Chapter V

PERFORMANCE STANDARDS FOR

ROAD TRANSPORT CORPORATIONS
Performance of business enterprises is usually judged on the basis of profits earned or surpluses generated. In the case, however, of public sector service-oriented enterprises, profit or surplus can only be one of several other criteria for measuring performance. The guiding purpose and the objectives for which organisations have been created will have to be the points of reference while evaluating performance. According to Kenneth Robinson, "For a private firm profits, loosely defined, are the overriding objective, whereas they clearly provide an inadequate measure of performance for a nationalised industry... In order that the full potential of public ownership and control is realised, public enterprises require an objective which embraces the wider interests of the community and reduces finance to the status of a constraint rather than a goal in itself."¹

The overriding social objectives and other environmental constraints are more often stressed in the evaluation of the performance of public sector service-oriented organisations like Road Transport Corporations. "There are decisions which are made outside the enterprise to which the enterprise has to conform; decisions made by the government; directives received from the ministry; special responsibilities
imposed upon an enterprise in respect of, for instance, labour welfare, and the generally economic policies which the government is pursuing.**

**Profit vs. Service

The public sector industry in India has been particularly bedevilled by the dichotomy of the competing claims of profit maximisation and service maximisation. While on the one hand social responsibilities were being heaped on these undertakings, both in the legislature and elsewhere they were being subjected to trenchant criticism for the accumulation of losses. The very purpose of State intervention in business and industry is to strengthen the economy and promote social justice by looking beyond the narrow confines of profit and loss, and to gear up the economy towards the national goals of prosperity. In a developing economy, it is not desirable to consider only the immediate, micro aspect of simplifying industrial contribution into profits and losses. What is of paramount necessity is the building up of a viable infrastructure for creating conditions for economic prosperity.

However, one of the main reasons for the public sector not coming up to expectations is the absence of clear-cut performance standards to judge efficiency against desired objectives. It is necessary to eliminate the external factors contributing to the non-performance and clearly identify those which properly assess inefficiency due to causes
internal to a given enterprise. On this point, the report of the British select Committee on Nationalised Industries (1968) clearly states that, "Not only should the (social) objectives be quantified wherever possible, its direct cost should be published. The citizen should know what he is paying for, the social benefit that he or his neighbour is receiving, so that he may decide whether or not he is getting the value for his money."³ If clear performance standards are laid down, it is possible to direct the concerned public enterprises in the path that is chalked out for them in the national interest. The Select committee on the Nationalised Industries of the British Parliament, in respect of the performance of the British Overseas Airways Corporation, went into great detail separating the internal and the external causes of inefficiency and concluded that "there is apparently no adequate reason, apart from your own inefficiency, for your failure in this respect and therefore it is high time that you introduced more efficient managerial practices."⁴

The point to be made in this context is that pursuit of social objectives should not obfuscate criteria for assessing performance. The public undertakings should be judged by evolving performance standards that denote internal organisational efficiency unrelated, as far as can be, to the unquantifiable social obligations enforced by the government. "With the transition in ownership, the emphasis has been
shifted from profit to standard of service. In fact there is a school of thought which considers that public undertakings need not necessarily cover the cost and the deficit, if any, should be absorbed as social overheads. Whether or not it should be so has been a controversial matter. May be they should cover the cost of operations and ensure a reasonable surplus after incurring all proper costs; otherwise it may become a convenient umbrella under which an inefficient and corrupt management can hide.\(^5\)

To tighten managerial efficiency by streamlining the organisational performance and to avoid wastages are reasonable aims that should be pursued by public undertakings. "Profit optimisation is relevant as a unified overall measure of corporate performance in the long run, but in the short term, profit can only reflect costs and revenues; it does not indicate the actual resources from which these are derived. Measures of waste, on the other hand, can help to identify quickly what is really going on."\(^6\) In outlining the performance standards for the purpose of judging internal organisational efficiency, the guiding principle should be as to what extent the resources kept at the disposal of the undertaking have been utilised judiciously in serving the objectives laid down.

Efficiency, in general, is basically an input-output relationship. It is the ability to produce the desired
effect with the minimum of effort, expense or waste. It is also, at the same time, relative. "The achievable standard is with reference to a particular situation with certain specific factors of production. A firm may set its own standards of output for each input and norms of behaviour for various other achievements, but whether the level of a standard or norm is right is not easy to ascertain. It becomes necessary to compare one situation with a similar situation in other places or in the same place over a period of time. The former course is more difficult to apply and, therefore, the latter is followed more commonly."

Public sector passenger road transport

The foundations of public enterprise in India, after Independence, have been laid in the Industrial Policy Resolutions of 1948 and 1956. "The Industrial Policy Resolution of 1948 aimed at greater production and the proper distribution of wealth so produced in order to establish a society wherein justice and equality of opportunity would prevail. The Resolution therefore envisaged a greater role for the state in the economic development of the country. However, it stated that in view of the limited resources at the disposal of the government, it should concentrate on the expansion of the units of production already under its control and the setting up of new industries rather than nationalising the existing
units in the private sector. This is perhaps one reason why road transport sector finds no mention in the 1948 Resolution.

Road passenger transport had been in the hands of private businessmen in the country, except in certain pockets, until Independence. The role of the Government was mainly regulatory. This was perhaps due to the inadequate appreciation of the importance of mobility for general economic upliftment. It could also be that the foreign rulers ignored this essential infrastructure facility since their commitment to development was at best perfunctory. Since one of the aims in the 1948 Resolution was not to be hasty in nationalising the units already in the private sector, road transport was understandably excluded from the industries mentioned and earmarked for public intervention.

