

## USING PUBLIC-PRIVATE PARTNERSHIPS TO MODERNIZE LATVIA'S INFRASTRUCTURE: ACHIEVEMENTS AND TAKEAWAYS

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**Abstract.** Public-private partnerships (PPPs) are crucial for leveraging private sector expertise to enhance service quality, operational efficiency, and economic growth. These collaborations play a vital role in infrastructure modernization and social development. Latvia has engaged in PPPs in key sectors such as transportation, energy, and utilities. However, its PPP performance lags behind Estonia and Lithuania due to structural and systemic inefficiencies. This study explores Latvia's PPP evolution, identifies key challenges, and provides policy recommendations. The findings emphasize the need for improved governance structures, increased digitalization, and a more active role for the Central Finance and Contracting Agency (CFLA) in project facilitation. Additionally, lessons from successful PPP models in Western Europe, such as Germany and the UK, provide a comparative perspective.

**Keywords:** governance and risk management, infrastructure modernization, Latvia, public-private partnerships (PPPs), sustainable development.

### Introduction

Recent studies on Public-Private Partnerships (PPPs) employ diverse methodologies, particularly mixed methods, to explore PPP complexities. Research examines factors affecting sustainable infrastructure development via literature reviews, expert interviews, surveys, and case studies, using advanced statistical tools like Structural Equation Modelling (SEM) and PLS-SEM. Word frequency and cluster analysis reveal trends and gaps, while Delphi polls address risk allocation challenges. Findings emphasize the public sector's role in policy risks, financial packages, governance, and stakeholder satisfaction. Critical Success Factors (CSFs) underscore planning, risk management, and engagement. Evolving research highlights the need for varied approaches to integrate perspectives and address emerging issues. Latvia's PPP framework began with the Concessions Law (2000) and the Concession Promotion Concept (2002) to attract private sector involvement in infrastructure projects. Despite these efforts, Latvia continues to lag behind Estonia and Lithuania in PPP adoption (EBRD, 2022) due to structural inefficiencies, fragmented governance, and inadequate risk allocation strategies. This study aims to analyze Latvia's PPP evolution relative to Estonia and Lithuania, examine governance and financial challenges impacting PPP implementation in Latvia, and offer policy recommendations based on international best practices. The research employs a systematic literature review, policy document analysis, case studies, and reports from entities such as the European Investment Bank (EIB), the Organisation for Economic Co-operation and Development (OECD), and the Central Finance and Contracting Agency (CFLA).

Table 1

### Summary of the research methodologies and key findings (developed by the authors)

Research Methodologies Applied	Key Findings of Papers
Two-round Delphi survey [1].	Public sector prefers government action hazards and shared risks; no private sector dangers.
Word frequency and cluster analysis [2; 3].	Six key study areas: financial package, economic viability, VFM, risk management, procurement, performance management, governance.
Mixed-methods: literature review, expert interviews, surveys, SEM [4; 5].	PPP success depends on stakeholder satisfaction, influenced by financial, legal, transparency, and social issues.
Questionnaire and SEM in Omani construction industry [6].	Factors affecting e-bidding participation: benefits, barriers, security, user-friendliness, costs, resource availability.
PLS-SEM and route analysis in Iranian highway projects [7].	CSFs impact success at each stage, necessitating planning, risk management, stakeholder involvement.

Table 1 (continued)

Research Methodologies Applied	Key Findings of Papers
Literature evaluation [8].	Smart sustainable cities require ICT, governance, stakeholder participation for success.
Expert interviews and risk factor questionnaire [8].	Political instability, regulatory uncertainty, financial resources, and technical expertise affect sustainable PPPs, varying by project and country.
BWM, DEMATEL, and MGFRSs [9].	Proposed approach addresses compensation problem among attributes and decision-maker's risk appetite.
Literary warrant analysis and SALSA framework [10].	Review techniques should be chosen based on research topics and evidence.

