



COST AND REVENUE MANAGEMENT IN KSRTC AND TNSRTC

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Abstract

Transportation is the backbone of a developing country. India is a big country which requires all modes of transportation in a good manner. Especially public are more using Road transportation than other modes. Passenger Road transport corporations are playing a major role in the movement of people from one place to another place as well as reducing the traffic. Hence, a study has been conducted to know the cost, revenue and profitability along with their relationship in State road transport corporations of Karnataka and Tamilnadu state. 10 State Road Transport Corporations (SRTCs) are selected for the study purpose. In Karnataka 4 Corporations like KSRTC, NEKRTC, NWKRTC and BMTC are selected; In Tamil Nadu 6 Corporations like State Express Transport Corporation Tamil Nadu Ltd, TN STC (Coimbatore) Ltd, TN STC (Kumbakonam) Ltd, TN STC (Madurai) Ltd, TN STC (Salem) Ltd. TN STC (Villupuram) Ltd are selected.

Secondary data are collected from published sources like Annual administration reports of the Corporations, Government websites. Collected data are tabulated and cost per Kilometer is taken into consideration for the comparison purpose. The data regarding revenue; cost incurred by the Corporations are collected for 6 consecutive years from 2010-11 to 2015-16. Collected data are tabulated and findings are drawn. Both descriptive and inferential statistics are applied for the data analysis purpose. Study found that there is no significant difference in Karnataka SRTCs as well as Tamil Nadu SRTCs regarding the total operating cost, total cost and total revenue. Hypothesis is accepted that there is no significant difference found in total costs and revenue in Karnataka SRTCs and Tamilnadu SRTCs. But there is a significant difference found in Karnataka SRTCs as well as Tamil Nadu SRTCs regarding the net profit/loss. Hypothesis is rejected that there is a significant difference found in the net profit/loss in Karnataka SRTCs and Tamilnadu SRTCs. SRTCs should give more emphasis on the major cost factors and try to reduce the unnecessary costs and concentrate on more revenue generation.

Key Words: *State Road Transport Corporations, Total Cost, Total Revenue.*

Introduction

Transportation is the backbone of a developing country. India is a big country which requires all modes of transportation in a good manner. Especially public are more using road transportation than other modes. Passenger Road transport corporations are playing a major role in the movement of people from one place to another place as well as reducing the traffic. Hence, a study has been conducted to know the cost, revenue and profitability along with their relationship in State road transport corporations of Karnataka and Tamilnadu state.

Transport Sector in Karnataka

Karnataka has a well-developed transport system. The public bus transport in Karnataka is managed by the Karnataka State Road Transport Corporation (KSRTC). It was set up in 1961 with the objective of providing adequate, efficient, economic and properly coordinated road transport services. For better management of public transport, KSRTC was bifurcated into three Corporations viz., Bangalore Metropolitan Transport Corporation, Bengaluru on 15th Aug 1997, North-western Karnataka Road Transport Corporation, Hubballi on 1st Nov 1997 and North-Eastern Karnataka Road Transport Corporation, Gulbarga on 1st Oct 2000.¹

Transport Sector in Tamilnadu

Tamil Nadu State Transport Corporation (TNSTC) is the public transport bus operator of Tamil Nadu, India. There are currently 8 divisions in TNSTC including Metropolitan Transport Corporation in Chennai and State Express Transport Corporation. State Express Transport Corporation Limited (SETC) formerly known as Thiruvalluvar Transport Corporation runs long distance express services exceeding 250 km and above throughout



the state of Tamil Nadu linking all important places, and adjoining states of Andhra Pradesh, Karnataka, Kerala and the Union Territory of Pondicherry².

In order to reduce the administrative overhead and to avoid wasteful competition, it was decided to amalgamate the various Transport Corporations. After amalgamation, the existing 18 Transport Corporations were merged into 7 corporations bringing down the overhead costs and unnecessary competitions among the corporations enabling them to earn profit. Until 1996, the transport services were bifurcated and were undertaken by 21 different transport corporations to cater to different parts of the state. Later during 1997, the number of transport corporations was reduced and those 21 different transport corporations were clubbed to form just 6 transport corporations (Excluding MTC & SETC). All the corporations were replaced with "Tamil Nadu State Transport Corporation (TNSTC)" along with a division Name³.

