

# Analysis of Three-Party Interactional Risks in Governance of Public Private Partnership

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## Abstract

Public-private partnerships (PPPs) involve a variety of project governance structures. Common among all these varied structures is the long-term contractual period between multiple public and private entities. The increased uncertainty of a long-term contract duration coupled with the involvement of multiple stakeholders proves to be a challenge to the development of risk strategies for PPPs. Therefore, it is necessary to systematically frame the risks associated with these projects and explore their dynamics. These risks often arise due to the organizational dynamics from the interactions between stakeholders in varied risk scenarios. In this paper, a methodology is proposed to systematically identify risks in PPP projects, model the organizational dynamics associated with interactional risks using game theory, and simulate these models to observe a range of potential outcomes. The proposed combined approach can help planners prepare for a range of complex and uncertain scenarios and enable stakeholder management in PPP projects. The current literature is extended in this paper by (1) integrating risk identification and framing with modeling and simulation, and (2) expanding the analysis of interactions from the current focus on two parties to three. A case study of the Indiana Toll Road is performed to showcase the application of the proposed approach.

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