



A Proposal Model for Estimation of Project Success in Terms of Radial Based Neural Networks: A Case Study in Iran

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Abstract

For improving the conditions of project intended purpose and reaching high score in the project success, project Stakeholders (including employer, contractor, consultant and its users) try to comply with the implementation of project Critical Success Factors(CSFs) at the beginning of each project. This implementation is in two terms: economic and executive. Artificial neural networks are one of the new methods which have been developed to estimate and predict parameters by using inherent relationship among data. In this research, it tried to propose a model to determine the project success score by using radial basis neural networks. For reaching this purpose, firstly, the key indicators of project success (employer, contractor and consultant) among the main elements involved in the industry of macro-civil construction projects in Iran reviewed. Secondly, ten CSFs key project success indicators were recognized in five categories: (i) financial, (ii) interaction processes, (iii) manpower, (iv) contract settings and (v) characteristic nature of the project (based on conditions of the present research in Iran). Then, some projects were selected by random sampling of projects operated during the last 5 years in the country's Ministry of Energy. Among those projects, project information was collected by managers of large projects. After training the designed neural network, the project success model was provided based on an assessment of project objectives including factors of Scope, Time, Cost, and Quality of the projects. For facilitating other researches' use, the applied equation of the model was presented as well. Outputs, calculated by the proposed model, were in good agreement with the actual number of projects assessed in Iran. The results of this study may be used as a tool in implementing projects for the rapid assessment of achieving project goals' facilities.

Keywords: Project Success; Critical Success Factors (CSFs); Construction Projects; Radial Based Neural Networks; Iran.

1. Introduction

The success of a project is of the largest and most important objectives and concerns of managers and all those involved in a project which is somehow unifying the efforts of all team members of the project. Reviewing the success and failure factors of projects in construction projects is more sensitive due to the dynamic and changing nature of the construction industry in various stages of project implementation. But, determining the success factors of a project is a complex and relative concept which most of the experts have proposed different and sometimes contradictory definitions due to their nature and execution system and natural characteristics. On the other hand, the volume of construction activities is of the essential development factors of a country. Annually, trillions of dollars of investments in the public and private sectors of various countries, either directly or indirectly, are expended in civil and building infrastructure. A construction project is a combination of different events, planned or unplanned, during the life cycle of the project, and survives under the umbrella of the changes in their environment. Among them, there are factors that

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