Review of Literature

Shilpa Trivedi (2012)⁴ revealed that the environment has thrown up Gujarat State Road Transport Corporation (GSRTC) to the challenges like productivity improvement, mark orientation and financial engineering. Study revealed that financial viability has become a critical goal for STUs. It found that various controllable and uncontrollable factors affect the performance of the GSRTC. Study concluded with a hypothesis stating that, through controlling some controllable factors GSRTC can improve its operational performance as well as its financial position.

Sanjay Kumar Singh, (June 2005)⁵ attempted to examine the cost structure and cost elasticity's, the demand for the factor of production economies of scale and factor substitution in Municipal Transport Corporations (MTUs) in India. A translog cost function is estimated using the data of seven major MTUs from 1990-91 to 2001-02 for the examination of the issues. The Study found that the average cost curve for MTUs is U-shaped and it is decreasing for the mean firm. Analysis of returns to scale experienced by each firm reveals that MTUs in India are operating on economies of scale particularly during recent years of the sample period. The Study found that the entire sample MTUs faced technological regress during the sample period. It found that the elasticity of substitution is less than one which implied that factor substitutability is weak.

Bagade M.V (2005)⁶ described the major areas considered for controlling the cost of Road transport Corporations. The paper analyzed the productivity levels of various inputs and cost structure of STU's, with a view to identify key result areas where STUs can concentrate more in order to overcome the problem of rising costs and control them on a priority basis. The article described the various measures to control staff cost. The article also suggested some measures to control material cost, cost control on auto spares, cost control on tyres etc.

Pradeep Singh Kharola, Bipin Gopalkrishna, D.C Prakash & K.V Srinivas (2005)⁷ analyzed the problems associated with a cut in the costs of collection and evolve ways of overcoming them in a bus-based city transport system. The article identified the various costs involved and depicted that the possibility of reducing the cost through reducing one conductor (one man operation) in the bus. The article also explained about how BMTC achieved the reduction of cost through one-man operation in Pushpak buses, the introduction of monthly passes for passengers, flattening the fares, introduction of front entry with the pneumatic door, the introduction of modified ticket vending systems, linking charter trips to OMO Trips.

Menasinkai K.S (2005)⁸ described that how NWKRTC achieved their performance through reducing the cost of operation. The Author revealed, in order to improve the KMPL, NWKRTC has taken some measures like improvement in tyre performance, CPKM on Spares and Lubricants. Some necessary actions have been taken by NWKRTC to maximize the traffic revenue by concentrating on the timely and regular operation of schedules. A number of steps have also been taken to control the cost of operation, especially the cost on variable items like fuel, tyres/tubes, lubricants, spares etc.



Made Gowda J (1999)⁹ conducted a study to know the implication of cost of concessional Travel on the working of State Road Transport Corporations (SRTCs) in India. They have examined 36 STUs in terms of cost of concessional travel provided to the public and found that the cost of concessional travel had a remarkable bearing on the profit of the STUs. They suggested that the Government should subsidize the amount to the STUs in an appropriate manner.

The survey of various literatures, authored by various authors' emphasis on the various factors which influence on the cost and revenue of public transport for a single organization. But comparative study on cost and revenue aspects of State Road transport Corporations are very less. Hence, the study is undertaken to fill the research gap.

Statement of the Problem

In India, the cost of operation in the Passenger Road transportation sector is increasing tremendously due to various reasons like, hike in the prices of the petroleum products, increase in the cost of labour, administration and other overheads etc. on the same way the revenue of the corporations are decreasing due to competition, bad decisions of the management etc. So many State Road transport Corporations (SRTCs) in India are incurring losses continuously. Therefore, a comparative study is conducted to know the cost, revenue and profitability of the various transport corporations in Karnataka and TamilNadu state.

Scope of the Present Study

The present research study is confined to Passenger Road Transport Corporations in Karnataka state and Tamil Nadu state only. They include

Karnataka SRTCs

Karnataka State Road Transport Corporation (KSRTC).Bangalore.
North Eastern Karnataka Road Transport Corporation (NEKRTC) Kalaburagi.
North Western Karnataka Road Transport Corporation (NWKRTC).Hubballi.
Bangalore Metropolitan Transport Corporation (BMTC). Bangalore.

