

Modeling Virtual Design and Construction Implementation Strategies Considering Lean Management Impacts

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Abstract

Virtual design and construction (VDC) implementation remains a challenge as companies lack understanding of the implementation strategies and their relation with other important improvement efforts such as lean management. This article presents a performance modeling methodology that allows companies to assess VDC implementation strategies, including lean management as a moderator. The methodology is based on a conceptual model of the implementation variables that influence project performance and a mathematical method that uses partial least squares to explain the relationships among the multiple variables. The methodology was tested using data from an existing survey to identify the variables and quantify the relationships. A significant finding is that using lean as a moderator strengthens the connection between strategies and allows a better performance on companies. The results are exploratory but provide interesting insights into VDC implementation strategies and provide evidence of the methodology's power..