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## Public-Private Collaborations In The Indian Context: A Study

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### Abstract

This paper examines the contemporary scenario of Public-Private Partnership (PPP) projects in India, a strategic approach designed to augment the economic worth of infrastructure outcomes, spanning a diverse range of public sector infrastructure initiatives. Numerous scholars have identified the potential of PPP applications to enhance the efficacy of infrastructure delivery. This study is geared towards a comprehensive assessment of extant research on PPP infrastructure projects, with a particular emphasis on pinpointing prevailing issues. Consequently, our research seeks to facilitate enhanced project accomplishment and diminished project timeline setbacks in the realm of infrastructure development by considering time-to-completion as a pivotal performance metric with direct implications on profitability. Additionally, this paper delves into the pivotal role of the present government in shaping the landscape of infrastructure development.

**Keywords:** Public-Private Partnership, Government Sector, Corporate Sector, Public Works, Economic Advancement

### 1. Introduction

According to the government of India, Public-Private Partnership (PPP) signifies an agreement between a governmental or statutory organization or a government-affiliated entity and a private sector entity. This arrangement is forged to furnish public assets and/or associated services for the collective welfare of the public. It operates through investments made by the private sector entity and often involves the private sector undertaking management responsibilities for a specified duration. Crucially, such partnerships are built on a sustainable risk-sharing foundation with the private sector. Furthermore, the private sector entity is remunerated based on performance, with payments structured to align with established, pre-defined, and quantifiable performance benchmarks.

When governments craft and formalize their PPP policies, they typically establish overarching program objectives. The selection and hierarchical significance of these objectives are inherently linked to the broader policies and priorities of the government. These objectives encompass a range of elements:

1. Facilitating increased investment in infrastructure by leveraging private financial resources.
2. Promoting the adoption of a whole-life-cost perspective in infrastructure considerations.
3. Placing a heightened emphasis on the quality of service delivered to the end-users.
4. Gaining access to supplementary management capabilities by entrusting private entities with the operation of infrastructure.
5. Achieving cost-effectiveness in the provision of both infrastructure and public services.
6. Enhancing transparency and accountability in the delivery of infrastructure and public services.
7. Harnessing the innovation and efficiency offered by the private sector.
8. Initiating economic growth and overall development within the nation.

These objectives collectively guide the formulation of PPP policies, aligning them with the government's overarching policy agenda and the imperatives of infrastructure development. Public-Private Partnership (PPP) embodies the infusion of private capital and expertise into the provision of services that traditionally fell under government purview. A fundamental hallmark of PPPs is the systematic transfer of risk from the government to the private sector, coupled with a commitment to furnish services that are both high in quality and cost-efficient, catering to the needs of both consumers and the government.

These partnerships encompass innovative approaches employed by the public sector to engage with the private sector, harnessing their financial resources and their capacity to execute projects punctually and within budgetary constraints. Meanwhile, the public sector retains the overarching responsibility of delivering these services to the public, ensuring that the public's interests are safeguarded, and simultaneously fostering economic development and elevating the quality of life.

PPP configurations span a diverse spectrum, serving varying objectives and catering to distinct market segments, mirroring the diverse requirements of governments in the realm of infrastructure services.

The economic reforms of 1990 heralded the era of economic liberalization in India, marking a transformative shift in the government's role from being a direct provider to assuming the role of a facilitator. Initially, this transformation took the form of privatization. However, drawing from global experiences, India later embraced Public-Private Partnerships (PPPs). The impediment to privatization stemmed from the private sector's inclination to undervalue social infrastructure, coupled with the substantial sunk costs linked to the provision of vital economic infrastructure.

### **The Emanation of PPPs**

Public-Private Partnerships (PPPs) saw a notable emergence as a vehicle for securing private sector capital and harnessing their management acumen for infrastructure investment. This evolution served two primary purposes: firstly, to continue endeavors where privatization had previously left off, and secondly, to provide an alternative avenue in cases where privatization had encountered obstacles. The emotional state of well-being, on the other hand, is characterized by a spectrum of positive or pleasurable emotions, spanning from contentment to profound elation.

