REVIEW OF RESEARCH
IMPACT FACTOR : 5.7631(UIF) UGC APPROVED JOURNAL NO. 48514 ISSN: 2249-894X
VOLUME - 8 | ISSUE - 7 | APRIL - 2019

PRODUCTIVITY OF TAMIL NADU STATE TRANSPORT CORPORATION, KUMBAKONAM DIVISION

C. Senbaga Aiyan Moorthi[1] and Dr. S. Ganesan[2]
[1]Ph.DResearch Scholar, Department of Economics, Bharathidasan University, Tiruchirappalli.
[2]Assistant Professor, Department of Economics, Bharathidasan University, Tiruchirappalli.

ABSTRACT:

Public enterprises are conceived as an important instrument for achieving rapid socio economic transformation of our economy. While greater emphasis is laid on the expansion of public enterprises, it is necessary to ensure that public enterprises increase their productivity. It is evident from factors productivity analysis that the Tamil Nadu State Transport Corporation in Kumbakonam division was functioning in good position. Average productivity of capital, Average productivity of labour, Marginal productivity of capital, marginal productivity of labour, capital labour ratio show that the Kumbakonam division is having a potential to have good performance in future also.

KEYWORDS: *Public enterprises , good position , socio economic transformation.*

INTRODUCTION

Public enterprises are conceived as an important instrument for achieving rapid socio economic transformation of our economy. While greater emphasis is laid on the expansion of public enterprises, it is necessary to ensure that public enterprises increase their productivity. Moreover the recent thinking is that public enterprises should find for themselves in meeting the requirements of expansion and modernization. Gone are the days when public enterprises were established to meet some societal needs and their existence justified on fulfillment of such needs and not on commercial profitability. Now they are expected not only to justify their existence in terms of proper returns on investment, but they should also serve as a model of efficiency and viability to private enterprises in the same line. In the light of these developments a study on productivity assumes a lot of significance in public enterprises. Modern economic activity requires speedy movement of men and materials. A good transportation system inessential for sustained economic growth and can significantly contribute to it.

An efficient public transportation system is also essential for improving the quality of life of the community. Achieving high productivity levels and optimum utilization of the resources in the road transport industry is, however, not a simple task. After clearly identifying the organizational objectives, the management will have to work out a complete programmed of organizational development including scientific designing of routes and schedules, designing work organizations and work systems for full utilization of the manpower and development of an efficient back up organization for ensuring proper operation of the fleet.

Traditional and rigid organizational forms will have to be replaced by innovative and flexible forms in which, through the judicious use of modern management techniques and concepts, an effort would be made to continuously improve the performance. Transport is a labour intensive industry and its work force is a precious resource. A great deal of the performance of an undertaking depends on the

response it gets from labour. Productivity concepts should be applied in this vital area, to motivate men individually and in groups to work and to work happily. Management of state transport undertakings should seriously consider the application of productivity concepts and productivity techniques in every branch of activity. Productivity alone could help state transport undertakings being overtaken by the looming crisis of recurring losses and falling consumer demands.

MEASUREMENT OF PRODUCTIVITY

Productivity appraisal at the macro-level means measurement of the absolute level of productivity and its historical trends expressed through a series of indicates. Essentially productivity change was a measure of the change in the efficiency with which resources (inputs) were converted into the goods and services that a society demanded. In the literature, several types of productivity change measures were common viz., 1.Labour Productivity, 2.Capital Productivity, and 3.Total Factor productivity. The first two measures were measures of partial productivity in that they were ratios of indices of output to a single input, i.e., labour or capital. Total factor productivity combined the two major inputs of capital and labour into a joint index of inputs and related its movements to an index of output.

The concept of total factor productivity was that intermediate purchases were included among the inputs measures. Specifically, it was a measure of output per unit of input; the inputs included labour and capital as well as the intermediate inputs of fuel, raw materials, and other purchase.

The main productivity indicators in transport in order of importance were partial productivity indices and total factor productivity indices.

The partial productivity served a limited purpose. If capital-labour (K/L) ratio remained constant, one could carry the productivity analysis with partial productivity of labour alone. So long as the role of capital and technology was insignificant, growth in productivity might be viewed as growth in labour productivity, but ascribing all the increments in production to labour alone was not studied.

