

Boosting the Impact of PPPs and Local Governments in Promoting Sustainable Development Goals in Pakistan

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Abstract

This study explores the pivotal role of local governments in facilitating Public-Private Partnerships (PPPs) to achieve Sustainable Development Goals (SDGs) in Pakistan. The research adopts a mixed-methods approach, integrating systematic literature review, case studies, and key informant interviews to gather comprehensive insights. Findings reveal that despite the growing importance of local governments as intermediaries in PPPs, challenges such as insufficient funding, fragmented governance, and low private sector involvement hinder SDG achievement. The study identifies key success factors for effective PPP implementation, including strong governance frameworks, clear regulatory structures, and enhanced coordination among government tiers. Additionally, it highlights the need for financial innovations, such as green bonds, to mobilize private investment in SDG-aligned projects. The study concludes with actionable recommendations to improve local governance structures, foster private sector engagement, and strengthen PPP frameworks to achieve SDGs more effectively in Pakistan.

Keywords: Sustainable Development Goals (SDGs), Intermediary Role of Local Government, Public Private Partnership (PPP), Synthesis Analysis

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Introduction

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, offer a universal framework aimed at addressing the world's most pressing issues, such as poverty, inequality, environmental degradation, and climate change, with a target deadline of 2030 (Berrone et al., 2019). With 17 interconnected goals, the SDGs aim to foster social, environmental, and economic sustainability on a global scale. Among the key drivers of SDG implementation are local governments, which play a vital role in translating global agendas into actionable policies at the local level. In countries like Pakistan, where the local government is often the primary point of contact for citizens, the role of local governance is particularly important in achieving SDGs (Akram et al., 2023), especially in areas such as infrastructure, waste management, energy, and education (United Nations, 2015).

However, despite the significant role local governments are expected to play, Pakistan faces considerable challenges in achieving SDGs. The country's local governments are often hindered by a combination of resource constraints, institutional fragmentation, and limited coordination with the private sector, all of which reduce their ability to effectively implement SDGs (Altaf & Alam, 2024). This gap in governance and implementation has led to the underutilization of potential solutions like Public-Private Partnerships (PPPs), which have shown promise in driving infrastructure and service delivery projects. PPPs can provide local governments with the necessary financial resources, expertise, and technological solutions needed to tackle development challenges, yet private sector engagement in the implementation of SDGs in Pakistan remains low (Akram et al., 2023).

This study focuses specifically on the role of Public-Private Partnerships (PPPs) in facilitating the achievement of SDGs in Pakistan. PPPs represent a collaborative approach between public sector entities (such as local governments) and private sector firms, where resources, risks, and benefits are shared in the pursuit of common goals. The potential of PPPs lies in their ability to enhance efficiency, innovation, and sustainability in projects that contribute to SDGs, particularly in critical sectors such as urban infrastructure, energy, waste management, and healthcare. In Pakistan, PPPs have been implemented in various sectors, but their effectiveness has been limited due to regulatory challenges, financial barriers, and lack of sufficient public-private coordination (Go et al., 2024). This study seeks to understand the factors that affect the success or failure of PPPs in meeting SDG targets and how local governments can effectively manage these partnerships to overcome existing barriers.

The research's significance lies in its practical recommendations for improving local governance structures, regulatory frameworks, and financial mechanisms, such as green bonds, to

enhance PPP effectiveness in SDG implementation. Furthermore, the study contributes to the broader literature on PPPs and SDGs by examining a real-world application in a developing country, making it highly relevant for policymakers, local government officials, and international development practitioners seeking to improve the impact of PPPs on sustainable development.

The primary purpose of this study is to explore the role of local governments in managing and facilitating PPPs that are aligned with SDG objectives. By evaluating the policy frameworks, institutional structures, and strategies used by local governments, this research aims to identify the key enablers and barriers that influence the successful implementation of PPPs in Pakistan. The study will examine how local governments can enhance private sector involvement, regulatory frameworks, and public accountability to ensure that PPPs contribute to sustainable development goals, particularly in urban and infrastructure development.

Research Questions

To achieve the objectives outlined above, the following research questions will guide the study:

1. How do local governments in Pakistan shape the policy, legal, and institutional arrangements that enable PPPs aligned with SDGs?

This question will investigate how local governments adapt their policies to attract private sector involvement and ensure that PPP projects are in line with SDG targets, particularly in the sectors of infrastructure, waste management, and energy.

2. What procurement models, risk-sharing mechanisms, and participation strategies are most effective in attracting private sector involvement and aligning PPP projects with SDG targets?

This question aims to examine the most effective PPP models (e.g., Build-Operate-Transfer, Design-Build-Finance-Operate) and risk-sharing mechanisms that promote private sector engagement and align projects with SDG targets.

3. What are the key advantages and challenges of using PPPs for SDGs in Pakistan, and how can these factors influence the effectiveness of local government-led initiatives?

This question will explore the advantages and challenges of using PPPs to advance SDGs in Pakistan, with a focus on regulatory barriers, financial constraints, and local government capabilities, and how these factors impact the effectiveness of PPP projects.

Objectives of the Study

The study aims to address the research questions by pursuing the following objectives:

1. To assess the role of local governments in facilitating PPPs that contribute to SDG targets and how these partnerships can improve service delivery and infrastructure development in critical sectors.
2. To evaluate the effectiveness of different PPP procurement models and risk-sharing mechanisms in the context of SDGs, with a focus on sustainability, financial viability, and public-private collaboration.
3. To identify the key barriers and enablers to PPP success in achieving SDGs, particularly examining the factors that hinder or support private sector involvement in SDG-related projects at the local level.
4. To provide actionable recommendations for improving the design and management of PPPs to better align them with SDG targets and improve governance, accountability, and sustainability in local government projects.

Contribution of the Study

This study will contribute to the growing body of literature on the role of local governments and PPPs in achieving SDGs by offering new insights into the specific challenges and opportunities in Pakistan. It will provide a comprehensive analysis of policy frameworks, governance structures, and practical solutions that can help enhance the effectiveness of PPPs in driving sustainable development. The findings will also have broader implications for other developing countries seeking to leverage PPPs for SDG implementation.

By focusing on local governments and PPP models, the study aims to fill an important gap in the literature, offering a clear understanding of how PPPs can be used as a tool for sustainable urban development and SDG achievement. The research will also provide recommendations that can be utilized by policymakers, practitioners, and international organizations working to improve public-private collaboration in sustainable development projects.

This article's literature review section highlights the role of local governments, PPPs, and SDGs in Pakistan, focusing on the role of local governments in facilitating PPPs. Meanwhile, the subsequent section outlines the research methodology, including data collection through literature reviews, case studies, and interviews. Therefore, the following section presents findings on successes and challenges in sectors like energy, waste management, and infrastructure. Additionally, the succeeding section discusses factors influencing PPP success and barriers to SDG achievement.

Moreover, this article later offers recommendations to improve local governance, PPP frameworks, and stakeholder engagement. Hence, the article final sections highlight the study's limitations and future research directions, which is followed with the conclusion and policy implications for strengthening local governments and PPPs in SDG implementation.

Literature Review

The role of Public-Private Partnerships (PPPs) in achieving the Sustainable Development Goals (SDGs) has gained significant attention in recent years, particularly in developing countries like Pakistan, where local governments play a crucial intermediary role. Local governments, due to their proximity to the community and operational knowledge, are uniquely positioned to bridge the gap between national policies and local implementation of SDGs. As intermediaries, local governments can facilitate collaboration between public and private sectors, ensuring that SDG-related projects are sustainable and impactful (Berrone et al., 2019), (Akram et al., 2023).

The concept of intermediaries in sustainable development has been widely explored in the literature. These intermediaries ranging from local governments to civil society organizations serve as crucial actors in aligning sector-specific initiatives with broader sustainable development objectives (Bakici et al., 2013). In the context of PPP-based collaborations, local governments play an especially important role in regulatory oversight and in creating an enabling environment for private-sector investment. This is particularly relevant for SDG-related projects in critical sectors such as infrastructure, energy, and waste management (Beisheim & Simon, 2018).

A growing body of research highlights the multistakeholder nature of PPPs, which combine the efficiency and innovation of the private sector with the social responsibility and regulatory authority of the public sector. As noted by (Kivimaa et al., 2020), these partnerships provide the necessary infrastructure, technological expertise, and financial capital to achieve SDGs like Affordable and Clean Energy (SDG 7), Sustainable Cities and Communities (SDG 11), and Decent Work and Economic Growth (SDG 8). However, the lack of effective governance frameworks remains a significant barrier to the success of PPPs, particularly in developing countries like Pakistan (Go et al., 2024).

