



PERFORMANCE ANALYSIS OF NORTH EAST KARNATAKA STATE ROAD TRANSPORT CORPORATION (NEKRTC)

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ABSTRACT :

Performance of an organization reflects the level of achievement or success and it is influenced by a large number of factors - both internal and external, both controllable and non-controllable, both physical and monetary, and by both qualitative and quantitative factors. The success or otherwise of an organization, therefore, depends upon how efficient the organisation was in its activities, functions, plans, policies and programmes. For instance, the cost of fuel is influenced by the ability of a corporation to use fuel more efficiently and effectively to obtain higher fuel productivity. If the corporation is able to obtain higher fuel productivity, it is able to keep its fuel cost at lower level. This results in lower operating cost, lower total cost and therefore, higher operating profit and total profit. Consequently, it will influence the profitability of the corporation.



Most STUs in India are unprofitable and remain dependent on State support for sustaining operations and meeting fleet replacement or augmentation and infrastructure development or up-gradation requirements. Since support for a continuous loss-making undertaking is often hard to access even from the State budgetary machinery, State Transport Undertakings (STUs) in India focus primarily on sustaining current operations, with limited resources at hand. They find themselves unable to direct effort towards meeting the increasing current demand (due to increase in population and affordability) and potential demand (potential to shift from other modes of transport). However, to affect the overall revamping and improvement in the financial health of STUs, simple induction of fleet may not be enough. What is required is a detailed understanding and action on fleet, operations, service and infrastructure requirements, over a longer term. To achieve this, STUs require to focus on developing long range development plans as well roadmap to achieve the goals set in the development plans. Both the central government and the Association of State Road Transport Undertakings (ASRTU) have set up challenging goals for the STUs and are offering to support them in achieving the same. In the present paper an attempt has been made to present a true picture of the State Road Transport Undertakings with particular reference to NEKRTC and the comparative performance analysis has been carried out in order to find the gaps and suggest ways to improve the same. In the present study a seven year time period i.e. from 2010 to the year 2016 is taken for which data has been collected from the authentic secondary sources. With the use of Physical and financial performance variables the comparative performance has been done during the period of

observation. For comparison KSRTC is taken as benchmark (as it is profit making SRTU). It is expected to fulfil the performance gaps for the sake of policy making in transport sector by the respective states.

KEYWORDS : SRTU, Financial Performance, Physical Performance Parameters.

INTRODUCTION

The North Eastern Karnataka Road Transport Corporation (NEKRTC), is a state run transport administration of Karnataka, India. It serves courses to towns and urban areas in the North-Eastern piece of Karnataka and the conditions of Telangana, Andhra Pradesh, Maharashtra, Goa and Tamil Nadu. It offers web based booking of tickets in relationship with KSRTC, its parent association. Profile of NEKRTC: NEKRTC was set up on 1.10.2000 having been isolated from KSRTC for giving "satisfactory, effective, monetary and appropriately organized street transport administrations" in the North eastern piece of the province of Karnataka. Accessibility of satisfactory, sheltered and agreeable traveler transport office is a significant file of financial improvement of any nation. Open vehicle PROVIDES fundamental availability in a creating society. NEKRTC is working 3,718 timetables covering 1.27 million km conveying 1.2 million travelers consistently. NEKRTC is serving 92% of the towns in its zone (3,859 out of 4,203) with transport office. The corporate office of NEKRTC is arranged at Kalaburgi, under which nine division central station arranged at Kalaburgi-01, Kalaburgi-02, Yadagiri, Bidar, Raichur, Koppalla, Ballari, Vijayapura and Hospete and 47 Depots are working under the regulatory control of separate divisions.

OBJECTIVES

Based on the problem formulation and critical review of the literature available on the related aspects of the topic, the following objectives have been framed:

1. To review the present status of North Eastern Karnataka Road Transport Corporation (NEKRTC).
2. To analyze the Physical and financial performance of the NEKRTC during seven years (2010 to 2016)
3. To carry out a comparative study of Physical and financial performance with the Karnataka State Road Transport Corporation (KSRTC)

RESEARCH METHODOLOGY

The present study is explanatory and descriptive in nature.

DATA SOURCE

The present study is based on secondary data collected from authenticated sources from state roadways and Transport Corporation. The data of NEKRTC has been compiled from the Annual Administrative Reports of various years. The time period of study has been taken as seven years i.e. from 2010-11 to 2015-16.

VARIABLES TO MEASURE PHYSICAL AND FINANCIAL PERFORMANCE OF SRTUs

The following variables have been taken to measure the physical and financial performance of the NEKRTC.