LABOUR PRODUCTIVITY

International labour office (ILO) (1951) may be the first organization which drew attention of all too systematic measurement of productivity, especially labour productivity at firm level after World War II. Some of the developed countries like USA and Japan did have earlier some kind of labour productivity measures but lacked organized approach to measure and use them. This was more so in service sector.

Mundel (1967) in USA first brought output conceptual approach in service organization. He advocated use of multilevel work units to identify service products. Finally, he adopted various work measurement techniques of Industrial engineering for application in service organizations and computed labour productivity by the following formula:

Labour Productivity = Standard Manpower Requirements / Actual Manpower Developed

Rostas (1955) maintained that labour productivity was the most appropriate concept for measuring productivity. He stated that productivity of labour as a measurement of general efficiency in the use of labour and not of the effort of the labour which latter was obviously too narrow to be of much value. He also stated that productivity of labour was influenced by the combined effect of a large number of separate though inter-related factors such as the amount and quality of equipment employed, technical improvements, managerial efficiency, the flow of materials and components, the relative contributions of units at different levels of efficiency as well as the skill and effort of workers. It was through this dual role that productivity of labour becomes an important indicator of the standard of living.

At the national level, labour productivity was computed by taking the entire economically active population as the inputs and the total value of goods and services produced as the output.

National Productivity = GNP / Active Population

Labour was only one inputs and comparing the value if output obscured the relative efficiency with other factors of production were used. For example, the results of a poor investment, policy in capital equipment could, in productivity figures, appear as deterioration in the quality of labour. Thus, a more useful way of measuring national labour productivity was to divide output by "hours potentially workable" in order to take account of labour wasted by unemployment.

In labour-intensive sectors like transport industry and operations, an increase in labour productivity did not decrease the fixed capital requirements, but indicated increase in the productivity of capital. For such situations it was sufficient to measure the productivity of direct labour alone. Output per person or output per work-hour was good measure of productivity in most service industries, except the few capital-intensive ones, because the cost of labour inputs for outweighed capital input.

There were many approaches to labour productivity measurements and analysis in public Sector Enterprises. The simple, practical method for small and medium enterprises was developed and tested in the productivity Development Centre of the Development Academy of the Philippines (Elena, 1984). It was relevant to such enterprises in any part of the world and deserved to be widely known. Quick Productivity Appraisal Approach (QPA), an integrated audit approach, included both diagnosis and monitoring of a productivity improvement programme covering a whole organization. It was a systematic assessment of the company's profitability and productivity performance.

CAPITAL PRODUCTIVITY

Dean (1954) defined capital productivity as the rate of output to capital input i.e.,

Capital productivity = output /capital input

According to Raj (1984), Ahluwalia (1990) and Dholakia (1986), the capital productivity index was defined as the ratio between the next values added and invested capital.

Capital Productivity Index (CPI) = Net Value Added (NVA) / Invested capital (K)

- Invested capital was defined as the total book value of fixed capital and physical working capital.
- Net value added was the increment to the value of goods and services that was contributed by the firm and was obtained by deducting the value of total inputs from value of output.

OBJECTIVES OF THE STUDY

1. To study the growth performances of TNSTC, Kumbakonam division.
2. To analyse the productivity of TNSTC, kumbakonam division.

METHODOLOGY

The present study is based on secondary data. The data have been collected from annual reports published by Central Institute of Road Transport, Pune, Tamil Nadu State Road Transport Corporation. The Ministry of Surface Transport, Government of India and, Ministry of Transport in Tamilnadu, Chennai, Transport commissioner, Chennai, Institute of Road Transport and Secretary of Commerce and Industries, Chennai. The present study covers the period from 2000-01 to 2015-16. For the purpose of analysis mean, Standard deviation and ratios have been used.

Partial Factor Productivity of Capital

Table-1
Average Productivity of Capital

Year	Output	Capital	AP_K
2000-01	51634.72	102.7	502.77
2001-02	52672.24	102.96	511.58
2002-03	55833.30	113.69	491.10
2003-04	59153.15	88.76	666.44
2004-05	64406.18	101.76	632.92
2005-06	66606.63	130.84	509.07
2006-07	73574.72	134.15	548.45
2007-08	81206.62	182.7	444.48
2008-09	88766.63	174.64	508.28
2009-10	93086.76	180.1	516.86
2010-11	98302.78	270.51	363.40
2011-12	112206.47	242.82	462.10
2012-13	146732.77	304.8	481.41
2013-14	159208.63	450.93	353.07
2014-15	160257.43	368.1	435.36
2015-16	157591.41	419.92	375.29
Mean	**95077.53**	**210.59**	**487**
SD			**83.21**
CV			**0.17**

Sources: CIRT, Pune.