Very soon, however, the government brought out a legislation in 1950 to provide for nationalisation of road transport. The Road Transport Corporations Act, dated 4th December 1950, is the first all-India measure for State intervention in the industry. The Industrial Policy Resolution of 1956 marked an improvement over its predecessor. The country, having given itself a constitution guaranteeing certain fundamental rights with the promise of a socialistic pattern of society, and having made a good start with planned economy, required a more enlarged industrial policy. The 1956 Resolution states its basic aim thus: "The adoption
of the socialistic pattern of society as the national objective, as well as the need for planned and rapid development require that all industries of basic and strategic importance or in the nature of public utility services should be in the public sector. Other industries which are essential and require investment on a scale which only the state in present circumstances could provide have also to be in the public sector. Schedule B of the 1956 Resolution listed industries "which will be progressively state-owned and in which the State will therefore generally take the initiative in establishing new undertakings, but in which private enterprise will also be expected to supplement the efforts of the State." It is under this schedule that road transport has been included as the eleventh of twelve items.

In pursuance of the provisions of the Road Transport Corporations Act, 1950 and in the spirit of the Industrial Policy Resolution of 1956, suitable amendments were brought into the Motor Vehicles Act of 1939, in the year 1956, for nationalising road transport. These amendments in the Motor Vehicles Act were, however, historic in that the entire legislation which was conceived in 1939 could not anticipate the role of the government as a transport operator. Between 1939 and 1950, the country underwent a great transformation. In this short span of eleven years, the country not only achieved Independence but also resolved its commitment to bring in a socialistic pattern of society. Armed with the
Road Transport Corporations Act and suitable amendments to the Motor Vehicles Act, the stage was set for increased State intervention in the operation of road transport services in the country.

While empowering the state governments to establish Road Transport Corporations in their respective States, the Road Transport Corporations Act, under Sec. 23 (1), gave the added incentive of the Central Government's participation in providing for the capital of the newly established Corporations. The Planning Commission also had recommended the formation of Corporations in the States, and the finance of the Corporations are obtained on loan from State and Central Governments on a 2:1 ratio of contribution. 9

Objectives of Road Transport Corporations

It is necessary to examine the objectives set for the Road Transport Corporations by the ruling legislation in order to identify the performance standards that could assess the internal managerial efficiency of the Corporations. Section 18 of the RTCs Act states that "it shall be the general duty of a Corporation to exercise its power as progressively to provide or secure or promote the provision of an efficient, adequate, economical and properly coordinated system of road transport services in the State or part of the State for which it is established and in any extended
area; provided that nothing in this section shall be construed as imposing on a Corporation, either directly or indirectly, any form of duty or liability enforceable by proceedings before any court or tribunal to which it would not otherwise be subject.\(^\text{10}\) And again, section 22 of the same Act enjoins that "it shall be the general principle of a Corporation that in carrying out its undertaking it shall act on business principles.\(^\text{11}\)

In simple terms, the objectives as laid down by the Road Transport Corporations Act for the Corporations formed under this legislation are that they should provide (secure or promote) an efficient, adequate, economical and properly-coordinated transport service and in doing so carry on its activities on business principles. These five-fold, essentially qualitative, objectives need to be quantified for separating those that are within the internal managerial efficiency to perform and those that have mainly to depend on the government and external agencies.

**Efficient Transport Service**

Efficiency, in general terms, is the ability to perform well or the capacity to produce results. "In any sphere of activity, efficiency is the ratio of the results achieved to the means used. It is the ability to produce the desired effect with the minimum of effort, expense or waste.\(^\text{12}\) Thus, the word Efficiency could be stretched to cover the
entire performance of an enterprise. However, this could not have been the purpose of this word when it has been used particularly as an objective providing for a certain aspect of transport service.

Efficiency, as defined by M.P.V. Anantha, is (a) ensuring the operation of services according to the published timings in order to obtain punctuality, regularity and reliability, (b) ensuring that statutory requirements are observed in the operation of services in the area, (c) ensuring that services are run at a speed consistent with the safety of the occupants of the buses and of the other road users, (d) ensuring that all possible assistance is rendered to the persons involved in an accident, and all information relevant for legal as well as record purposes is collected, (e) ensuring the operation of buses by crews in proper turnout and their rendering service with civility to the passengers, and (f) economic services.\(^1\)

For the purposes of evaluating a transport service on the parameter of efficiency, it could be summed up that it should have regularity, reliability, punctuality, safety, comfort, courtesy and cleanliness. Regularity denotes operating the service as per the frequency of timings advertised and made known to the public on the basis of the assessment of their needs and on which basis vehicle resources have been committed for the purpose. In other words, bus services should not ordinarily be cancelled. If services are
not operated at known intervals as planned, regularity is deemed to have been affected. **Punctuality** means 'neither early nor late', or in the present case, that bus service should leave the starting point at the appointed time, i.e., on time, without delay. **It** should also arrive at the destination at the predetermined time. En route, wherever it is supposed to halt for picking up and alighting passengers, it should conform to the scheduled timings of arrival and departure at such mid-points. Punctuality of a transport service, in sum, means that the service should not only leave and arrive on time but also adhere to the same stipulation on scheduled halts en route.

**Reliability** means the quality of being dependable. In the case of a transport service, reliability denotes a break-down free service. A passenger buys a service to reach his destination and if the bus breaks down and he is left stranded, the service is not dependable. **Safety** is freedom from danger. A safe transport service is one which is accident-free, enabling the passenger to reach his destination without loss of life or limb. Safety is not only in respect of the passengers travelling, it is equally in respect of the crew operating the service and pedestrians and others who have a right to share the road.

**Comfort** in transport service would mean a reasonably adequate accommodation for passengers to sit with ease. The buses should not be loaded beyond the capacity authorised
in order not to cause inconvenience to passengers. While this is basic, comfort could also be enhanced by providing faster service and improved facilities at an extra cost wherever justified. **Courtesy** is being polite and kind, showing good manners. The passengers should be treated well and it should be realised by those responsible for the transport operations that the passengers are paying for courtesy too. **Cleanliness** is another attribute of efficiency in transport service. The buses, bus stations and other premises should be kept clean and proper importance should be given to their maintenance and upkeep.