## 1.1 The Contemporary Landscape of PPP in India

### Influence of the Enabling Environment on PPP Initiatives

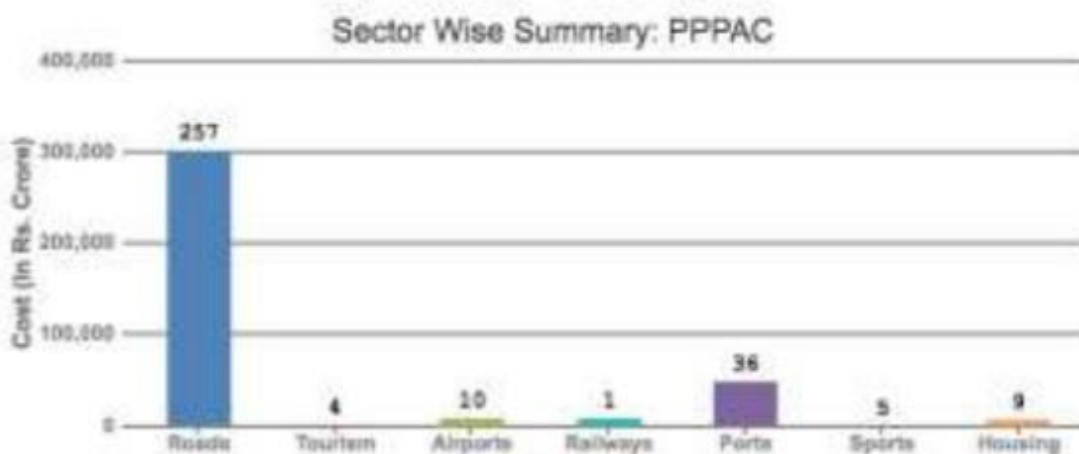
The ramifications of the aforementioned conducive environment swiftly manifested in the Indian economic landscape. This was evidenced by a notable upsurge in the volume of PPP projects and a concurrent increase in investments allocated to infrastructure ventures.

Period	Approximate Infrastructure investments	PPP infrastructure investment INR Billion	Estimated PPP %
10 <sup>th</sup> Plan	9061	2252	25
11 <sup>th</sup> Plan	20542	7429	36
12 <sup>th</sup> Plan	40992	20496	50

Source: Projections for Infrastructure Investment in the Twelfth Five-Year Plan by the Planning Commission

**Table 1:** Expansion in Public-Private Partnership (PPP) Projects and Investment

Table 1 underscores the substantial surge in investment levels within the realm of PPP projects in India throughout the 10th, 11th, and 12th planning periods. Commencing at 25% during the 10th plan, this figure has progressively ascended to a revised estimate of 36% within the 11th plan and is projected to reach an impressive 50% during the 12th plan. These statistics provide tangible evidence that the endeavors aimed at fostering a PPP-friendly environment in India have yielded tangible results, as illustrated by the growing engagement of the private sector in the development of infrastructure.



Source: Department of Economic Affairs, PPP Cell, Infrastructure Division, From, 2005 - 2019

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## 2. Eligible Sectors for Public-Private Partnerships (PPP):

1. Roads and bridges, railways, seaports, airports, and inland waterways.
2. Power;
3. Urban transport, water supply, sewerage, solid waste management, and other physical infrastructure in urban areas;
4. Infrastructure projects in Special Economic Zones and internal infrastructure in National Investment and Manufacturing Zones;
5. International convention centers and other tourism infrastructure projects.
6. Capital investment in the creation of modern storage capacity, including cold chains and post-harvest storage.
7. Education, health, and skill development.
8. Oil/Gas/Liquefied Natural Gas (LNG) storage facilities (including city gas distribution networks).
9. Oil and Gas pipelines (including city gas distribution networks).
10. Irrigation projects (dams, channels, embankments).
11. Telecommunication (Fixed Network) (including optic fiber/wire/cable networks providing broadband/internet).
12. Telecommunication towers.
13. Terminal markets.
14. Common infrastructure in agriculture markets.
15. Soil testing laboratories.

