

Challenges in Long-Term Public-Private Partnership: Impacts on Public Resource Utilisation

Abstract


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This study evaluates the challenges and impacts of long-term Public-Private Partnerships (PPP) on public resource utilization, focusing on their governance, financial, and operational frameworks. Employing a Systematic Literature Review (SLR) methodology guided by the PRISMA framework, the research identifies critical factors affecting the effectiveness of PPP models. The findings reveal that while PPP can foster innovation and enhance financial sustainability, issues related to governance, frequent renegotiations, and misaligned objectives between public and private sectors often undermine their success. The study highlights the need for improved governance structures, equitable risk-sharing, and greater transparency to optimize PPP performance. These findings have significant implications for eco-tourism and digital technology, where community engagement is crucial for long-term success. This research makes a novel contribution by addressing the broader social-economic implications of PPP and offering actionable recommendations to balance private-sector efficiency with public welfare goals, encompassing sustainable development initiatives and ensuring sustainable and resilient partnerships across diverse contexts.

Keywords Impact, public-private partnership, public resources, challenges

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Introduction

Public-private partnerships (PPP) have become a pivotal mechanism for financing and delivering public infrastructure and services, particularly in sectors with limited Government resources. Central to PPP is transferring public asset design, construction, financing, and operation responsibility to private entities through long-term contracts. This shift reflects the New Public Management (NPM) paradigm, which seeks to enhance public-sector efficiency by incorporating private-sector management principles (Wang et al., 2018). While PPP offers governments an alternative approach to addressing infrastructure needs, it raises complex questions about balancing profit motives with public welfare goals. This research addresses these challenges, examining the impact of PPP on public service delivery and identifying critical obstacles to their sustainability and success. PPP have been critiqued in practice for their frequent misalignment with public aspirations and the reduced role they offer to the public in the policymaking process, often attributed to the complexity and diversity of actors involved, which can lead to a predominance of private interests over public ones (Ginsburg, 2008; Murphy, 2008). Additionally, a reduction in direct Government involvement often coincides with increased potential risks transferred to the private sector; however, significant operational and maintenance risks frequently remain with the Government (Rifai, 2016). This underscores the need for PPP projects to carefully negotiate risk allocations between the public and private sectors, as inadequate transfer can undermine public oversight and control, with governmental inexperience further introducing political risks (Wulandari & Septian, 2024). Reliance on private sector operations within PPP arrangements can impede the Government's capacity to drive innovation, efficiency, and cost-effectiveness (Levai, 2012). Furthermore, it is essential to address the risks associated with budget constraints, limited transaction volumes, and construction, operational, and commercial uncertainties (Beckers & Stegemann, 2021).

Innovations within PPP are often geared towards cost savings rather than the production of tangible products, exemplified by a Dutch case where technological advancements transformed labor-intensive reporting processes into more efficient electronic operations (Brogaard, 2021). Although the private sector generally seeks returns from investments made over extended periods, typically ranging from 15 to 30 years (Turina & Car-Pusic, 2006), such long-term contracts limit the Government's ability to respond to unforeseen changes. Indeed, infrastructure projects frequently encounter cost overruns and delays, imposing additional financial burdens on the Government (Ross & Yan, 2015). Several Build-Operate-Transfer (B.O.T) projects have experienced challenges related to cost overruns, unrealistic financial projections, and legal disputes between private and public entities (Tang et al., 2010). The potential of PPP to alleviate fiscal pressures in resource-constrained environments makes investigating this model's efficacy crucial. As infrastructure demands grow, PPP presents a viable solution for governments seeking to meet these needs without increasing public debt (Shi, 2022). However, reliance on private partners introduces unique challenges, especially where private sector efficiency goals may conflict with broader societal values, such as equity and accountability. While private entities bring operational expertise, their profit-oriented nature can sometimes be at odds with public service ideals (Roehrich et al., 2014). This study explores how these conflicting interests can be managed and



balanced to ensure that PPP effectively serves the public good. PPPs are usually design-build-cost-operating (D.B.F.O.) schemes. The Government specifies the services required by the private sector in the plan, and the private partner then develops and constructs an asset for that purpose, finances the construction, and operates the asset (i.e., provides the services generated by the asset). PPP has been implemented in Korea, the Philippines, and Singapore (as mentioned earlier, Japan), but their development in other Asian countries has been slow. However, PPPs in India, Indonesia, and Thailand are intensely interested. As a regional leader, South Africa has started or is developing PPP in several areas (Greve & Hodge, 2022).

