Applied multi-criteria ideal rehabilitation model for budget allocation across road infrastructure

Abstract:

The solution of prioritization problem for budget allocation across road infrastructure rehabilitation projects is highly complicated. This complexity is often due to the contradictions exist in budget allocation process. Such process concerns allocation of rehabilitation funds across various road infrastructures and taking into account multiple evaluation criteria. Therefore, budget allocation is a complex process with too many contradictions in form of criteria or attributes. According to the Systematic Innovation methodology, solving a problem means removing a contradiction. This paper presents a decision support approach for management of budget in rehabilitation process of road infrastructure, introducing Applied Multi-Criteria Ideal Rehabilitation Model. To achieve this, with the help of multi-criteria decision analysis, the Degree of Ideality is introduced as a function of all criteria. "Ideality" is the measure of how close the system is to the ideal final result. If the useful feature improves or harmful feature lessens, the ideality improves. In order to maximize the Degree of Ideality in the proposed Model, contradictions and resources are identified and ideal final result is introduced. This will result in a simple mechanism for allocation of budget across all the road infrastructures need to be rehabilitated.