Root Causes of Cost Deviation in Highway Construction Projects in Bahrain

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ABSTRACT

In this research the cost overrun in highway construction projects in Bahrain was investigated. Fifty-two causes were identified from the literature and from interviews with highway construction engineers working at contractors, consultants, and at Ministry of Works (MoW). The causes were classified into six groups. A field survey was conducted through a questionnaire including thirty-six contractors, twenty-four consultants and eighty-four engineers working at MoW to study the frequency and severity of the causes of overrun.

For the model that was developed for this study, the data were gathered from interviews with project managers working at MoW, who managed 38 highway construction projects in Bahrain between years 2005 to 2016. They were asked to rank the severity and the frequency of occurrence of the six groups that were identified earlier, which had caused cost overruns to their projects. Based on the interviews’ data, an ANN model was developed to identify which group had more effect on cost overrun, and the results were compared to the ones from the questionnaire.

It was concluded that there are many causes of cost overrun related primarily to owner group, consultants group and contractors group such as frequent change orders, lack of experience of project manager, and lack of communication with suppliers, respectively. However, factors related to project characteristics, estimation, and environment were not as significant to the above groups.

Finally, recommendations were suggested in order to minimize the cost overrun in highway construction projects in Bahrain. Furthermore, recommendations for future research were suggested.