Although current literature often emphasises the economic advantages of PPP, more attention should be given to their broader social implications. This study fills that gap by examining PPP in traditional infrastructure and sectors like eco-tourism, which depend on sustainable community engagement (Ao, 2018). Such sectors highlight the need for PPP models to be flexible and adaptive, accommodating local contexts and aligning with community values (Litheko, 2022). By expanding the scope of PPP research, this study offers a fresh perspective on how these partnerships can foster community-driven development and contribute to sustainable growth across various sectors. The theoretical implications of this research contribute to the ongoing debate on the suitability of PPP for public service provision. Through the lens of NPM, this study challenges the assumption that PPP inherently delivers better public service outcomes. Recent research by Fouad et al., (2021) indicates that renegotiations of PPP contracts often disproportionately favor private entities, raising questions about the alignment of PPP with public sector objectives. By analysing issues such as contract design, negotiation processes, and the dynamics of long-term partnerships, this study provides valuable insights for policymakers and practitioners seeking to optimise the PPP model. On the practical side, this research offers actionable recommendations for policymakers and stakeholders involved in PPP projects. Effective governance frameworks and transparent contractual arrangements are essential to address common PPP challenges, such as misaligned objectives and accountability issues. This study underscores the importance of tailoring policy frameworks to local settings, ensuring community engagement and alignment with local aspirations, an approach particularly relevant in eco-tourism, where sustainable development depends on local support (Lekgau et al., 2024). These recommendations are designed to enhance the effectiveness of PPP in delivering public services while maximising their contributions to sustainable development.

This research aims to analyse the complexities of PPP models and assess their long-term viability across diverse regional settings. Drawing on case studies from Southeast Asia and South Africa, this study offers a comprehensive view of PPP implementation, challenges, and potential outcomes. For example, the toll road construction project in Batangas, Philippines, underscores the importance of the value capture concept, as projects require significant lead times to generate user demand and sustain economic viability (Asian Development Bank, 2021). Such cases contribute to understanding how PPP can be structured to support financial feasibility and public value creation. This research addresses the growing need for alternative financing models prioritising public interests while enabling efficient resource allocation. Although public finance remains the dominant source of infrastructure investment, accounting for over 90% of global funding (Hall, 2015). PPP represents a promising solution to infrastructure gaps. However, these partnerships also introduce unique risks, and this study explores mitigation strategies (Casady et al., 2024). The findings are particularly relevant for emerging economies, where PPPs are increasingly adopted to address infrastructure deficits, offering insights into building more resilient, accountable, and transparent partnership structures. This study comprehensively evaluates PPP models, focusing on balancing private-sector efficiency and public-sector accountability. By addressing the theoretical, practical, and sector-specific implications of PPP, this research contributes to a deeper understanding of how these partnerships can support sustainable development goals. The insights gained will be valuable for policymakers, private sector partners, and community stakeholders interested in implementing PPP that maximises public benefits while enhancing operational efficiency. Ultimately, this study aims to inform best practices and provide a roadmap for successful PPP implementation across various contexts.

Literature review

PPP have emerged as a vital mechanism for financing and delivering public infrastructure, particularly when governments face significant fiscal constraints. The increasing adoption of PPP is attributed to their ability to leverage private sector efficiency and capital, which is essential for meeting the growing demand for infrastructure while managing public debt and budgetary limitations (Hurk, 2018). In many cases, PPP provides a strategic alternative to traditional public procurement methods by transferring construction and operational management risks to private entities, potentially enhancing value for money and project outcomes (Hoppe & Schmitz, 2013). Moreover, integrating private financing bridges funding gaps and fosters innovation and improved service delivery through competitive practices (Kinyua & Mwenda, 2020). However, it is essential for public officials to carefully design PPP agreements to mitigate risks such as agency loss and to ensure that the public interest remains safeguarded throughout the partnership (Levitt & Eriksson, 2016). As governments worldwide continue to explore PPP as a solution to infrastructure challenges, establishing robust governance frameworks and accountability measures is crucial (Xu, 2023). This approach aligns with the NPM paradigm, which advocates incorporating private sector efficiencies into public service frameworks (Reynaers & Graaf, 2014). By adopting design-build-finance-operate (D.B.F.O) models, PPP aims to alleviate Government budget burdens by transferring substantial operational responsibilities to private entities. While countries such as Korea, the Philippines, and Singapore have successfully implemented PPP projects, other Asian nations like India and Indonesia are still developing their PPP frameworks, highlighting a regional disparity in PPP adoption (Greve & Hodge, 2022). This review underscores PPP's economic and operational benefits while addressing the challenges of balancing private-sector profit motives with public welfare objectives.

