

DEVELOPING A FRAMEWORK FOR ASSESSING THE ECONOMIC PERFORMANCE OF HIGHWAY PROJECTS IN SRI LANKA

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ABSTRACT – Empirical evidence demonstrates that transport networks create positive and negative impacts on the economy and society. Therefore, assessing these impacts via project evaluations is essential. As evidenced in the literature, conducting project evaluations, post-operationalization, provides many benefits. However, many countries do not conduct post-project evaluations consistently, or these are performed for shorter periods, due to little emphasis on their importance in evaluating the socio-economic impact, methodological challenges, and unavailability of data on the project, especially in low-income countries. Sri Lanka is not an exception to this rule as many road projects are not evaluated post-operationalization. Hence, this paper focuses on developing a standardized framework for post-project evaluations of road projects considering both direct and indirect economic benefits, by utilizing a Cost-benefit analysis and a wider-economic impact assessment, respectively. The Southern Expressway has been selected as the case study to conduct an in-depth analysis, utilizing the above framework, as it is one of the most significant infrastructure projects in Sri Lanka.

Keywords: Transport networks; Expressway networks; Post-project evaluation; Cost-benefit analysis; wider-economic impact assessment.

1. INTRODUCTION

Pradhan and Bagchi (2012) note that the improvement in resource productivity, improvement in mobility, and regional economic growth are some of the positive impacts of efficient transport networks. These also allow producers to redesign production processes and access more markets, improve access to job opportunities, improve economic conditions and increase global competitiveness (Smith, 1994). However, such projects also create negative impacts such as pollution, displacement, health risks and loss of current livelihoods of residents in the area (Asian Development Bank, 2014). Hence, assessing a transport project's performance via project evaluation is important (de Jong et al., 2019). Measures for evaluating these costs and benefits have been developed over the years, including for Sri Lanka (Kumarage et al., 2001).

Project evaluation can be carried out at different stages of a project; at project inception, mid-project and after project completion (Cleland, 1985, cited in Anbari, Carayannis, and Voetsch, 2008). Post-project evaluations have many benefits such as providing insights and guidance for future transport projects and policy development, and supporting the assessment of project object delivery and performance (The World Road Association, 2019; de Jong et al., 2019). These will also determine whether the actual benefits and costs have materialized and whether revisions are required for existing projects (Kumarage et al., 2001).

However, literature indicates that many countries do not conduct post-project evaluations for transport projects consistently or the evaluations are performed for shorter periods (de Jong et al., 2019). This is due to the limited emphasis on the importance of such appraisals in evaluating the socio-economic impact, methodological challenges, and unavailability of data on the project, especially in low-income countries (The World Road Association, 2019).

2. MATERIALS AND METHODS

Literature highlights a few different tools utilized when conducting project evaluations. Cost-Benefit analysis evaluates alternative courses of action by comparing costs and benefits in monetary terms (Blum et al., 1980). Financial analysis evaluates the impact of a project by considering only financial costs and revenues. Cost-Effectiveness analysis compares costs of alternative options to identify the least cost method of achieving a specific aim, when the objective itself can't be valued. Multi Criteria Decision Analysis orders set of options based on preference to achieve a given goal (Department for Communities and Local Government, 2009). Wider-economic impact assessments, which analyze the indirect economic effects, are important when a transport project operates in a market with market failures, where the economic costs and benefits of the project are cascaded to other parts of the economy (Department for Transport, 2019).

3. RESULTS AND DISCUSSION

When analyzing the above appraisal techniques, Cost-Benefit analysis is considered to be the most comprehensive appraisal technique as it is based on well-developed welfare theories (European Union, 2015). All gains and losses to society are considered and the evaluation is presented in monetary terms which is a familiar and understandable measurement scale (Department for Communities and Local Government, 2009).

Cost-Benefit analysis adopts a micro-economic approach, assuming secondary markets are efficient (European Union, 2015). However, if secondary markets are inefficient, leading to the economic impact of a transport project to trickle down to the wider economy and the project is large enough to affect the prices, indirect economic impacts should be considered (Department for Transport, 2019). A wider-economic impact assessment is important as a Cost-benefit analysis may not capture the large social and environmental issues (Nicolaisen and Driscoll, 2016). Wider-economic impacts on economic development and poverty reduction were seen to be significant as per studies conducted in the USA, India, China and Thailand (Pradhan and Bagchi, 2012; Asian Institute of Transport Development, 2011). This is why wider economic impact assessments were included as a part of the post-project evaluation models recommended by Pradhan and Bagchi (2012) and de Jong et al. (2019).

4. CONCLUSION

Therefore, a post-project evaluation framework, incorporating both a Cost-benefit analysis and a wider-economic impact assessment would address the literature gap detailed above. It would provide valuable lessons for effective planning and policy development, improve data collection and survey methodology of future studies and ensure public sector accountability (The World Road Association, 2019).

Cost-Benefit analysis is selected as the quantitative tool to assess the economic efficiency as it's a comprehensive tool based on well-developed welfare theories, presented in monetary terms, and can isolate the impact of a single project. Further, most post-project evaluations conducted by countries and institutions utilized a Cost-benefit analysis in the assessment (Welde and Volden, 2018; de Jong et al., 2019). Project evaluation guidelines developed for Sri Lanka also utilize Cost-benefit analysis as the primary evaluation technique (Kumarage et al., 2001). A wider economic impact assessment will be included in the analysis to capture the impacts on secondary markets which are not evaluated in the Cost-benefit analysis. The guidelines issued by the UK Department for Transport (2019) will be utilized in guiding the study. Three wider-economic impacts are considered which are Induced Investment, Employment effects, and Productivity impacts. These guidelines were recommended by Asian Development Bank (2014) as well.

This study has selected the Southern Expressway as the case study as it is considered to have significant economic, financial, social and environmental impacts. Several project evaluations were conducted for the project, during the pre and mid-project phases. However, post-project evaluations are limited. The post-project evaluation conducted by the Asian Development Bank (2014) also had a few weaknesses. The evaluation was limited to a general Cost-benefit analysis. Further, the project was too new to assess the overall economic impact. This is why an evaluation including a wider-economic impact assessment was recommended to be carried out by 2017 (Asian Development Bank, 2014). However, this is yet to be conducted. Additionally, studies show that the economic impact from the first link of a highway, on regions bordering the highway is substantial (Boarnet and Haughwout, 2000), indicating that the impact of the Southern expressway, as the first link of the expressway network could have significant impacts on the Southern province.

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