A Temporal Model of Information Technology Project Performance

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ABSTRACT: Efficiently delivering expected performance from information technology projects remains a critical challenge for many organizations. Improving our understanding of how various factors influence project performance is therefore an important research objective. This study proposes and tests a temporal model of information technology project performance (TMPP). It shows that performance can be better understood by separating risk factors into earlier (a priori) risk factors and later (emergent) risk factors, and modeling the influence of the former on the latter. Project performance, the dependent variable, is measured by considering both process (budget and schedule) and product (outcome) components. The model includes interactions between risk factors, project management practices, and project performance components. The model is tested using partial least squares analysis with data from a survey of 194 project managers. Our results indicate that the TMPP increases explanatory power when compared with models that link risk factors directly to project performance. The results show the importance for active risk management of recognizing, planning for, and managing a priori and emergent risk factors. The finding of a strong relationship between structural risk factors and subsequent volatility shows the need for risk management practice to recognize the interaction of a priori and emergent risk factors. The results confirm the importance of knowledge resources, organizational support, and project management practices, and demonstrate the ways in which they reinforce each other.

Key words and phrases: information technology project management, knowledge management, project performance, software project risk