Despite the well-documented economic benefits of PPP, broader social implications, including community engagement and sustainable development, still need to be explored. PPP is increasingly applied beyond traditional infrastructure projects, extending to sectors such as eco-tourism, where successful outcomes rely on meaningful community involvement and support (Ao, 2018). Research suggests that effective PPP models should be adaptable to local contexts and aligned with community values (Litheko, 2022). However, as PPP projects scale up, managing these partnerships becomes increasingly complex, often resulting in a dominance of private interests that may not align with public aspirations. Accountability and community alignment are critical, as PPP contracts frequently favor private entities during renegotiations, potentially shifting focus from public benefit and compromising service quality (Fouad et al., 2021). The literature emphasises the need for PPP frameworks incorporating community feedback and flexibility, particularly for long-term projects with significant social impacts. Although PPP offers substantial potential, faces numerous practical challenges, including risks related to negotiation, incompleteness, and contractual design (Rybnicek et al., 2020). Poorly structured PPP contracts can lead to inefficiencies, reduced service quality, and inadequate safeguards for public utilities ((Deep et al., 2019). Furthermore, PPP projects often transfer considerable risks to the private sector, yet the Government remains accountable for operational and maintenance risks, particularly when private partners experience financial or operational challenges (Rifai, 2016). The long-term nature of PPP contracts also limits the Government’s ability to adapt to emerging challenges, such as technological advancements and evolving public expectations (Ross & Yan, 2015). It is necessary to know that digital technology has entered organisational systems in all public sectors (Wulandari et al., 2024). Case studies, such as the toll road construction project in Batangas, Philippines, highlight the importance of value capture for financial sustainability while illustrating potential issues, including unrealistic pricing and revenue projections (Asian Development Bank, 2021; Tang et al., 2010). While PPP offers a promising approach to public infrastructure financing, it requires careful design, robust governance frameworks, and ongoing evaluation to align with public interests and deliver sustainable outcomes.

This literature review is grounded in the NPM theoretical framework, which supports integrating private sector efficiencies into public service delivery. NPM posits that by adopting private-sector management techniques, governments can improve efficiency, reduce costs, and enhance overall public service quality (Fakhrul, 2015). However, this theory faces criticism when applied to PPP, as private sector profit motives may not always align with public welfare goals, potentially compromising service quality and public accountability. Additionally, the review draws on risk management theory to examine the transfer and mitigation of risks associated with long-term PPP contracts (Rifai, 2016). Stakeholder theory also provides a basis for analysing the importance of community engagement and accountability in PPP projects, emphasising that sustainable outcomes depend on balancing the interests of all involved parties, including governments, private partners, and local communities (Fouad et al., 2021; Litheko, 2022). These theoretical foundations highlight the need for flexible, context-specific PPP models that prioritise public interests while leveraging private sector capabilities to support sustainable development.

In Figure 1, the clustering results from the network visualisation illustrate the relationships between nodes, representing interconnected networks based on the keywords analysed. Specifically, the researchers investigated the keywords “impact,” “PPP,” and “public resource.”