Recent research on PPPs highlights optimizing financial structures, broadening applications, and integrating sustainability. Studies address risk management, risk-sharing dynamics, and stakeholder satisfaction but reveal gaps in social impact assessments and flexible public-sector contracting. Key challenges include achieving reliable public-private contracts, with the private sector bearing project-level risks and the public sector handling social and political factors. For example, China's PPPs, unlike the UK's, have limited private-sector risk transfer. Adoption barriers include inadequate research on social effects, sustainability, contract flexibility, and knowledge management, particularly in developing countries. Current value-for-money assessments overlook social dimensions. Future studies should focus on social impact frameworks, quantitative sustainability metrics, flexible contracts, and improved knowledge management to foster intelligent infrastructure and context-specific models.

Table 2

**Research gaps according to literature review (developed by the authors)**

Research Topic	Key Gap	Relevant Sources
Social Impact Assessment	Lack of comprehensive frameworks for social impact	[11-13]
Sustainability Appraisal	Limited measurable indicators for sustainability	[14-16]
Flexible Contracting	Insufficient mechanisms for contract adaptability	[17-19]
Knowledge Management	Gaps in knowledge sharing and decision-making tools	[20]
Developing Country Contexts	Limited tailored models for PPPs in developing nations	[1; 12; 21]

The complexities of deploying PPPs in various sectors, especially in social infrastructure and developing nations, reveal significant gaps in research. Despite extensive studies on traditional infrastructure projects, there is a lack of comprehensive research on PPPs in education, healthcare, and smart sustainable cities. Most research has focused on industrialized nations, creating a geographical bias that hinders effective strategies for PPP implementation in emerging economies. Additionally, smaller foundations' educational contributions are underrepresented in philanthropic studies, particularly in impoverished nations where access to quality education remains a challenge. Addressing these deficiencies is crucial for improving the understanding and efficacy of PPPs for sustainable development across sectors [11; 22].

### Findings and trends

The deployment of PPPs in social infrastructure and developing nations reveals research gaps, particularly in education, healthcare, and smart sustainable cities. Geographical bias toward industrialized nations hinders strategies for emerging economies. Smaller foundations' educational contributions remain underrepresented in philanthropic studies in impoverished regions, requiring better understanding for sustainable PPPs [11; 22]. While early PPP research emphasized risk management, procurement, and financing, recent studies focus on investment environments, governance, performance management, VFM, and integration strategies [3]. Efforts aim to optimize financial packages, market development, and innovative financing mechanisms [23]. Key CSFs include risk allocation, robust

private consortia, political and institutional support, transparent procurement, legal frameworks, and macroeconomic stability [7]. Researchers advocate incorporating social dimensions into frameworks to align PPPs with sustainable development goals, balancing economic benefits with social equity and environmental considerations [16; 24; 25]. Advanced methodologies like cluster analysis, SEM, and Delphi polls provide objective insights [19; 26]. Recommendations emphasize comprehensive frameworks addressing economic, social, and environmental factors, focusing on risk management and sustainability. Current trends prioritize sustainability, financial viability, and governance. Integrating social and environmental concerns in PPP design and execution is essential, supported by innovative funding strategies, financial models, and governance structures to achieve sustainable development goals.

### **Evolution and prospects of PPPs in Latvia**

PPPs are vital for economic growth, helping Baltic countries like Latvia overcome fiscal constraints and leverage private sector expertise for infrastructure and services. Latvian vocational education PPPs enhance workforce skills, align with industry needs, and attract investments. Latvia requires government records, policy materials, and case studies to analyze PPPs in transportation, healthcare, and energy. Transportation receives the majority of PPP projects and funding, with 111 out of 754 PPPs [19; 27]. Economic infrastructure maturity, user-charge mechanisms, and government support make transportation PPPs appealing to private investors, though healthcare PPPs are increasing due to service demand. PPPs play a key role in energy, water, and telecommunications [27]. Latvia's railway infrastructure exemplifies PPPs but faces challenges like government interference and lengthy payback periods [28]. Latvia lags behind Estonia and Lithuania in PPP efficacy, as evidenced by lower SME innovation and European Innovation Scoreboard rankings. Estonia and Lithuania's digitalization and e-governance leadership indicate better-suited private sectors for PPPs [29]. Latvia's slower productivity growth, weaker economy, and insufficient alternative financing hinder PPP adoption [30]. Early initiatives like the Concessions Law (2000) and Concession Promotion Concept (2002) aimed to attract private investment for state functions. Latvia's early PPP initiatives, including the Concessions Law (2000) and the Concession Promotion Concept (2002), sought to attract private capital but have not achieved the PPP maturity of Estonia and Lithuania. The Report on the Development of National Economy cites policy misalignments, weak institutional capacity, and poor risk assessment as key obstacles. The EBRD (2022) attributes inefficiencies to governance issues, such as unclear mandates and inconsistent oversight [29; 31]. Addressing these issues requires governance reforms, streamlined institutional roles, and improved public-private collaboration. Policy fragmentation and overlapping responsibilities, unlike Estonia and Lithuania's centralized models, have hindered progress in Latvia. For example, while Estonia and Lithuania benefit from centralized agencies like CPVA and e-Governance frameworks, Latvia's PPP competence center (CFLA) is limited to monitoring. Improving Latvia's PPPs necessitates adopting centralized project management and digital tools to enhance efficiency and investor confidence.

