



AN EMPIRICAL STUDY ON HOW THE APPLICATION OF SOCIAL RETURN ON INVESTMENT (SROI) MAKES DECISION MAKING IN SOCIAL COST BENEFIT ANALYSIS (SCBA) MORE EFFECTIVE

Dr.Jyotsna Diwan Mehta

¹ Professor, Department of Management, S.S. Jain Subodh Management Institute, Jaipur, Rajasthan, India.

Dr.Himanshu Saxena

²Associate Professor, Department of Management, Apex Institute of Management & Science, Jaipur, Rajasthan, India.

ABSTRACT

The main objective of the paper is to examine the concept of Social Cost Benefit Analysis (SCBA) and the mechanism of Social Return of Investment (SROI) and evaluate their applicability as tools that governments, private entrepreneurs and project promoters can use to plan and evaluate performance. Social Cost Benefit Analysis (SCBA) is the process of analyzing the project from the point of view of society. This paper focuses on the empirical value of Social Return on Investment and uses secondary data to empirically examine the impact of SROI in Social cost Benefit Analysis. A thorough analysis of the objectives of SCBA and its application to SROI analysis shall also lead us to detect the limitations of the process. The study seeks to contribute towards the existing literature on Social Return on Investment by throwing light on existing data. A deeper understanding of Social Return on Investment will help Project Managers to determine optimum strategies; estimate the capital requirements for expansion or maintenance and develop profit maximization strategies for the organization.

KEYWORDS: Annual Benefits & Annual Costs; Economic Analysis; Project Appraisal; Social Cost Benefit Analysis; Social Return on Investment;

INTRODUCTION

Social Cost Benefit Analysis (SCBA) analyzes the project from the point of view of society. When one evaluates the costs and benefits of a project taking a social point of view using social and economic values then the whole procedure is termed as Social Cost Benefit analysis (SCBA). Thus, SCBA is an important tool for assessing the value of financial outlay, for example of public investments in developing nations. It not only aids decision making in several areas of a project but also contributes towards designing programmes of interrelated projects. In recent times, SCBA has gained favour with economists and entrepreneurs. Projects are implemented to deliver benefits and create value for users, the parent organization, and society at large (Morris, 2013; Samset and Volden, 2012). The choice of concept ought to be approved on the basis of a business case, in which the expected benefits and strategic outcomes are described

(Jenner, 2015). The business case provides a rationale for the preferred solution, and is therefore crucial for future benefits and cost management (Musawir et al., 2017; Serra and Kunc, 2015). This paper focuses on the Social cost-benefit analysis (SCBA) which is often a crucial part of the business case. The SCBA is based upon the relationship between resources invested and the benefits that can be achieved and is a tool to determine the project's value for money (i.e. whether it is profitable for society). Specifically, the aim of a CBA is to compute the Social Return on Investment of a project or various project alternatives and hence lead to the selection of the project that has the highest SROI.

Marglin examined how SCBA could actually reflect national objectives in his book published in 1967. A year later, Little and Mirrlees came up with the first fully comprehensive framework which placed CBA far beyond the traditional standpoint,



and indicated that it may actually be helpful in achieving greater national goals.

In recent years, Social Return of Investment (SROI) has become a popular measure for evaluating the performance of organizations. In contrast to the traditionally used Return on Investment (ROI), the SROI compares the social costs of a project to the social benefits that accrue from the outcomes of a project.

It cannot be argued that the main aim of a firm or a company is to maximize Return on Investment on their projects. Project promoters would therefore focus on wealth maximization. It is not surprising then, that project promoters tend to evaluate only the financial viability of the project. Yet, in a developing nation such as India, there are projects that may not offer attractive returns in terms of commercial profitability but since they have far reaching social implications, there is great imperative to undertake them. These include projects are public projects like road, railway, bridge and other transport projects, irrigation projects, power projects etc. for which socio-economic considerations play a significant part rather than mere commercial profitability. Such projects are analysed for their net socio economic benefits and the profitability analysis which is nothing but the **socio-economic cost benefit analysis** done at the national level.