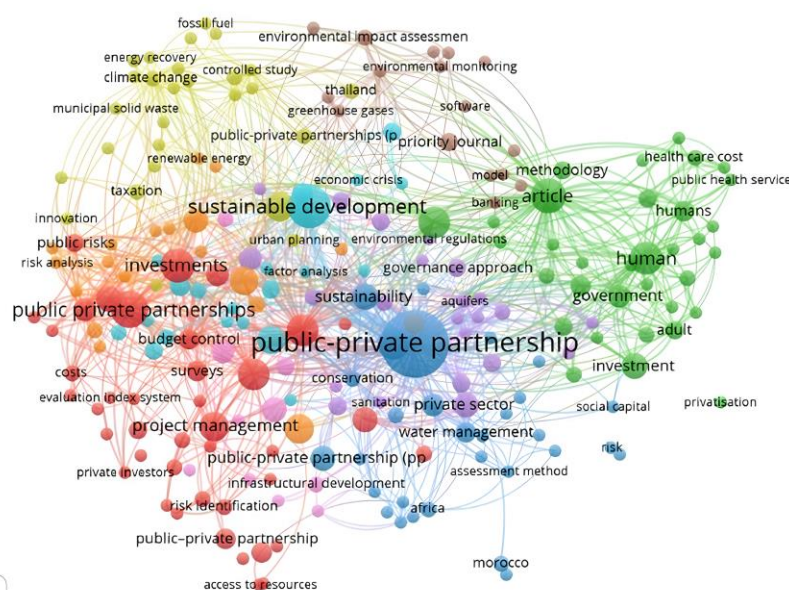


Figure 1. Network visualisation by Vos Viewer, 2024
 Source: Data processed by researcher, 2024

The results reveal that the blue and red clusters are associated with PPP nodes, while “impact” and “public resource” keywords do not appear in the visible network. This absence suggests that these keywords may be underrepresented in related studies,



exclusion criteria are characteristics that meet the inclusion criteria but have additional properties that can hinder the success of research results (Patino & Ferreira, 2018). The inclusion and exclusion criteria in the study are shown below:

Table 1. Inclusion and exclusion criteria

| Inclusion Criteria | Exclusion Criteria |
|----------------------------------------------------|---------------------------------------------------------------------------|
| Articles published in the last 4 years (2021-2024) | Articles published outside the last 4 years (published outside 2021-2024) |
| Article types | Non-article document type |
| English-language articles | Non-English language articles |
| Articles are freely accessible | Articles are not freely accessible (limited/paid) |

Source: Author (2024)

Based on these criteria, after limiting the year with articles published in the last four years, 169 articles from the Scopus database were included in the inclusion criteria; the rest were included in the exclusion criteria. Then, based on the type of document, there are 118 that are included in the inclusion criteria and will be filtered again based on language and article access. The screening results obtained 48 articles that will proceed to the eligibility stage.

3. Eligibility

Eligibility is adjusting or checking data from the results after the identification and screening process using inclusion and exclusion criteria to perform data extraction. Fifteen articles were selected from the Scopus database based on a thorough search. The 15 articles, after cross checking, were related to the research topic and will be discussed further. The article review process was conducted using a flow chart, as shown in Figure 3.