### **Fiscal risks and management challenges of PPP projects in Latvia**

PPPs improve social services and address infrastructure gaps but pose financial risks, especially in countries like Latvia with developing risk management frameworks. Hidden debt-like obligations may lead to underestimated long-term liabilities, threatening public finances if PPPs fail. Effective risk management involves centralized PPP approvals, budgetary limits, and systematic risk assessments by the Ministry of Finance [29]. Allocating risks to parties best equipped to manage them is essential. The governance of PPP projects in Latvia has historically suffered from fragmented institutional oversight. While the Ministry of Finance (MoF) now holds primary responsibility, the Central Finance and Contracting Agency (CFLA) is designated as Latvia's PPP competence center. However, CFLA's current role remains largely limited to compliance monitoring rather than strategic facilitation (CFLA, 2024). Unlike Lithuania's Central Project Management Agency (CPVA), which actively provides technical support and project structuring guidance, CFLA lacks dedicated advisory mechanisms for PPP implementers. Expanding CFLA's role to include PPP project consultations, risk-sharing guidance, and capacity-building programs would help address the lack of technical expertise at both national and municipal levels, making Latvia's PPP framework more effective [32]. Additionally, to enhance

accountability and transparency, it is vital to thoroughly document all expenditures and potential financial liabilities throughout the project's lifecycle. Figure 1 reflects SWOT analysis about challenges and opportunities for PPPs in Latvia.

