

A Systematic Review Of Public Private Partnership (Ppp) Implementation Outcomes And Financing Approaches

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ABSTRACT

This article reviews the development of research on the financing, governance, and implementation of infrastructure projects through Public-Private Partnership (PPP) schemes. The various studies analyzed show that project success is not determined by a single factor, but rather by a complex interaction between the implementation context, business model, contractual governance, and public-private partnerships. Several studies based on *fuzzy set Qualitative Comparative Analysis* (fsQCA) emphasize the importance of a combination of externally oriented management and intensive collaboration in achieving satisfactory project implementation. At the same time, effective funding and financing models depend on economic indicators, regulations, and the project's cost and revenue structure. This article synthesizes findings from five international journals to provide a comprehensive understanding of the factors influencing PPP success and offers evidence-based policy directions for improving infrastructure project performance.

Keywords: PPP, Infrastructure Management, fsQCA, Governance, Funding



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A. BACKGROUND

Global infrastructure investment faces significant pressure as the need for repairs and new asset development increases, while government funding capacity becomes increasingly limited. The 2008–2011 global financial crisis deepened the gap between demand and funding availability, widening the “*infrastructure gap*” in many countries (Vanelslander et al., 2018). This situation has prompted governments to seek alternative mechanisms, one of which is Public–Private Partnerships (PPPs), which are expected to improve management efficiency and ensure project sustainability. However, the success of PPPs is heavily influenced by governance, the implementation context, and the financing structure adopted (Hueskes et al., 2017).

Problems with infrastructure projects often occur during the implementation phase. Several studies have shown that even well-planned projects can fail due to social dynamics, conflicts of interest, or coordination barriers between stakeholders. A study (Verweij, 2015b) found that large projects in the Netherlands experienced cost overruns despite thorough planning, due to the complexity of external interactions and ineffective management during implementation. This confirms that traditional indicators such as cost, time, and quality are insufficient to assess implementation success.

Research on PPPs also highlights the importance of flexible contractual governance. Business models in infrastructure projects, as presented in the project (Vanelslander et al., 2018), are influenced by cost efficiency, revenue generation capacity, and the institutional context reflected in economic and regulatory indicators. This combination of

indicators determines a project's ability to attract financing and achieve performance targets, particularly in the transportation context.

Several studies also show that high implementation success is strongly associated with an externally-oriented management approach, particularly in building relationships with stakeholders, and intense collaboration between the public and private sectors. The FsQCA study of 27 road projects in the Netherlands confirmed that implementation satisfaction is influenced by a particular configuration that combines externally-oriented management and close public-private collaboration. However, smaller-scale and narrow-scope projects may rely on a less interactive, contractual compliance-based approach (Verweij, 2015b) .

Other findings related to PPP financing indicate that the cost of capital structure, financing risk, and return ratio are important indicators for determining financial viability. Research on the WACC of PPPs in France highlights the need for high efficiency from private operators to ensure projects remain financially attractive. Furthermore, limited financial data presents a challenge, limiting transparency and comprehensive evaluation (Lu & Wilson, 2024) .

Drawing from these various studies, this article aims to synthesize key findings related to PPP financing, governance, and implementation. The ultimate goal is to provide a unified understanding of the factors influencing infrastructure project success and to formulate recommendations for improving the effectiveness of PPP implementation in the future.

B. IMPLEMENTATION METHODS

This study uses a *systematic narrative review approach* to analyze five international journals that discuss the financing, governance, and implementation of infrastructure projects through PPPs. The review process involves four main stages: identification, selection, comparative analysis, and synthesis. Each stage is designed to ensure that key indicators and dimensions, such as *governance* , *funding/financing mechanisms* , *implementation behavior* , and *business model indicators*, are analyzed in-depth and comprehensively. This procedure allows for cross-method integration of the various approaches used in the five journals.

In formulating this study's method, methodological elements from the study (Verweij, 2015a) on PPP implementation based on *fuzzy-set Qualitative Comparative Analysis* (fsQCA) were adopted as the primary reference for analyzing the configurative relationships between implementation variables. The fsQCA approach is relevant for understanding how the combination of managerial factors and public-private collaboration influences satisfaction with PPP project implementation. Furthermore, journals on PPP governance and sustainability provide a methodological framework related to normative and evaluative reasoning on policy instruments and governance mechanisms applied to PPP projects in various contexts of developing and developed countries.

The approach used in (Vanelslander et al., 2018) regarding transportation infrastructure funding and financing also forms the basis for developing a funding analysis framework. The study outlines indicators such as *the Financial-Economic Indicator (FEI)* , *Institutional Indicator (InI)* , *Revenue Support Indicator (RSI)* , and *Cost Saving Indicator (CSI)* used in this study as cross-journal comparison variables to assess the financial feasibility and financing structure of PPPs. In addition, the study (Vanelslander et al., 2018) regarding *the Weighted Average Cost of Capital (WACC)* , financial risk, and market models is also used to strengthen the understanding of how capital costs affect the feasibility and sustainability of PPP projects in the European context.

