

**Essays on Public Private Partnership in Infrastructure Sector: A review of Critical Success
Factors and Barriers to Private Sector Investments**

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Abstract

Infrastructure requirements across countries have typically exceeded the available public financial resources (World Bank, 2019). According to Private Participation in Infrastructure (PPI) Annual Report (2022), Private sector finance in infrastructure was USD 91.7 billion across 263 projects¹. This was a 21 percent increase from 2021 and a 4 percent increase from the 5-year average (2017-21).

The financial crisis of 2008 constricted the fiscal space of the developed and developing countries drastically. With the need to move forward with building infrastructure to help their economies grow, the governments explored the possibility of Public Private Partnerships. Apart from the fiscal benefits, Public Private Partnerships can be beneficial to innovation, efficiency and skill transfer from private or foreign players to national entities. The World Bank states that in a balanced regulatory environment, Public Private Partnerships can make infrastructure creation more sustainable and efficient. Despite this, PPPs have face significant challenges and are not always successful. While it is widely acknowledged that PPPs have significantly impacted the development of infrastructure in the country, in sectors such as roads, airports and ports, there are still challenges faced in improving regulatory frameworks and creating an investment friendly climate for ensuring the long-term sustainability of PPP.

Given the massive potential of PPPs, this thesis aims to delve deep into what impacts the success of PPPs projects. The thesis covers three essays which cover Public Private Partnership's key sources of success and failures in PPPs. The first essay is focused on the Force Majeure clause in the context of COVID 19 and its ability to provide relief to PPP projects. The second essay evaluates the key success and failure factor for PPPs in metro projects in India. The essay attempts to explore the inter-dependencies of the factors responsible for the failure of PPP metro rail projects in India from a tri-fold perspective of the end-users, the private investor/stakeholder and the public agency involved. The third essay is focused on challenges linked to financing electric bus projects in India Cities and evaluation of policy initiatives to enable offtake of electric buses. Analysis of PPP models, cash-flow of Electric bus projects including Total Cost of Ownership and policy challenges has been undertaken to identify challenges linked to the financing of the electric bus projects on PPPs.

¹ <https://ppi.worldbank.org/content/dam/PPI/documents/PPI-2022-Annual-Report.pdf-page 4>

The research in this thesis, outlines failure factors in PPPs could emerge from articulation of force majeure clauses and the proactive actions required from concessionaires, to the role of policy support needed for enabling financing of PPPs in Electric Bus. The findings of these essays could be very relevant for infrastructure developers, investors, regulators, financing and policy making institutes to identify areas for improvement in the structure of public-private partnerships, and could lead to implementable actions to make PPP frameworks and concessions more robust. The findings of the study could be shared with Department of Economic Affairs and PPP offices in Central Government ministries, and State finance departments for reviewing actions they need to take on future PPP projects.

Key words: Public Private Partnerships, Metro rail, Electric Buses, Gross Cost Contracts, Lease finance, Viability Gap Funding, Payment Security Fund, Force Majeure, COVID, Transport, Risk Mitigation

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Table of Content

List of Tables

List of Figures

Chapter-1: Introduction and Motivation of Research

1.1 Public Private Partnerships remain critical for Infrastructure development

1.2 PPPs many a times have failed to achieve their objectives

1.3 Rare events like COVID highlighted gaps in existing Force Majeure provisions and provided a rare opportunity to review risk management approaches in PPPs

1.4 While India needs public transport infrastructure, what constraints PPPs in metro rail projects in India, remains an important issue to be analyzed

1.5 Policy actions of Government of India and State Government to enable offtake of electric bus PPPs remain critical

Chapter 2: COVID-19 Pandemic, Transport PPPs and Risk Mitigations

2.1. Introduction

2.2. Research Motivation

2.3. Literature Review

2.4. Research Methodology Transport Concession Agreements' FM provisions in the context of COVID-19

2.4.1. Defining and Qualification for Force Majeure

2.4.1.1. Definition and approaches for defining Force Majeure events

2.4.1.2. Qualification as a Force Majeure event

2.4.1.3. Recommendations for FM Provisions

2.5. Mitigation and Non-performance Relief measures

2.5.1. Non-financial Relief Measures

2.5.1.1. Extension of Concession Period

- 2.5.1.2. Relief against private partner non-performance
- 2.5.1.3. Dispute resolution provisions
- 2.5.1.4. Recommendations for FM Provisions- Non-Fiscal
- 2.5.2. Financial Relief Measures
 - 2.5.2.1. Relief from penalties and liquidated damages
 - 2.5.2.2. Contingency pricing against increased finance costs
 - 2.5.2.3. Availability-based payment shall continue to be paid
 - 2.5.2.4. Tariff Increases
 - 2.5.2.5. Revenue Shortfall Loans
 - 2.5.2.6. Provision for Lumpsum Compensation
 - 2.5.2.7. Recommendations for FM Provisions- Fiscal
 - 2.5.2.8. Validation of recommendations using Delphi Survey