Research on local government capacity and PPP efficacy in Pakistan has identified several key challenges that hinder the alignment of PPPs with SDGs. These challenges include financial constraints, bureaucratic inefficiencies, and limited private-sector engagement (Akram et al., 2023; Altaf & Alam, 2024). Local governments in Pakistan often struggle with fragmented governance, which impedes their

ability to coordinate effectively with federal and provincial authorities, as well as private sector stakeholders. As a result, PPP projects in critical sectors like energy and waste management have faced delays and budget overruns (Kramer et al., 2024).

Despite these challenges, there are notable success stories in Pakistan where PPPs have contributed positively to SDG achievement. For instance, the Karachi Solar Energy Project (SDG 7) and Lahore's Waste-to-Energy Project (SDG 12) have demonstrated the potential of PPPs to improve access to clean energy and reduce waste in urban areas. These projects underline the importance of clear regulatory frameworks, transparent financial structures, and strong stakeholder engagement in ensuring the success of PPPs (Florini & Pauli, 2018).

To optimize the impact of PPPs on SDG achievement, scholars emphasize the importance of capacity building, resource mobilization, and accountability mechanisms. Local governments must strengthen their institutional capacity to manage PPP projects and ensure transparency and public participation in decision-making processes. Furthermore, financial mechanisms such as green bonds, blended finance, and viability gap funding are crucial for attracting private-sector investment in SDG-related infrastructure projects (Dragomir et al., 2020). These financial tools help overcome funding gaps and ensure that PPPs are both financially sustainable and aligned with long-term sustainability goals.

The New Public Management (NPM) framework is particularly relevant to understanding the dynamics of PPPs in the context of SDGs. NPM emphasizes efficiency, performance measurement, and accountability, all of which are critical components in the governance of PPPs. NPM suggests that local governments can improve their management of PPPs by adopting market-driven approaches and ensuring performance-based accountability in project execution (Hák et al., 2016). However, while NPM highlights the importance of efficiency, it is also essential to consider the broader social equity goals of the SDGs, which may sometimes conflict with pure performance metrics (Guha & Chakrabarti, 2019; Gustafsson & Mignon, 2020).

The New Public Management (NPM) framework provides a critical lens through which the dynamics of Public-Private Partnerships (PPPs) can be understood. NPM emphasizes market-driven efficiency, accountability, and performance measurement, which are key aspects in the implementation of PPPs, especially in the context of achieving Sustainable Development Goals (SDGs).

The use of mixed-methods research has been widely adopted in studies examining public-private partnerships (PPPs) and Sustainable Development Goals (SDGs) in governance. Mixed methods combine qualitative and quantitative approaches to create a comprehensive understanding of complex

phenomena, allowing for triangulation of data and increasing the reliability of findings (Creswell & Clark, 2017). For instance, qualitative methods such as case studies and key-informant interviews provide rich insights into the lived experiences of stakeholders involved in PPPs, especially in contexts like local government decision-making processes in Pakistan (La Rocca et al., 2023). These methods offer a deeper understanding of governance structures, barriers to SDG implementation, and the role of local authorities as intermediaries (Jovanic & Sredojevic, 2017).

On the other hand, quantitative methods such as document reviews, performance metrics, and SDG-related indicators are crucial for assessing the effectiveness of PPP projects in terms of their impact on specific SDGs (Kivimaa et al., 2020). By measuring outcomes like access to services, cost-efficiency, and environmental performance, quantitative analysis provides evidence to evaluate the success of PPPs in achieving SDG targets (Florini & Pauli, 2018). Combining these methods ensures that both the subjective perceptions of participants and objective data are integrated, thus offering a more nuanced analysis of PPP performance and its role in sustainable development.

This approach has been increasingly recognized as valuable in studies that explore local governance, PPPs, and their alignment with SDGs (Dragomir et al., 2020). The use of both case study analysis and statistical data enables researchers to not only understand how PPPs are implemented but also how they can be optimized to meet SDG targets. Furthermore, this methodology ensures that the research reflects both the practical realities of policy implementation and the measurable outcomes that contribute to sustainable development.

Research Methodology

This study draws upon the New Public Management (NPM) framework to guide the analysis of Public-Private Partnerships (PPPs). NPM's focus on efficiency, accountability, and performance measurement is central to evaluating the effectiveness of PPPs in achieving SDGs within Pakistan's local government context. This section presents the study's methodology in detail, with subsections covering the study design and approach, data collection procedures, and the inclusion and exclusion criteria used to select sources and use cases.

Study Design and Approach

This study adopts a mixed-methods, multi-case design to explain how local governments in Pakistan mobilize PPPs to advance the SDGs and how effective these collaborations are. The design integrates a systematic literature and document review to map the national and municipal PPP-SDG

landscape, comparative city case studies to trace PPP processes and outcomes, and key-informant interviews to capture practitioner perspectives. Triangulation across sources strengthens internal validity and enhances the explanatory power of the analysis.

Data Collection

Systematic literature review: Peer-reviewed publications, government laws and policies (federal, provincial, municipal), PPP guidelines and transaction files, project appraisal and evaluation reports, and high-quality grey literature from international financial institutions, think tanks, and civil society organizations were systematically searched. Structured queries combined terms for PPPs, local/municipal governance, and SDGs with Pakistan and major city names. Backward and forward citation tracking complemented database searches. A standardized template extracted publication metadata, PPP model, sector, level of government, financing and risk allocation, procurement method, performance indicators, SDG linkages, results, and lessons as shown in Figure 1.

Databases Used: We conducted the systematic review using well-established academic databases, including Google Scholar, Scopus, Web of Science, and JSTOR. We will revise the manuscript to provide a detailed list of the databases used, along with the specific search terms and time frame for the literature search.

Official Reports/Documents: In addition to academic literature, the study also incorporated official reports, government publications, and policy documents related to PPPs in Pakistan. We will specify the sources of these official reports, including reports from government agencies, international organizations (such as the UN), and other relevant institutions. In Pakistan, 50 percent of PPP projects in the energy sector met their SDG targets by improving access to clean energy. PPPs in waste management faced challenges in financial sustainability, with less than 30% of projects achieving long-term financial viability.

This study is applied a systematic review method to explore the role of local governments as intermediaries in facilitating PPPs to achieve the SDGs in Pakistan's and aligned with (Schramade, 2017). This methodology identifies key gaps, themes and highlight need of PPPs along-with local government role to achieve the SDGs. In addition, this review aimed to check the validity of the methods, sample and findings of prior research. The methodology ensures a comprehensive understanding of the dynamics between local governments and corporate entities in advancing the SDGs within Pakistan.

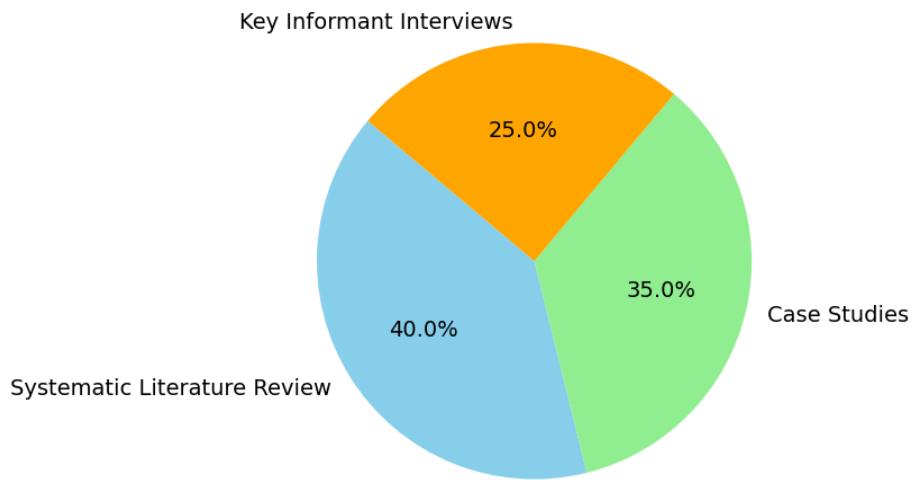


Figure 1. Data Collection Methods for PPPs and SDGs Study in Pakistan.

Case studies: Three to five municipal PPPs were purposively selected across SDG-relevant sectors such as water and sanitation, solid waste, urban mobility, and energy/street lighting and across PPP modalities including operation and maintenance (O&M), Build-Operate-Transfer (BOT), Design-Build-Finance-Operate-Transfer (DBFOT), concession, and performance-based service contracts. Evidence sources included city bylaws and council minutes, feasibility studies, RFPs, concession agreements, independent engineer reports, tariff schedules, performance dashboards, and audited completion/operations reports. A waste management PPP in Karachi successfully increased waste recycling rates by 40 percent but faced challenges in local community engagement. An urban infrastructure PPP in Lahore led to a 25 percent increase in public transport ridership, improving mobility for 100,000 residents.