All projects impose a cost to the nation and offer benefits. The cost may be direct or indirect and similarly the benefits derived from any project will also be either direct or indirect. Early descriptions of the methodology for calculating the SROI suggest that the approach initially evolved from standard methodologies found in the business finance literature for evaluating investments, with one important twist! In comparison to the for-profit sector nonprofit sector returns/payoffs are defined in far broader social terms (Thornley, Anderson, & Dixon, 2016).

Before the development of the approach for estimating the SROI, Young and Steinberg (1995) recognised that SCBA could be an effective means of evaluating the performance of Project organizations. The idea of using SCBA as an evaluation method is based on the premise that it provides a useful aid to public decision-making by offering a coherent and comprehensive social accounting framework.

Sunstein (2002) argued that the advantage of evaluating social projects using the SCBA mechanism is that these approaches result in “bottom line” metrics of net social surplus. Achieving this measure involves systematically applying a social accounting framework for identifying, classifying, and measuring the comprehensive effects of social projects.

Social return on investment (SROI) emerges as a method for measuring elements that are usually not reflected in financial statements, and includes

factors such as social, economic, and environmental. SROI can therefore evaluate how effectively a company uses its investments and other resources to create value for the society. While a traditional cost-benefit analysis compares different investments or projects, SROI can actually be used to analyse the progress of certain developments, and effectively demonstrate the financial as well as the social impact that the organization makes.

The main characteristics of SROI are;-

- Social Return on Investment (SROI) is a method of financial accounting for the social and economic value created by project promoters.
- The purpose of calculating SROI is for the project promoters to be able to assess their social impact in financial terms.
- The factors that go into calculating the SROI include the social value and the initial investment amount.

Available literature on Social cost benefit analysis (SCBA) as an application for the evaluation of public programs clearly shows similarity between the outcomes that SCBA intends to measure, and those that the calculation of SROI hopes to achieve. A study of the literature on the theory and practice of Social cost benefit analysis (SCBA) also explains the traditional mechanism to measure the social return on investment (SROI), while pointing out the potential limitations that need to be kept in mind while attempting to undertake SROI analysis.

Monetary values must be attached to social benefits and social costs while calculating the value of Social Return of Investment. The concept of Consumer willingness to pay and the concept of social opportunity cost reflect two broad ways in which projects either add to or reduce social surplus.

Let us try and understand these concepts

1) Consumer Willingness to pay: When the outcome of a program is in the form of goods and services, the social value of such goods or services are to be calculated as the aggregate sum of what individual members of society would be willing to pay for those goods and services. Consumer Willingness to pay can also be “negative” when a project, whether produces results with adverse consequences for an individual or society. Negative willingness to pay, is defined as the minimum amount of money that an individual or society would have to be paid in order to compensate them for the negative result of a project.

2) Social opportunity cost: Social opportunity cost measures the value to society of a foregone opportunity. If an activity results in a saving of resources, Social opportunity cost measures the value to society of the saved resources. A basic principle of implementing SCBA is that, the correct benchmark for determining both project costs and benefits is to value project inputs and any cost saving outcomes in terms of social opportunity cost. Examples of



projects under the purview of Social Cost Benefit Analysis include traditional public investment projects such as Bridge Projects, Tunnel Projects, highways, airports, and water projects.

Limitations of SROI

It is important to remember that one limitation of SROI is that it is only one of several factors to be weighed, and the results from SCBA or SROI analysis would be one of several inputs in undertaking a multi-goal analysis. Such analyses are more complex than SCBA or SROI analysis and don't actually offer specific recommendations about which alternative is "best" in terms of achieving all relevant goals. Boardman et al. (2011). J.J. Cordes showed how multi-goal analysis can provide useful information to decision makers because the analysis involves comparing alternatives in terms of some common yardsticks, and clearly describes trade-offs among different goals.

Benefit-transfer is viewed as a quick low-cost approach for obtaining desired monetary values but the method is also associated with uncertainties must be used with great care. Two more issues that need attention with respect to the implementation of SCBA and SROI analysis are-

- (a) When based on benefit transfer, estimates of tangible benefits and/or costs are at best highly uncertain;
- (b) There are real, although often intangible effects of the activities of nonprofit organizations and social enterprises.

A researcher cannot avoid these limitations, but can certainly make careful use of the social accounting framework used to undertake a SCBA. This will help to keep in check the uncertainty about ultimate program impact resulting from these problems.

