

SOCIAL COST BENEFIT ANALYSIS OF INDIAN RAILWAYS

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ABSTRACT

As an aid to planning, decision-making, evaluation and control, the social cost benefit analysis provides a scientific and quantitative base for the appraisal of projects and concerns with a view to determine whether the total benefits of a project and concern justify the total social costs. To make scientific and systematic social cost benefit analysis of a project or concern it is necessary to weigh each project's or concern's advantages (benefits) and disadvantages (costs) to the society or nation as whole. Economists consider externalities as spillover effects, third-party effects etc. to be more precise, external economies and diseconomies are social benefits and social costs respectively. An externality arises whenever a firm's activities have a negative or positive impact on the environment for which the firm is not held accountable. If the impact is positive, it is called an external economy or social benefit if the impact is negative, it is external diseconomy or social costs.

Keywords: Social Cost Benefit Analysis, Decision-Making, Social Costs, Spillover Effects.

Introduction

Social cost benefit analysis brings out a comparison between the social benefits and social costs in order to reveal the net return on investment as a difference which can be quantified. In such cases, social cost are investment cost which would have been available without the concern and the benefits can be defined as contribution made to the objectives of the economic policy of the government. SCBA is a part of feasibility report detailing and justifying assumptions made about the inputs and outputs and their appropriate market price. There could have some factors in an investment decision by the government in particular instance, which gives rise to a social cost or a social benefit but this may not have a market. For example, in case of building a highway, the effect on the environment to local residents by causing nuisance would be a social cost but at the same time traveling a motor vehicle would be easier through highway and will represent social benefit. In effect, investment decisions would be based largely on economic costs and benefits but in the SCBA items of social costs and benefits would be added in financial arithmetic.

Steps in Social Cost Benefit Analysis

There are five broad steps to be gone through in the process of social cost benefit analysis of a project or concern as follows:

- Main aspects of project and time-frame of the project or concern must be defined in clear terms.
- The second step in the application of the technique is to list out all steps in the application of the technique i.e. to list out all costs of the project.
- Similarly, both explicit and implicit benefits should be listed.
- The fourth step in computing the SCBA of a project is to discount the future benefits back to the present in order to determine the true return on cost.
- Last steps in SCBA is to make decision in respect of inclusion or exclusion of a project in the development programmes. Given the resources constraint, one way out is to list the project in descending order and implementing them one by one, beginning with the first till the investment resources are exhausted.

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Indian Railways

It is obvious that railways forms part of the basic infrastructure of the country. Broadly, all infrastructure services can be divided into two categories as follows :

- **Open Access Services**

These services are those from which people cannot be easily excluded, irrespective of whether they have contributed monetarily to the establishment and maintenance of the service or not. Some examples of this service include public lighting, intra city roads etc.

- **Limited Access Services**

These services are those which can be provided exclusively on an user pays basis and those who do not pay can be excluded from enjoying the benefits of this service. These services thus can be self- financing like Railways.

Railways ideally would fall in the latter category, as it would not be too onerous a task to prevent somebody who has not paid for the service from enjoying its benefits. However, in India the railways have come to symbolize an institution which exists to serve a social purpose as well as a commercial one and often this has led to policy distortions away from the most economically sound ones. One major by-product of this perception of the railways has been the system of cross-subsidization of lower class passengers which is the category with the thinnest margins, by freight services and higher class passengers who provide the highest margins. This had led to a severe financial crunch in the Indian Railways and as a result the railways has failed to pay a dividend to the Government for its investment. Thus, the neglect of containerization of freight has also led to the railways falling out of many customers consideration set.

Social Costs of Indian Railways

Various social costs include mainly the following items :

- Goods and material (coal, diesel) acquired and consumed.
- Labor and Services used :
 - Work-related injuries and illness - trains accidents and casualties at work place.
 - Social losses resulting from employment of children, women and young persons.
- Investment in fixed assets i.e. infrastructure.
- Environmental damage especially by locomotive engines which are still on track.
- Public service and facilities used.
- Discrimination in comfort in different categories of train/class of tickets.
- Payments from other elements of society.
- Other costs :
 - Depletion of energy sources - like coal, (locomotive engine), diesel (diesel engines) and electricity (electricity engines).
 - Costs of technological change i.e. change from meter gauge to broad gauge or to electric train rout.
 - Soil erosion and deforestation by laying track lines.

Social Benefits by Indian Railways

A project has many social benefits. These Benefits may be listed as follows:

- Products and services provided.
- Creation of employment opportunities.
- Additional direct employees benefits.
- Improvements in environment if trees and plantation takesplace parallel to railway track.
- Providing good township and better social life to theemployees.
- Making efforts to enhance health of the workers.
- Opening railway's hospital for employees and their family member almost in all cities.
- Contribution to raise standard of living.

- Equality means equal opportunity to all.
- Decrease in poverty by providing transportation at concessional rates.
- Creation of employment opportunities to weaker sections of the society e.g., Schedule Castes (SC), Scheduled Tribes (ST) etc. on a preferential basis as their is reservation for SC, ST etc. in recruitment.

Social Service Obligations of Indian Railways

Indian Railway (IR), in the larger social and national interest has been undertaking certain uneconomic operations in transportation with a view to provide affordable transport facilities to poorer sections of society and to facilitate the movement of essential commodities meant for mass consumption. Losses incurred on this account are termed as social service obligation.