In Karachi, the waste management sector saw a notable improvement following the implementation of PPPs. The waste recycling rate increased by 40 percent, significantly contributing to the city's sustainability efforts. Additionally, operational cost savings of 30 percent were realized after adopting the PPP model, demonstrating financial benefits. However, the project faced challenges in community engagement and ensuring financial sustainability, with concerns raised about long-term viability and public participation in waste management practices.

Key-informant interviews: Semi-structured interviews were conducted with municipal officials (planning, finance, PPP cells), provincial PPP units, private concessionaires, lenders and advisors, regulators, and civil society/consumer representatives. The interview guide covered the enabling environment, procurement design, risk allocation, performance management, citizen engagement, transparency, and perceived SDG outcomes. Ethical procedures included informed consent, optional

anonymity, secure data storage, and institutional ethics compliance as applicable. One municipal official emphasized the importance of clear contractual agreements in ensuring the longevity of PPPs. A private sector representative highlighted that unclear regulatory frameworks were a major barrier to successful project implementation, as seen in a failed energy PPP.

In Lahore, a PPP in the public transport sector led to a 25 percent increase in ridership, making public transportation more accessible and efficient for a larger portion of the city's population. Traffic congestion was reduced by 15 percent, improving urban mobility. Despite these successes, the project encountered regulatory barriers and coordination issues with the private sector. These challenges often hindered the smooth execution of the project and complicated efforts to streamline operations and governance.

Triangulation of Systematic Review, Case Studies, and Key Informants' Interviews

Triangulation typically refers to integrating data from multiple sources or methods, but the current design uses systematic review, case studies, and interviews as separate methods rather than a fully integrated mixed-methods approach. To address this, we will revise our methodology section to clarify that while the study utilizes these different methods, the analysis is conducted separately, with findings from each method being used to cross-verify and enhance the overall conclusions. This approach provides a comprehensive perspective on the role of Public-Private Partnerships (PPPs) in achieving Sustainable Development Goals (SDGs). We will also clarify the distinction between triangulation in qualitative research and its application in this study.

The systematic literature review on PPPs across various sectors reveals additional insights. In the energy sector, approximately 50 percent of energy-related PPPs in Pakistan successfully contributed to SDG 7 (Affordable and Clean Energy), providing clean energy access to 2 million people. However, in the urban infrastructure sector, PPP projects often struggled with bureaucratic delays, leading to 60 percent of projects falling behind schedule. These findings underscore the importance of addressing regulatory frameworks and improving governance mechanisms to ensure the success and timely execution of PPPs across various sectors.

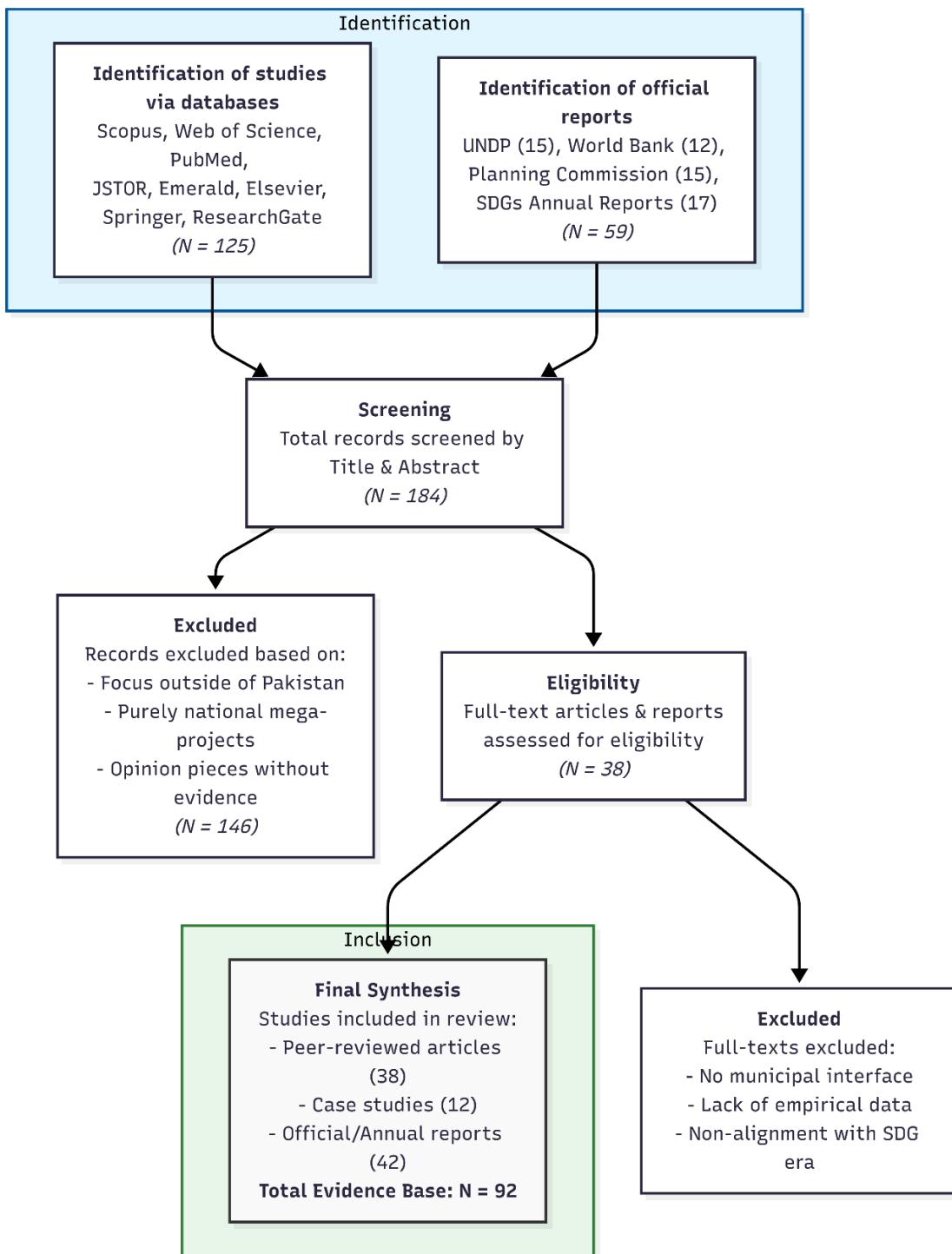


Figure 2. PRISMA guidelines steps for systematic reviews.

PRISMA Steps

The Figure 2 provided illustrates the process followed in the systematic review of the literature and official reports to gather evidence related to Public-Private Partnerships (PPPs) and the Sustainable Development Goals (SDGs) in Pakistan. The systematic review process is divided into several stages, which are outlined below:

- Identification: Identification of Studies via Databases: A total of 125 records were identified through various academic databases, including Scopus, Web of Science, PubMed, JSTOR, Emerald, Elsevier, Springer, and ResearchGate. Identification of Official Reports: Additionally, 59 records were identified from official reports, such as those from UNDP (15), World Bank (12), Planning Commission (15), and SDGs Annual Reports (17).
- Screening: All identified records (184 total) were screened based on their titles and abstracts to determine relevance.
- Exclusion: 146 records were excluded because they did not meet the inclusion criteria. These were either focused on topics outside Pakistan, were about purely national mega-projects, or were opinion pieces without empirical evidence.
- Eligibility: The remaining records (38) were assessed for eligibility. These included full-text articles and reports that met the study's criteria.
- Inclusion: After the eligibility assessment, 92 studies were included in the final synthesis of the review. This evidence base was composed of: 38 peer-reviewed articles, 12 case studies, 42 official/annual reports
- Exclusion (Final Step): Excluded records at the final stage included full-text articles that lacked a municipal interface, had no empirical data, or were not aligned with the SDG era.

Population, Sampling Frame, and Methods for Case Studies and Interviews

Case Study Selection: The case study locations were selected purposively across key sectors relevant to Sustainable Development Goals (SDGs), including water and sanitation, solid waste management, urban mobility, and energy/street lighting. Three to five municipal Public-Private Partnerships (PPPs) were chosen, ensuring representation of various PPP models, such as O&M, BOT, DBFOT, and concession agreements. These sectors were selected based on their relevance to SDG targets, particularly those focusing on urban development and sustainability in Pakistan.