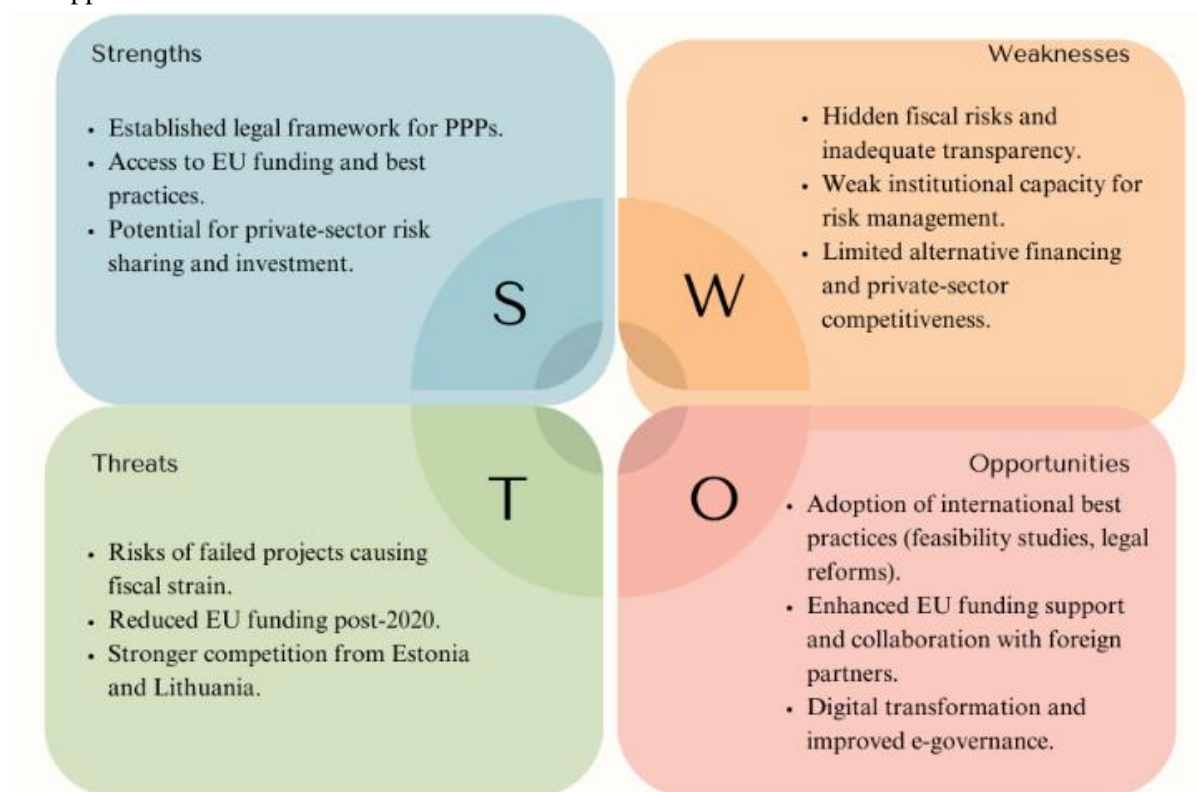


Fig. 1. SWOT analysis: challenges and opportunities for PPPs in Latvia

PPP agreements must transparently disclose financial responsibilities, payment flows, and government guarantees per Eurostat standards. Unclear financial reports excluding PPP obligations heighten financial risks and reduce accountability. Latvia's SWOT analysis reveals budgetary vulnerabilities, limited transparency, and weak institutional capacity but highlights a strong legal framework, EU funding, and business involvement. Opportunities arise from EU procedures, best practices, and digital infrastructure. Internationally, feasibility studies, competitive procurement, and balanced risk sharing are critical. Global PPP failures often stem from unrealistic income projections, poor financial evaluations, and weak institutions. Successful PPP countries integrate risk assessment into financial planning [32]. Latvia faces limited financial resources and declining EU support, making effective risk management, transparency, and quantitative financial assessments crucial for PPP success. Small-scale projects struggle to attract private sector interest due to high transaction costs and limited economies of scale, as noted by the European Investment Bank (EIB, 2021). Unlike larger economies, Latvia's narrow investor base complicates risk allocation. Solutions include regional PPP bundling, leveraging international financial institutions for risk-sharing, and adopting adaptive contract models for financial predictability [31; 32]. The OECD (2023) highlights Latvian municipalities' dependence on central government funding, hindering PPP autonomy, unlike decentralized governance models in Estonia and Lithuania. Latvia could enhance local PPPs by increasing municipal financial autonomy and accelerating digitalization through integrated e-governance platforms. PPP financial obligations are currently underreported in national fiscal indicators, creating hidden liabilities [32]. Governance improvements include expanding CFLA's role to active project facilitation, standardizing financial reporting, introducing independent oversight, and adapting Lithuania's CPVA governance model.

## Conclusions

The authors conclude that Latvia's PPP performance faces structural inefficiencies, including unclear mandates, weak financial risk management, and limited municipal capacity, leading to project failures and reduced private sector confidence. PPP governance remains fragmented; while the Ministry

of Finance (MoF) oversees policy, the CFLA's role is limited to compliance. Strengthening CFLA's technical support is essential. Latvia's small economy increases financial risks, making PPPs less appealing to investors. Solutions include project bundling, alternative financing, and flexible contracts. Municipal PPPs are hampered by financial dependence on central government and digitalization gaps, unlike Estonia and Lithuania's decentralized models. Strengthening municipal autonomy and adopting digital public finance systems can improve PPP success. Latvia must focus on digital transformation, regulatory streamlining, and institutional collaboration to prevent lagging further behind Estonia and Lithuania in PPP development and economic modernization.

### Author contributions

Conceptualization, S.S.; methodology, S.S. and I.G.; software, J.Z.; validation, I.G. and A.K.; formal analysis, S.S. and J.Z.; investigation, S.S., I.G., A.K., and J.Z.; data curation, S.S. and J.Z.; writing – original draft preparation, S.S.; writing – review and editing, I.G. and A.K.; visualization, J.Z. and S.S.; project administration, I.G.; funding acquisition, I.G. and A.K. All authors have read and agreed to the published version of the manuscript.

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