2.6. Conclusion

2.7. Future Area of Research

Chapter 3: Examination of Failure Factors of the Public-Private Partnership (PPP) Model for Metro Rail Projects in India

3.1 Introduction

3.2 Literature Review

3.2.1 Complete PPP

3.2.2 Part PPP

3.2.3 Government led Model – no PPP

3.3 Research Methodology

3.3.1 Viability Linked issues

3.3.2 Risk on account of political, government, and policy actions

3.3.3 Private sector capabilities

3.3.4 Implementation Challenges

3.4 Collection of Research Data and Survey Methodology

3.4.1 Interpretation of Factors Considered

3.4.1.1 Factor 1: Viability linked Issues

3.4.1.2 Factor 2: government, Policy and Contractual risks

3.4.1.3 Factor 3: Consortium Capabilities

3.4.1.4 Factor 4: Implementation Challenges linked to the project

3.5 Data Analysis

3.6 Corroboration: Indian Metro Rail Projects

3.6.1 Viability linked Issues

3.6.1.1 Overestimation of Traffic

3.6.1.2 Return on Investment Appeal

3.6.1.3 Fit to City Needs

3.6.2 Private Sector Capabilities

3.6.2.1 Inability to raise finance and monetise investments

3.6.2.2 Gaps in delivering quality public service

3.6.2.3 Stringent procurement processes

3.6.3 Implementation Challenges

3.6.3.1 Delays in implementation

3.6.3.2 Cost overruns

3.6.3.3 Land acquisition challenges

3.6.4 Political, Government, Policy Factors

3.6.4.1 Lack of government support

3.6.4.2 Political interference

3.6.4.3 Master plan / land use changes

3.6.5 Cross Case Synthesis

3.7 Conclusion

Chapter 4: Enabling large scale PPP adoption of electric buses through policy and financing interventions.

4.1. Introduction

4.2. Literature review

4.3. Methodology

4.4. Analysis and insights

4.5. Enabling offtake of electric buses – Funding and financing options

4.5.1 Make finance available for e-bus procurement with government support

4.5.2 Enabling offtake of electric buses – Manufacturing interventions

4.5.3 Enabling offtake of electric buses – Infrastructure interventions

4.6. Synthesis and Conclusion

Chapter 5: Conclusion and Implications

References

Appendices

List of Tables

Table 1: Approach used for definition of Force Majeure event

Table 2: List of Events to be considered as a Force Majeure event

Table 3: Qualifying Criteria to be considered as a Force Majeure and trigger contractual provisions as per contracts studied

Table 4: Qualifying Criteria to be considered as a Force Majeure and trigger contractual provisions of reviewed PPP contracts

Table 5: Financial Relief Measures proposed in concession agreements reviewed in this study

Table 6: Framework for Pandemic Insurance in a PPP Contract

Table 7: Expert Profiles

Table 8: Final Recommendations

Table 9: Project Structure and Financing of Key Metro Rail Projects on PPPs

Table 10: Metro Projects Operational and Under-Construction in India

Table 11: Analysis of the Key Failure Factors based on the survey responses

Table 12: Key Failure Factors of PPP in Metro Rail & Top 3 Reasons

Table 13: Spearman's Coefficient for Critical Factors & Sub-Factors

Table 14: Overview of Indian Metro Rail PPP Projects

Table 15: Viability-Linked Issues in Chosen Case-Studies

Table 16: Private Sector Capabilities in Chosen Case-Studies

Table 17 - Corroboration of Implementation KFFs with Indian Metro Rail PPP Projects

Table 18: Corroboration of Political, Government, Policy-based KFFs with Indian PPP Projects

Table 19: Risk Mitigation Actions Suggested for KFFs

Table 20: Policy Analysis

Table 21: Key thematic issue

Table 22: Intracity and Intercity Operations – bus specifications

Table 23: Capital Infra Costs per bus (INR cr.)

Table 24: Total Cost of Ownership – E-Bus, and Diesel Bus

Table 25: Earning Per Km in STUs

Table 26: VGF support under PM-eBus Sewa

Table 27: Global Models for Bus Operations

Table 28: Manufacturing capacity of OEMs

List of Figures

Figure 1: Risk Matrix

Figure 2: Environment Complexity Theory

Figure 3: Literature Review

Figure 4: Step-by-Step Framework

Figure 5: PPP-Risk Matrix

Figure 6: Demographics of Survey Respondents

Figure 7: The main causes

Figure 8: China EV Program

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