Impediments to Public-Private Partnership Projects In Aftermath of Covid-19 Pandemic

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Abstract

India has enjoyed impressive economic growth over the past two decades. The country possesses the world's second-largest road system, fourth-largest rail system, and fifth-largest electric power generating manufacturing capability. Despite progress and good prospects for the future, investors continue to face many challenges, which have worsened after Covid-19. Nearly 90% of the world's population has faced travel restrictions, a sharp decline in the global economy during the Covid-19 pandemic. There had been significant downward trend in the infrastructure investment during Pandemic, keeping in view the slowdown of private investment in infrastructure; the present study was carried out to investigate the complexities in PPP infrastructure projects by looking at the elements that impede the successful implementation of PPP in India. The study relies on primary and secondary data. To better understand the constraints to PPP implementation, a questionnaire survey was performed to collect the viewpoints of partners who have a good grasp of the PPP concept and have worked on PPP projects in India. There was a total of 94 valid submissions. The overall findings show that the top five challenges for speeding PPP in India are 'Inefficient and inequitable risk allocation in PPPs,' 'Over leveraged debt and paucity of equity,' 'Weak regulatory and institutional frameworks,' 'Delay in issuing clearances by authorities,' and 'Land selection and acquisition.

Keywords

Finance, Infrastructure, Projects, Public Private partnerships (PPPs).

1. Introduction

The importance of adequate infrastructure for economic development has been extensively documented in the literature. (World Bank, 1994; Arndt, 1999). The need of substantial infrastructure investment based on a mix of public and private investment has been emphasised, with the latter having been widely implemented through various types of PPPs in European Union, North American, Southeast Asian, and African countries during the preceding two decades. Not only at the union level, but also at the state level, efforts in India to stimulate private infrastructure development through the PPP approach have been a major success. Many PPPs have taken off, and many are currently operational at the national and state levels (Nataraj, 2014).

Public-Private Partnerships (PPPs) aims to offer people with high-quality, cost-effective real estate services. PPPs allow the public sector to benefit from commercial dynamism, the ability to obtain finances in a budget-constrained situation, innovation, and efficiency by bringing in private sector investors who contribute their own resources, skills, and knowledge. The private investor is able to put money to greater use (Skietrys et al. 2008).

India has a long history of successful PPP initiatives that benefit the general people. However, there are barriers to the effective execution of PPP projects, such as the risk of project default, projects completed at a greater cost to the government, and projects wherein return on investment is not attained (Cheung et al., 2009). The pandemic also has had a significant impact on demand for infrastructure services, causing many assumptions that underpin PPP risk allocation and revenue generation to crumble. COVID-19 have a significant short-term impact on many PPPs due to physical restrictions on movement and consumer confidence, and a long-term impact due to decreases in income (and thus demand for services) and changes in consumer behaviour.

The increasing relevance of PPP implementation, and the presence of restrictions in its execution during COVID-19 in India, prompted the researcher to conduct the current study, which strives the viewpoint of crucial PPP players, with an emphasis on the major disruptive factors in the success PPP implementation. The current investigation has two specific goals. First, it attempts to investigate the significance of variables that impede the successful implementation of PPP in India. Second, it seeks to study variations in stakeholders' assessments of the impediment factors. The study's findings will help practitioners improve PPP implementation by eliminating or minimising the negative factors that impede the benefits of using PPP. The financial losses incurred by the Project Company as a result of COVID-19 should be fairly assessed. If the government's policy decision is to keep the service and the project running, the contract's financial equilibrium may need to be rebalanced. Furthermore, understanding stakeholder perceptions is critical because successful PPP implementation necessitates

commitment from the contracting parties.

2. Objective of study

The purpose of this study is to investigate the difficulties in implementing PPP by examining the factors that impede the successful implementation of PPP in India. To investigate the differences in stakeholders' perceptions of the impediment factors

3. Methodology

To achieve the study's goal, an empirical A questionnaire survey was carried out to evaluate the difficulties associated with adopting PPP in Indian building projects. Questionnaires were distributed to individuals from both the public and private sectors. The respondents were chosen based on the criteria that they possessed sufficient understanding of the PPP concept and had been involved in PPP projects throughout the planning, tendering, building, operating, or maintenance phases. Cheung et al. (2012) used similar selection criteria in a study.