Physical Variables - Average Fleet Held, Fleet Utilisation (%), Average Age of Fleet (Years), Over Aged Vehicles(%), Number of Accidents, Staff/Bus Ratio, Staff Productivity(Kms/Staff/Day), Vehicle Productivity(Kms/Staff/Day), Fuel Efficiency(Km/litre of HSD), Occupancy Ratio(%), Passengers Carried per Bus/Day

Financial Variables - Total Revenue (Rs. Lakhs), Total Cost (Rs. Lakhs), Net Profit/Loss (Rs. Lakhs), Revenue/Km (Paise), Cost/KM (Paise), Profit/Loss per Km (Paise), Revenue/Bus/Day (Rs.), Cost/Bus/Day (Rs.), Profit/Loss per Bus/Day (Rs.), Staff Costs (Rs. Lakhs), Fuel & Lubricant Costs (Rs. Lakhs), Cost of Tyres & Tubes

(Rs. Lakhs), Cost of Spares (Rs. Lakhs), Interest (Rs. Lakhs), Depreciation (Rs. Lakhs), Taxes (Rs. Lakhs), Other Costs (Rs. Lakhs).

Physical Variables

1. Fleet Utilization Percentage:

Fleet utilization is the ratio of the number of vehicles on road to the fleet held by the corporations. As is known, a vehicle (i.e., bus) which is operated for effective (revenue) kilometre is a vehicle on road. And the vehicles held by the corporations include (a) vehicles on road, (b) vehicles held as spares (road-worthy traffic spares), (c) vehicles in workshops under routine inspection and off-road condition, (d) vehicles awaiting scrapping (but vehicles approved for scrapping by the competent authority should be taken as vehicles scrapped and should not be included in the vehicles held), and (e) vehicles in transit. On the basis of these two variables (viz, vehicles on road and vehicles held), the fleet utilization ratio can be computed as shown

$$\text{Percentage of Fleet Utilization} = \left(\frac{\text{Number of vehicles on road}}{\text{Number of Vehicles held}} \right) \times 100$$

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	7002	7160	7621	7831	8243	8321	8172
NEKRTC	3686	3773	3992	4058	4247	4320	4447

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	3.2	3.2	3.4	3.6	3.8	4.23	4.94
NEKRTC	4.5	4.6	4.7	5.1	5.3	5.7	6.12

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	90.4	91.8	91.4	91.7	91.4	91	90.57
NEKRTC	92.5	91.2	89.1	89.5	89.3	87.8	89.58

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	5.9	3.8	4.5	4.9	22.9	6.4	15.9
NEKRTC	20.2	14.4	11.6	12.3	17.5	27	31

Tables from 1 to 4 show comparative analysis of Average fleet held, Average of Fleet, Fleet Utilization and over aged vehicles respectively of KSRTC and NEKRTC from year 2010 to 2016. It can be observed that KSRTC held more fleet and average age of fleet is between 3 to 5 years, whereas the average of fleet of NEKRTC is between 4 to 6 years. When it comes to Fleet utilization (%) there is not much of a difference between the two SRTCs. Over aged Vehicles (%) wise KSRTC had 15.9 % over aged vehicles in 2016 and NEKRTC had 31 % in the same year which is high. Over aged vehicles means, Vehicles which have completed the prescribed life in terms of years or kilometres performed as per norms set by an SRTU are categorised as over aged vehicles.

2. VEHICLE UTILIZATION:

Vehicle utilization which may be defined as the number of kms done per vehicle on road per day assumes importance as it is one of the important determinants of both the cost and the revenue. It shows the extent of utilization of the vehicles on road in terms of kms. Normally, vehicle utilization is measured considering the number of effective kms operated though it is possible to calculate in terms of gross kms. The average vehicle utilization can be worked out as under.

$$\text{Vehicle Utilization (Kms)} = \left(\frac{\text{Daily Service Kms}}{\text{Average Number of Vehicles on road per day}} \right)$$

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	329.78	333.19	331.36	329.41	328.46	325.33	323.76
NEKRTC	322.36	311.87	305.69	303.03	295.21	288.46	295.49

Table 5 shows Vehicle Utilization in Kms, KSRTC has maintained a range between 323 to 333 Kms, whereas NEKRTC vehicle utilization has decreased over a period of time from 322.36 Kms in 2010 to 295.49 Kms in 2016.