**Adequacy in transport service**

Adequacy of transport service denotes provision of service level in right proportions. According to M.P.V. Anantha, adequacy of service could be ensured "(a) by introducing additional services, (b) by increasing or decreasing or otherwise adjusting the number of trips, (c) by altering the timings of trips to suit the traffic demand, (d) by initiating proposals for expansion of services involving fresh capital investments, (e) by operating unscheduled services on special occasions or in response to manifest demand, (f) by an operation of unscheduled services involving fresh capital investments, and (g) by operating emergency services in public interest."  

In a given area of operations, adequacy of transport service could be achieved by an objective assessment of
travel needs of the people and matching them with the procurement of enough resources for meeting the transport demands of the area. "Transport is a derived demand; in other words, the demand for transport is derived from the demand for something else."15 Especially in a developing country, the general economic and other social development in the area should be carefully studied for determining the existing, and for forecasting the future, demands for transportation. While it is necessary to match the transport service as per the demands of the people, transport is also a business where supply creates demand. In most of the backward and developing areas in rural parts, transportation needs are stifled, and are yet to be articulated and pronounced. The supply of service is likely to trigger off more demand, awakening the latent or dormant needs of travel. Depending upon the convenience, people would like to go to the nearby towns and other places for business, education, recreation, etc. The growth of transportation needs will therefore be much more than the growth of population in a given area. The very process of rural awakening will require more and more attention to provide for the new needs of mobility. It is in this context that adequacy of transport service should be read, planned and provided for.

At micro level, it is as observed by Mr Anantha, the ability to adjust the available resources for meeting the
travel demand. At a macro level, however, providing for adequacy would mean long range planning on the basis of evolving an overall strategy for obtaining adequate resources to cater to the total mobility needs.

Economical transport service

Economical transport service means a service that is not wasteful. It denotes that all the inputs are put to appropriate and maximum use in order to provide a service which reflects only the genuine costs of operation. Economical service is not cheap service because cheapness is relative. What is cheap to one may not be cheap to another. Under this objective, there is a responsibility to provide transport services at fares that give consistently better value for their money to the passengers. To provide maximum of service at a minimum of cost to the public and to eliminate wastages internal to the working of the organisation is the crux of providing economical transport service. The responsibility to the supplier of the service is not to pass on the costs of his own inefficiency to his customer.

Economical is interpreted here only from the point of view of the passenger because the four objectives mentioned in Section 18 of the RTCs Act spell out an obligation on the part of the Road Transport Corporation towards the passenger or the user.
properly coordinated transport service

To coordinate is to equalise in importance. Proper coordination means, in the context of transport operations, provision of service in conformity with the weightage to be given to one mode of transport in relation with other modes of transport. That this is important is recognised by Sec.43 of the Motor Vehicles Act, where it is mentioned that the State Government, while issuing directives in regard to grant of permits, should have regard to the ‘desirability of coordinating road and rail transport’.

Coordination in this context is of two types; internal and external. Internal coordination means coordination within a given mode of transport. In other words, the bus schedules of one unit of operations and another should be so adjusted that there is no wasteful provision of services in a spirit of meaningless competition. The seat/kilometers produced by the transport operations are a highly perishable commodity. If there are no passengers waiting for the seats provided and the bus moves on, the capacity generated is lost for ever. It is for this reason, coordinated transport is of utmost importance. Wastages due to improper coordination will tell on the profitability of the service and in the long run will have the effect of being passed on as costs to the travelling public in the shape of increased fares.
The other aspect of coordinated transport is external or inter-modal coordination. Bus transport, rail transport, water transport, and even air transport, should be planned and operated as a coordinated network by evolving a national transport policy. Certain modes of transport are economical in certain operating conditions. There are energy implications. Long distance travel is more economical by rail. But provision of a railway is a much costlier proposition than building roads. Road transport has a greater criss-crossing manœuvrability than rail transport, and has the added advantage of penetrating the countryside. Whereas, rail transport can carry economically bulk loads over long distances. There is place for both; but what the share of each mode, and its place in the overall transportation network, should be, has to be decided on the basis of a national policy.

There is another dimension to the transport coordination. That is the facility for inter-change among the different modes of transport. Passengers coming by rail need bus transport to continue and complete their journey. Similarly, buses most often feed the railways. In this case, if the terminals are located in an unrelated manner, as is the case in this country, there will be a great inconvenience to passengers, requiring intermediate modes of transport such as rickshaws, etc. It is not unoften that the cost of travel between two terminals is as high as, or
even more than, the cost of travel by major modes of transport like buses and the railways. While locating transport terminals, as far as possible, they should be integrated so that the passengers can easily inter-change from one mode to another without incurring additional cost or inconvenience.