Net social service obligation borne by IR in 2017-18 is assessed at Rs. 4,107.61 crores, excluding staff welfare cost (Rs. 1,541.69 crores) and law and order cost (Rs. 958.91 crores). These huge costs impinge upon the ability of Indian Railways to remain self reliant and constrain its capacity to finance expansion and growth. Railways have been meeting the cost of social service obligation through cross subsidization.

Elements of Social Service Obligation

The main elements of social service obligation as identified by IR are losses relating to:

- Essential commodities carried below cost;
- Losses on passenger and other coaching services;
- Operation of uneconomic branch lines; and
- New lines opened as social service obligation.

All these elements of social obligations are fulfilled by Indian Railways, explained as follows :

- **Essential Commodities Carried Below Cost**

As part of the Railways social service obligation, certain essential commodities of mass consumption like sugarcane, paper, livestock, etc. are carried below the cost of operation in order to contain their market prices. The total loss on the movement of these commodities is Rs. 42.08 crores during the year 2017-18. The breakup of losses incurred for 2017-18 is as follows :

Table 1: Essential Commodities Carried Below Cost

(Rs. in Crores)

Commodities	Losses
Sugarcane	15.30
Paper	9.49
Live stock	8.78
Edible oil	3.95
Bamboos	3.28
Others*	1.28
Total	42.08

*Others include charcoal, cotton raw pressed, bidi leaves and gur-jaggary (bura) and sugar. These commodities constituted 0.70% of the revenue and 0.38% of freight earnings for the year 2017-18.

- **Losses on Passenger and other Coaching Services**

Analysis of the profitability of coaching services for 2017-18 has revealed an overall loss of Rs. 6,566.13 crores on this account of which net suburban losses in Chennai, Kolkata and Mumbai provided with EMU and non-EMU services contributed Rs. 837.50 crores. While the lag in the rise of passenger fares with respect to inflationary pressures prevalent in the economy has contributed to coaching losses, other factors have also exacerbated the situation which includes:

- Low second class ordinary fares.
- Non-suburban commuters availing season ticket concessions for travel between two stations up to a distance of 150 kilometers. These journeys constituted 30.9% of non-suburban traffic.
- Commuters availing concession in monthly and quarterly season tickets on suburban sections of Mumbai, Kolkata and Chennai. Journeys performed by passengers holding season tickets formed 67.3% of suburban traffic.

- Concessions in fare extended to various categories in society such as recipients of gallantry awards and National sports awards, participants in National and State sports tournaments, teachers honored with National Awards, State awards, war widows, patients suffering from cancer, tuberculosis and other serious diseases, handicapped persons etc. Concessions are also extended to military traffic, postal traffic, transportation of seeds, milk etc. and traffic to the North-East. IR also steps in to provide emergency relief by transporting material like food, water, fodder and emergency relief material to areas affected by Natural disasters like drought, cyclone, earthquake etc.

- **Operation of Uneconomic Branch Lines**

Despite concerted efforts to enhance earnings on branch lines, most of such lines remain commercially nonviable. The Railway Reforms Committee recommended closure of 40 such lines but due to stiff public resistance and opposition of State Governments towards withdrawal of such services, only 15 lines have been closed permanently by the Railways. A review of the financial results of uneconomic branch lines for the year 2017-18 shows that on an original investment on these lines of the order of Rs. 502 crores, loss during the year 2017-18 amounted to Rs. 451 crores in as many as 111 branch lines.

- **New Lines Opened as Social Service Obligation**

The Railway Convention Committee (RCC) in its 9th report on this subject has noted that in the present state of Railway finances and prevalent high costs of construction, the Railways are not in a position to inject adequate capital investment in underdeveloped areas. Therefore, they have felt that reliefs like the distribution of land free of charge and waiver of dividend payment on such lines for a minimum period of twenty years are justified. Periodic reviews have revealed that of the 14 lines examined in 2017-18, return was below expectation in several lines. Of the new lines reviewed, three lines were built to relieve bottlenecks or to bridge the gaps in the existing system links, two are yielding higher returns while one is yielding lower return than anticipated. Of the eleven lines taken up as part of the social service obligations of the railways for development of backward areas all lines except two are showing either negative returns or unremunerative returns.

Social Service Obligations Compared to Other Countries

Most Railways the world over are called upon to meet certain public service obligations at low tariff in the larger social interest for which they adequately compensated for by the government. Such support is provided in various forms and for different purposes like :

- Compensation for losses on account of concessional tariffs;
- Outright grant to cover deficits;
- Soft loans to meet the deficits;
- Financial support to maintain viability of the system and to earn marginal profits;
- Writing off of accumulated debts and unproductive capital; and
- Support for investment and infrastructure maintenance.

Indian Railways incur losses every year by performing a variety of unremunerative but socially necessary services. These losses are mostly due to low ordinary second class fare, suburban and non-suburban season fare, a variety of concessions granted on passenger ticket and transportation of certain commodities below cost. Working of uneconomic branch lines too impose a heavy burden on IR's finances. Thus, a wide gap is created between the revenue income generated through these services and their running costs.

According to the statistics published in Jane's World Railways (2018-19 edition), the State support was provided to some foreign railways for meeting social service obligation. The net social service obligation borne by IR in 2018-19 assessed at Rs. 4,107.61 crores, constitutes 7.55% of the total revenue earnings and 9.01% of the total expenditure.

Conclusion

Thus, Social cost and benefits are just two side of coin. Therefore, it is very difficult to decide whether particular activity or function of a concern should be grouped in social costs or social benefits because every function or activity of a concern generates social benefits if it is performed well but at the same time if it is not performed well it incur costs to society.

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