3. Occupation Ratio:

Occupation ratio is another ratio used to measure the effective utilization of seat-kms generated and this ratio represents the percentage of passenger-kms to seat-kms offered. Thus

$$\text{Occupancy Ratio (\%)} = \left(\frac{\text{Passenger Kms}}{\text{Seat Kms offered}} \right) \times 100$$

This is an important ratio as it sheds light on the volume of traffic and the extent to which the seats provided are occupied by the general public. The ratio reveals the travel habits of the travelling public and therefore, it is of immense value to the corporations at the time of revision of timings, augmentation of trips and realignment of routes.

Besides, the occupation ratio is the most effective indicator of the adequacy or otherwise of the services offered to the public. A very low ratio may indicate the need for either reduction in the number of trips or the change in the timings. A very high ratio may indicate either over loading or non-availability of seats at intermediate points and therefore, the need to augment the services. It may be noted here that virtually there is no difference between the two parameters (viz, load factor and occupation ratio) except when there is significant concessional traffic. In such an eventuality, the passenger-kms get increased significantly and the occupation ratio may go up compared to the percentage load factor. However, these two parameters indicate the effectiveness in the utilization of the services.

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	69.5	72.8	77.4	75.3	68.9	69.8	69.1
NEKRTC	57.5	60.9	64.8	66.7	62.2	63	63.37

Table 6 shows comparative analysis of Occupancy Ratio in terms of percentage, overall KSRTC had a better occupancy ratio.

4. Staff Ratio Per Schedule:

As the staff sanctions are influenced by the number of schedules, it is necessary to establish the relationship between the number of employees and the number of schedules. Staff ratio is, therefore, the ratio of the total staff employed on the last day of the accounting period to the total number of schedules on that day. Staff ratio can be worked out separately for each group of activity such as traffic, workshop and maintenance, and administration. Similarly, staff ratio can also be worked out separately in respect of each level (viz, depots, divisions, regions and organization) by considering the respective staff and the number of schedules in each such level. However, one way of computing the staff is as follows:

$$\text{Staff Ratio per Schedule} = \left(\frac{\text{Total Staff employed}}{\text{Total number of schedules in operation}} \right)$$

Table 7 - Staff Ratio per Schedule							
Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	4.57	4.75	4.78	4.63	4.7	4.49	4.54
NEKRTC	4.89	4.66	4.69	4.55	4.5	4.26	4.57

Table 7 Shows the Staff Ratio per Schedule. Even though there is no huge difference in the two SRTCs, NEKRTC had better numbers marginally. Staff per schedule is a very important component as the staff accounts for almost 30 % of the total cost.

5. Man-Power Productivity:

Another ratio viz, man-power productivity may be used to measure the effective utilization of man-power. This ratio views the utilization of man-power from the view point of work obtained. It shows the number of kms operated per employee per day. Total kms operated during the year divided by the product of 'number of employees on roll and 365 days' gives the man-power productivity (ie, number of kms per employee per day)

$$\text{Man power productivity(kms/day/employee)} = \left(\frac{\text{Total Kms operated during an year}}{\text{Number of employees X 365}} \right)$$

Table 8 - Staff Productivity(Kms/Staff/Day)							
Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	72.17	70.13	69.28	71.16	69.82	72.52	71.26
NEKRTC	65.87	66.91	65.2	66.63	65.54	67.68	64.6

Table 8 shows Man power productivity, KSRTC has better man power productivity which ranges from 69.28 to 72.52 kms/day/staff. Whereas NEKRTC ranges from 64.6 to 67.68 kms/day/staff.

6. Rate of Fuel Consumption (HSD Oil):

Fuel is an essential item and the cost of fuel is a major item of variable or service cost. Any savings achieved in this item directly saves crores of rupees. The performance of vehicles in respect of fuel consumption is measured in terms of average kms obtained per litre of fuel (KMPL) or number of litres of fuel (high speed diesel, HSD) consumed per 100 kms. The computational procedure is shown below

$$Kms\ obtained\ per\ litre\ of\ fuel = \left(\frac{Total\ gross\ Kms\ covered\ by\ the\ vehicles}{Total\ litres\ of\ fuel\ consumed\ by\ the\ vehicles} \right)$$

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	4.84	4.85	4.87	4.8	4.76	4.82	4.83
NEKRTC	5.27	5.25	5.25	5.22	5.14	5.15	5.15

Table 9 shows the fuel efficiency; KSRTC has better fuel efficiency when compared to NEKRTC, this may be because of various factors like road conditions, area of operations, driving habits, distance between depots, and bus terminals etc.