Running transport on business principles

The justification for any business activities lie in creating a surplus. And if there are any principles in business, the most important of them is to earn profit—-atleast in the long run. As argued in the earlier pages, the essence of state intervention in business is to lead it beyond the narrow confines of profit-seeking, towards conformity with the overall strategy of achieving the commanding heights of economy. "profit in the commercial sense is difficult to assess in public sector (transport) undertakings because of several social costs incurred by them compared to privately managed undertakings. Unless we are in a position to identify the social costs and give credit for these costs to the undertakings, its profits revealed by the accounts of the undertakings cannot be compared. These social costs can be said to include higher wages, overstaffing, provision of more amenities to the workers than in the private industry, and other facilities."
Profit making in public sector transport is discounted by several other authors. According to a study made by Mr. G.K. Sant in 1972, profitability of nationalised transport undertakings over a period of twenty years changed from year to year due to factors such as (1) direct taxes (passenger tax, motor vehicle tax, octroi, etc.) and indirect taxes (excise duty, import duty, sales tax, customs, etc.), (2) rise in wages, allowances and improvement in service conditions due to labour settlements and labour legislation, (3) market conditions relating to shortages of chassis, stores, equipment, etc. resulting in large scale sickness of vehicles, (4) changes in the mode of depreciation, rates of interest, provision of certain statutory and non-statutory funds, etc. All these factors, in the opinion of Mr. Sant, operating either singly or in combination, change the profits from year to year. Besides, administrative inefficiency and lack of planning may also be responsible for the fall in profits or increases in losses in some cases. Under the circumstances, profits as reported in the accounts are the resultant effect of all these factors and are not necessarily a true index of efficiency of the management of the road transport undertakings. "If the profits turn into losses due to the imposition of tax of higher wages, or loss of revenue due to political agitations or natural calamities, it is no longer a measure of inefficiency of the undertaking. Therefore, if comparative business profits are to be assessed, the factors
imposed by legislation must be eliminated and the profitability exclusively assessed. In other words, efficiency of an undertaking lies in its determination in reducing controllable costs in order to enhance profit or reduce loss. This alone could give a comparable quantum of profitability of an undertaking from year to year as a measure of efficiency.**

Analysing the causes of poor financial performance of public sector transport, G.C. Baveja opines that "one of the main causes contributing to the financial difficulties of nationalised (transport) undertakings is inflexibility of their fare structure. The fare standards of various undertakings has not been fixed on a scientific basis. Even as the operational costs go on increasing because of increase in incidence of taxation, rise in prices of vehicles and spare parts, and increase in cost of staff, it is not possible for the undertakings to raise the fares in time and to the extent needed because of public pressure."**

"Public sector transport is unable to pass on even the true cost of operations to the customer under the protected fares. During the last five years, taxes have gone up by 100 per cent, materials by 56 per cent and wages by 36 per cent, but the increase in fares is less than 20 per cent. It is for this reason that many transport
executives argue that losses in the nationalised transport industry are artificial. They arise out of the Government's desire to protect the passengers from the varieties of price escalation in the supply market.  

Commenting on the plight of public transport in India, the noted British economist, Lady Hicks, observed that "a more sensible policy would be to sanction the imposition of higher fares, making sure that they are collected, even if this is not in the best traditions of theoretical welfare economics; it may indeed promote welfare in the long run."

More often, Government itself is responsible for increasing costs in transportation industry. "It is interesting to see from the figures of cost hike during the last five years that the Government has itself increased the taxes by 100 per cent. While on the one hand it exhorts that State Transport Undertakings should bear the social costs of uneconomic routes, it is not prepared to part with its own pound of flesh! The upshot of it all is that under a system of pricing and uncontrolled external costs, the losses (or profits) can only be deemed to be artificial."

Elsewhere in the world, public transport is heavily subsidised, as it has been regarded as a facility to the public, where fares are only a token payment. "Indeed, subsidy to public transport is currently running at historically unprecedented levels. In 1975-76 passenger subsidies to transport operators amounted to over £550m, of which some £340m went to British Rail and £200m to the..."
buses (1975 survey prices). In addition, local authorities are spending nearly £50m on concessionary fares. At outturn prices the community spent nearly £40 a year per household (£22 of it on rail) to keep services going and fares down. (Passenger subsidies at outturn prices in 1975-76: Railways - over £400m; buses - over £240m. Concessionary fares at outturn prices in 1975-76 approximately £60m).”

The situation in other countries on the continent is even more interesting. The subsidisation of urban travel there has been the envy of British transport managers. The following table will illustrate the extent to which operating costs are subsidised and the recognition of the role of urban transport in promoting general welfare.

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of cities</th>
<th>Fares revenue as percentage of operating cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>4</td>
<td>40 - 75</td>
</tr>
<tr>
<td>Germany</td>
<td>4</td>
<td>50 - 75</td>
</tr>
<tr>
<td>Italy</td>
<td>2</td>
<td>15 - 20</td>
</tr>
<tr>
<td>Denmark, Norway</td>
<td>4</td>
<td>40 - 60</td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>6</td>
<td>50 - 55</td>
</tr>
</tbody>
</table>

Even greater subsidies are being contemplated for rural or inter-city transport in these countries in view of the policy to discourage private transport and promote mass transport due to emphasis on fuel economy.
The foregoing paragraphs illustrate the difficulty in running Road Transport Corporations on business principles, if what is meant by them is profit-making. It is interesting to note that while laying down the objectives for Indian Airlines and Air-India, Section 9 of the Air Corporations Act states that "in carrying out any of the duties vested in it by this Act, each of the Corporations shall act as far as may be on business principles." (emphasis added)

This is further compounded by the alacrity with which the Government allows increase in air fares as and when a case is made out by the air corporations. It is only charitable to conclude that since road transport is poor man's means for mobility, government wants to protect his interests, even against reflection of true costs of operations in the fares. In which case, the business principles theme will be reduced to an empty formality.