Targeted respondents were requested to score their degree of agreement with each of the identified problematic elements on a 5-point Likert scale (1=least important, 5=most important). A covering letter explaining the aims of the research and assuring respondents of the privacy of the data provided followed the questionnaire. One hundred forty respondents were contacted, and 94 completed questionnaires were collected. This accounted for 73.33 percent of the total, which is significant enough to provide a foundation for valid and reliable conclusions. The collected data was presented in tables and analysed using Microsoft Excel 2007 and SPSS.

1. Public sector inefficiency to successfully execute PPPs
2. Confusion over government objectives and evaluation criteria
3. Rehabilitation and resettlement of project-affected persons;
4. Inefficient and inequitable allocation of risk in PPPs
5. Weak regulatory and institutional frameworks
6. Strong public opposition to some privatized projects
7. Higher charge to direct users
8. Lack of experience and appropriate skills
9. Inadequate diligence and appraisal by lenders
10. Force majeure in PPPs
11. Gap between the policy of central government and implementation by local government
12. Land selection and acquisition
13. Lack of coordination between government ministries/departments
14. Delay in issue of clearances by authorities
15. Over-leveraged debt and paucity of equity
16. High customs duties on infrastructure equipment
17. Aggressive bidding by developers

3.1 Calculation of Relative Importance Indexes

Shash A.A (1993) used the Relative Important Index (RII) approach to

examine the data in order to assess the relative difficulty factor in PPP projects To calculate the rankings of the various elements, the previously described five-point scale was translated into relative significance indices for each factor. These rankings allowed for a comparison of the relative importance of the elements as assessed by the respondents.

The relative importance index (RII) was calculated using the formula:

Relative importance index = Σ W / (A x N)

Where W denotes the scores assigned by respondents to each variable and, range from 1 to 5. 'A' denotes the maximum weight (in this example, 5) and N is the total number of responders. The Relative Important Index value will range between 1/A (=0.20) and one.

4. Data Analysis and Discussion

Hundred and Forty respondents were contacted out of which a total of 94 completed questionnaires were collected, as shown in Table 2, 31 (33 per cent) engaged in the public sector 25 (27 per cent) engaged in the private sector, 18 (19 per cent) and 20 (21 per cent) from Govt./semi Govt and Research & Academic respectively

Source: compiled by author from literature

The sample of respondents comprised professional individuals from infrastructure industry. According to Table 2, 66% had more than five years of work experience, with over 28% having more than ten years of industrial experience. Overall, the respondents' backgrounds indicate their reliability in giving relevant data for the research.

Table1. Evaluation of Challenging factors in execution of PPP in construction projects

Type of organisation	Frequency	Percentage
Public	31	33%
Private	25	27%
Govt. /semi Govt	18	19%
Research & Academic	20	21%
Total	94	100%
Years of working experience	**Frequency**	**Percentage**
0-1	13	14%
1-5	21	22%
5-10	34	36%
Above 10	26	28%
Total	94	100%

Source: compiled by author from literature

4.1 Overall perception concerning the challenges of PPP

As indicated in Table 3, the mean scores of the seventeen barriers factors range from 4.1 to 2.93, indicating that each element is of varying relevance as seen by the total respondents as well as by each set of respondents as a limitation to the effective implementation of PPP in India. The two sub-sections that follow address the results of the overall respondents and the variations in perceptions across the categories of respondents, respectively.

4.2. Analysis of Variance

One-Way Analysis of Variance (ANOVA) was used to measure perceptions about challenges of PPP mode, Having enough understanding in the domain of PPP projects, experience in conducting PPP research, or having closely studied the growth of PPPs among diverse interest groups Following an examination of the respondents' perceptions of

Table 3. Mean Score, Relative importance index and ranking of challenging factors in PPP construction projects.