Why SROI is Useful?

- SROI is useful to organizations because it can improve their performance through better planning and evaluation.
- It can also increase the organization's understanding of its effect on the community and allow better communication regarding the value of the organization's mechanism.
- Entrepreneurs may use SROI to monetize their social impact, in financial terms. This is just as true for projects, where the standard approach to measuring benefits is based on incremental earnings received (Blaug, 1970)

The general formula used to calculate SROI is :

$$SROI = (Social\ Annual\ Cash\ Inflows/Investment) \times 1000$$

Where: *Social Annual Cash Inflows*= Social Annual Benefits- Social Annual Costs

Investment = initial investment amount

Let's examine the concept of SROI using a case:

Maharashtra Government is planning to construct a bridge over a sea channel. The construction is expected to cost Rs 500 crore and the annual maintenance cost is likely to be Rs 5 crore. At present a Ship service is used to cross the sea channel. The government is planning to lay down the railways track with the help of which cars and passengers will be carried by train. It will cut the journey time by 4 hours for cars and passengers. The relevant categories of traffic include:

- a) Cars (and their passengers)
- b) Passengers not in cars
- c) Freight

The authorities who would operate the project have decided to charge a toll which would maximize revenue. The toll they have decided to charge is Rs.100 per car which compares favorably with the charge by ship which is Rs.400 per car. Because of the quicker and cheaper journeys available, it is forecasted that the given traffic per year for the foreseeable future will be diverted from the existing method of travel

- 1, 00,000 cars (with an average of two passengers)
- 60,000 passengers not in cars
- 5,00,000 tons of freight with a cost of Rs 2 per ton.

After the construction of bridge, additional 90,000 extra car journeys (with average of two passengers each) will be made. Also additional 4,00,000 tons of freight will be carried by train. The authorities who would operate the project have decided to charge Rs 1.5 per ton which compares favorably with the charge by ship which was Rs 2 per ton. The average value of passenger time is Rs.15 per hour. The diverted traffic will reduce the cost of operation of the existing ship by Rs.50 crore a year. Assuming that the monetary figures given above reflect social value, let's calculate the Return of Investment (ROI) of the stream of social costs and benefits.

Firstly we will have to bi-furcate the Social Costs and Benefits into One Time (Investment) and Annual for the smooth calculation of Social Return on Investment (SROI).

- i) Here the Capital Cost of the Project is Rs 500 crores and the nature of the Capital Cost will be One Time (Investment).
- ii) Maintenance cost of the Project is Rs 5 crore and the nature of the Maintenance cost is Annual
- iii) Value of Passenger's Time = 4 hr X Rs 15 X 4,40,000 (passengers)= Rs 2.64 crore

Time Reduced = 4 hr of each passenger

Value of 1 hour= Rs 15

No. of Passengers = 4,40,000

1,00,000 cars with 2 passengers = 2,00,000 passengers

Passengers not in cars = 60,000 passengers

Additional 90,000 cars with 2 passengers = 1,80,000 passengers

Total Passengers = 4,40,000 passengers

iv) Increase in Consumer Satisfaction (Cars) = $\frac{1}{2} \times \text{Base} \times \text{Altitude}$
= $\frac{1}{2} \times 90,000 \times 300$
= Rs 1,35,00,000

Increase in the number of cars= 90,000 while the benefit on each car is Rs 300 as the toll has come down by Rs 300