The objective of business principles can however be interpreted to mean that the Road Transport Corporations should use their capital and other assets with efficiency that does credit to a business enterprise. In their efforts of cost reduction and elimination of wastages due to internal organisational inefficiencies, the Corporations should act as private businessmen do to remain in business. In respect, however, of fulfilling the obligations entrusted by the Government for improving the overall mobility of people, profits may have be sacrificed for the greater good of the community.
Survey of literature on transport performance

There is a general confusion prevailing even in advanced countries about the role of public undertakings and the method of judging their efficiency. There can be no dispute that these undertakings should be run in the 'national interest'. But national interest, as Professor Robson has said, "is so vague a concept that it can be extended to cover almost every conceivable reason for granting, or rejecting, or modifying a proposal." In the case of British Transport, C.D. Foster mentions a white paper on Reorganisation of the Nationalised Transport Undertakings. "Nationalised transport shall be soundly based both in organisation and finance providing efficient services to industry and the public and giving a good livelihood and worthwhile jobs to those who work them... The practical test for Railways as for other transport is how far the users are prepared to pay economic prices for the service provided. Broadly, this will in the end settle the size and pattern of the Railway system... Increasing Railway fares and charges must, where and when appropriate, make their due contribution towards meeting railway costs... As an essential first step, there must be radical changes in the organisation, financial structure and statutory framework." (Emphasis Foster's) After quoting from the report, Mr. Foster states, "All this vagueness typical of such statements proceeds either from inability to make up one's mind or from a failure to appreciate that if an industry
is to be run in the consumers' interest then the appropriate rate of return must be used.\textsuperscript{26}

This only proves that vagueness of objectives is common. In fact, the above writer argues that "the words that parliamentary draftsmen use and civil servants prefer, are scarcely ever precise as an economist knows precision, simply because civil servants (and ministers) wish for enough ambiguity so that policies can be altered significantly without being necessary to face all the problems and costs of having to pass new legislation, given the queue of impending Bills."\textsuperscript{27} While this alleged vagueness may suit the policy makers, for practical management, appropriate standards of performance have to be set for measuring internal managerial efficiency. The following are, therefore, being mentioned even at the risk of elaboration so that while formulating performance standards to be achieved by the Road Transport Corporations, however saddled they may be with the burdens of social obligations, and to give effect to political imperatives, such standards will centre mainly around what is reasonably achievable inspite of constraints external to their working.

The work of Dr. Tomazinis\textsuperscript{28}

transportation. He divided his analysis into efficiency measures for the operator-Supplier on the one hand and the users on the other. According to him Operator-suppliers' efficiency measures "should be able to assist them to assess or determine in absolute or relative terms the success they have had in achieving desirable objectives in the following five areas of concern: (1) Unit costs, (2) Input of resources, (3) Relative distribution of costs, (4) Provision of service, and (5) Collection of revenues." Dr. Tomazinis further divides each of these five areas into ratios most appropriate in revealing the extent to which the first service goal has been met.

(1) Unit cost measurements as Efficiency Indicators:
(a) total operating expenditure per vehicle mile operated,
(b) total operating expenditure per passenger mile carried,
(c) total operating expenditure per passenger carried,
(d) direct cost of conducting transportation for vehicle mile operated,
(e) direct cost of conducting transportation per passenger mile carried,
(f) direct cost of conducting transportation per passenger carried.

(2) Input of resources measurements as Efficiency Indicators:
(a) total labour input per vehicle mile operated,
(b) total labour input per passenger mile carried,
(c) total labour input per passenger carried,
(d) total energy consumed per vehicle mile operated,
(e) total energy
consumed per passenger mile carried, (f) total energy consumed per passenger carried.

(3) Relative distribution of costs as Efficiency Indicators: (a) Direct & indirect costs of conducting transportation per dollar or total operating expenses, (b) utilised capacity (during the base service period) per available capacity (during the hour of peak demand).

(4) Direct service measures as efficiency indicators: (a) average vehicle miles per vehicle, (b) passengers carried per vehicle (daily or annually), (c) vehicle miles operated per man-hour of labour, (d) passenger miles per man-hour of labour, (e) passengers carried per man-hour of labour, (f) vehicle miles operated per passenger carried, (g) seat miles or passenger miles.

(5) Revenue measures of efficiency Indicators: (a) operating revenues per vehicle mile, (b) operating revenues per passenger mile, (c) operating revenues per passenger carried, (d) operating revenues per man-hour of total labour output, (e) operating revenue per dollar of direct costs of conducting transportation, (f) operating revenue per vehicle.

Outlining the efficiency measures of public transportation from the point of view of the User, Dr. Tomazinis mentions four areas of concern: (1) cost of travel, (2) quality of travel (convenience, comfort), (3) reliability of service, and (4) safety and security. These areas of concern are further subdivided into individual pertinent
(1) Cost of travel measurements as Efficiency Indicators: - (a) total travel cost per unit of distance travelled, and (b) time cost per unit of distance travelled.

(2) Quality of travel measurements as Efficiency Indicators: - (a) convenience of service - frequency of service and proximity of service - to be derived from the ratio of actual to demand, frequency of departure and the ratio of actual operating distance of the service to the maximum acceptable distance, and (b) comfort of service, to be determined by the floor area of vehicle per passenger carried and the ratio of average number of seats available to the average number of passengers carried.

(3) Reliability of service measures as Efficiency Indicators: - (a) number of on-time arrivals per number of all movements, (b) number of major delays in performance per number of all movements, (c) number of abandoned services per number of all movements.

(4) Safety and security measures as Efficiency Indicators: - (a) number of fatal accidents per vehicle mile, (b) number of miscellaneous accidents per vehicle mile, (c) number of fatal accidents per passenger carried, (d) number of miscellaneous accidents per passenger carried, (e) number of all types of accidents per passenger carried.

Concluding his deep and detailed analysis of measurement
of efficiency indicators, Dr. Tomazinis states, "The number of the suggested efficiency indicators is obviously too large for any easy, straight forward understanding of the efficiency conditions prevailing in the transportation service... As future empirical work on these efficiency indicators proceeds in the field, and as more understanding is gained on the significance and utility of these indicators, the analysts may soon be able to improve in their definitions, determine their data feasibility and conclude on the absolutely minimum number of indicators they would need in each case of service assessment."

Popper's Evaluation Measures for Rural Public Transportation

Rural public transportation is catching up in advanced countries in view of the curbs on fuel consumption. While the main preoccupation in U.S.A., U.K. and other advanced countries is still with urban transportation, inter-city rural public transportation is gaining attention. Notess, Popper and Zapata make a list of the following measures for evaluating rural public transportation:

1. Transportation service to users.

   (a) Quality - (1) Convenience: travel time, pick-up/delivery proximity, frequency, reservation requirements, compatibility of schedule.