In the analysis phase, the conceptual framework from studies of infrastructure financing in African countries is used to broaden the methodological perspective for developing countries, particularly in assessing structural constraints such as limited government fiscal capacity, macroeconomic risks, and financial market constraints. The study provides an empirical perspective on the variety of PPP financing approaches and the external factors influencing the success of PPP schemes in low- and middle-income countries.

Overall, this literature review method combines various analytical techniques from the five journals, including fsQCA, economic and institutional indicator analysis, contractual governance evaluation, and financial risk approaches. This cross-method integration allows for a more robust synthesis of the relationships between the financing, governance, and implementation dimensions of PPP projects. By following this methodological structure, the study results provide a more comprehensive picture of the determinants influencing PPP performance and how the interactions between these dimensions shape infrastructure project success.

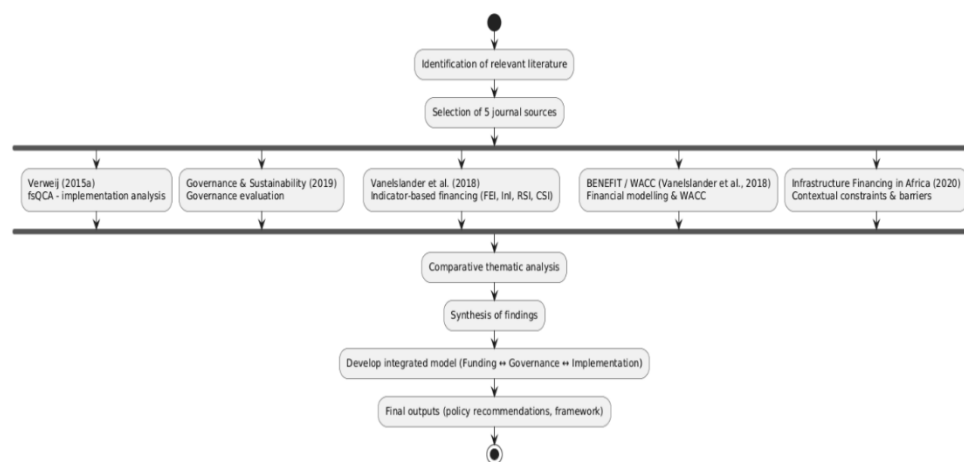


Figure 1. Literature Review Workflow (5 PPP Journals)

C. RESULT AND DISCUSSION

1. PPP Project Funding

Analysis shows that the PPP funding structure is heavily influenced by a country's economic and institutional indicators. Indicators such as the *Financial-Economic Indicator (FEI)* and the *Institutional Indicator (Int)* determine whether a project can attract private financing. Furthermore, the *Cost Savings Indicator (CSI)* and the *Revenue Support Indicator (RSI)* are used to assess project feasibility in terms of cost efficiency and revenue potential. A study in France confirms that the efficiency of private operators is a crucial prerequisite, given the relatively high WACC.

2. Contractual Governance and Business Mode

(Vanelslander et al., 2018) illustrates that contractual governance influences implementation flexibility and effectiveness. *Governance Indicators (GI)* are one of the factors determining project performance throughout its life cycle. The more flexible contractual governance, the greater the project's opportunity to adapt to external risks and dynamics.

3. PPP Project Implementation and Management

Research (Verweij, 2015b) on 27 PPP projects shows that implementation success depends not only on the contract or funding structure, but also on the managerial approach. Externally oriented management configurations and intense collaboration between the public and private sectors have been shown to result in high levels of implementation satisfaction. Conversely, managers who are too internally oriented

often result in dissatisfaction, particularly when dealing with social events or stakeholder dynamics.

4. Funding, Governance, and Implementation Interactions

A synthesis of the five journals shows a close relationship between funding, governance, and implementation. Projects with strong funding but rigid governance are more vulnerable to implementation risks. Conversely, flexible governance supported by sustainable funding tends to improve implementation performance. This combination of factors is a key element in PPP success.

D. CONCLUSION AND RECOMMENDATIONS

This study concludes that the success of PPP projects is not determined by a single factor, but rather by a complex interaction between funding, governance, and implementation processes. Funding effectiveness is determined by economic indicators, capital cost structures, and revenue potential. Contractual governance significantly impacts project flexibility and risk management capabilities. Meanwhile, implementation is strongly influenced by management orientation and the quality of public-private partnerships in addressing social and technical challenges.

Recommendations include increasing contractual governance flexibility, strengthening the transparency of financing data, and developing externally oriented managerial capacity for stakeholder management. The government and private sector also need to enhance cross-project learning to identify ideal configurations for PPP financing, governance, and implementation.

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