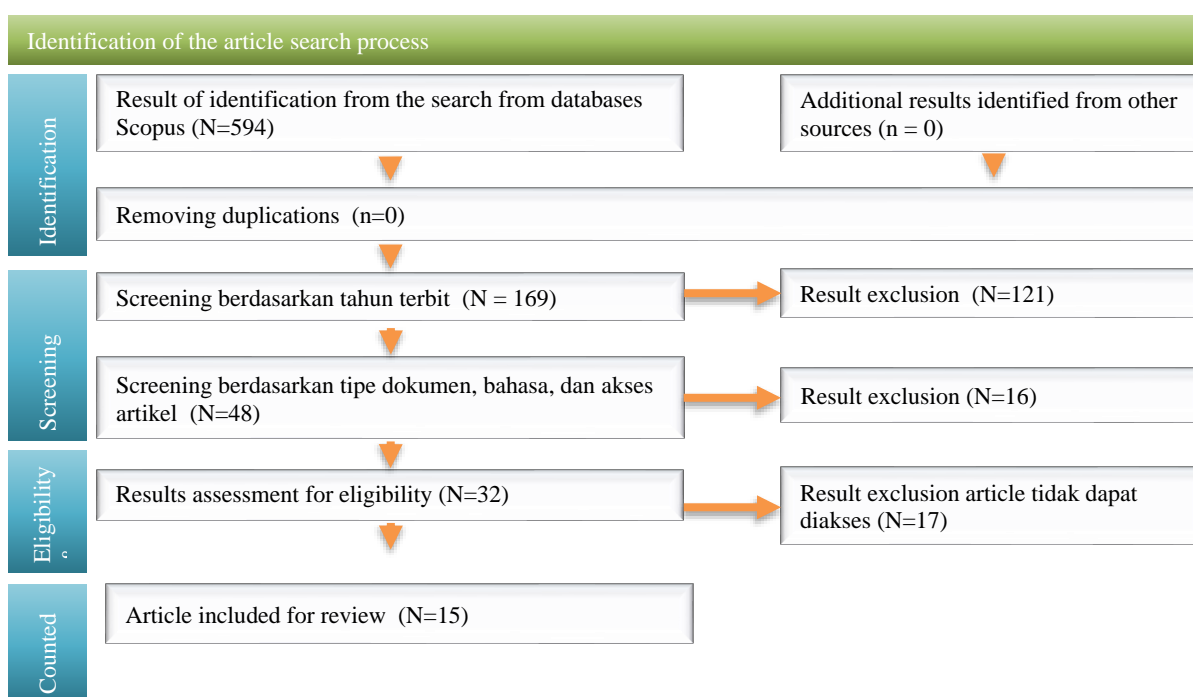


Figure 3. PRISMA search flow chart

Source: Author (2024)

Results and discussion

Portrait of PPP project failure and PPP challenges

Developed countries prioritise enhancing their existing infrastructure to become "smart," as they already possess the foundational infrastructure needed, unlike many developing nations still facing significant gaps in basic facilities (Jayasena et al., 2022; Tarasenko et al., 2023). While upgrading to smart infrastructure is crucial, financial constraints, high development and maintenance costs, and governance challenges impede progress (Jayasena et al., 2022). Key barriers include insufficient financial resources, a lack of knowledge and expertise, low citizen participation, political instability, and the involvement of diverse stakeholders. PPPs have been identified as a potential solution to these challenges (Du et al., 2019). However, their implementation could have been better due to various factors undermining their success. The fragmented nature of existing legislative frameworks further complicates progress, leading to delays in agreements (Tarasenko et al., 2023).



Table 2. Failure factors of PPP in infrastructure development

| No. | Sector | PPP Failure Factors |
|-----|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Economic | Transfer-operate-transfer (TOT) projects are a standard PPP model that applies to existing facilities and does not involve construction tasks. In recent years, to reduce China's local Government debt levels, improve the operational efficiency of existing public services, and encourage transforming existing public services into cooperative projects between the Government and private partners (known as social capital). However, the implementation has experienced many disputes or failures as the revenue realization may not match the expectations at the time of project initiation. This scenario may lead to an imbalance in revenue distribution between the Government and the private sector (Du et al., 2019; Visconti et al., 2019), causing contract renegotiation and cost increases (Amato et al., 2021; Cheng et al., 2018; Du et al., 2019). In general, the tendency of PPP is considered a general concept that includes BOT (Build-Operate-Transfer), TOT (Transfer Operate-Transfer), PFI (Private Finance Initiative), and other types of contracts (Cheng et al., 2018). Some studies believe PPP is a scam or financial black hole (Cheng et al., 2018; Du et al., 2019; Visconti et al., 2019). |
| 2. | Tourism | As an innovative governance tool, PPP has transformed the dominant traditional governance model into a decentralized network governance regime based on cooperation among stakeholders, including Government, private sector, and civil society. However, when the tourism industry responds to PPP policies, it should consider whether the standard PPP model fits its characteristics (Cheng et al., 2018; Gong et al., 2022). PPP facilitates the reorganization and readjustment of factors across regions based on the cooperation between the market and the Government, thereby reducing spatial disparities in tourism investment and expertise and promoting the development of tourism resources. To some extent, there is a presumption that the tourism characteristics of PPP are not significant or relevant enough. Currently, tourism PPP projects are mostly launched to promote the PPP model rather than to develop the tourism industry (Cheng et al., 2018). |
| 3. | Health | In healthcare, PPP investments are still controversial, and critical concepts such as public sector comparators or value for money are hotly debated (Visconti et al., 2019). PPP can work if it is convenient for private investors (with an associated public interest). The public health sector is often not profitable. Therefore, although in the public interest, PPP in healthcare is only sometimes convenient for private investors. Many Government auctions cannot attract private investors, so PPP must be abandoned. |

Source: Analysis results (2024)

Developed and developing countries require comprehensive, long-term planning to address rising populations, urbanisation, and environmental issues while promoting innovative infrastructure development (Cheng et al., 2018; Du et al., 2019; Jayasena et al., 2022). Despite the potential of PPP to address these issues, their failure has been attributed to several factors, including financial mismanagement, lack of stakeholder coordination, and governance problems, posing significant challenges to achieving the desired outcomes. The following are the failure factors in PPP in several sectors are shown in Table 2 above. PPP projects face numerous challenges that must be addressed to ensure their success, many of which arise from complex risk management issues. A significant challenge is the risk of higher restoration costs, particularly in projects involving historic buildings, where, despite meticulous planning, unforeseen costs frequently emerge (Amato et al., 2021). Another critical challenge is the need for effective management, as each project scenario requires highly skilled management to efficiently organise functions and activities that attract users appropriately and in sufficient numbers. Furthermore, aligning the vision and objectives of public and private sector stakeholders often proves difficult, adding complexity to project execution (Cheng et al., 2018). These challenges emphasise the need for robust, high-quality management in PPP projects to navigate risks and foster collaboration between the public and private sectors, essential for achieving successful outcomes.