   (2) Comfort: seating, delay at stops, others.

   (3) Privacy: traveller mix, information requirements.
2. Operator efficiency

(1) Revenue
(2) Cost factors: capital, operational
(3) Revenue utilisation: vehicle load factor, personnel utilisation, route deadhead mileage, energy consumption

3. Community/area impact

(1) Economic: employment, business
(2) Social: Service utilisation, others
(3) Political

Other studies in transport efficiency

As may be seen from the studies cited above, performance indicators for transportation industry are still in the process of being evolved even in advanced countries. According to B.R. Stokes, "Basic efficiency indicators relate units of cost or work by employees or vehicles to units of service or other types of input. Examples include (a) labour utilisation indicators like ratio of platform time to
pay time; mechanics per vehicle, miles and/or hours per operator; and miles and/or hours per mechanic; (b) vehicle utilisation indicators such as annual miles of service per vehicle or annual hours of service per vehicle; and (c) cost indicators such as cost per hour, per mile, per employee, per rider, per passenger mile, or per vehicle, as well as the percentage of total costs which each function represents.  

Echoing the same type of analysis, William C. Underwood states that, "Some of the key data that might be developed and used as part of performance evaluation programme include: revenue passengers, revenue, operating expenses, vehicle miles, vehicle hours, passenger miles or vehicle miles, scheduled vehicles, total vehicle fleet, spare ratio, subsidy/passenger trip, rides/capita, revenue/expense, revenue/passenger, revenue/passenger mile, revenue/hour, cost/hour, passenger/mile/vehicle, total employees, passenger miles/employee, and drivers' wages. The basic understanding of these statistics and their application in measuring performance are essential management skills that must be greatly improved."

Management control parameters

A.W.H. Lammond, a UNDP seconded to India, made a study of the transport system in India and tried to evolve parameters for managerial control. According to him, optimising utilising utilisation of the main assets (vehicles) and minimising operating costs are the special problems in
nationalised undertakings in India. Fleet utilisation (per cent of total fleet on road), vehicle utilisation (kilometers per day per bus), and earnings per kilometer are the three main parameters necessary for effective control. Analysing these further, Mr. Lammond lists eight factors: kilometers run, earnings, buses operated on routes, earnings per bus/day (by route), vehicle cost per bus/day, margin per bus/day over variable costs, fixed cost per bus per day, and profit/loss per bus per day.

Two Australian experts mention that "for the transport of goods, the services should have the qualities of speed, safety, adequacy, frequency, regularity, comprehensiveness, responsibility, and acceptable cost. For the transport of people, the additional quality of comfort is called for. All of these qualities are important to the user in determining what form or method of transport is most suitable to him. However, as financial or other considerations may not permit all of these qualities being attached to every movement, something less than perfection may be acceptable. The relative values of the qualities may change from movement to movement and from place to place. The constant problem is the selection of qualities which are more important than others in each particular instance."^{33}

**Key Result Areas for Operational Control**

Pioneering work has been done in India by Mr. M.P.V. Anantha,^{34} a highly experienced and articulate transport
executive, in the cause of sharpening the focus of managerial attention for operational control in Road Transport Corporations. He divides the key result and performance areas in transport operations into two categories: quantitative and qualitative. His six-fold classification of quantitative standards are as follows:

(a) Schedules: Total scheduled kilometers per month.

(b) Vehicles: Vehicle utilisation per day (kilometers per day per vehicle); and vehicular (fleet) utilisation (percentage of number of vehicles made available for operation to the number of vehicles held by the depot).

(c) Materials Management: Rate of fuel consumption (kilometers per litre of diesel oil); use and maintenance of major parts of vehicles expressed in terms such as kilometers per unit assembly, kilometers per tyre, etc.; bus kilometers wasted as a percentage of revenue kilometers operated.

(d) Earnings: Earnings per bus kilometer; and load factor or occupation ratio (ratio of number of seat kilometers sold to the number of seat kilometers produced).

(e) Crew utilization/Man-hour costs: Crew working ratio (number of steering hours per crew to the number of scheduled duty hours); cost of crew hours expressed in terms of paise per revenue kilometer operated; and cost of overtime as a percentage of total wage bill of the depot.
(f) Passenger satisfaction: Number of unpunctual operations and their percentage to the total number of trips to be operated; number of cancellations of trips and percentage of such cancellations to the total number of scheduled trips; number of breakdowns en route (percentage of number of breakdowns to every 10,000 kms. of scheduled operations; number of accidents - fatal, major and minor - per 10,000 kms. operated; and the number of man days lost (percentage to the number of man days paid for) analysing on the basis of leave, sick leave and unauthorised absence.

In order for these quantitative standards to be achieved, according to Mr. Anantha, it is necessary to have back up of such qualitative standards like better industrial relations, positive public relations, and agreements on targets set, etc., so that the active support and cooperation of workers, public and higher authorities are mustered for achieving the physical, quantitative standards.

Management control systems approach

Taking advantage of recent advances in the planning and control mechanisms of identifying basically three major hierarchical levels for effective control by Professor Anthony, the (a) strategic planning, (b) management control, and (c) operational control areas in Road Transport Corporations have been identified by this student and tasks assigned to each level. The spirit of this approach is that the top manage-
ment should mostly concern itself with policy decisions, interacting with external agencies and taking care of long range interests of the organisations. The task of the middle management would then be mainly in translating the policies of the top management into working plans so that the junior management, which is in charge of operational control, will be able to implement these working plans for the achievement of the overall policies evolved at the top level.

