

An Index to Measure Transportation Sustainable Performance in Construction Projects

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Abstract : The continuous increase in the world population, resource shortage and the warning of climate change cause various environmental and social issues to the world. Thus, sustainability concept is much needed nowadays. Organizations are progressively falling under strong worldwide pressure to integrate sustainability practices into their project decision-making development. Construction projects in the industry are amongst the most significant, since it is one of the biggest divisions and of main significance for the national economy and hence has a massive effect on the environment and society. So, it is important to discover approaches to incorporate sustainability into the management of those projects. This study presents a combined sustainability index of projects with sustainable transportation which has been formed as per a comprehensive literature review and survey study. Transportation systems enable the movement of goods and services worldwide, and it is leading to economic growth and creating jobs while creating negative impacts on the environment and society. This research is study to quantify the sustainability indicators, through 1) identifying the importance of sustainable transportation indicators that are based on the sustainable practices used for the construction projects and 2) measure the effectiveness of practices through these indicators on the three sustainable pillars. A total 26 sustainability indicators have been selected and grouped under each related sustainability pillars. A survey was used to collect the opinion about the sustainability indicators by a scoring system. A combined sustainability index considering three sustainable pillars can be helpful in evaluating the transportation sustainable practices of a project and making decisions regarding project selection. In addition to focus on the issue of financial resource allocation in a project selection, the decision-maker could take into account the sustainability as an important key in addition to the project's return and risk. The purpose of this study is to measure the performance of transportation sustainability which allow companies to assess multiple projects selection. This is useful to decision makers to rank and focus more on future sustainable projects.

Keywords : sustainable transportation, transportation performances, sustainable indicators, sustainable construction practice, sustainability

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