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A Relational Case-Based Reasoning Framework for Project Delivery System Selection

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Abstract : An appropriate project delivery system (PDS) is crucial to the success of a construction project. Case-based reasoning (CBR) is a useful support for PDS selection. However, the traditional CBR approach represents cases as attribute-value vectors without taking relations among attributes into consideration, and could not calculate the similarity when the structures of cases are not strictly same. Therefore, this paper solves this problem by adopting the relational case-based reasoning (RCBR) approach for PDS selection, considering both the structural similarity and feature similarity. To develop the feature terms of the construction projects, the criteria and factors governing PDS selection process are first identified. Then, feature terms for the construction projects are developed. Finally, the mechanism of similarity calculation and a case study indicate how RCBR works for PDS selection. The adoption of RCBR in PDS selection expands the scope of application of traditional CBR method and improves the accuracy of the PDS selection system.

Keywords : relational cased-based reasoning, case-based reasoning, project delivery system, PDS selection
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