7. Accident Rate:

Accident is an occurrence in the use of motor vehicles resulting in injury to, or death of, a person or animal or damage to property or a combination of these. Accidents are classified as fatal, major, minor, and insignificant. A fatal accident is one involving loss of human life immediately or within 30 days of its occurrence. A major accident is one involving grievous hurt to human beings and/or damage to property exceeding Rs.3,000. A minor accident is one involving simple bodily injuries to human beings and/or damage to property exceeding Rs.300 but not exceeding Rs.3,000. All other accidents not included in fatal, major and minor accidents are considered as insignificant. Rates of accident are the relative measures of incidence of accidents. The following are the different rates which may be calculated on the basis of either effective or gross kilometres

$$Accident\ rate\ per\ lakh\ of\ effective\ kms = \left(\frac{Total\ number\ of\ accidents}{Total\ effective\ Kms} \right) \times 100000$$

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	0.10	0.12	0.11	0.13	0.12	0.11	0.11
NEKRTC	0.12	0.12	0.10	0.10	0.09	0.09	0.08

Table 10 shows Accident rate per lakh of effective kms, NWKRTC has better numbers consistently over a period of time when compared to KSRTC.

FINANCIAL VARIABLES

1. Cost per Effective Km:

Cost per km is one of the relative measures used to measure the cost effectiveness and it is computed by selecting effective kms operated as a unit of measurement. It can easily be computed by dividing the total cost by the total effective kms operated and the result is normally expressed in terms of paise. Depending upon the composition of cost, one can use a number of ratios and of these, the important are identified below.

$$Cost\ per\ Km\ (Paise) = \left(\frac{Total\ cost\ for\ the\ year\ (both\ operating\ \&\ non\ operating)}{Total\ effective\ Kms} \right)$$

Table 11 - Staff Costs (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	49745.83	63281.65	67252.63	87540.79	103240.7	113881.9	131416.3
NEKRTC	24365.31	26806.61	33307.47	42523.39	48159.18	56627.75	73715.61

Table 12 - Fuel & Lubricant Costs (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	67157.29	78491.92	90705.94	101254.3	125105.8	127099.9	102021.6
NEKRTC	31126.18	35455.9	40461.37	44475.86	54121.09	55082.44	47759.02

Table 13 - Cost of Tyres & Tubes (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	6609.49	7706.87	9572.37	9686.82	9434.19	8477.81	6929.02
NEKRTC	3203.09	4239.77	5077.85	5098.52	5621.67	4429.18	4177.5

Table 14 - Cost of Spares (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	5137.69	7507.97	8389.36	8055.31	8829.02	10000.52	10097.98
NEKRTC	2066.45	2132.14	2417.04	2455.86	3084.75	2931.44	3055.86

Table 15 - Interest (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	2512.83	1904.17	1932.96	2256.68	3022.22	3768.38	3232.68
NEKRTC	2303.17	1866.88	1850.52	1535.25	1603.75	2521.16	1172.91

Table 16 - Depreciation (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	16483.5	19094.2	19580.59	19566.9	20916.15	22933.5	22284.95
NEKRTC	6979.21	7157.7	7535.96	7806.32	7487.52	7270.4	7841.96

Table 17 - Taxes (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	8366.7	9756.12	11682.74	12813.47	14542.09	15791.6	15416.88
NEKRTC	3584.25	4090.79	4808.99	5343.28	6200.28	6774.7	6904.53

Table 18 - Other Costs (Rs. Lakhs)

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	13738.01	13920.13	20710.48	18456.81	19157.92	22864.27	21229.89
NEKRTC	5709.02	5419.26	4383.55	6194.77	8763.63	10776.84	7689.22

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	169751.3	201663	229827.1	259058.8	304248.1	324818	312629.3
NEKRTC	79336.68	87119.05	99842.75	115433.3	135041.9	146413.9	152316.6

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	2014.07	2315.92	2486.62	2751.37	3078.73	3287.41	3228
NEKRTC	1829.32	2028.41	2235.6	2571.79	2950.99	3218.99	3167

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	6641.99	7716.5	8262.21	9038.58	10112.29	10694.77	10452
NEKRTC	5896.93	6326.06	6852.76	7772.09	8711.51	9285.51	9358

Tables from 11 to 21 show various costs, cost per km, cost per bus per day and total cost incurred by KSRTC and NEKRTC from year 2010 to 2016. It can be seen that there is not much of a difference between the two SRTCs, in the initial years NEKRTC has better numbers cost/km wise but over a period of time the costs have increased to the levels of KSRTC. Cost/Bus/Day wise NEKRTC has better numbers than KSRTC marginally.