Tamil Nadu SRTCs

State Express Transport Corporation (SETC) Tamil Nadu Ltd. Chennai
Tamil Nadu State Transportation Corporation (TN STC) (Coimbatore) Ltd.
Tamil Nadu State Transportation Corporation (TN STC) (Kumbakonam) Ld.
Tamil Nadu State Transportation Corporation (TN STC) (Madurai) Ltd.
Tamil Nadu State Transportation Corporation (TN STC) (Salem) Ltd.
Tamil Nadu State Transportation Corporation (TN STC) (Villupuram) Ltd.

Period of the Study

The data regarding revenue; cost incurred by the Corporations are collected for 6 consecutive years from 2010-11 to 2015-16. There is no significance in selecting the period except the availability of data consistency.

Objectives and Hypothesis of the Study

To study the total cost, operating cost, total revenue and net profit or loss in passenger road transportation of Karnataka State Road Transport Corporations and Tamil Nadu State Road Transport Corporations.

The following hypotheses have been formulated for the present study.

There is no significant difference in the total cost, operating cost, total revenue and net profit or loss in passenger road transportation of Karnataka State Road Transport Corporations and Tamil Nadu State Road Transport Corporations.

Research Design / Method of Research

The data for the study is collected from secondary Sources like Annual administration reports of the sample Corporations and Government websites (www.morth.nic.in) Ministry of Road Transport and Highways



(MORTH), Government of India. Collected cost and revenue data are tabulated and cost per Kilometer is taken into consideration for the comparison purpose. Collected data are tabulated and findings were drawn.

Plan of Analysis

1. After data obtained from secondary sources classification and tabulation carried out.
2. Both descriptive and inferential statistics applied for the data collected.
3. It consists of numbers, percentages, mean, t-test and Pearson Co-efficient of correlation.
4. Statistical inference drawn based on the result obtained and tested for 5% level of significance.

Data Analysis and Interpretation

10.1.1 Total Operating cost

Table - 1: Total operating Cost Per Kilometer of selected Corporations

SI No.	Name of the Corporations	2010-11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	Mean	't' Test
A	Karnataka SRTCs	22.98	25.13	28.63	32.95	35.44	39.24	30.73	P=0.3204
1	KSRTC	22.94	24.66	27.27	30.47	32.48	31.95	28.30	
2	NEKRTC	19.86	21.73	25.38	29.14	31.64	31.43	26.53	
3	NWKRTC	21.43	23.31	25.49	28.58	29.80	29.87	26.41	
4	BMTC	27.72	30.80	36.40	43.61	47.84	63.71	41.68	
B	Tamil Nadu SRTCs	20.66	23.59	25.61	28.25	30.39	29.59	26.35	
1	State Exp.TC TN Ltd.	21.69	24.83	28.36	30.36	32.20	30.59	28.01	
2	TN STC (Coimbatore) Ltd.	22.71	25.66	27.10	29.69	31.91	31.26	28.06	
3	TN STC (Kumbakonam) Ltd.	19.69	22.19	24.06	26.81	28.71	29.60	25.18	
4	TN STC (Madurai) Ltd.	20.95	24.74	26.21	28.87	30.43	30.81	27.00	
5	TN STC (Salem) Ltd.	19.49	21.83	23.93	26.94	30.54	27.61	25.06	
6	TN STC (Villupuram) Ltd.	19.43	22.28	24.02	26.82	28.54	27.67	24.79	

Source: www.morth.nic.in retrieved on 26.06.2019

H0₁: There is no significant difference in total operating cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

H1₁: There is a significant difference in total operating cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

Interpretation: Regarding the average total operating cost per kilometer of Karnataka SRTCs found to be higher in BMTC (41.68) followed by KSRTC (28.30), NEKRTC (26.53) and NWKRTC (26.41). In Tamil Nadu SRTCs highest average total operating cost per kilometer found under TN STC (Coimbatore) Ltd. (28.06) followed by State Exp.TC TN Ltd. (28.01) least of these is in TN STC (Villupuram) Ltd. (24.79). Further, the Average total operating cost per Km found higher in Karnataka SRTCs (30.73) as compared to Tamil Nadu SRTCs (26.35). The data subjected for statistical test reveals that the difference in the average operating cost per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.3204).

Result: Hypothesis (H0₁) is accepted that there is no significant difference in total operating cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.