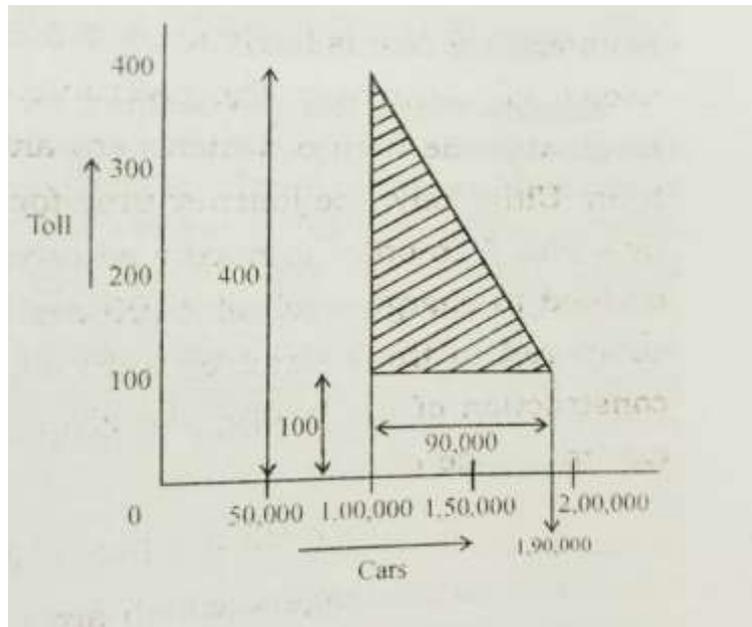


Table 1: Calculation of Increase in Consumer Satisfaction (Cars)

v) Increase in Consumer Satisfaction (Freight) = $\frac{1}{2} \times \text{Base} \times \text{Altitude}$
= $\frac{1}{2} \times 4,00,000 \times 0.50$
= Rs 1,00,000

Increase in the Freight= 4,00,000 tons while the benefit on Freight is Rs 0.50 per ton as the charges has come down by Rs 0.50

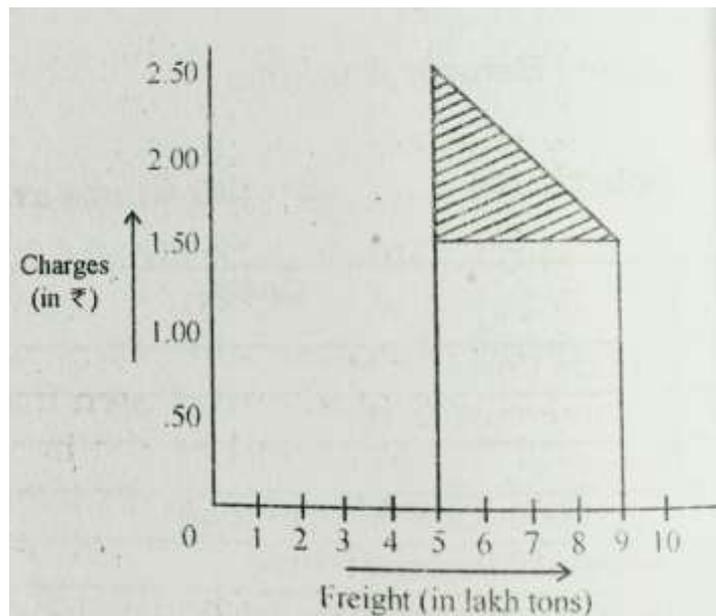


Table 2: Calculation of Increase in Consumer Satisfaction (Freight)

S.No.	Costs	Nature	Social (in Rs crore)
1.	Construction Cost	One time	500
2.	Maintenance Cost	Annual	5
Benefits			
1.	Value of passengers time	Annual	2.64
2.	Savings on cost of operation	Annual	50
3.	Increase in consumer satisfaction(Cars)	Annual	1.35
4.	Increase in Consumer Satisfaction (Freight)	Annual	0.01
Return on Investment			9.80 %

Table 3: Social Cost and Benefits

$$\begin{aligned}
 \text{SROI} &= (\text{Annual Cash Inflows} / \text{Investment}) \times 100 \\
 \text{Annual Cash Inflows} &= \text{Annual Benefits} - \text{Annual Costs} \\
 &= \text{Rs } 54 \text{ crore} - \text{Rs } 5 \text{ crore} \\
 &= \text{Rs } 49 \text{ crore}
 \end{aligned}$$

Investment = Rs 500 crore

Therefore, $\text{SROI} = (49/500) \times 100 = 9.8 \%$

Here the Social Costs and Benefits have been calculated and the Return on Investment from Social Perspective is 9.8%

Specifically, the aim of SCBA is to compute the Social Return on Investment of a project or various project alternatives and thereby select the best project having the highest SROI. However, if there's only 1 project to be analysed then the comparison of SROI can be made with the Social Discount rate an appropriate decision can be made. While the approach differs depending on the project that is being evaluated, there are some components that are required to measure SROI:

- Inputs, or resources in the Project (e.g. Raw Materials, Skilled or unskilled labour)
- Outputs, or the direct and tangible products from the Project(Projects)

- Outcomes, or the changes to people as a result from the activity (e.g. jobs, higher yield, improved quality of life for society; decreased taxes, and reduced costs)
- Impact, or the outcome less an estimate of what would have happened anyway

CONCLUSION

In order to conduct an effective SROI there are some vital aspects of ROI which must be kept in mind as they continue to apply to a social cost benefit analysis:-

1. ROI is a comprehensive measure which reflects the changes in Financial Statements.
2. Return on Investment (ROI) is simple to calculate and easy to understand, and is absolute in nature



3. Regardless of the size or type of the organization it can be used to assess the profitability of the organization.
4. ROI data can be used for comparison with the financial estimates of the competitors. SCBA is a powerful social and economic tool that is especially designed to assist project promoters to make optimum allocation of available resources amongst competing needs, and shall prove to be very useful if it is implemented to a greater degree. The improvements in the methodology of calculating SCBA over the past decade aims at supporting governments and organizations in attaining national development goals. Earlier projects were analyzed, and decisions regarding their implementation were taken from a private sector point of view. Usually this meant that profit maximisation was assumed to be the project objective. For certain sectors, such as transport or water resources, alternative objectives were sometimes substituted, but social objectives were not given due importance when calculating the project's net present value or return on investment (ROI), or rather SROI. However, in certain projects it is imperative to devise an efficiency criterion in which the project's contribution to profits is replaced by its contribution to society. This is done by including externalities, wherever possible, in the project cash flow, and by revaluing the entire cash flow at accounting price instead of market prices, thereby calculating Social Return of Investment more effectively. While undertaking the SCBA an important aspect that must be paid attention to relates to income distribution. Project beneficiaries must be identified according to their income levels. The beneficiaries are those who receive the additional income generated by the project in the form of increased income, wages, returns to capital invested, increased farmers' incomes, and so forth (remember that those who suffer additional costs should similarly be identified). The additional income is then re-valued by the application of a special set of weights which shall help to mirror the accurate value of Social Return of Investment. It must be noted that assigning Rupee (or any monetary) value to the social impact will present problems, and several methodologies have been developed to help quantify the results. For example the Analytical Process is a technique that converts and organizes qualitative information into quantitative values. It is

very important to transfer the estimates of benefits and costs should be done properly. In particular, the public sector experience provides a number of insights about when and how estimates of program benefits and costs can be transferred from one set of studies to others.

REFERENCES

1. Ackerman, F., 2004. *Priceless benefits, costly mistakes: what's wrong with cost-benefit analysis*. *Post-autistic Econ. Rev.* 25.
2. Andersen, B.S., Samset, K., Welde, M., 2016, *Low estimates – high stakes: underestimation of costs at the front-end of projects*. *Int. J. Manag. Proj. Bus.* 9 (1), 171–193.
3. Annema, J.A., 2013, *The use of CBA in decision-making on mega-projects: Empirical evidence*. In: Priemus, H., van Wee, B. (Eds.), *International Handbook on Mega-Projects*. Edward Elgar, Cheltenham, UK, pp. 291–313.
4. Association for Project Management, 2018. *Resources*. <https://www.apm.org.uk/resources/> (retrieved April 2018).
5. Atkins, G., Davies, N., Kidney Bishop, T., 2017. *How to Value Infrastructure: Improving Cost Benefit Analysis*. Institute for Government, London, UK.
6. Bertisen, J., Davis, G.A., 2008. *Bias and error in mine project capital cost estimation*. *Eng. Econ.* 53 (2), 118–139.
7. Boardman, A., Greenberg, D., Vining, A., Weimer, D., 2011. *Cost-Benefit Analysis*. 4th ed. Pearson.
8. Breese, R., Jenner, S., Serra, C.E.M., Thorp, J., 2015. *Benefits management. Lost and found in translation*. *Int. J. Proj. Manag.* 33, 1438–1451.
9. Browne, D., Ryan, L., 2011. *Comparative analysis of evaluation techniques for transport policies*. *Environ. Impact Assess. Rev.* 31 (3), 226–233.
10. Boardman, A., Greenberg, D. H., & Weimer, D. L. (2011). *Cost-benefit analysis: Concepts and practice*. Prentice Hall.
11. Commonwealth of Australia (2006). *Handbook of benefit cost analysis*.
12. Cordes, J., & Coventry, K. (2011). *Performance assessment (with K. Coventry)*. In D. Young, & B. Seaman (Eds.), *Nonprofit economics and management: The state of research* Edward Elgar Publishing 2009.
13. G.H. Volden / *International Journal of Project Management* 37 (2019) 549–564 563
14. HM Treasury, 2013. *Public Sector Business Cases Using the Five Case Model (Green Book Supplementary Guidance on Developing Public Value from Spending Proposals)*.
15. Jenner, S., 2015. *Why do projects 'fail' and more to the point what can we do about it? The case for disciplined, 'fast and frugal' decision-making*. *PM World J.* 4 (3).