### 2.1 Models of Public-Private Partnership (PPP)

The essence of PPP arrangements lies in the meticulous delineation of risks and their subsequent distribution among the involved parties. These PPP models are ingeniously formulated, contingent on the unique risk-sharing structures adopted in various projects. As a result, a spectrum of PPP models has evolved, each distinguished by the specific risk allocation framework applied. Presented below are the fundamental PPP models commonly observed in the realm of project development.

1. **Build-Operate-Transfer (BOT):** Within the BOT framework, a public entity, typically a local government, extends an initial concession to a private firm, entrusting them with both the construction and operation of the designated project. Upon the completion of a predetermined period, typically spanning two to three decades, control over the project reverts to the public entity.
2. **Build-Own-Operate-Transfer (BOOT):** In the BOOT model, the private sector partner is granted the authority to finance, design, construct, and operate a specific infrastructure component. Furthermore, they have the liberty to impose user fees for a defined period. Subsequently, ownership transitions back to the public sector partner.
3. **Build-Own-Operate (BOO):** Under the BOO scheme, the private sector partner takes on the roles of financing, construction, ownership, and perpetual operation of the infrastructure component. The parameters within which the public sector partner operates are initially established in the agreement and are subject to ongoing regulatory oversight.
4. **Design-Build (DB):** In the DB arrangement, the private sector partner assumes responsibility for both designing and constructing the infrastructure in adherence to the specifications laid out by the public sector partner. Typically, this is done at a fixed price, and the private sector partner shoulders all associated risks.

- 5. Operation & Maintenance Contract (O & M):** Within the O & M framework, the private-sector partner, through a contractual agreement, undertakes the operation of a publicly-owned asset for a predetermined timeframe, while ownership of the asset remains with the public partner.
- 6. Design-Build-Finance-Operate (DBFO):** In the DBFO model, the private-sector partner takes on the roles of design, financing, construction, and operation of a new infrastructure component. This is done under an extended lease agreement, with the infrastructure component eventually reverting to the public-sector partner upon lease expiration.
- 7. Buy-Build-Operate (BBO):** In the BBO arrangement, a publicly-owned asset is legally transferred to a private-sector partner for a specified duration, during which they assume operational responsibilities.
- 8. Build-Lease-Operate-Transfer (BLOT):** Under the BLOT scheme, the private-sector partner is responsible for designing, financing, and constructing a facility on public land held under a lease. They subsequently operate the facility for the lease's duration, after which asset ownership transfers back to the public-sector partner.
- 9. Operation License:** In the Operation License model, the private-sector partner secures a formal license or a legally binding authorization to operate a public service, usually for a specified and mutually agreed-upon duration. This model is particularly prevalent in the realm of Information Technology (IT) projects, where private entities are granted the privilege to deliver and manage IT services for the public sector, ensuring compliance with agreed-upon terms and conditions to safeguard the interests of all stakeholders.
- 10. Finance Only:** Under the Finance Only paradigm, typically employed by financial services companies, the private-sector partner plays a pivotal role in providing essential funding for a specific infrastructure component. In return for this financial support, the public-sector partner incurs interest charges, effectively compensating the private entity for their financial involvement. This model serves as a financial avenue through which infrastructure projects can secure the necessary capital, thereby expediting their execution and development. It is a mechanism that underscores the interplay between the public and private sectors in the context of infrastructure financing.