The Table-1 presents the capital output ratio of Tamil Nadu State Transport Corporation in Kumbakonam division during the study period from 2000-01 to 2015-16. The mean value of capital output ratio of kumbakonam division during the study period was 487. The highest capital productivity ratio of 666.44 was found in the year 2003-04 and the minimum ratio of 353.06 was found in the year 2013-14. Since the co-variance, standard deviation values are very low it is inferred that there is higher level capital productivity in Kumbakonam division has been found in the period of study.

Table-2
Average Productivity of Labour

Year	Output	Labour	AP_L
2000-01	51634.72	20086	2.57
2001-02	52672.24	19724	2.67
2002-03	55833.30	19193	2.91
2003-04	59153.15	18663	3.17
2004-05	64406.18	18208	3.54
2005-06	66606.63	18010	3.70
2006-07	73574.72	18156	4.05
2007-08	81206.62	22335	3.64
2008-09	88766.63	22673	3.92
2009-10	93086.76	22901	4.06
2010-11	98302.78	22342	4.40
2011-12	112206.50	21379	5.25
2012-13	146732.80	22106	6.64
2013-14	159208.60	23216	6.86
2014-15	160257.40	23212	6.90
2015-16	157591.40	24573	6.41
Mean	**95077.35**	**20963.5**	**4.42**
SD			**1.47**
CV			**0.33**

Source: CIRT, Pune. .

The Table-2 portrays that the output labour ratio of Tamil Nadu State Transport Corporation in kumbakonam division during the study period from 2000-01 to 2015-16. The mean value of labour output ratio of kumbakonam division during the study period was 4.42. It implies that per day of investment on labour has produced 4.42 rate of output. The labour productivity ratio was 2.57 in the initial period. The highest ratio 6.90 was found in the year 2014-15. From 2000-01 to 2006-07, Average Productivity of Labour (AP_L) was continuously increasing. In 2007-08, a sudden falls AP_L in after which was AP_L continuously increasing till 2014-15. In 2015 -16 was AP_L decreased from 6.90 to 6.41 again. Since the co-variance, standard deviation values are very low it is inferred that, not much variation in labour productivity has been found in between the years.

Table-3
Marginal Productivity of Capital

Year	Output	Capital	O/K	^O	^K	MP_K
2000-01	51634.72	102.7	502.77			0
2001-02	52672.24	102.96	511.58	1037.52	0.26	3990.46
2002-03	55833.3	113.69	491.1	3161.06	10.73	294.60
2003-04	59153.15	88.76	666.44	3319.85	-24.93	-133.17
2004-05	64406.18	101.76	632.92	5253.03	13	404.08
2005-06	66606.63	130.84	509.07	2200.45	29.08	75.67
2006-07	73574.72	134.15	548.45	6968.09	3.31	2105.16
2007-08	81206.62	182.7	444.48	7631.9	48.55	157.20
2008-09	88766.63	174.64	508.28	7560.01	-8.06	-937.97
2009-10	93086.76	180.1	516.86	4320.13	5.46	791.23
2010-11	98302.78	270.51	363.4	5216.02	90.41	57.69
2011-12	112206.5	242.82	462.1	13903.69	-27.69	-502.12
2012-13	146732.8	304.8	481.41	34526.3	61.98	557.06
2013-14	159208.6	450.93	353.07	12475.83	146.13	85.37
2014-15	160257.4	368.1	435.36	1048.83	-82.83	-12.66
2015-16	157591.4	419.92	375.29	-2666.02	51.82	-51.45
Mean	**20963.5**	**210.59**	**487.66**	**-136628**	**-209.33**	**652.69**
SD			**83.21**			**1148.22**
CV			**0.17**			**2.67**

Source: CIRT, Pune.