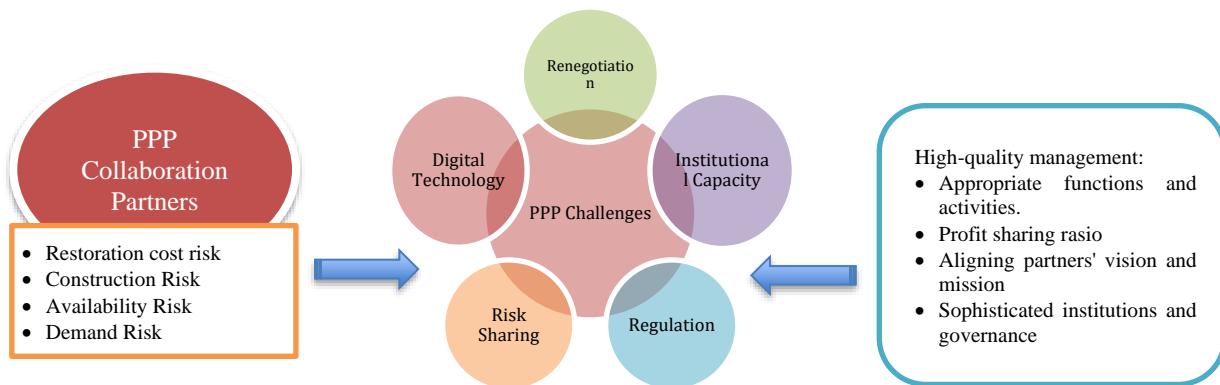


Figure 4. PPP challenges in realising high quality management

Source: Processed by the Author (2024)

Table 3. The critical challenges facing Public-Private Partnerships

| Aspect | Challenges | Concrete Steps |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Renegotiation | Uncertainty in revenue sharing often leads to renegotiation between public and private partners. | Renegotiations arise from revenue uncertainty, which disrupts the balance between the public and private sectors. Adjustments in variables such as the franchise term, fees, and product or service prices can help balance benefits. However, these adjustments require costly reassessments of future revenue projections and project realization, making decision-making less flexible (Cheng et al., 2018; Du et al., 2019; Gonçalves et al., 2023). Furthermore, this uncertainty can also lead to disputes or project failures due to the mismatch between expected and actual revenue, causing an imbalance in revenue distribution (Visconti et al., 2019). |
| Risk Sharing | The risk of higher restoration costs, particularly in historic building projects, and risks related to management and demand are significant challenges. | Restoration costs and management risks are often underestimated, leading to financial instability. Effective risk sharing requires detailed risk assessments and highly skilled management to organize project activities to attract the right users. Additionally, balancing construction, availability, and demand risks between public and private partners is crucial to ensure alignment with the project's vision and objectives (Amato et al., 2021; Kuteesa & Kyotalimye, 2019; Visconti et al., 2019). |
| Regulation | The lack of clear laws and regulations governing PPPs is a major challenge. | With specific legal frameworks, PPP projects can avoid uncertainty, which can discourage private sector investment. Establishing clear legislation and independent regulatory bodies is essential for creating a stable environment for PPPs. These regulations must carefully balance the needs of both public and private sectors. With legal protection, PPPs can avoid political interference, which may not align with public interests, undermining project success (Eckhardt et al., 2020; Gong et al., 2022; Jayasena et al., 2022; Li et al., 2017). |
| Institutional Capacity | Limited institutional capacity, especially in developing countries, hinders the implementation of large and complex PPP projects. | The quality of institutions directly influences the success of PPP projects, particularly in terms of risk sharing. Strong institutions with mature governance systems are crucial for supporting sustainable growth in PPP markets. Countries with limited institutional capacity may struggle to manage the complexity of PPP projects, underscoring the need for improved governance, capacity building, and trust between the public and private sectors (Eckhardt et al., 2020; Gong et al., 2022). |
| Digital Technology | Insufficient information and lack of comprehensive databases for PPP programs hinder project execution and communication among stakeholders. | Digital technology is vital in improving transparency and communication in PPP projects. An online database that stores all project-related documents, such as feasibility reports and concession agreements, can facilitate better access to information for all stakeholders. This enhances transparency and allows for more efficient decision-making. Moreover, digital tools enable better data sharing and collaboration across sectors, addressing communication barriers (Jayasena et al., 2022; Kuteesa & Kyotalimye, 2019). |