## 2.2 The Evolution of Public-Private Partnerships (PPP) in India

The origins of Public-Private Partnerships (PPP) in India are somewhat elusive in terms of pinpointing an exact date or year. However, the PPP narrative can be traced back to the latter half of the 1800s, with British investors making substantial private sterling investments in Indian railways. By 1875, British organizations had poured approximately £95 million into Indian "guaranteed" railways.

Alternatively, the roots of PPP in India can also be connected to the early 1900s when private entrepreneurs and business entities began to make their mark in the power sector. In Kolkata, the Calcutta Electric Supply Corporation emerged as a significant player, while in Mumbai, the Tata Group took a prominent role by initiating the "Tata Hydroelectric Power Supply Company" in 1911. These early developments laid the foundation for the evolution of PPP in India, setting the stage for collaborative efforts between the public and private sectors in various domains of infrastructure development.

The saga of Public-Private Partnerships (PPP) finds its origins in the latter half of the 1800s when private sterling interests were first vested in the Indian railways. A significant turning point in the PPP landscape occurred with the introduction of a policy by the Central government in 1991, signaling the opening of doors for private sector involvement in the power sector. This policy change paved the way for independent power producers to actively participate in this domain.

Furthermore, the transformation of the National Highways Act in 1995 marked another pivotal moment, as it granted increased roles to private stakeholders in infrastructure development. In 1994, a significant milestone was reached when licenses were awarded through a competitive bidding process to eight cellular telephone service providers in four metropolitan cities and 14 operators in 18 state circles, ushering in a new era of private sector participation in the telecommunications sector. These key events illustrate the progressive evolution of PPP in India, as the government embraced policies and regulatory amendments to foster collaboration between public and private entities in diverse sectors.

The substantial transformation in the field of Public-Private Partnerships (PPP) was manifestly evident with the establishment of the Infrastructure Development Finance Company (IDFC) in Chennai on January 30, 1997. This initiative was spearheaded by the then Finance Minister, P. Chidambaram, and materialized under the aegis of the government of India. The IDFC's creation was a direct outcome of the recommendations presented by the "Expert Group on Commercialization of Infrastructure Projects," led by Rakesh Mohan. It signified a resolute commitment by the government to actively engage private entities in infrastructure development, harnessing their expertise, financial resources, and managerial proficiency.

Numerous legislative enactments spanning various domains have instigated a significant transformation in the landscape of Public-Private Partnerships (PPP). Notable among these enactments are the Electricity Act of 2003, the amended National Highways Authority of India Act of 1995, the Special Economic Zone Act of 2005, and the Land Acquisition Bill, among others. In addition, the emergence of new funding sources, such as support from the Asian Development Bank (ADB), Viability Gap Funding (VGF), the India Infrastructure Finance Company Limited (IIFCL), and the India Infrastructure Project Development Fund (IIPDF) under the purview of the Economic Affairs Department, has paved the way for the advancement of PPP projects.

Various key governmental entities have actively contributed to this progress, including the Prime Minister's office, the Planning Commission of India, the Department of Economic Affairs, and several service sector departments. Several states have also displayed a strong commitment to PPP, with noteworthy engagement observed in Maharashtra, Madhya Pradesh, Karnataka, Tamil Nadu, Gujarat, Punjab, Delhi, and Andhra Pradesh, among others.

The period spanning from 1997 to 2016 encompasses two decades of PPP evolution, and the current government, under the leadership of the NDA, exhibits a palpable enthusiasm for propelling the PPP agenda toward a more prosperous India.

The available statistics and data unambiguously indicate that the PPP sector in India is experiencing robust and ascending growth. This sector's achievements are further magnified by the government's proactive efforts to stimulate and nurture these collaborative partnerships.

**Roads and Highways:** India boasts the world's second-largest road network, spanning an extensive length of kilometers (3.3 million km). This network shoulders a substantial load, accommodating approximately 61% of freight and 85% of passenger traffic. A considerable portion of highway development is earmarked for execution through public-private partnerships. Notably, numerous high-traffic segments have already been entrusted to private entities based on the Build-Operate-Transfer (BOT) model, with successful implementation through both the annuity and upfront/lumpsum payment models. Opportunities for investment abound in diverse projects tendered by the National Highways Authority of India (NHAI) under the National Highway Development Program (NHDP). Contracts range from construction-oriented to BOT-based, contingent on the specific section being tendered. This landscape includes initiatives such as the Prime Minister's Rural Roads Program, National Rail Vikas Yojana, National Maritime Development Program (NMDP), and airport expansion programs.

One noteworthy illustration of India's pioneering efforts in Public-Private Partnership (PPP) is the Delhi-Noida Bridge Project 49, a substantial US\$100 million endeavor. Implemented on a Build-Own-Operate-Transfer (BOOT) framework with a 30-year concession, this project stands as India's premier PPP initiative in the realm of infrastructure development.

**Railways:** India's railway network ranks as the fourth largest in the world and the second largest in Asia, drawing substantial global recognition for its remarkable transformation into a profitable entity. Notably, during the fiscal year 2008-09, investments in Indian Railways amounted to a substantial USD 7.91 billion. The Indian Government is actively pursuing the expansion of the railway network to bolster capacity for domestic cargo transportation. A significant investment of approximately Rs. 22,000 crore (equivalent to USD 4.525 billion) is anticipated to be channeled into this expansion initiative. This endeavor underscores the government's commitment to enhancing the efficiency and effectiveness of the country's vital railway infrastructure.

**Power:** Based on the currently accessible data, India's total electricity demand is anticipated to exceed 950 GW. The Planning Commission of India has outlined a projection of Rs. 171 billion in investments in the power sector, with an estimated Rs. 60 billion originating from private sector sources. According to Sushil Kumar Shinde, the Union Power Minister, the future investment demand in the power sector is in the vicinity of Rs. 300 billion. To fulfill this objective, foreign direct investment through the automatic route is also being actively pursued.

**Urban Infrastructure:** The development of urban infrastructure pertains to the establishment of elements like urban road networks, urban transportation systems, water distribution, sewage facilities, effective waste management, traffic management structures, and the rejuvenation and redevelopment of informal settlements. The municipal authorities in urban and city regions face a continual financial requirement to undertake these essential tasks. The evolving demographic patterns of India, marked by population shifts and a growing urban populace, have given rise to an enduring necessity for urban amenities such as road networks, clean water access, sanitation services, efficient waste and garbage handling, and various other civic facilities.

**Ports:** The Indian government is formulating a fresh approach to stimulate private sector engagement in the advancement of port-related endeavors and functions. Several international port operators have been extended invitations to participate in competitive bidding processes for Build-Operate-Transfer (BOT) terminals, where revenue-sharing arrangements are the focal point. To enhance infrastructure at the country's 12 major ports, the Indian government has instituted the National Maritime Development Plan (NMDP). A substantial project with an estimated value of Rs. 41,200 crores (equivalent to US \$ 5 billion) is in progress, aimed at constructing 6-lane roads spanning a total of 6,500 km along National Highways. The project is founded on the Design-Build-Finance-Operate (DBFO) framework.

**Airports:** There is a substantial need for investments in aviation infrastructure. Projections indicate that both passenger and cargo traffic are anticipated to experience Compound Annual Growth Rates (CAGRs) of 15% and 20%, respectively, in the upcoming years. Presently, approximately 60% of domestic passenger traffic is handled by Indian private airlines such as Sahara, Jet Airways, Spice Jet, and Kingfisher. In an effort to align with international benchmarks, the government is actively concentrating on the imminent development and modernization of airports.