In a typical transport organisation, the top management which is responsible for strategic planning should (1) work for timely changes in the legislative framework in order to make it more relevant, (2) bring about coordination between Road Transport Corporations and the Transport departments of the respective Governments, and (3) liaise with the road authorities for construction of new roads and for strengthening the roads already laid.

The middle management which is responsible for management control (i.e., translating the top management policies into working plans and planning for better resource utilisation) should concentrate mainly on (1) traffic planning to meet the objective of adequate transport service, (2) improving average vehicle utilisation in order to produce more seat/kilometers with the same fleet, (3) keeping a watch on bus/staff ratio on the basis of productivity of vehicles in
terms of kilometers, (4) providing the framework for regular monitoring of route behaviour in order to modify schedules on the basis of traffic generation and movement, (5) coordinating inter-depot and inter-divisional bus schedules in order to eliminate wasteful internal competition and for proper allocation of vehicle resources, (6) planning for the prevention of losses and leakages in traffic revenue, (7) anticipating seasonal tendencies of absenteeism in staff and meeting the shorta-ges by prior manpower planning, and (8) analysing on a continuous basis the route economics in order to control costs and maximise revenue collection.

Given this broad division of work between the top and middle management levels, the task of junior management which is responsible for operational control will mainly centre round implementation of instructions received and monitoring efficiency in operations by (1) minimising cancellation of trips/kms., (2) ensuring proper collection of revenues, (3) controlling absenteeism and counselling the staff, and (4) ensuring crew productivity not only in terms of increasing the steering hours but also in determining standards of crew productivity in terms of kilometers operated.

Summing up the literature surveyed

From the survey of literature published at home and abroad indicating approaches for judging performance of
transport services, it may be stated that there is vast scope for further research into this vital area of the working of transport undertakings. The imperatives of public ownership make such a study even more urgent in the context of the stranglehold road transport in India is likely to have as one of the more potent instruments of rural upliftment. The work done in advanced countries, illuminating as it undoubtedly is, does not help much for drawing more comprehensive conclusions in the Indian context. This may be because transport situation in those societies is vastly different from ours. The emphasis there has been to discourage private travel and to make public transport attractive enough, both in cost as well as in comfort, for a large scale 'modal transfer'. In India, however, road transport being more accessible and convenient in relation either to railways or airways, it is bound to be the main mode of travel for the millions living in rural India, much of which is yet to be connected by motorable roads.

The problem of resources is also one of importance. In a developing economy it is natural that there are competing claims from several essential sectors like agriculture, irrigation, industry, etc. However important road transport may be in realising the Plan objectives of rural upliftment, it has not yet merited its inclusion in the 'core' sector of the economy. The funds allotted to this sector in the development plans will not be to the extent that will please
transport planners and transport economists. The task before the Road Transport Corporations will be more and more in the shape of making the most optimum use of the vehicle and manpower resources and other infrastructure facilities which are within their control. It is necessary to convince the government by showing greater managerial efficiency in running the Corporations and demonstrate by performance that these organisations can take on more responsibilities and show better results. In the ultimate analysis, extension of nationalisation in road transport is a political decision and the criteria for such decisions may not always be what the economists and transport executives prefer. In this background, the urgent need is for evolving parameters of performance which the Corporations should be able to achieve, without taking shelter under likely political indifference for their failure to provide a reasonable level of service, and in spite of the limitations of capital and other resources.

What can the Road Transport Corporations perform?

As the above survey searching for performance standards for judging the efficiency of Road Transport Corporations has revealed, the focus needs to be turned inward in order to specify what is possible within the limitations, rather than indulging in a futile exercise of what they could have done if all the external agencies, including the government,
have fully cooperated. Taking advantage of the discussion in the previous pages, it is proposed to identify performance standards for the purpose of the analysis undertaken in this thesis, both for appraising the performance of each organisation over a decade, as well as for comparing the four organisations, in relation to their organisation structures.

The broad areas that suggest themselves on a perusal of the work done so far are: (1) operational coverage, (2) fleet performance, (3) man management, (4) quality of service, (5) cost performance, and (6) revenue performance. These six areas will further be divided into quantifiable performance indicators in order to assign appropriate responsibility within the organisational structure. These indicators will form the points of reference for comparing inter-organisational performance in relation to the organisation structures of the four selected Road Transport Corporations.

(1) Operational Coverage

Under this term, it is intended to assess the extent to which an organisation could stretch its own efforts for increasing its operations in the State which it is expected to serve. This has two aspects: infrastructure facilities to be provided by external agencies and the extent to which the organisation's resources have been employed to
meet the objective of adequate transport service. Criteria such as (a) road length per 100 square kilometers, (b) road length per 1,00,000 population, (c) percentage of unsurfaced roads in the State, and (d) the share of the Road Transport Corporation in the total number of buses operating both in the public and private sectors within the state will form part of the infrastructure facilities to be provided by external agencies like the Public Works Department and the Road Transport Department. In respect of employing the organisation's internal resources to provide as adequate a service as possible, the criteria will be (a) increase in fleet strength over a period of five years, (b) kilometers operated annually, (c) number of kilometers operated per 1,00,000 population, and (d) number of buses per 1,00,000 population. It may be argued that some of the criteria in the second category such as fleet strength may also depend on the funds that are expected to be provided by the Government. In the case of larger organisations, while it may not be possible to go in for large scale nationalisation of transport services, there is sufficient autonomy under the Road Transport Corporations Act to employ borrowings and internal resources to increase the fleet strength, and to serve the areas earmarked for nationalisation by providing a higher level of service. The criteria will undoubtedly reveal the forward thrust of managerial efficiency and a striving for growth enabling comparison among similar organisations.
(2) **Fleet Performance**

Fleet performance has three main criteria; they are, (a) vehicle utilisation, (b) fleet utilisation, (c) occupation ratio. Vehicle utilisation is expressed in terms of kilometers performed per bus per day. The ultimate product of a transport service is a certain number of seats for a certain number of kilometers (seat-kilometers) and this product depends upon the running of the vehicle in a day and the number of kilometers it has been able to cover. It is possible to establish the optimum number of kilometers a vehicle is capable of performing, on the basis of the travelling hours, i.e., the hours during which there is movement of passengers, mainly day-hours, taking into consideration the time a vehicle requires for mechanical maintenance.

