

A Meta-Analysis towards an Integrated Framework for Sustainable Urban Transportation within the Concept of Sustainable Cities

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Abstract : The world's population is increasing continuously and rapidly. Moreover, there are other problems such as the decline of natural energy resources, global warming, and environmental pollution. These facts have made sustainability an important and primary topic from future planning perspective. From this perspective, constituting sustainable cities and communities can be considered as one of the key issues in terms of sustainable development goals. The concept of sustainable cities can be evaluated under three headings such as green/sustainable buildings, self - contained cities and sustainable transportation. This study only concentrates on how to form and support a sustainable urban transportation system to contribute to the sustainable urbanization. Urban transportation system inevitably requires many engineering projects with various sizes. Engineering projects generally have four phases, in the following order: Planning, design, construction, operation. The order is valid but there are feedbacks from every phase to every phase in its upstream. In this regard, engineering projects are iterative processes. Sustainability is an integrated and comprehensive concept thus it should be among the primary concerns in every phase of transportation projects. In the study, a meta-analysis will be performed on the related studies in the literature. It is targeted and planned that, as a result of the findings of this meta-analysis, a framework for the list of principles and actions for sustainable transport will be formed. The meta-analysis will be performed to point out and clarify sustainability approaches in every phase of the related engineering projects, with also paying attention to the iterative nature of the process and relative contribution of the action for the outcomes of the sustainable transportation system. However, the analysis will not be limited to the engineering projects, non-engineering solutions will also be included in the meta-analysis. The most important contribution of this study is a determination of the outcomes of a sustainable urban transportation system in terms of energy efficiency, resource preservation and related social, environmental and economic factors. The study is also important because it will give light to the engineering and management approaches to achieve these outcomes.

Keywords : meta-analysis, sustainability, sustainable cities, sustainable urban transportation, urban transportation

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