Source: Analysis results (2024)



The challenges in PPP highlight the complexity of establishing contractual agreements. A key solution to these challenges is achieving high-quality management through a strong partnership between the Government and the private sector. However, in practice, failures often arise due to several factors, including revenue-sharing uncertainties leading to renegotiation, restoration, and management risks requiring specialised expertise, the absence of clear regulations, limited institutional capacity, and the lack of digital technology and information, hampers communication. These factors present significant challenges to PPP projects' practical and sustainable implementation. Some of the challenges that must be faced are shown in Table 3.

Transparency and accountability of PPP

Transparency in PPP refers to the availability and accessibility of information related to costs, agreements, and the performance of public service provision. However, transparency often decreases in PPP projects due to the diminished oversight role of public officials and their reduced involvement. When transparency functions properly, PPP projects can succeed, as literature highlights how private institutions can supplement public financial resources to ensure proper maintenance and effective management (Amato et al., 2021). PPP also encourages forming new joint organisations, such as companies with mixed public-private capital, cultural consortia, associations, and foundations. Typically, public entities are responsible for preservation activities, while enhancement-related services are outsourced to private or non-profit companies (Du et al., 2019; Tarasenko et al., 2023). In this context, PPP serves as an innovative tool that, despite challenges, can exemplify effective public-private collaborations. Another aspect of transparency in PPP involves the Government providing a guaranteed minimum rate of return to address revenue uncertainties associated with project risks (Du et al., 2019). A maximum revenue cap is established to prevent private partners from exploiting this, with any surplus revenue categorized as excess profit. Experts advocate that excess profits should be shared between the Government and private partners based on a predefined distribution agreement (Tarasenko et al., 2023). This form of financial accountability is particularly relevant in sectors such as tourism, where PPP is increasingly used to reorganise regional factors and foster cooperation between markets and governments. By addressing disparities in tourism investment and expertise, PPP contributes to developing tourism resources and promoting regional prosperity. The involvement of non-profit organisations alongside commercial enterprises highlights the potential for collaboration under PPP frameworks to generate employment and economic growth (Cheng et al., 2018; Gonçalves et al., 2023).

In many cases, PPP accountability is tied to corporate social responsibility initiatives or service fees. For instance, humanitarian agencies often retain ownership of innovative products developed through PPP, with projects typically initiated in developed countries where these agencies are based (Egger, 2023). These partnerships are essential for securing external funding, with humanitarian organizations and technology companies sharing innovation costs through joint budgets. Another form of accountability is seen in PPP projects that operate under government-issued concessions, where sponsors provide equity, technical expertise, and project management. The Government, in turn, may contribute equity and operational capital, authorize fiscal agreements, and negotiate long-term contracts with private sponsors regarding project ownership and operation (Visconti et al., 2019). This arrangement ensures that public and private entities are accountable for the project's financial and operational success. While transparency and accountability in PPP projects are generally viewed positively, some literature suggests that these principles are not always fully implemented. Issues such as inadequate communication between the Government and private sector, frequent policy changes, and legal and socio-political barriers contribute to a lack of accountability, which diminishes private capital's enthusiasm for participating in PPP projects (Gong et al., 2022; Li et al., 2017). For instance, in China, many PPP projects are led by state-owned enterprises in partnership with local governments, thereby sidelining market-driven financing advantages and limiting private sector involvement (Gong et al., 2022; Jayasena et al., 2022). These challenges underscore the need for more optimized transparency and accountability mechanisms in PPP, as many countries struggle to fully realize the potential of these collaborations between public and private sectors.

