.00	0.25
ASMSTC	-237.29	0.00	N.A.	-
BSRTC	-399.33	-0.03	N.A.	-
CSTC	-1662.76	-1.00	-4481.52	-0.37
DTC	-7431.17	-0.18	-4793.35	-0.15
GSRTC	5866.93	0.12	10504.86	0.18
KnSRTC	5517.25	0.14	13865.91	0.22
KSRTC	453.50	0.01	6334.06	0.24
MPSRTC	1424.66	0.07	425.18	0.02
MSRTC	11748.09	0.14	38952.01	0.35
NBSTC	N.A.	N.A.	-1193.45	0.17
OSRTC	-122.00	-0.03	166.00	0.02
PRTC	-554.88	-0.09	3018.40	0.52
RSRTC	3353.09	0.19	12690.72	0.48
UPSRTC	3243.07	0.07	9940.67	0.18
TRPTC	-66.79	N.A.	-239.72	0.30

reveals social surplus and social surplus per employee produced by various SRTCs for 1985-86 and 1994-95.

It is observed that the social surplus was positive for eight SRTCs out of fifteen SRTCs in 1985-86. The social surplus was maximum for MSRTC at Rs.11,748.09 lakhs where as the negative social surplus was at Rs. -7431 lakhs for DTC. The RSRTC performed well in terms of social surplus per employee. It was around Rs.19,000 per employee. In the year 1994-95, there were about ten SRTCs with positive social surplus and it was highest for MSRTC at Rs.38,952.01 lakhs which was followed by APSRTC. Looking at the social surplus per employee one finds that PRTC produced highest amount of social surplus per employee i.e. Rs.52,000, which was followed by RSRTC. Thus it can be concluded that the performance of majority of SRTCs is satisfactory as the social surplus produced by them was positive. It is also obvious from the table that the social surplus per employee has increased in 1994-95 for majority of SRTCs. However, it is to be noted here that the part of it is due to increase in price over a period of time.

**VALUE ADDED :**

The relative financial performance of SRTC is also reflected in value added and valued added per employee. It is to be noted here that the value added was positive for all SRTCs under study for both the years. The highest value added was

TABLE - V.19  
VALUE ADDED BY SRTCS

[At Current Price] [Rs. in lakhs]				
	1985-86		1994-95	
Name of SRTC	Value Added	Value Added Per Employee	Value Added	Value Added Per Employee
1	2	3	4	5
APSRTC	22903.23	0.34	86653.00	0.72
ASMSTC	652.54	0.12	N.A.	N.A.
BSRTC	703.23	0.06	N.A.	N.A.
CSTC	435.61	0.26	996.68	0.08
DTC	537.31	0.01	10434.94	0.32
GSRTC	14631.78	0.30	39141.01	0.67
KnSRTC	13472.09	0.35	43996.71	0.70
KSRTC	5251.36	0.16	17331.97	0.64
MPSRTC	3767.95	0.17	6938.71	0.30
MSRTC	28261.15	0.32	94120.78	0.83
NBSTC	N.A.	N.A.	1531.93	0.22
OSRTC	414.00	0.09	2136.00	0.30
PRTC	546.54	0.09	6083.01	1.04
RSRTC	6133.06	0.35	23952.38	0.91
UPSRTC	7627.06	0.16	32386.12	0.58
TRPTC	26.64	N.A.	70.98	0.09

observed for MSRTC for both the years at Rs.28261.15 lakhs and Rs.94120 lakhs in 1985-86 and 1994-95 respectively. The minimum valued added is observed in case of TRPTC during both the years. The picture is entirely different when we look at valued added per employee. The value added per employee was highest at 0.35 for KnSRTC and RSRTC in 1985-86 where as it was lowest in case of DTC. In the year 1994-95, the value added per employee was highest in case of PRTC where as the lowest value added per employee is observed for TRPTC. However the SRTCs like APSRTC, KnSRTC, MSRTC and RSRTC performed well in terms of value added per employee as compared to other SRTCs during 1985-86 and 1994-95.

#### **FARE STRUCTURE :**

Bus transport pricing is related under Section 67[I] of the Motor Vehicle Act 1988 under which the State Government can issue directives to the State Transport Authority regarding fixing of fares including the minimum and maximum for stage carriers and contract carriers. The National Transport Policy Committee under the Chairmanship of Shri B.D. Pande observed that the fare rates are fixed having regard to vehicle terrain road service and vehicle traffic in various regions, but there is no uniform basis on which fare rates are fixed in actual practice in different states. There is wide variation in the prevalent fare structure in various states. To the extent possible, the fare

Table - V.20

FARE PER PASSENGER KM.