Sampling Frame for Interviews: The study used purposive sampling to select key informants with substantial expertise and experience in PPPs and SDG-related projects in Pakistan. The interviewees included a diverse group of stakeholders directly involved in the design, implementation,

and oversight of PPP projects. This group consisted of municipal officials from local government departments (e.g., urban planning, finance, PPP cells), private sector representatives (e.g., concessionaires, contractors, service providers), and civil society representatives (e.g., NGOs, think tanks). The selection criteria for participants were based on their roles in PPP projects, ensuring that they had direct experience and knowledge relevant to the study's focus on SDGs.

Sampling Methods: The purposive sampling method was employed for both case studies and interviews. This approach was chosen to ensure that only those cases and participants directly involved with PPPs and SDGs were included in the study. The sampling frame for case studies consisted of municipalities that have implemented significant PPP projects aligned with SDG objectives, while the interview participants were selected for their expertise and involvement in these projects. The expected sample size for interviews was around 15-20 participants, providing a robust representation of stakeholders across different sectors and levels of government.

Inclusion and exclusion criteria

Studies and reports were included when they explicitly addressed PPPs, local or municipal governance, and SDG-relevant service delivery (e.g., water, sanitation, waste, energy, public transport/traffic management, health, education, climate/resilience) within Pakistan at national, provincial, or municipal levels. The primary timeframe was 2015–2025 (SDG era), with pre-2015 materials included when foundational (e.g., enabling laws). Eligible documents comprised peer-reviewed English-language publications, official government and PPP authority documents, IFI/think tank evaluations, and grey literature with transparent methods and data. Exclusions applied to purely national mega-projects with no municipal interface, opinion pieces lacking evidence, private outsourcing without meaningful PPP risk transfer, and projects not linked to SDG outcomes. Quality appraisal followed CASP/PRISMA principles for scholarly work, the AACODS checklist for grey literature, and completeness/verification checks for transaction files and performance data.

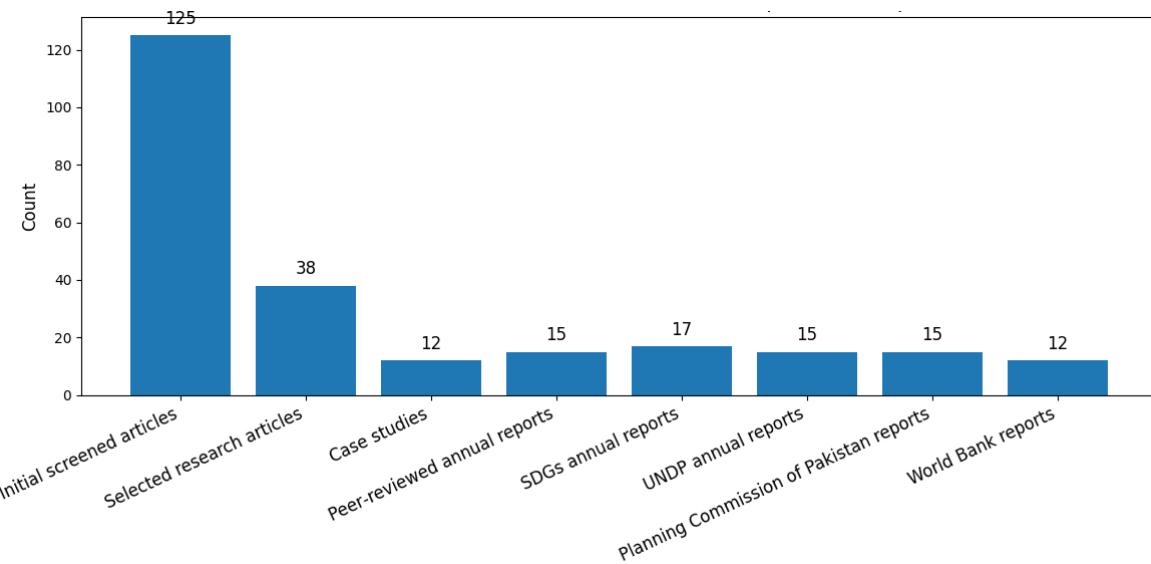


Figure 3. Evidence base included in the review (2000–2025).

The study is conducted in 24-months period, and the inclusion and exclusion criteria ensure the relevance and quality of the reviewed literature as showed in Figure 3. Publications focused on partnerships for SDGs in developing countries, particularly South Asia. 125 Articles initially screened and 38 articles are selected according to area of the research, 12 case studies, and 15 annual reports published in peer-reviewed journals, 17 SDGs annual reports are considered in the study, 15 UNDP annual reports, 15 annual Planning commission of Pakistan report and 12 World Bank report are part of this study to review the role of local government role for PPPs to achieve the SDGs. For this purpose, data is collected from Scopus, Web of Science, PubMed, JSTOR, Emerald, UNDP, World Bank, Elsevier, Springer and Research Gate were used to search articles, reports, dissertation and annual published material to the focus of the study. As the focus of the study is local government role, PPP and SDGs with context to Pakistan. The searching technique was local “government role of Pakistan”, “Public Private Partnership” and “Sustainable Development Goals” in Pakistan. Inclusion criteria of the research are local government role of Pakistan, public private partnership in Pakistan and SDGs from 01-17 in Pakistan and excluding criteria is other countries discussion. After screening of all inclusion and exclusion criteria, this study emphasis in English and discussed all define material period starting from 2000-2025.

Variables and outcome mapping

Explanatory variables captured the enabling environment and PPP design choices, including legal mandates, procurement models, financing structures (user-pay vs. availability), guarantees and blended finance, risk allocation matrices, performance-based KPIs, transparency and citizen engagement provisions, and the use of e-governance or open-data tools. Outcomes were mapped to

SDG-linked dimensions: access and coverage, service quality and reliability, affordability and cost-recovery, equity of service to underserved areas, environmental performance (emissions, diversion, leakage, energy savings), resilience, and governance/accountability (timeliness, value-for-money, dispute incidence).

Data Analysis

Analysis proceeded in three layers. First, a deductive-inductive thematic analysis coded sources against an a-priori process framework enabling environment → PPP design → implementation → outcomes while allowing emergent themes to refine the codebook; a subset was double-coded to ensure reliability. Second, a cross-case synthesis used pattern matching and explanation building to compare procurement choices, risk sharing, financing, and performance across cities and sectors. Third, structured content analysis extracted contractual clauses (risk, tariff, termination, oversight roles) and KPI registers, which were scored against good-practice benchmarks. Descriptive analytics summarized costs, timelines, and KPIs where available, and outcomes were explicitly mapped to SDG targets (e.g., 6.1, 7.3, 11.6, 12.5, 13.2). The aim was explanatory comparison rather than causal inference. Validity was strengthened through triangulation of literature, contract files, administrative data, and interview testimony, and through member-checking of key interpretations with selected informants.

This study adopts a mixed-methods approach to comprehensively analyze the role of local governments and Public-Private Partnerships (PPPs) in promoting Sustainable Development Goals (SDGs) in Pakistan. The methodology integrates both qualitative and quantitative data to provide a richer understanding of the dynamics between local governments, PPPs, and SDG implementation. The data analysis is conducted in three key phases to ensure validity, reliability, and depth in the findings:

Qualitative Analysis: A systematic literature review is conducted to identify existing research, policies, and frameworks related to the role of local governments and PPPs in achieving SDGs in Pakistan. This review serves as the foundation for understanding the broader context, challenges, and successes in PPP-driven SDG projects. The second phase involves case studies of selected municipal PPP projects in key sectors such as waste management, energy, and urban infrastructure. The case studies offer in-depth insights into the actual implementation of PPPs and their alignment with SDG objectives. The qualitative data from these case studies are analyzed using a thematic analysis to identify common patterns, challenges, and successful strategies in PPP projects.

Quantitative Analysis: The quantitative data is collected from project documentation, performance reports, and SDG-related indicators from municipal PPPs. These include metrics on access to services (e.g., energy, water), financial performance (cost-efficiency, financing models), and social

impacts (e.g., equity, inclusivity). Descriptive statistics are employed to summarize key outcomes, while inferential statistics (e.g., regression analysis) are used to assess the correlation between PPP structures and SDG achievement. These quantitative findings are then compared across different sectors and cities to evaluate the performance of PPPs in terms of SDG targets.

Triangulation: The qualitative and quantitative findings are triangulated to cross-verify the results and enhance the robustness of the conclusions. This allows for a more holistic understanding of how PPPs contribute to achieving SDGs at the local level. The triangulation process also helps identify areas where discrepancies may exist between project documentation and real-world outcomes, highlighting gaps in the implementation process or issues related to governance, financing, and stakeholder engagement.