10.1.2 Total Cost

Table - 2: Total Cost Per Kilometer of selected Corporations

Sl No.	Name of the Corporations	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Mean	't' Test
A	Karnataka SRTCs	23.36	25.56	29.09	33.57	36.21	39.90	31.28	P=0.418
1	KSRTC	23.16	24.87	27.51	30.78	32.86	32.28	28.58	
2	NEKRTC	20.29	22.14	25.72	29.49	32.19	31.67	26.92	
3	NWKRTC	22.04	23.90	26.12	29.14	30.46	30.36	27.00	
4	BMTC	27.93	31.34	36.99	44.86	49.31	65.28	42.62	
B	Tamil Nadu SRTCs	21.47	24.81	27.05	29.63	31.90	31.23	27.68	
1	State Exp.TC TN Ltd.	23.41	27.43	31.47	33.33	35.35	33.88	30.81	
2	TN STC (Coimbatore) Ltd.	23.46	26.97	28.63	31.08	33.67	33.06	29.48	
3	TN STC (Kumbakonam) Ltd.	20.22	23.08	25.11	27.80	29.72	30.80	26.12	
4	TN STC (Madurai) Ltd.	21.84	25.56	27.18	29.82	31.55	32.11	28.01	
5	TN STC (Salem) Ltd.	20.10	22.88	25.17	28.15	31.76	28.81	26.15	
6	TN STC (Villupuram) Ltd.	19.76	22.94	24.76	27.57	29.33	28.69	25.51	

Source: www.morth.nic.in retrieved on 26.06.2019

H0₂: There is no significant difference in total cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

H1₂: There is a significant difference in total cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

Interpretation: Regarding the average total cost per kilometer of Karnataka SRTCs found to be higher in BMTC (42.62) followed by KSRTC (28.58), NWKRTC (27.00) and NEKRTC (26.92). In Tamil Nadu SRTCs, highest average total cost per kilometer found under State Exp.TC TN Ltd. (30.81) followed by TN STC (Coimbatore) Ltd. (29.48) least of these is in TN STC (Villupuram) Ltd. (25.51). Further, the Average total cost per Km found higher in Karnataka SRTCs (31.28) as compared to Tamil Nadu SRTCs (27.68). The data subjected for statistical test reveals that the difference in the average total cost per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.418).

Result: Hypothesis (H0₂) is accepted that there is no significant difference in total cost in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

10.1.3 Total Revenue

Table -3: Total Revenue per Kilometer of selected Corporations

Sl No.	Name of the Corporations	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Mean	't' Test
A	Karnataka SRTCs	23.62	25.53	28.28	32.18	35.53	39.85	30.83	P=0.129
1	KSRTC	23.87	25.08	27.53	30.02	32.42	32.81	28.62	
2	NEKRTC	20.13	21.72	25.25	28.64	31.85	31.22	26.47	
3	NWKRTC	21.45	23.43	24.92	28.07	29.93	29.70	26.25	
4	BMTC	29.02	31.87	35.43	41.99	47.93	65.68	41.99	
B	Tamil Nadu SRTCs	16.93	19.24	24.27	25.93	27.13	24.88	23.06	



1	State Exp.TC TN Ltd.	16.86	18.89	24.87	27.49	29.53	27.15	24.13
2	TN STC (Coimbatore) Ltd.	17.57	20.17	24.95	26.59	27.48	25.55	23.72
3	TN STC (Kumbakonam) Ltd.	16.48	18.70	23.77	25.47	26.81	24.71	22.66
4	TN STC (Madurai) Ltd.	17.92	20.94	25.65	26.96	27.73	25.27	24.08
5	TN STC (Salem) Ltd.	15.94	17.32	22.44	23.65	24.44	22.67	21.08
6	TN STC (Villupuram) Ltd.	16.83	19.41	23.93	25.39	26.81	23.95	22.72

Source: www.morth.nic.in retrieved on 26.06.2019

H01₃: There is no significant difference in total revenue in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

H1₃: There is a significant difference in total revenue in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

Interpretation: Regarding the average total revenue per kilometer of Karnataka SRTCs found to be higher in BMTC (41.99) followed by KSRTC (28.62), NEKRTC (26.47) and NWKRTC (26.25). In Tamil Nadu SRTCs highest average total revenue per kilometer found under State Exp.TC TN Ltd. (24.13) followed by TN STC (Madurai) Ltd. (24.08) least of these is in TN STC (Salem) Ltd. (21.08). Further, the Average total revenue per Km found higher in Karnataka SRTCs (30.83) as compared to Tamil Nadu SRTCs (23.06). The data subjected for statistical test reveals that the difference in the average total revenue per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.129).