Impact of PPP on public resources

PPPs have emerged as a critical mechanism for global environmental governance, frequently delivering improved outcomes due to the collaboration between Government entities, the private sector, and civil society (Tarasenko et al., 2023). However, the impact of PPP on public resources is multifaceted, with the literature highlighting both positive and negative outcomes, depending on the sector and region of implementation. In tourism, for instance, PPP has played a pivotal role in transforming traditional governance models into decentralized, network-based governance structures. These models foster stakeholder collaboration and promote sustainable development (Cheng et al., 2018; Tarasenko et al., 2023). Despite these advancements, challenges such as spatial disparities in development and fiscal strain underscore the need for tailored policies to ensure that PPPs are aligned with the specific demands of the tourism industry (Gong et al., 2022; Li et al., 2017). In the healthcare sector, PPP provides a viable framework for financing infrastructure projects, particularly in countries with constrained public resources. Nonetheless, concerns about capital rationing and the increasing demand for elderly care services highlight the financial limitations of PPP (Visconti et al., 2019). The literature suggests that focusing on outcome-based financing and refining traditional PPP criteria, such as availability payments and risk transfer mechanisms, can mitigate public fund waste and improve the efficiency of healthcare investments. By adopting a more results-oriented approach, governments can address pressing social needs while ensuring a more sustainable allocation of resources.

The positive impact of PPP on digital technology development is another critical area explored in the literature. Private sector involvement has accelerated the development of digital tools, including software, mobile applications, and remote transaction services (Egger, 2023; Kuteesa & Kyotalimye, 2019). Governments and private companies have enhanced access



to technology through collaborative efforts, particularly in underserved regions. PPP has also supported community-based digital humanitarianism by externalising technology labs and facilitating the adoption of digital innovations in humanitarian contexts, thus demonstrating the transformative potential of public-private cooperation (Egger, 2023). Regarding environmental impact, PPP has been instrumental in preserving natural resources and improving community access to services, particularly in rural areas. Several studies have shown that PPP can significantly reduce environmental degradation and provide essential infrastructure, such as transportation services (Eckhardt et al., 2020; Gong et al., 2022). However, the success of such initiatives depends on strong Government leadership, an enabling policy environment, and sufficient organisational capacity. These prerequisites underscore the importance of a well-structured PPP framework to maximize these projects' environmental and social benefits at various societal levels. Finally, the financial implications of PPP are well-documented, with numerous studies highlighting the positive impact of PPP on financial resources and business sustainability. By promoting responsible corporate behavior and aligning financial performance with societal values, PPP can restore public trust in governance, workplace conditions, and environmental management (Vaslavskiy, 2022). Additionally, other literature shows that in China, PPP is suitable for the tourism industry because it has many advantages, including promoting spatial adjustment between resources and tourism factors. At the same time, it must be recognized that PPP is a financing instrument (Cheng et al., 2018). This growing body of evidence suggests that PPP has the potential to amplify financial resources and contribute to the long-term sustainability of both public and private sectors.

Conclusion

PPP have emerged as a crucial financing model for public infrastructure and services, allowing governments to leverage private sector resources and expertise to meet increasing demands. However, the implementation of PPP has encountered both successes and significant challenges. This study highlights the dual impacts of PPP on public resources, demonstrating positive outcomes such as technological advancements and environmental sustainability alongside negative effects, including fiscal inefficiencies and governance complexities. The misalignment between public and private sector goals, financial risks, and inadequate governance frameworks frequently lead to project failures. This research addresses a gap by examining how these partnerships influence public service delivery while balancing profit motives with broader public welfare goals. The analysis tackles critical gaps in the literature by investigating the legal, financial, and operational frameworks that underpin PPP. While PPP has proven effective in fostering innovation and enhancing transparency, unresolved challenges such as frequent renegotiations, limited public sector capacity, and the absence of robust regulations continue to impede long-term sustainability. The findings emphasise the need for improved governance structures to ensure better accountability, equitable risk-sharing, and alignment between private sector efficiency and public sector responsibilities, which are essential for PPP success.

Future research should prioritise field-based studies that explore the implementation of PPP across various contexts, such as eco-tourism and digital technology. These studies should examine how local governance models and community engagement strategies impact the sustainability of PPP projects. Moreover, addressing transparency issues, refining legal frameworks, and enhancing financial risk-sharing mechanisms will be crucial for optimising PPP models and ensuring their alignment with long-term public sector objectives. These insights will provide policymakers and stakeholders with practical recommendations to enhance the effectiveness and resilience of PPP across multiple sectors.

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