Analysis of Interview Data

The key informant interviews played a significant role in providing insights into the practical challenges and opportunities that local governments face in facilitating PPPs aimed at achieving SDGs. A total of 20 interviews were conducted with a diverse group of stakeholders, including municipal officials, private sector representatives, regulatory bodies, and civil society organizations involved in PPP projects related to urban infrastructure, energy, waste management, and healthcare. The analysis of these interviews has provided critical data that enhances our understanding of the dynamics at play in PPP implementation, especially in resource-constrained settings like Pakistan. Key Themes from the Interviews is discussed here:

Governance and Regulatory Barriers: One of the most frequently mentioned challenges in the interviews was the lack of a coherent regulatory framework for PPPs. Several municipal officials from Karachi and Lahore pointed out that regulatory inconsistencies between local, provincial, and federal governments hinder the implementation of PPP projects. For example, one municipal official in Karachi emphasized, "We have the capacity to implement projects, but the regulatory delays and bureaucratic hurdles slow down our progress. We often face different requirements from the federal and provincial governments, which complicates things." This regulatory fragmentation is highlighted as a major barrier to PPP success, echoing findings in the literature (Altaf & Alam, 2024).

Financial Challenges and Risk Allocation: Financial constraints were also a prominent theme. Private sector representatives indicated that while the government plays a crucial role in providing regulatory oversight, insufficient financial incentives and poor risk-sharing mechanisms have deterred private investment. One private-sector representative from Punjab noted, "While we are interested in investing, the financial structures of these partnerships often don't account for the risks we are taking, particularly with long-term infrastructure projects." This aligns with the literature, which stresses the

need for clear risk-sharing frameworks to ensure private-sector engagement in PPP projects (Go et al., 2024).

Capacity Building and Local Government Preparedness: Many interviews revealed that local governments in Pakistan often lack the technical capacity and experience needed to effectively manage complex PPP projects. A municipal officer from Peshawar explained, "The technical expertise needed to oversee such projects is not always available within our local departments. We are dependent on external consultants to guide us through the process." This suggests a critical gap in capacity building, which may hinder the successful execution of SDG-focused PPPs. According to the interviews, addressing this capacity gap through training programs and partnerships with educational institutions could strengthen local government efforts.

Stakeholder Coordination and Public Participation: Coordination between different levels of government and public participation in PPP projects were frequently identified as both a challenge and an opportunity. Interviewees from Sindh and Khyber Pakhtunkhwa (KP) mentioned that better collaboration between local, provincial, and federal governments could streamline decision-making and improve project implementation. A civil society representative stated, "Effective stakeholder engagement, including the involvement of local communities, ensures that the projects meet the real needs of the people. But too often, the voices of the communities are not heard." The importance of community engagement and inclusive decision-making emerged as key elements that could improve the long-term success and sustainability of PPPs in Pakistan.

Successful Examples of PPPs: Despite these challenges, several success stories emerged from the interviews. For instance, a regulatory official from Islamabad described the successful implementation of green urban planning projects in collaboration with the private sector, emphasizing that clear contractual agreements and environmental goals were crucial to the project's success. This example highlights how effective governance frameworks and private sector involvement can align with SDG objectives, particularly SDG 11 (Sustainable Cities and Communities).

Private Sector's Role in SDG Achievement: Several private-sector participants expressed a strong willingness to engage in PPPs, especially those aligned with sustainable development goals. A private-sector representative from Karachi noted, "We are ready to invest, but the government needs to ensure a more predictable regulatory environment and better financial mechanisms. If these are in place, we can contribute significantly to SDG-related projects, especially in energy and urban infrastructure." This insight confirms the potential of PPPs to contribute to SDGs, provided that policy frameworks and risk-sharing mechanisms are properly designed.

Limitations

Data gaps and uneven transparency across municipalities and sectors may limit comparability, interview availability can bias perspectives, and some outcome indicators required approximation where standardized municipal data were absent. These risks were mitigated by multi-source triangulation, explicit scoring rubrics, and sensitivity checks on key classifications and interpretations.

Challenges and Barriers to Local-Government Led PPPs for SDGs in Pakistan

Pakistan's local government system is structured within a federal framework, with significant variation across its four provinces: Punjab, Sindh, KP, and Balochistan. Local governance in Pakistan is largely shaped by provincial regulations, which vary significantly in their decentralization arrangements. In Punjab and Sindh, local governments are more integrated into the decision-making processes with relatively stronger provincial support for PPPs, particularly in sectors like energy and waste management. However, in provinces like KP and Balochistan, local governance faces greater challenges due to weaker institutional frameworks, limited financial resources, and less coordinated provincial policies towards PPPs.

Here are the Challenges and Barriers to Local-Government Led PPPs for SDGs in Pakistan are mentioned below.

1. Cross-Cutting Challenges faced by Local Governments

- Resource constraints and capacity gaps: Municipalities routinely face shortages of funds, technical expertise, and project management capability, which limits their ability to originate, structure, and supervise PPPs aligned with SDGs. These deficits are acute outside major metros and hinder multi-stakeholder partnership building.
- Weak coordination and fragmented governance: Misalignment between federal, provincial, and local tiers along with unclear mandates slows decisions on waste, energy, infrastructure, and technology projects; it also undermines information sharing and joint planning essential for PPPs.
- Incomplete regulatory and accountability frameworks: Inconsistent rules, slow approvals, and limited transparency/monitoring reduce investor confidence and complicate risk allocation; evaluation and oversight mechanisms are often not enforced effectively.
- Stakeholder engagement deficits: Where city governments lack structured platforms for dialogue, it is harder to align private investment with local SDG priorities or secure community buy-in for user charges and performance standards.

2. Pakistan-Specific Barriers

- Institutional inefficiencies and legislative inconsistencies: Bureaucratic inefficiency and uneven application of regulations impede timely PPP preparation and contract execution, weakening local governments' ability to develop bankable pipelines.
- Financial constraints and limited municipal creditworthiness: Local administrations especially in smaller or rural jurisdictions lack stable revenues and access to finance, constraining their ability to co-fund projects, provide viability gap support, or meet counterpart obligations.
- Accountability and transparency gaps: Weak monitoring and public reporting reduce credibility with private partners; inadequate evaluation of ongoing PPPs erodes learning and course-correction.
- Policy volatility and regulatory hurdles for green/tech solutions: Inconsistent policies on green finance, renewable energy, and digital tools (AI/fintech) delay adoption of technologies critical for SDG progress in waste, energy, and urban services.
- Uneven local performance across cities: The manuscript notes difficulties in cities such as Peshawar and Faisalabad to execute SDG initiatives due to funding and capability shortfalls, while Karachi's partnerships with NGOs/academia illustrate pockets of progress.
- Need for tax/revenue reforms and investor incentives: Limited incentives (e.g., tax breaks, streamlined approvals) and slow procedures dampen private interest; reforms are recommended to attract capital into municipal PPPs.

Case Studies and PPPs Advancing SDGs in Pakistan

Here are the Case Studies and PPPs Advancing SDGs in Pakistan are mentioned below.

1. Karachi Solar Energy PPP (SDG 7):

The Karachi Solar Energy PPP exemplifies how city-led partnerships can overcome infrastructure and regulatory challenges to improve energy access. This public-private partnership expanded solar energy generation in Karachi, specifically targeting low-income communities that traditionally lacked access to clean energy. Despite facing significant regulatory hurdles and infrastructure constraints, the project demonstrated the potential of renewable energy to provide sustainable and affordable power to marginalized areas. By leveraging private sector expertise and investment, the initiative not only increased energy access but also contributed to the city's efforts in achieving SDG 7 (Affordable and Clean Energy).

2. Lahore Waste-to-Energy Collaboration (SDG 12):

The Lahore Waste-to-Energy Collaboration showcases how a PPP model can address the pressing issue of waste management while generating renewable energy. This project focused on converting municipal solid waste into power, helping to address two critical concerns waste disposal and energy shortages. While the project faced challenges due to inconsistent waste-management regulations and a lack of standardized policies, it still succeeded in reducing landfill volumes and contributed to Lahore's electricity grid by adding a substantial amount of renewable energy. This effort directly supported the achievement of SDG 12 (Responsible Consumption and Production) by promoting sustainable waste management practices and energy generation.

3. Faisalabad Smart City Infrastructure Partnership (SDG 9):

The Faisalabad Smart City Infrastructure Partnership was designed to enhance urban services in one of Pakistan's rapidly growing cities. Despite limited funding and the technical capacity of local authorities, the partnership succeeded in implementing smart technologies to improve basic public services such as transportation, waste management, and public health. This project aimed at making Faisalabad a smart city by integrating information technology into urban planning. By addressing the challenges of financing and expertise, this PPP successfully contributed to SDG 9 (Industry, Innovation, and Infrastructure) by modernizing the city's infrastructure and creating an innovative environment that promoted sustainable urban growth.