Result: Hypothesis (H01₃) is accepted that there is no significant difference in total revenue in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

10.1.4: Net Profit/Loss

Table - 4: Net Profit/Loss per Kilometer of selected Corporations.

Sl No.	Name of the Corporations	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Mean	't' Test
A	Karnataka SRTCs	0.27	-0.04	-0.53	-1.15	-0.67	-0.05	-0.36	P=0.0006
1	KSRTC	0.71	0.21	0.018	-0.76	-0.44	0.53	0.04	
2	NEKRTC	-0.16	-0.42	-0.47	-0.88	-0.33	-0.46	-0.45	
3	NWKRTC	-0.59	-0.47	-0.12	-0.11	-0.53	-0.66	-0.41	
4	BMTC	1.10	0.54	-1.57	-2.87	-1.38	0.41	-0.63	
B	Tamil Nadu SRTCs	-4.53	-5.57	-2.78	-3.70	-4.76	-6.34	-4.61	
1	State Exp.TC TN Ltd.	-6.55	-8.54	-6.60	-5.85	-5.81	-6.73	-6.68	
2	TN STC (Coimbatore) Ltd.	-5.88	-6.80	-3.67	-4.49	-6.18	-7.50	-5.75	
3	TN STC (Kumbakonam) Ltd.	-3.74	-4.38	-1.34	-2.33	-2.90	-6.09	-3.46	
4	TN STC (Madurai) Ltd.	-3.92	-4.62	-1.53	-2.86	-3.81	-6.83	-3.93	
5	TN STC (Salem) Ltd.	-4.16	-5.57	-2.73	-4.51	-7.32	-6.14	-5.07	
6	TN STC (Villupuram) Ltd.	-2.93	-3.53	-0.82	-2.18	-2.53	-4.74	-2.79	

Source: www.morth.nic.in retrieved on 26.06.2019

H01₄: There is no significant difference in Profit/loss in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

H1₄: There is a significant difference in Profit/loss in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.



Interpretation: Regarding the average Profit per kilometer of Karnataka SRTCs found to be only in KSRTC (0.04). But losses are found in NWKRTC (-0.41), NEKRTC (-0.45) and BMTC (-0.63). In Tamil Nadu SRTCs, all the corporations under loss, highest loss per kilometer found under State Exp.TC TN Ltd. (-6.68) followed by TN STC (Coimbatore) Ltd. (-5.75) least of these is in TN STC (Villupuram) Ltd. (-2.79). Further, the loss per Km found higher in Tamil Nadu SRTCs (-4.61) as compared to Karnataka SRTCs (-0.36). The data subjected for statistical test reveals that the difference in the profit/loss per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Significant (P= 0.0006).

Result: Hypothesis (H0₁) is rejected and H₁ is accepted that there is a significant difference in profit or loss in passenger road transportation of Karnataka SRTCs and Tamilnadu SRTCs.

Summary of Major Findings of the Study

1. The difference in average operating cost per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.3204).
2. The difference in average total cost per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.418).
3. The difference in average total revenue per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Non- Significant (P= 0.129).
4. The difference in the average profit/loss per Km between Karnataka SRTCs and Tamil Nadu SRTCs found to be Significant (P = 0.0006).

Conclusion

From the study we can conclude that there is no significant difference found in Karnataka SRTCs and Tamil Nadu SRTCs regarding the average operating cost, total cost, total revenue. But there is a significant difference found in Karnataka SRTCs and Tamil Nadu SRTCs regarding the net profit/loss. Study found that there exists significant positive relationship between average total cost and Average operating cost among Karnataka SRTCs and Tamilnadu SRTCs. Study also found that there exists significant positive relationship between Average Total cost and Average revenue among Karnataka SRTCs and Tamilnadu SRTCs.

Both Karnataka SRTCs and Tamilnadu SRTCs are continuously incurring losses during the study period. Total cost exceeds total revenue in almost all the corporations. They should give more emphasis on the major cost factors and try to reduce the unnecessary costs and concentrate on more revenue generation.

Scheme of Suggestions

1. SRTCs have to reduce more number of hierarchies of officers through that they can reduce their labour cost.
2. State Government should not treat SRTCs them as a profit oriented concerns and they should reduce the tax burden on the SRTCs.
3. SRTCs should find out the unnecessary cost and try to reduce it.
4. SRTCs should try to find more ways to generate revenue from various sources.
5. State Governments have to reimburse the concessional passes regularly and should give subsidy to the corporations.

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