S.No.	Major Impediments	Mean	Std. Deviation	Index	Rank
1	Inefficient and inequitable allocation of risk in PPPs	4.1	0.893	0.82	1
2	Over-leveraged debt and paucity of equity	4.05	0.834	0.81	2
3	Weak regulatory and institutional frameworks	3.93	0.997	0.78	3
4	Delay in issue of clearances by authorities	3.83	0.851	0.76	4
5	Land selection and acquisition	3.77	1.031	0.75	5
6	Force majeure in PPPs	3.67	0.998	0.73	6
7	Charge to direct users	3.6	1.034	0.72	7
8	Aggressive bidding by developers,	3.53	1.023	0.70	8
9	Gap between the policy of central government and implementation by local government	3.46	1.074	0.69	9
10	Lack of coordination between government ministries/departments	3.18	1.126	0.64	10
11	Public sector inefficiency to successfully execute PPPs	3.17	1.023	0.63	11
12	Confusion over government objectives and evaluation criteria	3.14	1.084	0.62	12
13	Strong public opposition to some privatized projects	3.11	1.042	0.62	13
14	Rehabilitation and resettlement of project-affected persons	3.09	1.206	0.61	14
15	Lack of experience and appropriate skills	3.05	1.265	0.61	15

16	Inadequate diligence and appraisal by lenders	2.93	1.148	0.58	16
17	High customs duties on infrastructure equipment	2.8	0.946	0.56	17

Source: compiled by author from literature

Table 4. Analysis of Differences between the groups with respect to Perception of challenges of PPP

Challenging factors	Public	Private	Govt. /semi Govt.	Research & Academic	Total	ANOVA	
						F-value	Sig. level
Public sector inefficiency to successfully execute PPPs	2.87	3.52	2.89	3.45	3.17	2.993	**0.035****
Confusion over government objectives and evaluation criteria	2.94	3.56	2.5	3.5	3.14	5.027	**0.003***
Rehabilitation and resettlement of project-affected persons	2.94	3.16	3.44	2.9	3.09	0.877	0.456
Inefficient and inequitable allocation of risk in PPPs	4	4.12	4.06	4.25	4.1	0.329	0.804
Weak regulatory and institutional frameworks	3.74	4.12	3.78	4.1	3.93	1.003	0.395
Strong public opposition to some privatized projects	3.26	2.88	3.22	3.05	3.11	0.699	0.555
Charge to direct users	3.48	3.6	3.67	3.7	3.6	0.213	0.887
Lack of experience and appropriate skills	3.1	3	2.61	3.45	3.05	1.437	0.237

Inadequate diligence and appraisal by lenders	3.48	3.68	3.72	3.9	3.67	0.739	0.531
Terrorism and guerrilla attacks	3	3.28	2.61	2.65	2.93	1.712	0.17
Gap between the policy of central government and implementation by local government	3.39	3.56	3.11	3.75	3.46	1.248	0.297
Land selection and acquisition	3.81	3.68	3.72	3.85	3.77	0.125	0.945
Lack of coordination between government ministries/departments	3.03	3.32	2.89	3.5	3.18	1.256	0.294
Delay in issue of clearances by authorities	3.68	4.2	3.33	4.05	3.83	4.965	**0.003***
Over-leveraged debt and paucity of equity	4.13	4	3.89	4.15	4.05	0.434	0.729
High customs duties on infrastructure equipment:	2.68	2.88	2.78	2.9	2.8	0.304	0.822
Aggressive bidding by developers,	3.58	3.44	3.61	3.5	3.53	0.129	0.942

Source: compiled by author from literature

problems, as shown in Table 4, it is sought to determine whether there is any substantial variation in perception across stakeholders.

From above Table 4, it is observed that out of 17 factors, only 3 factors were perceived differently by the four groups of respondents. The three factors i.e., Public sector inefficiency to successfully execute PPPs, Confusion over government objectives and evaluation criteria and Delay in issue of clearances by authorities are perceived differently among public, private,Govt. /semi Govt and Research & Academic respondents

4.3. Repeatedly issues and challenges of PPP in India

Table 2 and figure 1 depicts that the top five constraints in implementation of PPP approach in construction projects based upon the perception of respondents. Out of seventeen factors, the five factors, 'Inefficient and inequitable allocation of risk in PPPs', 'Over leveraged debt and paucity of equity', 'Weak regulatory and institutional frameworks', 'Delay in issue of clearances by authorities' and 'Land selection and acquisition', were perceived as the significant challenges in using PPP approach.