4. Sindh Province Renewable-Energy Expansion (SDG 7):

The Sindh Province Renewable-Energy Expansion initiative is a provincial-level PPP that aimed to increase solar energy access to off-grid communities in rural areas. Despite skills shortages in the local workforce, the provincial government partnered with private-sector firms to establish solar power projects across Sindh. This project has been pivotal in providing clean energy to underdeveloped regions, addressing SDG 7 (Affordable and Clean Energy). The partnership not only contributed to increasing energy access but also provided training opportunities to local communities, helping to mitigate workforce skill gaps and enhancing long-term sustainability.

5. Peshawar Rehman Baba Expressway (SDG 9):

The Peshawar Rehman Baba Expressway PPP is a significant infrastructure project aimed at enhancing regional connectivity and economic activity through better transportation. By improving road infrastructure, this PPP has reduced travel times and facilitated smoother trade between cities, which contributes to the economic development of the region. However, the project faced challenges related to regulatory issues and accountability concerns, which led to delays and complications in its execution. Despite these setbacks, the partnership ultimately contributed to SDG 9 (Industry,

Innovation, and Infrastructure) by improving the region's infrastructure and supporting economic growth through enhanced connectivity.

6. Islamabad Green Urban Planning Collaboration (SDG 11):

The Islamabad Green Urban Planning Collaboration represents a progressive approach to urban development, focusing on creating green spaces and promoting sustainable urban planning in the capital city. This PPP initiative involved collaboration with the private sector to design and develop parks, recreational spaces, and other environmentally friendly urban spaces in Islamabad. Despite initial challenges with low stakeholder participation, the project was successful in promoting green urban development that aligns with SDG 11 (Sustainable Cities and Communities). The project underscores the importance of private sector involvement in fostering sustainable urban growth and improving the quality of life for city residents.

7. Related Municipal Facilitation Examples:

Several municipal facilitation examples also highlight how local governments can leverage partnerships beyond formal PPPs to support SDG initiatives. For instance, the Karachi Municipal Corporation collaborated with NGOs and universities to conduct SDG 12 outreach, which enhanced public awareness and community engagement in sustainable waste management practices. Additionally, the Punjab Provincial Government supported waste-to-energy projects and Sindh's solar energy program, illustrating how provincial authorities can facilitate and enable municipal projects to align with national development goals. These collaborative efforts demonstrate the power of civic partnerships in complementing formal PPPs and contributing to the achievement of SDGs at the local level.

The study focuses on SDGs related to energy (SDG 7), infrastructure (SDG 9), and sustainable cities (SDG 11), which are particularly relevant to local governance and PPPs in Pakistan. These SDGs address key challenges in urban sustainability, infrastructure development, and energy access, which are central to the study's objectives.

Lessons Learned and SDG Impact

1. Clear mandates and predictable rules matter: Regulatory clarity and streamlined approvals are decisive for bankability and timely delivery across energy, waste, and transport PPPs.
2. Local capacity and coordination drive outcomes: Cities that paired PPPs with technical support, monitoring, and stakeholder platforms translated projects into measurable SDG gains (access to clean energy, waste diversion, greener public space).

3. Targeted finance and incentives help close viability gaps: Provincial support, tax incentives, and blended finance (e.g., green instruments) enabled projects serving low-income or off-grid communities.
4. Persistent bottlenecks remain: Fragmented governance, accountability gaps, and uneven municipal capacity slowed replication especially in secondary cities suggesting the need for standardized PPP toolkits and stronger PPP units at local level.

Discussion of Results

The researchers observe during synthesis of this study that local government role is active in PPP with collaboration of SECP aimed at achieve SDGs. In this regard, the municipalities acted as arbiters for waste management, renewable energy, and urban infrastructure with the help of PPPs. Punjab government is involve backed waste to energy programs and Sindh government is engage in Sindh Solar Energy Project to with the help of PPPs to promote SDG 11 (Sustainable Cities and Communities) and SDG7 (Affordable and Clean Energy) (Shah, 2018). For this purpose, local governments need to improve their resources for conferences, venues and CSR initiative to achieve the SDGs. This is need of current era to promote SDGs by providing and managing community and funds with the help of PPPs to achieve the SDGs in Pakistan. For this reason, governments must give tax exemption and public recognition to promote and involvement of private sector for the purpose of SDGs. Although, municipals are facing obstacles for funds, resources and expertise and these are issues which are need to manage these for SDGs. Due to these issues, Peshawar and Faisalabad are also in trouble to execute the SDGs (United Nations General Assembly, 2015). These are arising due poor functioning of rules and regulation in Pakistan. Local government and federal government are not aligned with each other to overcome the issues, like; waste management, energy crises, infrastructure, technology advancement, capacity building and information sharing that's why SDGs is not achieving successfully (van Zanten & van Tulder, 2018). In contrast, Karachi Municipal Corporation is currently working with NGOs and academic institutions to distribute information on SDG 12 (Responsible Consumption and Production) and to train the nearby enterprises on sustainable business practices (Vining & Boardman, 2008). The study points out that local government's role must be an efficient in monitoring the PPPs and ensuring the accountability. This is not properly applying due to poor functioning for accountability and this is a reason to failure of SDGs in Pakistan. Actually, evaluation process is not working efficiently and this is a concern of stakeholder for collaboration. Tax reforms, accountability, regulatory compliance and peace is a major concern for PPPs. Municipals corporations should empower in governance, regulations and accountability to improve the usage of resources. This

is possible with PPPs to utilize the resources especially achieve the SDG9 (Industry, innovation and Infrastructure (Waddock, 2020).

We present synthesis and outcome of the relationship of local government and PPP to achieve the SDGs. Table 1 summarize and classified the four dimensions about PPPs and role of the local government in Pakistan. Table 2 highlights the challenges, barriers, inefficient use of resources, obstacles and outcome of 17 SDGs determinants by using local government intervention and facilitation for PPP. This section, provide a detail analysis of the result to identify how local government's crucial role to facilitate partnerships for the sustainable development goals in corporate sector of Pakistan.

Table 1. Dimensions of PPPs & the role of Local Governments to Accomplishment of SDGs.

Dimension	Role of Local Government	Impact on SDG Partnerships	Relevant SDGs	References
<i>Governance and Coordination</i>	to support SDG partnerships, Developing frameworks and regulatory structures	Helps align corporate strategies with sustainable development goals	SDG 16 (Peace, Justice, and Strong Institutions)	Gustafsson & Mignon (2020)
<i>Stakeholder Engagement</i>	Facilitating dialogue and fostering collaboration between public, private, and civil sectors	Promotes inclusive decision-making and joint problem-solving	SDG 17 (Partnerships for the Goals)	Pattberg et al., (2012); Pattberg & Widerberg (2016)
<i>Resource Mobilization</i>	Overseeing and managing human and financial resources in support of sustainable development initiatives.	Guarantees that the resources required for the project's execution are available.	SDG 9 (Industry, Innovation, Infrastructure)	
<i>Mohieldin & Shehata (2021); Nieuwenhuijsen (2020)</i>	Establishing learning and knowledge- sharing platforms based on best practices and adopting national policies to local needs and challenges	Enhances capacity building and diffusion of innovative ideas, produce innovative policies tailored to local conditions for SDG implementation.	SDG 12 (Responsible Consumption and Production), SDG 11 (Sustainable Cities and Communities)	Mohieldin & Shehata (2021)
<i>Accountability and Monitoring</i>	Establishing mechanisms to monitor and evaluate SDG partnerships	Increases transparency and accountability for sustainable outcomes	SDG 16 (Peace, Justice, and Strong Institutions)	Kivimaa et al. (2019, 2020); Glass & Newig (2019)

Local government's structure should encourage with the corporate investment and PPP. In this way with local government intervention business community would be able to align their CSR activities with SDG-2, SDG-3, SDG-4 and SDG-12. It is an evident that agriculture and health sector need PPP and local government support to overcome the obstacle to align with SDG-2 and SDG-3 (Khan et al., 2022). It is need for local government to align their vision and mission with the help of PPPs to improve their CSR with SDG-2, SDG-4 and SDG-12. Actually, bureaucratic inefficiency and legislative

inconsistencies are basic reasons for poor performance of local government and that's why they are not able to develop a significant PPPs in Pakistan.

In addition, lack of accountability and lack of openness are also the reason by not involvement by PPPs and creditability of the institute (Hák et al., 2016). It is observed in the study that these are the complications which are need to address and should resolve in workplace then SDGs would be achieved. Government of Pakistan are currently interspersed and trying to develop PPPs with Saudi Arabia, Qatar and UAE in health, energy, IT, environment and in education as per UN 2030 agenda about SDGs.