16. Kelly, C., Laird, J., Constantini, S., Richards, P., Carbajo, J., Nellthorp, J., 2015. *Ex post appraisal: what lessons can be learnt from EU cohesion funded transport projects*. *Transp. Policy* 37, 83–91.
17. Karoly, L. (2010). *Toward standardization of benefit-cost analyses of early childhood, interventions*. *Rand Working Paper WR-823*. New Zealand Treasury (2005). *Cost benefit analysis primer*. .
18. OMB, 2016. <https://www.whitehouse.gov/omb/circulars/a004/a-4>.
19. Laursen, M., Svejvig, P., 2016. *Taking stock of project value creation: a structured literature review with future directions for research and practice*. *Int. J. Proj. Manag.* 34 (4), 736–747.
20. Mouter, N., Chorus, C., 2016. *Value of time – a citizen perspective*. *Transp. Res. A* 91, 317–329.
21. Müller, R., 2009. *Project Governance: Fundamentals of Project Management*. Gower, New York, NY.
22. Pearce, D., Atkinson, G., Mourato, P., 2006. *Cost-benefit Analysis and the Environment: Recent Developments*. OECD, Paris, France.
23. Project Management Institute (Ed.), 2017. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), 6th ed* Project Management Institute, Newton Square,
24. PA. Sager, T., 2013. *The comprehensiveness dilemma of cost-benefit analysis*. *Eur. J. Transp. Infrastruct. Res.* 13 (3), 169–183.
25. Samset, K., Volden, G.H., 2015. *Front-end definition of projects: ten paradoxes and some reflections regarding project management and project governance*. *Int. J. Proj. Manag.* 34 (2), 297–313.
26. Scriven, M., 2015. *Key Evaluation Checklist (KEC)*. <http://michaelscriven.info/papersandpublications.html> (retrieved 23rd January 2019).
27. Singh, B.S., Saxena H., 2012. *Approach to Project Management*, Rbd Publications, 9.34-9.37
28. Shenhar, A.J., Dvir, D., Levy, O., Maltz, A.C., 2001. *Project success: a multidimensional strategic concept*. *Long Range Plan.* 34, 699–725.
29. Sunstein, C. (2002). *Risk, and reason: Safety, law and the environment*. Cambridge, MA: Harvard University Press.
30. Thornley, B., Anderson, J., & Dixon, L. (2016). *Impact to last: Lessons from the front line of social enterprise*. Roberts Enterprise Development Fund.
31. Vining, A., & Weimer, D. (Eds.). (2009). *Investing in the disadvantaged*. Washington D. C: Georgetown University Press.
32. Volden, G.H., Samset, K., 2017a. *Governance of major public investment projects: principles and practices in six countries*. *Proj. Manag. J.* 48 (3), 90–108.
33. Wachs, M., 1989. *When planners lie with numbers*. *J. Am. Plan. Assoc.* 55 (4), 476–479.
34. Van Wee, B., 2007. *Large infrastructure projects: a review of the quality of demand forecasts and cost estimations*. *Environ. Plan. B* 34, 611–625.
35. Weimer, D., & Vining, A. (2014). *Policy analysis: Concepts and practice*. Prentice Hall.
36. Young, D., & Steinberg, R. (1995). *Economics for non profit managers*, Ch. 10. Washington DC: