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Issues and Challenges in Infrastructure Project based on PPP Model

Antara Mishra^a

^aUniversity of Petroleum and Energy Studies, Dehradun, India

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World Economic Forum Global Competitiveness Report 2019, depicts India ranked 68 out of 140 countries in terms of infrastructure quality with 'inadequate supply of infrastructure' thus listing as the most difficult factor in doing business. The limited resources, equal distribution of risk allocation and mitigation, contradictory and complementary roles, and the need for different institutional mechanisms in infrastructure projects are some of the factors incentivizing Public-Private-Partnership projects in India. Nevertheless, a slow-down is caused in the model due to a combination of factors including weak regulatory and institutional framework, delay in clearance issuance, social factors, inadequate risk allocation, etc. which come with social, environmental, and economical after-effects which need to be deliberated, as they could prove detrimental to the project. The paper intends to focus on the challenges faced in Infrastructure Projects, by both the Sector and Private Parties, in the PPP model in the most prominent sectors. This shall be done with the aid of Case Studies of both successful projects, such as the Karnataka Urban Water Supply Improvement Project, and the failed ones. Various measures have been taken by Union Government to facilitate the working of the PPP Model- Viability Gap Funding, PPP structuring toolkit, establishing Appraisal Committee, etc. regardless of which no robust revenue stream has been established. The paper will throw light on reports like the Kelkar Committee Report, World Bank Report, and Annual Finance Ministry Report, which illustrate the Government efforts and result ratio and identify the area of the problem. This will also allow us to identify the reason for the lack of Foreign Investment which holds back the ease of business in India. The paper will draw a conclusion and suggest a general and project-specific solution.

Keywords: *model, viability gap fund, ease of business, kelkar committee report.*

INTRODUCTION

The economy and infrastructure of India are inseparable aspects. Infrastructure has been a demanding sector and has been actively dealt with by Government, leading to unlocking a vast arena of an economic boost to the society. India is planning to spend a hefty sum of \$1.4 trillion on Infrastructure for the years 2019-23, divisible accordingly among the various sectors. As per the Harmonised Master List updated by the Government, the Infrastructure sector includes the subject of energy, communication, water, sanitation, and commercial and social infrastructure, with the addition of logistics to the sector. India is requiring Rs 50 trillion of investment by the year 2022¹ for sustainable development. Under the Union Budget of 2020-2021, Government has divided the investment into sub-sectors of Infrastructure as Rs 1,69,637 crore in logistic infrastructure, Rs. 38,637.46 crore for communication infrastructure, Rs 72,216 crore for railway infrastructure, and Rs 50,040 crore have been allocated to the Ministry of Housing and Urban Affairs. This increased focus on investment in infrastructure is attracting both domestic and foreign investment and giving incentives, providing a lower cost risk involvement.² The market has changed and reformed over the years which has led to the bigger and more active participation of private and foreign parties and it has evolved as an open market. With the aid of this modification, there have been numerous successful ventures which have permanently evolved economy and infrastructure, such as Metro rails, solar parks, green airport, Yamuna Expressway, Sardar Sarovar Dam, etc. The government has been coming up with innovative technological advancements and investment schemes. The loss occurred due to the fragmented allocation system being dealt with too to facilitate a speedy project delivery system. Tax holidays and amendments providing better dispute resolutions have been introduced to attract investment, with evidential progress. Nevertheless, despite the measures being adopted for smooth functioning, Infrastructure Sector is still lagging behind

¹ 'Infrastructure Sector in India' (IBEF Campaign, March 2020) <<https://www.ibef.org/industry/infrastructure-sector-india.aspx>> accessed 15 May 2022

² Aakanksha Joshi & Sujain Talwar, Infrastructure in India' (*Economic Law Practice*, 17 June 2017) <<https://elplaw.in/leadership/infrastructure-in-india/>> accessed 15 May 2022

and needs greater focus. The major issues are lack of investment, strict norms hindering the appeal of projects, time-consuming allocation, complex and fragmented nodal steps, along with environmental and social backlashes.

EVOLUTION OF THE PPP MODEL

Public-Private partnerships evolved in the Railway Sector of India in the 19th Century by the British organisations which needed better logistic capacities in India. They are long-term contracts for planning, financing, working, and executing Governmental services and they might include 'governmental authority such as for toll collection, besides enabling private control over monopolistic services'³. The Economic Survey of the year 2009-10 mentioned "PPPs provide a variety of benefits in terms of investing public capital to draw in private capital and undertake a bigger number of infrastructure projects, introducing Private sector experience and cost-reducing technologies further leading to efficiencies in operations and maintenance. Hence, other than financial implications, PPPs are unit tools to meet the fundamental obligations of governments to produce higher infrastructure services (with massive externalities), by increasing the answerability of the private sector as a service supplier."⁴ The development of the PPP model in modern free India commenced in the year 1991 with policies introduced by the Government for private participation in the field power sector. The Ministry of Power paved way for private parties via notifications for the generation of companies in the sector of electricity. This was served in the form of the Electricity Laws (Amendment) Act of 1991 which allowed private parties to build, operate and maintain power plants of any size, entering into a long-term agreement with the State Electricity Board (SEBs).⁵ The SEBs regulated the flow of electricity. This was later strengthened by Electricity Act, 2003. Nevertheless, under post-1991 Government policy, the telecom sector was also exposed to private participation. Further developments in telecommunication sectors, such as the adoption of intra-circle mergers and acquisitions, acceptance of unified access amenities, licensing regulations, etc. have provided a boost for private ventures in the sector. The Airport

³ Samta Singh, 'Evolution and Need for PPP in India' (2017) 3 Imperial Journal of Interdisciplinary Research

⁴ *Ibid*

⁵ Mohua Mukherjee, *Private Participation in the Indian Power Sector* (World Bank 2014) 19-24

Authority Act of India was amended in the year 1994 to allow airport-related activities by a private partnership. This led to an increase in employment, tax returns, up-gradation of the quality of airports, and improved accessibility to remote locations. Later on, due to constraints relating to public funding, the Highway sector had to turn up to private participation in the development of national highways in 1995. The National Highways Act, 1956 was amended in the same year for the development, maintenance, and operation of highways by private players as per BOT (toll) and BOT (annuity) models (later discussed in the paper).⁶

To facilitate all this, the concept of the Viability Gap Fund and Scheme for Financial Support to PPP in Infrastructure was introduced. In the year 1997, on recommendations of the 'Expert Group on Commercialization of Infrastructure Projects', a company was formed to channelise private funds into public commercially viable projects. The formation of this company, 'Infrastructure Development Finance Company' was an important step for acknowledgment of participation of private players in public sectors for utilization of their expertise, technology funds, and management skills. Other legislation led to similar effects, incorporating private parties in different subsectors of infrastructure over time.⁷

NEED AND ADVANTAGE OF PUBLIC-PRIVATE-PARTNERSHIP

PPP models allow private partnerships in public projects. This allows newer technology inclusion and a quality framework. The public sector is not capable enough to meet the infrastructure/needs and available capital. This increases the dependability of public on private players for bridging the gap by coming up with better financial solutions and capital.

There is risk allocation to both sectors. All the loss is not burdened on the private entities and neither the Government has to pay up from the national treasury. The technological and establishment risk is also shared as a private entity is better at faster deliverance of project to

⁶ Gajendra Haldea, 'Public Private Partnership in National Highways: Indian Perspective' (*International Transport Forum*, 28 September 2012)

<<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP201311.pdf>> accessed 15 May 2022

⁷ Gajendra Haldea, 'Investment in Infrastructure during the Eleventh Five Year Plan' (*Gajendra Haldea*, January 2021) <<http://www.gajendralhaldea.in/download/Investment-in-Infrastructure-during-the-Eleventh-Plan.pdf>> accessed 15 May 2022

Government. The allowance of PPP also helps to attract Foreign Direct Investment for Infrastructure ventures. This boosts overall available capital for projects. PPP also helps increase in employment rate, and increase tax returns for Government, along with sector-specific growth which has been observed in cases of private parties' involvement. To sum this up, PPP opens the door for additional significant capital, with mitigation of public spending. It leads to better resource allocation and utilisation along with quality management and results. Ease of doing business is facilitated, giving a push to small enterprises and businesses.

WORKING ON PPP MODEL

The private party is selected on basis of open-competitive bidding and is paid according to the performance of the party. Generally, a private company consortium (a lender, maintaining company, and contractor) forms a special purpose vehicle (referred to as **SPV**) that enters into an agreement with the Government and sub-contractors for the development and maintenance of the public sector asset.

According to the Fiscal Affairs Department of IMF, there are 11 PPP schemes/models.

The private party designs build develops and operates the goods and services as a result of the project and is not obligated to transfer ownership to the Government

BOO build-own-operate

BDO build-develop-operate

DCMF design-construct-manage-finance

In these models private parties design and develop the asset and then the ownership is transferred to Government, with future scope of leasing the asset by a private party

BTO build-transfer-operate

BROT build-rent-own-transfer

BOT build-operate-transfer

BOOT build-own-operate-transfer

BLOT build-lease-operate-transfer

These are applicable for brownfield projects where a pre-existing Governmental asset is leased or bought by the party to modernise it, expand and renovate the asset. In these models, there is no obligation on the party to transfer ownership to Government.

LDO lease-develop-operate

BBO build-buy-operate

WAA wrap-around-addition⁸

A PPP Appraisal Committee has been set up to carry out the process of approval of the PPP project. It has to ensure the appropriate mechanism and guidelines.

Phase 1 of the Procurement process involves the identification of the project. The sustainability and technical procedure are taken into consideration to avoid loss of resources. The scope of the project is analysed, along with its economic viability. The public need is assessed and out of various options, the screening process is executed. PPP worthiness is also checked in the phase.

Phase 2 is the appraisal and preparatory phase. The environmental impacts are considered, socio-economic assessment is done, commercial and financial feasibility is checked and due diligence is carried out. a procurement plan is also laid down in this phase.

Phase 3 involves a tender process if defined which best fits the requirement of the project. The structuring and drafting of the project are completed and sent for internal approval.

Phase 4 is the tender phase which completes the awarding of the contract. The best proposal in the bidding process is selected in an open competitive market and a contract is executed.

⁸ L. Lakshmanan, Public-Private Partnership in Indian Infrastructure Development: Issues and Options' (*Research Gate*, January 2008) <https://www.researchgate.net/publication/283005179_Public-Private_Partnership_in_Indian_Infrastructure_Development_Issues_and_Options> accessed 15 May 2022

Phase 5 is the contract management phase. This is the main construction phase which is about managing contract administration, governance, delays, cost overruns, communications and commissioning, and the start of operations.

Phase 6 marks the completion of the contract. This involves claims, changes, and disputes occurring out of the contract and the ownership appropriation at the end of the contract.

FINANCING OF PPP PROJECTS

There are different sources of financing for PPP projects. Traditionally, the project must be financed by the private party, but concession has been granted to this methodology and in some cases, Government shares the cost incurred. Government funding- in certain cases, Government opts to provide the total capital funding and the private party is obligated to carry out the management work, bringing in the expertise and efficiency. This can be facilitated by the private parties by 'on-balance sheet financing' where the private party brings in capital based on the 'on-balance sheet' cost of the operator, rather than basing the funding on the project itself. This lowers the bar for the party as well as helps the Government.⁹ Project Financing can be done by SPV. This is a risky method and requires careful due diligence. The payback is done once the construction is completed, from the tariffs on the enjoyment of the asset. Financing can also be helped by administrative financing which is structured by the Government through various developments. Examples of this are **Infrastructure Debt Funds** which derive investment via commercial banks and NBFCs, pensions and insurance funds and institutional investors, **Real Estate Investment Trusts**, **Infrastructure Investment Trusts** which are trust-based structures that have similar working to mutual funds, issuance of bonds through **Urban Local Bodies**. The **Viability Gap Funding Scheme** has been adopted to provide funds in form of grants to PPP-based projects. It provides funding for up to 20 percent of the total cost of the project. Further 20% of the Total Project Cost can be granted. **Indian Infrastructure Project Development Fund (IIPDF)** was formulated with the function to fund up to 75% of the cost incurred towards PPP Project development. Foreign Direct Investment is

⁹ 'Main Financing Mechanisms for Infrastructure Projects' (*The World Bank Group*, 22 October 2020) <<https://ppp.worldbank.org/public-private-partnership/financing/mechanisms>> accessed 15 May 2022

also a source of funding. 100% FDI has been allowed for most of the sectors, not requiring prior approvals. There are other Multilateral Institutions that provide capital in India, such as World Bank, International Monetary Fund, Asian Development Bank, International Finance Corporation, etc.

KARNATAKA URBAN WATER SUPPLY IMPROVEMENT PROJECT

This is a case study of the PPP project of the year 2005 which focused on a water supply service delivery improvement program. The Government of Karnataka aimed to improvement in the supply of water in all Urban Local Bodies of the state. The focus was on the quality of service and sustainability, and this project was a part of the larger goal. This project was designed and implemented with the assistance of the World Bank, with the aim to strengthen the sanitation and supply of clean water in Karnataka. The Nodal Agency of this project was KUIDFC or Karnataka Urban Water Sector Improvement Project, which approves the external funding in the State.

Among all the ULBs listed, the three ULBs selected for implementation of the Project were: Belgaum (currently known as Belagavi),

Gulbarga (currently known as Kalaburagi) and

Hubli (currently known as Hubballi-Dharwad).

The aim of the project was to target these 3 ULBs and provide bulk water supply and improve the overall distribution system in the same. 24*7 constant water supply was aimed to be provided to the residents of these sectors.

A pilot project selected by three municipal corporations in five demonstration zones

Karnataka has been conquered. The project involved refurbishing/rehabilitating the current project. In the distribution network for the selected five demonstration zones in the three local urban bodies, the operation and management of water distribution systems in these zones are followed by a PPP system basis. The venture was organized with the aim and a private

engineer was recognized for undertaking the required recovery works, and for undertaking the operation and maintenance (O&M) of the circulation network at the time of the agreement. The financing for capital speculation required that the restoration works be remunerated by the World Bank through KUIDFC, and the private designer be given a charge to undertake the O&M movement. The undertaking was set for an estimated time period of 3 and a half years, comprehensive of both restoration works for the distribution networks and the activity and upkeep of the conveyance framework.

There were 3 parties involved in the framework:

- Beneficiary party: in the given case they were the three ULBs, that is, Belgaum, Hubli-Dharwad, and Gulbarga
- Sponsoring party: here the parties bringing in the capital required are the sponsoring parties, which are KUIDFC (Karnataka Urban Infrastructure Development and Finance Corporation) and KUWSDB (Karnataka Urban Water Supply and Drainage Board), via World Bank
- Developer: this is supposed to be the private party who is responsible for operations and rehabilitation

As this is a brownfield project, the developer has not had to work from the scratch. His job is to replace the water distribution pipelines, install the bulk water reading meter as well as meter at the consumers' end, and set up an advanced system for the billing process. All these activities cost a sum of INR 42 crore which was funded by KUIDFC. The other function of KUIDFC and KUWSDB was to approve the detailed design of the capital works which was presented to them by the private developer. The performance goal and target and quality must be pre-approved and must not be carried out prior to the nod of these establishments.

The assessment of the project was taken up by Tata Consultancy Engineering. The problem area was identified, capital investment was calculated and the financial capacity was defined. The procurement stages were carried out, the first being the Request for Qualification and the second being Request for Proposal. Among the 30 bidders, the one that quoted the lowest, i.e.

INR 22 crore, was selected which was the French company Compagnie Generale des Eaux. The developer was given 6 months assessment period which was assigned for the preparation of a draft investment scheme and detailed design. The amount was later capped at INR 42 crore. The developer was supposed to carry out the construction, issue tender, select contractor, and supervise rehabilitation. The developer was also to manage the installation work and provide the service connections to the customers. An efficient working system was to be set up which would be audited by an independent engineer appointed by KUIDFC. After all the rehabilitation work, a period of 2 years was given to the developer for operation and management which majorly consisted of supply of treated water, at the appropriate pressure, checking the leakages, and addressing all the forthcoming complaints. 100 % metering was to be done and loss in process of distribution was to be reduced.

CHALLENGES

Delays occurred due to delays in obtaining a permit from other departments, problems in digging, lack of cooperation from ULBs and lack of information sharing, and unfavourable climatic conditions. Other challenges included :

- The lack of structure in working. The work chronology was not met which caused the delay.
- Resistance on the part of KUDIFC on approval of material to be used for construction work.
- The Volumetric Tariff system was opposed by the public. Thus the socio-economic concerns caused delays.
- Lack of local political cooperation for regularisation of unauthorised connections.
- Non-communication on behalf of ULBs as per the authorised consumers caused a problem in O&M procedures.
- A flat-rate bill had to be generated in the initial stages which caused a loss of returns.

CHALLENGES IN PPP MODELS

In November 2015, Dr. Vijay Kelkar submitted a report based on a study conducted on PPP models. The report analysed the drawbacks and recognised the problem area the same. The committee did the following work (i) reviewing the experience of PPP policy, including the variations in contracts and the difficulties experienced, and (ii) analysing the risks involved in PPP projects in different sectors and the framework of risk-sharing between the project developer and the government, (iii) proposing design modifications to the contractual arrangements of PPPs based on the above; and (iv) proposing measures to improve capacity building in government for effective implementation of PPP projects.

The Committee recommended

Revisiting PPPs: The Committee mentioned that with the consequent growing need for improved infrastructure, it is important for India to develop and mature its model of PPPs. PPP contracts focus more on financial gains. The Committee recommended that the focus should instead be on service delivery for consumers rather than gain oriented. Improving Fiscal reporting practices and monitoring of PPPs were also recommended. Operational efficiencies are the focus and thus state-owned enterprises or public sector undertakings should not be allowed to participate in PPP projects. This leads to an unjust advantage for the public participant. Government must also stick to service providing rather than profit collection. Viability for the project must be assessed before appointing projects, in terms of costs and risks. Furthermore, PPP structures should be avoided pertaining to very small projects.

Risk allocation and management: The Committee suggested that inequitable and inefficient risk allocation might be a big cause of PPP failures. PPP contracts should assure optimal risk allocation among all parties and stakeholders and ensure that it is allocated to the entity that is best equipped to handle and work best under the considered risk. A generic risk monitoring and evaluation framework must be formulated, including all features of a project's lifecycle.

Strengthening policy and governance: The Committee also recommended formulating a PPP law, if feasible. Further, the Prevention of Corruption Act, 1988 was suggested to be amended to differentiate between genuine decision-making errors and defects from acts of corruption by public servants.

Strengthening institutional capacity: The capacity of all stakeholders including authorities, financing agencies, consultants, regulators, etc. was suggested to be upgraded. Institutional capacity-building activities and private investments with regard to PPPs were recommended to be legislated and provided for. Government-independent regulators for sectors that are going for PPPs were suggested to be established. An Infrastructure PPP Project Review Committee was suggested for evaluation, along with an Infrastructure PPP Adjudication Tribunal. A need for an efficient, speedy, and enforceable dispute resolution mechanism was stressed. Special Purpose Vehicles (SPVs) must adhere to rules of corporate governance and financial disclosures as per the Companies Act, 2013.

Strengthening contracts: Due to the long life of Infrastructure Projects, a private developer is at risk of losing bargaining power due to sudden changes in the economy or shifts in policy for the environment. The Committee recommended the protection of private sectors from such unforeseeable incidences. Allowing scope for re-negotiation in contracts post-commencement might remove this possibility. The decision must be based on (i) comparison with the existing fiscal standing of the government prior to the renegotiation., (ii) comparing the financial position of the government at the time of signing the agreement, and (iii) full disclosure of renegotiated costs, risks, and benefits.

An appropriate suggestion mechanism, involving submissions from various consumer groups, potential private providers, and other stakeholders needs formulation. There must be sufficient justification as to the requirement of the project to avoid rendering the private party as a non-performing asset at a later stage due to a lack of objective. The requirements need to be communicated clearly.

All constraints regarding legal requirements, regulatory needs, contractual duties and obligations, environmental sustainability, socio-political requirements, and technical aspects must be identified prior to commencement of the project. Inter-sector effects must be identified too. There must be physical or natural characteristics of a project affecting aspects such as minerals, water, mining resources, etc. A Project management structure needs to be kept at hand at an early stage to prevent later ambiguity. The Steering Committee needs to include key managerial entities from concerned departments, ministries, and implementing agencies.

Transparency of the project aim, procedure, and expectations must be taken care of. Proper disclosure and making them understand the purpose and gain from the project will lessen the social outburst and resentments. Government support in case of land acquisition, capital grant issues, revenue guarantee, foreign exchange risk, loan guarantee, protection against the tariff, etc must be provided. In addition to this, the Ease of Doing Business Index must be taken into account. The procedural fault and delay caused in starting a business must be negated. Legislative roadblock leads to delay and issues in land acquisitions. The existence of different nodal departments and lack of coordination among them is also a factor detriment to business. Due to logistical delays, the projects are left hanging and time expectation is not reached. If the requirements of the index are met, there might be more players involved and greater chances for an increase in private party participation in Infrastructure Sector. The problem with the twin balance sheet problem is also rising. It leads to the accumulation of debt on parties and leads to the inability of loan repayment. The stability of the bank market is threatened due to loan going to Non-Performing Assets which are backed by the Government but has no way of repaying the loans.

CONCLUSION

The major issues hindering the growth of PPP-based models are factors such as global economic falloff, insufficient diligence and appraisal of the developer, delay in issuing clearance and approval, insufficient financial backing, faulty risk allocations, indifferent approaches to model concession agreements (MCAs), uncalculated bidding by developers to attain projects, inadequate dispute resolution mechanisms, social resistance and environmental

issues. There needs to be a strengthening of the financing system. Refined IFCs and IDFs need to be implemented. There are vast resources available in form of FDIs, which need to be paired with strong local partners, improved structured contracts, and increase tax benefits to manifest sustainability for foreign players. Identification of the reason for the delay must be done properly and sanction without fault of parties must be prevented. Issues arising in power sectors due to delays in the approval of power-purchase-agreement, obsolete distribution and transfer systems, fuel supply shortage, and political issues in resource exploration must be dealt with for increasing private participation. The logistic sectors must be made more attractive by the modernisation of ports and curbing land-acquisition issues for airports and roads. Customers shall be communicated well to negate the resistance offered by them. Risk allocation must be balanced and long-term financing should be facilitated. Furthermore, the focus must be shifted from sector-specific projects and directed to the combined progress of more than one field. Projects must also be formulated as per the requirement of the infrastructure and problem-specific and environmental hazards must be removed. Lastly, delay in dispute resolution is one of the most important factors repulsing private parties. Harmonised solutions and speedy resolution mechanisms must be devised. Infrastructure must be a priority sector and special attention must be given as it decides various other factors- economy, logistics, foreign attraction, and assurance of dignified life. The goal must be to make infrastructure ventures financially feasible, economically beneficial, and politically acceptable.