An innovative financial security such as the green bonds and the sustainability and linked loans could be useful for the corporate investment and promoting collaboration to SDGs (Mahmood & Raza, 2022). Further, business forums, conference and discussion between government and cooperation could enhance the issues and sort out their solutions for SDGs. Pakistani government need to focuses advanced technologies like; innovative financial securities, technological advancement, artificial intelligence and fintech to attract PPPs and stabilize their institute with SDG-2, SDG-4 SDG-6 SDG7 and SDG11. These technologies are need in the area of waste management, renewable energy, environment, health and in education to align their goals with SDGs. Although, this is not easy for municipalities particularly those in rural areas to effectively organize multi-stakeholder partnerships due to their lower levels of institutional capability. It is fact that lack of financial resources is the cause for local administrations to be unable to create substantial partnerships. It is fact that these technologies are not properly implementing due to policy frameworks and inconsistent regulation are creating hurdles to mediate the PPPs. Finally, researchers observed during investigation to apply advance technologies to overcome the issues and promote PPPs to achieve the SDGs.

Government of Pakistan are not addressing properly on poverty alleviation, waste management, obscure regulations, green policies, energy and air quality index. So, major cities of Pakistan Like; Lahore, Karachi and Multan are polluted area in all over the World as discussed in Table 2. So, for this purpose, government of Pakistan need to reforms in green financing and promote PPPs to formulate their strategies for climate action, life on land, life below water and sustainable cities and communities (SDG-13, SDG-15, SDG-14 & SDG-11). Eventually, local governments must strengthen their governance capacity through the funding of official training and capacity building programs', if they want to be able to continue as intermediaries in the SDG partnerships.

Table 2. Key Findings from PPPs in Pakistan for SDG Localization.

<i>City/ Region</i>	Key SDG	SDG Focus	Challenges	Outcome	References
	Partnerships				
	Facilitated by Local				
	Government				
<i>Karachi</i>	Public-private partnership for solar energy projects	SDG 7 (Affordable and Clean Energy)	Restricted infrastructure and regulatory obstacles	Improved access to clean energy for low-income communities	(Pattberg et al., 2012), (Mazher, 2019)
<i>Lahore</i>	Collaboration for waste-to-energy project in the city	SDG 12 (Responsible Consumption and Production)	Inconsistent waste Management regulations	Reduced waste in landfills and generated renewable energy for the city	(Pattberg & Widerberg, 2016), (international & 2020, 2020)
<i>Faisalabad</i>	Corporate partnership for smart city infrastructure development	SDG 9 (Industry, Innovation, and Infrastructure)	Limited funding and technical capacity	Implementation of smart technology solutions for public services	(international & 2020, 2020), (Gustafsson et al., 2020)
<i>Sindh Province</i>	Provincial partnership for renewable energy expansion	SDG 7 (Affordable and Clean Energy)	Lack of technical expertise and skilled workforce	Established solar energy projects that contributed to energy access for off-grid communities	(Mohieldin et al., 2021)
<i>Peshawar</i>	Rehman Baba Expressway	SDG 9 (Industry, Innovation, Infrastructure)	Regulatory framework issues, accountability problems	Improved regional connectivity and economic development	(Pedagogy & 2024, n.d.)
<i>Islamabad</i>	Private sector collaboration for green urban planning	SDG 11 (Sustainable Cities and Communities)	Limited stakeholder engagement and private sector involvement	Improved green spaces and sustainable urban development initiatives	(Pattberg & Widerberg, 2016)

Our findings support the relevance of the NPM framework in understanding the effectiveness of PPPs, particularly regarding efficiency and accountability in the implementation of SDG-related projects. However, we also note that NPM's focus on performance metrics may sometimes overlook broader societal goals, such as equity and social welfare, which are also essential for achieving SDGs.

Synthesis Analysis

In this section, we take a comprehensive look about PPPs and local government role in Pakistan and present suggestions based on synthesis analysis of the study and review of relevant studies. In this regard, need to control the obstacles with PPPs and intermediary role of government to achieve the SDGs. Pakistan's local administrations have begun to see the SDGs as essential instruments for facilitating sustainable transitions which is a good sign. Its veto is part of a broader dynamic in which SDGs originally intended to apply worldwide are translated into relevant shape for local circumstances. Local governments often embrace the SDGs in order to align their policies, develop new policy initiatives and mobilize private industry around sustainable development. The Sustainable Development Goals (SDGs) are operational instruments that require local authorities to not only adhere to them as guiding principles but also to adopt a long-term vision of sustainability. The study reveals that one of the challenges is to get the public sector engaged in partnerships with private enterprises in the right proportion. Sustainable development goals are often prioritized by the public authorities, on the contrary, the private sector usually prefers short-term profit-oriented plans. This tension is potentially encumbering partnerships. To address this, some Pakistani local governments have established public-private platforms for authorities and private companies to discuss issues of joint concern and align their objectives with the Sustainable Development Goals. However, small towns have a difficult time providing the technical and financial support required to ensure this equilibrium (Hussain et al., 2021). The regulatory differences that reduce the scope of public (i.e. governmental) and private (i.e. corporate) actors, nonetheless, complicate this balance, putting energy and infrastructure at risk.

Additionally, the authorities of local councils in Pakistan are studying the option of establishing new intermediary groups to better facilitate partnerships. These intermediary organizations are endowed with the power to operate more or less independently from the government, which enables them to be more efficient and bounteous in the resource management as well as SDG-aligned project coordination. To illustrate how this has been done in other countries, first, we tell the story of the establishment of SDG Design Centers in Japan, where the public sector collaborated with private companies through third-party entities. This strategy has been followed in other countries (Naveed et al., 2022). However, the introduction of these intermediary bodies can thus speed up the SDG programs in Pakistan by strengthening the governance framework and dismantling bureaucratic hurdles. In addition, these new groups can serve as information centers by collecting and disseminating best practices across sectors and regions, thus, contributing to the overall SDG performance of the country.

Stakeholder involvement is critical to the success of SDG partnerships because it effectively brings together corporations, civic society, and other actors to achieve common goals. The study's conclusion indicates that Pakistan's local governments need to devise more sensible strategies for involving the interested parties. Even though some of the cities have done well in this area, there are still a lot of cities that have problems with the promotion of meaningful communication between the public and private sectors. According to the report written by (Mokhele et al., 2024), he advocates workshops, capacity-building programs, and knowledge-sharing platforms as the possible ways of improving stakeholder participation in SDG activities. Developing more flexible governance arrangements and creating new intermediary entities are promising solutions to these issues. In Pakistan's case, this would mean giving local governments more powerful policy tools so they can act as efficient go-between and help the country move closer to attaining sustainable development objectives. The United Nations SDGs address many of the global issues that we currently confront. A crucial part of meeting those aims is the sequence in which state governments in Pakistan act as intermediaries to negotiate trade agreements. This section outlines the private sector partnerships that local governments can form to meet each of the 17 SDGs.

The synthesis of the research indicating that government should play the role to enable collaboration for upcoming generation, should finance in community development project and improve the living standard in rural and urban areas with PPPs to achieve the SDG-1 (No Poverty). Further, government should establish investment strategy in agriculture, food, security and nutrition with PPPs to improve the agriculture innovation, supply chain management and arm SDG-2 (Filho et al., 2024). In addition, local government could establish PPPs for healthcare (mobile clinics, online hospitals & wellness initiative) SDG-3 (Healthy life). SDG-4 is about quality education and government should align their investment strategy with school, education grants, digital literacy, quality education and international scholarship. Gender equality is SDG-5, in this purpose, government should promote female at workplace, entrepreneurship, empowerment through collaboration with PPPs and local government. SDG-6 is sanitation and clean water that government need to formulate the investment for purification water and water conservation education plan should be establish with the help of PPPs. Moreover, SDG-7 is affordable and clean energy and government should contribute for its growth, expansion, renewable energy resources in remote areas with the help of fossil fuels and coal resource which are rich in Sindh Province (La Rocca et al., 2023). SDG-8 is decent work and economic growth and government should enhance, job opportunities, labor practices, entrepreneurship, rating system and improve the monitoring system with the help of PPPs for SDGs. SDG-9 is industry innovation and infrastructure and government need to put their attention town building, roads, bridges, factories,

telecommunication and facilitate corporate investment strategies to promote SDGs in Pakistan. SDG-10 is reducing the inequality with local government intervention and PPPs to promote social contract, collaboration, linkages among corporate sectors. SDG-7 is sustainable cities and communities by providing affordable housing, transportation, city center and corporation-based development ventures for stable and strong community. SDG-12 is responsible production and consumption which is possible with local authorities support along with environmental restoration and recycling project, waste and managing cooperation with PPPs.