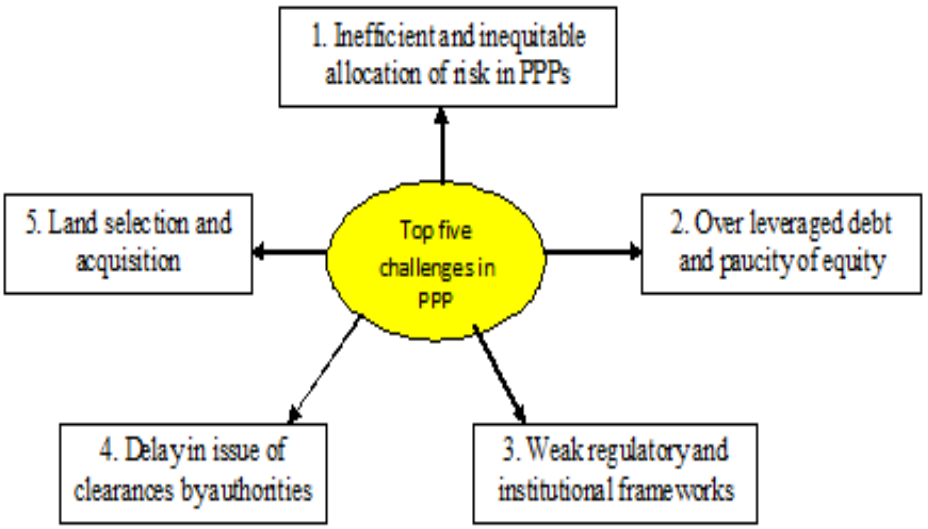

Figure 1. Top five constraints in implementation of PPP approach

1. Inefficient and inequitable allocation of risk in PPPs:

According to Payson and Steckler (1996) "Public-private partnerships are often described as innovative, collaborative undertakings in which the public and private sectors share the risks, responsibilities, and rewards". Distribution and allocation of risk is a major concern in the management

of risk in PPP. (Li, B., Akintoye. A.Edwards, P.J. Hardcastle C. 2005). A fundamental indicator of assignment between the public and private sectors is highlighted risk allocation. It is crucial that the risk distribution is entirely communicated as well as understood among the parties. According to Shen, L.Y., Platten, A., Dang, X. 2006, "Risk allocation being one of the advantages of PPP because public and private sector enable to share the risk."

Additionally, risk allotment in public-private setup is linked with contract negotiation; the outcome of the allotment is a crucial requirement for the successful development of PPP projects. Wang, W., Dai, D. (2009) stated in their study there are 3 principles in structuring PPP projects; Public sector sponsor must point out the main risks, analyse the degree of acceptability of each risk and distribute risk among the parties involved. Formal risk management has been an increasingly important aspect of the construction project management activity in recent years. It is critical to project success in that it provides a technique for maintaining or improving construction value for money. (Flanagan, R. & Norman, G. 1993).

2. Over leveraged debt and scarcity of equity:

One of the major risks in the implementation of Indian BOT road projects has been recognised as a delay in financial closure in PPP projects. (Thomas et al., 2003). One of the major reasons for the delay in financial closure was due to delays in debt syndication because lenders were not comfortable with the proposed projects, and lenders were afraid of high-risk investments. (Thomas, 2003). It has also been suggested in Merna and Khu (2003) that there are instances where projects have not achieved financial closure in the UK, even after being awarded, because of a lack of understanding of debt financing techniques and their associated risks. To decide whether or not to advance project finance loans, lenders evaluate the technical feasibility, economic feasibility, and project cash flow capacity of a project. (Finnerty, 1996).

Since debt financing plays an important role in public-private partnership projects and focus is increasingly being placed on risk management standards from a debt-financing standpoint, it is very important for sponsors to understand the risk profile of PPP projects from a debt-financing perspective. Several macroeconomic and institutional factors limit India's ability to build the infrastructure it requires. A lack of risk capital, limited long-term borrowing capabilities in the domestic banking sector, and high public debt levels at around 80% of GDP, restrictive exposure norms for commercial banks in the infrastructure sector, as well as regulatory and other constraints pose challenges to access to debt from insurance companies and pension funds.

