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EXTENDED ABSTRACT

Prioritizing of Factors Affecting Delays in Construction Projects in Iran

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1. Introduction

Successful implementation of civil projects is one of the key factors for the economic development of each society. Every year, a major part of the country's capital allocates to civil and infrastructure projects. Most of these projects are implemented with delay. Analyzing the factors affecting delays in these projects is essential with the aim of omitting the factors and timely implementation of the projects.

Over the years, professionals and researchers have investigated various aspects of delays. For example, causes of delay in large construction projects in Saudi Arabia were studied by Assaf and Al-Hejji (2006). Sweis et al. (2008) identified and classified the causes of construction delays in residential projects in Jordan. Factors affecting delays in Indian construction projects were analyzed by Doloi et al. (2012). Aziz (2013) identified various factors causing a delay in construction projects in Egypt. Delay causes of road construction projects in Egypt were explored by Aziz and Abdel-Hakam (2016). Arditi et al. (2017) studied the effect of organizational culture on delay in construction.

In this paper, after a revision of related researches and considering experts' opinions, different factors affecting projects delay in Iran are identified. Then the factors are prioritized by using the analytical hierarchy process (AHP).

2. Methodology

As mentioned in the previous section, first, a comprehensive revision of various researches is done. By gathering experts' opinions different factors affecting project delays in Iran are identified. Then these factors are prioritized by using AHP.

The AHP method can be implemented in four simple consecutive steps (Saaty, 1980):

1) Define the problem and specify the criteria. Organize the problem as a hierarchy.
2) Construct a pairwise comparison matrix of the relevant criteria. Obtain all judgments required to develop the set of matrices.
3) Calculate the relative weights.
4) Evaluate consistency for the entire hierarchy.

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3. Results and discussion

Factors causing a delay in implementation and finalizing projects in Iran were identified and categorized into seven groups consist of owner, consultant, conductor, material, labor, equipment, and external factors. Analytical model of factors affecting delays in Iran construction projects is seen in Fig. 1.

After running the AHP model, the important factors were determined. Owner, consultant, and external factors with the weights of 0.19, 0.16, and 0.16 respectively, were the most important factors affecting projects delay. Moreover, the most important factors in every seven groups were identified.

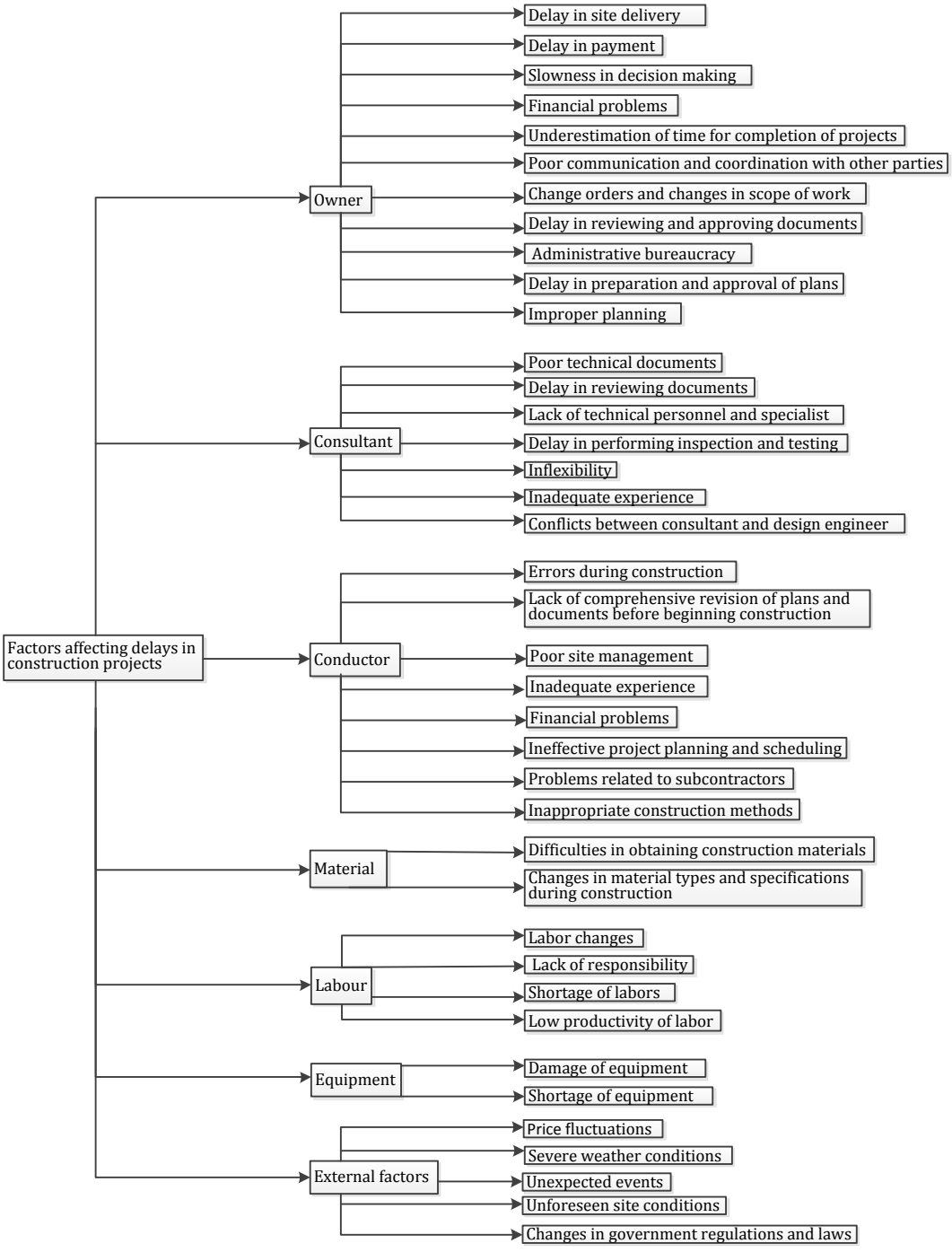

Fig. 1. Analytical model of factors affecting delays in construction projects

4. Conclusions

The results showed that financial problems and delay in payment by the owner, poor technical documents provided by the consultant, contractor financial problems, changes in material types and specifications during construction, lack of responsibility of labor and price fluctuations are the most important factors affecting delays in construction projects.

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