The Table-3 explains the marginal productivity of capital (MP_K) of Tamil Nadu State Transport Corporation in Kumbakonam division during the study period from 2000-01 to 2015-16. The mean value of the marginal productivity of capital in Kumbakonam division was 625.69. During the study period, maximum **(**MP_K) of 3990.46 was found in the year 2001-02 and the minimum of **(**MP_K)-937.97 was found in the year 2008-09. In the study period, the years 2001-02 to 2003-04, 2004-05 to 2007-08, 2009-10 to 2010-11and 2012-13 to 2013-14 have recorded positive sign of(**MP_K**) and rest of years (**MP_K**) was negative. Marginal productivity of capita is showing better performance overall study period.

Table-4
Marginal productivity of labour

Year	Output	Labour	O/L	^O	^L	MP_L
2000-01	51634.72	20086	2.57			0
2001-02	52672.24	19724	2.67	1037.52	-362	-2.87
2002-03	55833.3	19193	2.91	3161.06	-531	-5.95
2003-04	59153.15	18663	3.17	3319.85	-530	-6.26
2004-05	64406.18	18208	3.54	5253.03	-455	-11.55
2005-06	66606.63	18010	3.7	2200.45	-198	-11.11
2006-07	73574.72	18156	4.05	6968.09	146	47.73
2007-08	81206.62	22335	3.64	7631.9	4179	1.83
2008-09	88766.63	22673	3.92	7560.01	338	22.37
2009-10	93086.76	22901	4.06	4320.13	228	18.95
2010-11	98302.78	22342	4.4	5216.02	-559	-9.33
2011-12	112206.5	21379	5.25	13903.69	-963	-14.44
2012-13	146732.77	22106	6.63	34526.3	727	47.49
2013-14	159208.6	23216	6.85	12475.83	1110	11.24
2014-15	160257.43	23212	6.9	1048.83	-4	-262.21
2015-16	157591.41	24573	6.41	-2666.02	1361	-1.96
Mean	**95077.5**	**21048.5**	**4.42**			**-11.00**
SD			**1.47**			**69.75**
CV			**0.33**			**-6.34**

Source: CIRT, Pune.

The Table-4 presents, marginal productivity of labour (MP_L) of Tamil Nadu State Transport Corporation in Kumbakonam division during the study period of 2000-01 to 2015-16. The mean value of the marginal productivity of labour Kumbakonam division was -11.00. In the study period, maximum value of (MP_L) 47.73 was found in the year 2006-07 and the minimum value of **(**MP_L) 262.21 was found in the year 2014-15. In between the study period only 2006-07 to 2009-10, 2012-13 to 2013-14 have recorded positive sign of marginal productivity of labour showing better performance compared to the overall study period.

Table-5
Capital Labour Ratio

Year	Capital	Labour	K/L
2000-01	102.7	20086	0.0051
2001-02	102.96	19724	0.0052
2002-03	113.69	19193	0.0059
2003-04	88.76	18663	0.0047
2004-05	101.76	18208	0.0055
2005-06	130.84	18010	0.0072
2006-07	134.15	18156	0.0073
2007-08	182.7	22335	0.0081
2008-09	174.64	22673	0.0077
2009-10	180.1	22901	0.0078
2010-11	270.51	22342	0.0121
2011-12	242.82	21379	0.0113
2012-13	304.8	22106	0.0137
2013-14	450.93	23216	0.0194
2014-15	368.1	23212	0.0158
2015-16	419.92	24573	0.0170
Mean	**210.59**	**21048.56**	**0.0097**
SD			**0.0047**
CV			**0.49**

Source: CIRT, Pune.

The Table-5 gives the details regarding the magnitude of capital employed per worker and its mean value and the co-efficient of variation for Tamil Nadu State Transport Corporation in Kumbakonam division. The mean value of capital labour ratio was 0.0097 during the study period (2010-11 to 2015-16) and which indicates that on an average this industry has employed Rs.0.0097 lakhs of capital for per labour. The standard deviation and co-variance are very low over the study period. It clearly indicates that there is no much deviation had been taken place over the study period.

CONCLUSION

It is evident from factors productivity analysis that the Tamil Nadu State Transport Corporation in Kumbakonam division was functioning in good position. Average productivity of capital, Average productivity of labour, Marginal productivity of capital**,** marginal productivity of labour, capital labour ratio show that the Kumbakonam division is having a potential to have good performance in future also.

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C. Senbaga Aiyan Moorthi
Ph.DResearch Scholar, Department of Economics, Bharathidasan University, Tiruchirappalli.