3. Weak regulatory and institutional frameworks:

In India, most infrastructure projects take longer than expected to complete. This is mostly due to an inefficient approval process and an inadequate

regulatory framework. Projects requiring infrastructure clearances at multiple levels of government lack a "common regulatory philosophy to guide the evolution of regulatory institutions in India" (Government of India, Planning Commission, The Secretariat for the Committee on Infrastructure, 2008). Independent Regulatory Institutions have only ever been used in the telecommunications and electricity industries. Moreover, the airports and ports sectors have their own regulators; Aera is the new regulator for the airports and Aera is the new regulator for the ports. Ministry at the centre or state department is still in charge of the rest of the sectors. Despite the existence of independent regulators, there are significant differences in scope, rules, practices, and legitimacy among sectors.

4. Delay in issue of clearances by authorities:

In India, infrastructure projects require active cooperation between several departments. Different departments are responsible for different activities, such as project implementation, shifting power lines, water lines, sewer lines, cutting trees, and obtaining environmental clearances, among other things. Therefore, timely project delivery is highly dependent on the coordinated efforts of all departments; laxity by one department or dereliction by a few officials can stall the entire process. "However, interdependence of efforts means that it is easy for departments to shirk responsibility and pass the blame on to others. So, in addition to intra-organisational failures, infrastructure projects in India are vulnerable to inter-organisation failures" (Singh, 2010). The World Bank (2006) reports that an infrastructure project can take anywhere from 18 months to four to five years to obtain all the necessary approvals in India. There has been little success with state governments establishing "single window clearances," since most state-level approvals go through multiple clearances at different levels.

5. Land selection and acquisition:

Land acquisition is considered as the biggest impediment for infrastructure development projects in India. This is due to the lack of proper title deeds and additionally due to the reason that farmers are against the use of land for industrial and infrastructural purposes. In majority of the infrastructure projects, project initiation or project implementation is delayed for the lack of land clearances. Seventy percent of the country's highway building program has been delayed by difficulties acquiring land and then obtaining permission to use it for its intended purpose. A major roadblock for infrastructure development is land acquisition. (Nataraj, G. 2014).

Distrust and disputes are likely to result from local communities feeling left out of the development process. Moreover, rehabilitation packages are not meticulously planned nor are they executed efficiently. For example, by the time financial closure of a highway project is achieved, the National Highway Authority of India will bid out the project even with only 10-15% of the land acquired. Almost 70% of PPP road

projects experience a delayed financial closure and construction start.

The Chairman of India's Planning Commission, Montek Singh Ahluwalia (2011), expresses concern about this major problem that requires immediate attention. He draws attention to two major issues: 1) The "hopelessly outdated" Land Acquisitions Act and 2) opaque mechanisms for granting land development permissions, which eventually lead to intuition of corruption and cronyism. The difficulties are exacerbated further by a lack of coordination among central bodies, states, and local authorities.

5. Conclusion and Suggestion

The combined deficit of the federal and state governments in India is approximately 10% of GDP. The Fiscal Responsibility and Budgetary Management Act places restrictions on government borrowing. As a result, state participation in infrastructure financing is inevitably limited, opening the door to novel approaches such as public-private partnerships (PPPs).

While the public-private partnership (PPP) model has been relatively successful in many advanced countries, it is still in its infancy in India, where several projects in various sectors have recently been implemented. However, due to the effects of COVID-19 on economic activity, PPP projects (particularly in the transportation sector) will face significant revenue generation challenges. The overall results show that the top five constraints for speeding up PPP in India are 'Inefficient and inequitable allocation of risk in PPPs,' 'Over leveraged debt and paucity of equity,' 'Weak regulatory and institutional frameworks,' 'Delay in issuing clearances by authorities,' and 'Land selection and acquisition'.

The financial losses incurred by the Project Company as a result of COVID-19 should be fairly assessed. If the government's policy decision is to keep the service and the project running, the contract's financial equilibrium may need to be rebalanced. Furthermore, understanding stakeholder perceptions is critical because successful PPP implementation necessitates commitment from the contracting parties. A review of international best practices in Public-Private Partnerships (PPPs) identifies a number of critical issues that public authorities must address when considering their use in the procurement of public infrastructure projects. The results of this study add to the literature in the field of PPP. Moreover, it also contributes to practice in the PPP. The government, public sector providers, and private sector providers can take the necessary steps to overcome limitations that limit the adoption of PPPs in order to ensure Value for money.

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