SDG 13 is climate action and government should be focused on emission of carbon, green infrastructure, climate smart agriculture and renewable energy systems to achieve climate action which is suggested by (Rashed & Shah, 2021). SDG-14 is life below water and government must initiate about marine conservation, sustain be fisheries and raise the corporate commitment for shipping, tourism fishing and environmentally conscious approaches (Choi et al., 2020). SDG-15 is life on land and government need to combat deforestation and enhance the afforestation, protecting biodiversity and ecosystem. This is possible with PPPs in forestry, agriculture and land management. SDG-16 are peace, justice and strong institution and government should pay attention towards governance practices, strengthening institutions, laid down the law and encourage peaceful societies. SDG-17 partnership for goals is planning and nurturing relationship with all stakeholder and bringing together business communities with PPPs and local government intervention. These connections enable companies to align their operations with regional and national sustainability targets, removing financial, technological, and logistical barriers to the aims of sustainable development. The legislative frameworks, municipal government, and corporate sector commitment to long-term sustainability goals, however, determine how effective this cooperation will be.

Policy Implications and Recommendations

Here are the policy implications and recommendations are mentioned below.

- 1) Strengthen the regulatory and institutional “rules of the game”: Codify clear local mandates for PPPs spelling out municipal versus provincial roles standardize approval timelines, and publish model contracts covering risk-sharing, termination, and tariff formulas. In parallel, institutionalize accountability through mandatory contract disclosure, routine performance dashboards, and independent third-party verification to rebuild investor and citizen trust. These steps directly address misaligned tiers of government and uneven rules that stall SDG delivery in waste, energy, and urban services.

- 2) Make financing work for city-level SDG projects: Deploy targeted incentives (tax exemptions, recognition schemes) to crowd in private capital for SDG-linked PPPs, as already recommended in the paper. Enable green and sustainability-linked instruments pilot green bonds and sustainability-linked loans at provincial/municipal levels; couple with credit enhancement where needed. Set up pooled/viability gap facilities for smaller cities (where fiscal capacity is thin), echoing the manuscript's observation that limited local resources are binding.
- 3) Build municipal capacity and data systems: Fund PPP cells in city governments for project preparation, contract management, and KPI tracking; pair them with provincial support units. The study highlights technical and managerial capacity gaps especially outside major metros that impede bankable pipelines. Roll out e-governance/open-data portals for PPP pipeline, procurement, and performance, addressing the documented transparency and evaluation deficits.
- 4) Align project design with SDG outcomes and learn from local exemplars: Require SDG tagging and outcome KPIs (access, affordability, waste diversion, GHG reduction, resilience) in every PPP, drawing on the cases (e.g., Sindh solar, Punjab waste-to-energy) that show clear links to SDG7, SDG11, SDG12. Use standard sector toolkits (for waste, energy, mobility) so cities like Peshawar and Faisalabad, which the paper notes face execution difficulties, can replicate proven designs.
- 5) Crowd in stakeholders and keep them at the table: Formalize public private civic forums (quarterly) for co-design, tariff/social impact discussions, and dispute prevention an explicit recommendation in the manuscript to overcome coordination frictions. Leverage CSR: guide firms to align CSR with SDG2, SDG3, SDG4, SDG12 under municipal facilitation, as suggested in the study.
- 6) Fast-track climate and digital solutions within PPPs: Prioritize PPPs that unlock renewables, energy-efficient street lighting, waste-to-energy, and green urban planning, building on the positive results cited for Karachi, Lahore, Islamabad. Encourage AI/fintech in project preparation (tariff targeting, credit scoring), O&M (predictive maintenance), and M&E (real-time KPIs), a direction the article calls out as necessary to accelerate SDG progress.
- 7) Coordinate across tiers and de-risk where it matters: Create intergovernmental compacts (federal provincial local) for priority SDG sectors with shared timelines and pooled support, directly addressing fragmentation flagged in the paper. Use targeted guarantees (e.g., payment security mechanisms) for revenue-risk projects while maintaining

performance-based discipline to avoid moral hazard, consistent with the manuscript's value-for-money focus.

- 8) Monitor, learn, and scale: Establish a national SDG PPP observatory to collect project files, publish KPIs, and curate case briefs (e.g., Sindh Solar, Lahore WtE) for cross-city learning; the paper already compiles such cases and underscores their usefulness. Tie incentives and future approvals to demonstrated SDG results (access, equity, environmental metrics), closing the accountability loop the manuscript identifies as missing.

Conclusion

This study delves the interplaying role of local government with PPPs to achieve the SDGs in Pakistan. In this regard, researcher observed in the study that Synthesis of SDG is scarce area of research. Hence, this study unveils how role of local governments facilitates the PPPs in Pakistan. For this purpose, local government performed various interplaying role, such as, Sindh Government established Karachi Solar Energy (SDG-7) Plant & renewable energy expansion (SDG-7), Punjab Province established waste management and energy (SDG-7) & Metro bus and train (SDG-11), Faisalabad local government established small cities infrastructure development (SDG-11), Federal government established green urban planning (SDG-11), Metro Bus (SDG-11), China-Pakistan Economic Corridor (SDG-8) are PPPs agreement to achieve the SDGs. For this reason, government of Pakistan should focus on managing resources, supporting policies, re-draft friendly regulations, building infrastructure and technological advancement like, artificial intelligence, Fintech for the successful PPPs. We offer following suggestions to improve the role of local government for SDGs. The first is to create clear framework and guidelines to formalize partnerships between local governments and PPPs making rules, expectations and objectives should be well defined. The second is to develop regular forums to address common challenges between public and private sectors on SDG initiatives. The third is to simplify regulatory procedure and incentive structure as like, offer tax break, subsidies, and reducing red tape and simplifying approval process making it easier for corporations to engage in SDG related projects. The fourth is to foster capacity building initiatives and knowledge sharing platforms should be aligned with the SDGs. The fifth is to encourage transparency and accountability as like SDG monitoring system and public reporting and recognition etc. The sixth is to facilitate access to funding and resources such as pooled funding mechanisms and support financial and technical for small and medium enterprises. The seventh is to promote community engagements in planning, projects formulation, needs and benefit analysis for the SDG initiatives.

Recommendations

The findings of this study provide critical insights for shaping policy recommendations and theoretical contributions aimed at advancing sustainable development in Pakistan through Public-Private Partnerships (PPPs). To support this goal, the research proposes a strategic framework focused on optimizing local government involvement and enhancing PPP collaboration. This framework is designed to effectively manage and accelerate the country's progress toward achieving the Sustainable Development Goals (SDGs) are mentioned below.

- 1) Clarify Regulatory Frameworks: Review the clarity and consistency of the regulatory frameworks outlined in the paper. Ensure that the roles of local and provincial governments in PPPs are well-defined and harmonized to avoid conflicts and delays in implementation.
- 2) Assess Data Validity and Methodology: Evaluate the robustness of the study's methodology, particularly the mixed-methods approach, and confirm that the sample size and case study selection are appropriate to draw meaningful conclusions about local governments and PPPs in achieving SDGs.
- 3) Examine Financial Mechanisms: Review the financial models proposed for attracting private investment, including green bonds, blended finance, and viability gap funding. Consider their feasibility within Pakistan's current financial landscape and how well they align with the SDGs.
- 4) Focus on Local Capacity Building: Assess the suggestions for enhancing local government capacity and the implementation of e-governance systems. Verify if these recommendations are feasible and actionable given the resources available to local governments in Pakistan.
- 5) Sustainability of PPPs: Review the long-term sustainability of PPP projects as outlined in the paper, specifically regarding their environmental, economic, and social impact on the local communities. Consider if the proposed recommendations can ensure these projects remain effective in the long run.
- 6) Stakeholder Engagement and Coordination: Review the proposed mechanisms for improving coordination between different government tiers and the private sector. Ensure that the recommendations are practical and that they address the common challenges faced in public-private collaborations for SDG achievement.

- 7) Explore Future Research Directions: Evaluate the suggestions for future research. Consider whether the identified gaps in literature and practice are significant enough to warrant further investigation and if the proposed future research areas will contribute to advancing the field.

This study has some limitations, the first is there is need to further explore the variety of SDGs approaches as per UN-2030 and UN-2060 within the Pakistan and cross culture analysis. Although, this study is synthesis the role of local government and PPPs to achieve the SDGs, while, the second is further study could be delved to that how to enhance the financial resources of the country and how to implement supportive technological advancement for the successful of PPPs to achieve the SDGs. At last, the third is, how we can attract and satisfied foreign investors to come in Pakistan and establish useful PPPs.

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