[in Paise]

SRTCS	Fare Per Passenger Km.			
	1985-86		1994-95	
	Ordinary	Express	Ordinary	Express
1	2	3	4	5
APSRTC	8.00	10.00	17.00	21.00
ASMSTC	10.50	13.50	-	-
BSRTC	10.76	11.59	14.00	13.00
CSTC	8.00	8.00	18.00	20.00
DTC	7.50	7.50	-	-
GSRTC	8.33	8.33	19.17	20.83
KnSRTC	8.69	9.56	16.47	18.76
KSRTC	7.00	11.00	16.47	27.00
MPSRTC	9.50	11.30	22.00	27.50
MSRTC	10.00	10.00	20.83	23.33
NBSTC	6.50	10.00	12.00	14.00
OSRTC	10.00	12.00	16.00	18.00
PRTC	5.58	8.58	25.00	31.25
RSRTC	7.30	8.00	20.50	25.00
UPSRTC	7.65	7.65	13.80	16.10
TRPTC	10.00	10.50	18.00	22.00

Source : State Transport Undertakings : Profile and Performance  
published by the CIRT, Pune.



rates are enforced by Transport Authority by making it a condition of a permit that fares beyond the prescribed level would not be charged. Violation of this condition renders the permit liable for cancellation/suspension under Section 86 of the Motor Vehicle Act 1988 and the operation is liable for persecution.

In this chapter it is not feasible to discuss pricing of various SRTC's and deriving break even cost pricing marginal cost pricing, average cost pricing and comparing them with the existing fare of various SRTC's. An attempt is made here simply to compare fare per passenger km. charged by different SRTC's to during 1985-86 and 1994-95 for ordinary and express services. It is observed from Table - V.20 that fare per passenger km. charged by PRTC was minimum at 5.58 paise in 1985-86 and the maximum fare was 10.76 paise charged by BSRTC for ordinary services where as for the express services the minimum fare was charged by DTC where as maximum fare was charged by ASMSTC. In 1994-95 the fare per passenger km. has increased by significant amount for both the types of services. The NBSTC charged lowest fare and PRTC charged the highest fare for ordinary services. For express services BSRTC charged lowest fare and PRTC charged the highest fare. The fare charged by SRTC affects the revenue of SRTC and there by it affects margin of SRTC. In order to find out the impact of fare on margin per km. the following model is used.

$Y = a + bx + u$  where  $X$  is the fare per passenger km. for ordinary services and  $Y$  is the margin per km. for both the years 1985-86 and 1994-95 and following results are obtained.

$$Y = 20.20349 - 17.41153 X \quad R^2 = 0.027028 \quad \dots \dots 1985-86$$

$$[-0.57736]$$

$$Y = 505.5 + 14.07647 X \quad R^2 = 0.010 \quad \dots \dots 1994-95$$

$$[0.345668]$$

It is observed from above equations that the impact of fare on margin per km. is negative in 1985-86 where as positive impact is found in 1994-95. However the impact is not statistically significant during both these years. Not only that but the value of  $R^2$  is nearer to zero. This tends to suggest that this cross section analysis fails to explain positive impact of fare on margin per km. of SRTC.

#### **CONCLUSION :**

Looking at the physical and financial performance of SRTCs for 1985-86 and 1994-95, it may be concluded that the size of SRTCs in terms of indicators like number of buses held, strength of staff, effective kms. operated, and passenger travelled varies significantly and the dispersion has increased over a period of time. The physical performance in terms of various indicators differ among SRTCs and the relative performance of SRTCs with respect to each indicator differs and

therefore the single index of physical performance is estimated through three different methods for 1985-86 and 1994-95 and one observes that SRTCs like GSRTC, KnSRTC, RSRTC and APSRTC performed well whereas very poor performance is found in case of TRPTC, BSRTC, CSTC, ASMSTC and DTC.

As far as the financial performance is concerned, only APSRTC and RSRTC show the profit during both the years where as MSRTC and KSRTC incurred profit only in 1994-95. The remaining SRTCs incurred losses. But the profit before tax turned out to be positive for SRTCs like, APSRTC, GSRTC, KnSRTC, MSRTC, PRTC, RSRTC and UPSRTC.

The operating revenue constitutes the major share in total revenue of SRTCs where as the structure of expenditure differs significantly among SRTCs. The elasticity of earning, the indicator of financial performance was positive and greater than one for seven SRTCs in 1985-86 where as in 1994-95 the deterioration of financial performance in terms of elasticity of earning is observed. The social surplus per employee was positive for majority of SRTCs during both these years and it was highest for RSRTC in 1985-86 which was followed by APSRTC. In 1994-95, the highest social surplus per employee is produced by PRTC which was followed by RSRTC. Similarly the value added per employee was significantly high for RSRTC, KnSRTC and APSRTC in 1985-86 and for PRTC, RSRTC and APSRTC in 1994-95. Thus it may concluded that the better financial performance in terms of social surplus per employee and value added per employee is

observed for those SRTCs whose physical performance was also relatively better. Moreover it is to be noted that the fare per passenger km. charged by various SRTCs differ significantly from each other both with respect to ordinary services and express services. The cross section analysis fails to explain impact of fare on margin per km. earned by SRTC.