

Multi-Attribute Criterion to Identify Candidate Roads for Development Under Public-Private Partnership

Kopikah Tharmakulasingham and H.R. Pasindu

Abstract

In many cases, the Public-Private Partnership (PPP) projects are looked as a sceptical phenomenon due to the involvement of risk factors. However, in order to reduce the financial burden on the government, it is essential to undertake PPP projects. Lack of project prioritization due to the absence of a supporting framework for selecting the infrastructure projects in Sri Lanka was identified as one of the key issues by the World Bank for accelerating PPP projects. Therefore, a review was conducted to identify the criteria considered in the selection of road projects in other countries and to develop criteria that can assist the public and private entities to identify the potential road projects in Sri Lanka. The aim of this research is to develop criteria to prioritize highway project from pipelines for the developments under PPP.

As the first step, criteria which are used by USA (US Department of Transportation, Virginia Transportation, Commonwealth of Pennsylvania), Pakistan, Philippines, and World Bank for selection of PPP projects were collected. Further, Critical Successful Factors (CSF) and reasons for the failure of PPP highway projects were reviewed. The importance of these factors in the selection criteria was analyzed. A Multi-Attribute Analysis was used in the research. The criteria identified from other countries are subpackage under Demand, Financial, Risk and Scale categories.

A questionnaire survey was carried out with PPP and highway experts. The ranking of subpackage criteria, top six preferred criteria, and their score by nine respondents were collected. Using Garrett ranking technique, a single criterion was selected from each subpackages and used for the development of preliminary screening criteria. Based on the other countries' guidelines, the percentage responses, and scores for the top six preferred criteria, nine criteria were recommended for secondary screening. Financial viability of a project was identified as the topmost criterion to be considered in project screening.

The completed and ongoing 10 expressway projects were considered, and PPP candidate nature of these projects was analyzed based on the preliminary and secondary screening criteria. Five projects were eliminated from the preliminary screening. Due to less information availability: financial viability, economic development, traffic congestion reduced from the projects, roles of the road in-network and project cost were used for the comparison of projects. Port Access Elevated Highway has received the highest total score from the

secondary screening. The major limitation in this study is that there are not any successfully completed PPP road projects in Sri Lanka, to compare our study and the real-world project scenario. In addition, another limitation was the lack of availability of detailed documentation in the projects.

Keywords: *Public-private partnership, Multi-attribute, Screening criteria, Garrett ranking technique*

Author Details

1. Engineer, Road Development Authority, kopikah@gmail.com
2. Senior Lecturer, Department of Civil Engineering, University of Moratuwa, pasindu@uom.lk