Vehicle utilisation should, however, be calculated on the basis of total fleet held, rather than on the basis either of the fleet on road or the fleet scheduled for operation. This distinction is necessary to take care of the variations among organisations in the spare vehicles kept as a standby. Investment is uniform whether a vehicle is used for scheduled operation or is kept in spare. For inter-organisational comparison, vehicle utilisation will bring out the relative effectiveness in producing more kilometers, keeping the number of vehicles constant.
Fleet utilisation is the percentage of vehicles pressed into service against the total number of vehicles available and held by an organisation. This will reveal the efficiency with which the vehicles are treated for mechanical maintenance, by following a well-regulated preventive work in order to avoid breakdowns which deplete the fleet available for operation. The availability of vehicles and their effective utilisation in terms of kilometers will have to be matched by the occupation of the seats offered. Occupation ratio is the measure to ascertain the load factor indicating whether the vehicles are gainfully operated. Depending upon the availability of the fare particulars, this ratio could be calculated by the following formula:-

\[
\text{Occupation ratio} = \frac{\text{Earnings per kilometer} \times 100}{\text{Fare per km} \times \text{Seating capacity}}
\]

(3) Man Management

Man management has three important indicators: (a) bus-staff ratio, (b) kilometers operated per employee (per day or per year), and (c) cost per kilometer on personnel. The bus-staff ratio is calculated by dividing the total number of employees with the total number of buses held. This simple calculation has some pitfalls. If the utilisation, in terms of kilometers, of the buses is low, the number of staff employed will be low. For instance, if only one set of crew is employed on a bus per day, the bus can only be operated during the working hours of the crew,
i.e., eight hours of which the steering hours (the actual running hours) will be still less. If the same bus is run for more than twelve or thirteen hours, it requires two sets of crew, but will give double the productivity. In other words, the persons employed for running a bus will be more if its utilisation is more. Hence, if more staff is held per bus, it does not necessarily mean feather-bedding. It could well mean getting more productivity out of the vehicle owned. The following formula will correct the indicator:

\[
\text{Staff employed per bus} \times 100 \\
\text{Vehicle utilisation}
\]

Kilometers operated per employee per day or year will give the productivity per employee. The practice of computing crew productivity in terms of hours they are at the disposal of the employer, while it is necessary for the Motor Transport Workers Act purposes, need not necessarily result in gainful employment, and hence the linkage with kilometers. Similarly, the cost per kilometer on the staff employed will enable comparison over a period of time as well as with other organisations.

(4) **Quality of service**

Quality of service can be judged by (a) trips/services/kilometers cancelled for reasons other than non-availability of passengers, (b) rate of breakdowns per 10,000 kilometers.
(c) rate of accidents per 1,00,000 kilometers, and (d) percentage of punctuality of services. These four indicators will help judge the quality of service offered from the point of view of the passenger and afford comparison among similar organisations.

(5) **Cost Performance**

Elimination of wastages and reduction of costs should be a continuous exercise, as otherwise such wastages are likely to be passed on to the passengers as genuine costs of operation. Kilometers operated being the indicator of productivity, costs should be divided on the basis of major heads of expenditure and calculated per kilometer operated separately for each head of expenditure. The indicators for this purpose will be: personnel, fuel and lubricants, materials, depreciation, interest and taxes. Of these the costs incurred on taxes do not give scope for reduction as they are based on rates imposed by the Government, nor for comparison because each State has its own tax structure. There could, however, be scope for avoiding unnecessary payment of taxes on buses not employed for operation.

Costs of operation should be assessed separately for diesel oil and tyres, which form a major chunk of the total cost. Kilometers obtained per litre of diesel oil (KPL) and kilometers obtained per tyre (KPT), over a period of time, will indicate efficient use of these scarce and costly materials.
It has been said that “a danger which companies occasionally and regularly experience is that they may minimise themselves to death (in the process of cost reduction), if revenue considerations are ignored.” While emphasis should be placed on reducing costs, such emphasis should not affect maximisation of revenue by operating more kilometers, ensuring that buses go full and fares are collected. The following indicators will be useful in judging revenue/financial performance: (a) earnings per bus per day, (b) earnings per kilometer, (c) contribution of internal resources to the total capital; (d) return on capital employed, and (e) profit or loss (per kilometer). The indicator of earnings per bus per day will reveal not only the maximisation of earnings per kilometer operated, but also the maximisation of vehicle utilisation (kms/day).

These indicators have one major limitation, however. They depend upon the basic fare per kilometer to be charged from the passenger, and this differs from State to State. In one State it will be low, and in another it will be high. They also vary from time to time. Since fare decisions in the Indian context are not dependent on the cost of operations — and are inevitably influenced by political considerations — these indicators do not offer themselves for direct comparison among Corporations. The basic fare, as of today, ranges from 5 paise per kilometer to 8 paise. For judging
internal organisational efficiency, there will be no harm even if these indicators are completely ignored.

Conclusion

Summing up the discussion on performance standards, it may be stated that they should be based on what the Corporations could achieve, independent of being explained away quoting external factors and by concealing internal inefficiencies. Inter-Corporation comparison is possible on the model indicated in the foregoing paragraphs, where performance is sought to be assessed on a uniform basis taking into account only those performance parameters which are not unduly influenced by external factors.
References


4. Hanson, A.H., op. cit., p. 97.


11. Ibid.


27. Foster, C.D., Ibid., p. 15.