2. Gross Revenue Per Effective Kilometre:

The total revenue earned by the corporations from all the sources, both operating and on operating activities, constitutes gross revenue. It, therefore, includes both the operating and the non-operating revenues. This ratio expresses the relationship of total revenue to effective kms operated in terms of paise representing the number of paise of 'gross revenue' earned per effective km operated. The ratio can be worked out as under.

$$\text{Gross earnings per km(paise)} = \left(\frac{\text{Total Revenue}}{\text{Total effective Kms operated}} \right) \times 100$$

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	174636	207868.3	231768.5	259233	296692.3	320468.9	317724.4
NEKRTC	74477.75	86420.16	98035.59	113340.6	131070.2	144901.2	150125.1

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	2072.03	2387.19	2507.62	2753.22	3002.27	3243.4	3281
NEKRTC	1717.28	2012.14	2195.13	2525.17	2864.2	3185.73	3122

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	6833.12	7953.94	8332.01	9044.66	9861.16	10551.58	10623
NEKRTC	5535.77	6275.31	6728.73	7631.19	8455.3	9189.57	9224

Tables from 22 to 24 show total revenue, revenue per km and revenue per bus per day. It clearly shows that the KSRTC had better revenues than NEKRTC both revenue per km wise as well as in revenue per bus per day wise.

3. Measurement of Profitability

While the profit is an absolute measure of earnings, the profitability is the relative measure of earning capacity. In fact, earning capacity is properly reflected in the profitability but not in the actual profit. Before evaluating the profitability, it is necessary to understand the meaning of a few concepts of profits.

- Gross profit is the excess of total gross revenue over the revenue expenditure (i.e., the cost of operation excluding the cost of depreciation and interest charges).
- Net profit is the excess of total gross revenue over the total cost of operation (including depreciation and interest charges). The net profit margin is usually arrived at before charging income tax.
- Operating profit is the excess of total traffic or operating revenue over the total cost of operation.

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	4884.69	6205.25	1941.41	174.2	-7555.79	-4349.01	5095.14
NEKRTC	-4858.93	-698.89	-1807.16	-2092.65	-3971.68	-1512.76	-2191.51

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	57.96	71.26	21.01	1.85	-76.46	-44.02	53
NEKRTC	-112.04	-16.27	-40.46	-46.62	-86.79	-33.26	-46

Year	2010	2011	2012	2013	2014	2015	2016
KSRTC	191.13	237.44	69.79	6.08	-251.13	-143.19	170
NEKRTC	-361.15	-50.75	-124.04	-140.9	-256.21	-95.94	-135

Tables from 25 to 27 show total profit/loss, profit/loss per km and profit/loss per bus per day. It can be seen that the NEKRTC has made losses consistently, whereas KSRTC has made profit in 2010, 2011, 2012, 2013, and 2016. The highest profit was recorded in the year 2011.

SUGGESTIONS

As already discussed above the North Eastern Karnataka Road Transportation corporation is independent unit among the various Karnataka state public sectors. Public Transport Undertakings in Karnataka are financially independent and have to manage all its expenditures by way of traffic revenue. Therefore for the longer survival and continuity of the corporation is completely depended on its management decision to increase the revenue to meet breakeven point. From the above analysis and findings the following are some of the major suggestions offered for betterment of the corporation.

- Cost cut down policy has to be implemented strictly, for those factors which contributes major part of CPKM, such as staff cost controlling by avoiding unnecessary overtime schedules, operating complete schedule without cancellation, rationalization of schedules, cost control technique in HSD management, Fuel Management and Tyres management etc to be implemented by the management.

- Identifying the potential market of the passengers and operating the schedules in a single goal to carry each needy passenger from one place to another place, avoiding overlapping of timings from bus stands,
- The corporation need to convert the loss making schedules to break even schedules to avoid financial crises.
- Optimum utilization of vehicles makes the corporation to accumulate traffic revenue.

CONCLUSION

From the above data the study , it can be concluded with the remarks that NEKRTC is making its efforts to generating traffic revenue, further it has to emphasize more on route cancellation and cost control. It is seen in the history of the corporation that identification of new routes is always profitable if the same is done on the proper analysis and justification. Political interference in recommending of implementation of routes / schedule is unavoidable in the state road public sector , but it is always better to be done with proper analysis of routes and passenger strength. Though the revenue generation is not the primary objective of the state transport unit, but the corporation like NEKRTC, it cannot be run only with the social objectives of service providing to the commuters, especially when the corporation has to meet its expenditures on its own business.

REFERENCES

- Road Transport Year Book 2015-16, Transport Research Wing, Ministry of Shipping, Road Transport and Highways, GOI.
- Annual Reports, Ministry of Road Transport and highways, GOI of various years.
- Records of KSRTC and NEKRTC including Annual Reports of different years.