**Development of Social Infrastructure:** While the collaborative efforts between the public and private sectors have yielded notable successes in the realm of economic infrastructure, a different narrative unfolds in the context of social infrastructure. Sectors like education and healthcare still offer significant potential for such

partnerships. The statistics outlined in Tables 4 and 5 unequivocally reveal that, both in terms of the number of projects and their monetary value, the education and health sectors collectively account for just 25 projects out of a total of 758 projects, representing a mere 0.96% share in value. Consequently, these sectors find themselves trailing at the lower end of the spectrum when it comes to participation in Public-Private Partnerships (PPP).

### 3. Hurdles in Public-Private Partnerships (PPP)

Each PPP agreement is inherently distinctive, with no two contracts being identical. Consequently, standardizing a universal PPP format is a formidable endeavor. The complexity stems from the inherent variability in structuring PPP arrangements, with differences arising in terms of the requisite infrastructure's characteristics, the specific sector involved, the chosen model, and numerous other factors. Notably, transparency issues have been extensively debated in the realm of PPPs, despite concerted efforts to enhance transparency in the bidding and contract award processes.

Numerous obstacles are encountered in the implementation of public-private partnership (PPP) projects:

- 1. Commercial Feasibility:** Ventures like water supply and sanitation schemes have yet to substantiate their financial viability to the public.
- 2. Disparities in Contractual and Capabilities:** Inadequate experience within the partnering entities, especially in the public sector when engaging in such ventures. This results in information imbalances favoring private firms, who naturally leverage their expertise to negotiate advantageous terms.
- 3. Concealed Debt:** From a macroeconomic perspective, PPPs are burdened by hidden financial obligations that must be recognized.
- 4. Risk Transfer:** A new spectrum of risks is transferred from the private sector to the public sector, such as the potential bankruptcy of private entities.
- 5. Emphasis on Economic Gains:** PPP projects tend to prioritize economic aspects, sometimes at the expense of long-term fiscal obligations and the subsequent emergence of concealed debts, which could adversely impact future governments' fiscal flexibility and burden future generations.
- 6. Lengthy Duration:** Typically, the preparation of individual PPP projects may span 2-3 years, contingent on project size and complexity. This prolonged gestation period, accompanied by associated uncertainties, dampens private sector enthusiasm.
- 7. Fracture of Collaborations:** Partnerships may have significantly adverse financial consequences concerning social and environmental aspects.
- 8. Deficiencies in Enabling Policy and Regulatory Framework:** Extensive work is needed to render sector policies and regulations conducive to PPPs. A substantial proportion of these projects operate within states, and without active state involvement, achieving satisfactory outcomes would be challenging.
- 9. Scarcity of Long-Term Financial Instruments:** The market currently lacks adequate instruments and resources to fulfill the long-term equity and debt financing requirements of infrastructure projects.
- 10. Absence of Bankable Projects:** Discovering credible and structurally sound projects remains a formidable task. There is a deficiency of a catalog of credible, bankable infrastructure projects available for private sector financing. While some central and state-level initiatives have been launched to develop PPP projects, these efforts tend to be isolated cases and exhibit notable inconsistency.
- 11. Limited Public Sector Capacity for PPP Management:** Public institutions and officials also encounter limitations in managing the PPP process due to the intricate nature of these projects, which encompass the entire life cycle of infrastructure assets.



#### 4. Benefits of PPP Projects for Government and Private Sector

The "Global Happiness Survey," conducted by market research company Ipsos, identified personal safety, social connections, and a sense of control over one's life as prominent factors contributing to Indians' happiness.

1. Initiation of New Capital Sources
2. Reduction in Direct Government Expenditure
3. Diversion of State Resources for Priority Sectors
4. Enhanced Leverage of Private Sector Managerial Expertise and Innovation
5. Methodical Infrastructure Development
6. Pre-Established Conditions, Specifications, and Agreements before Bidding
7. Equitable Opportunities for Eligible Concessionaires to Engage in Infrastructure Development
8. Predetermined User Charges/Tariffs with Defined Scope for Periodic Adjustments

#### 5. Conclusion

Public-Private Partnerships (PPPs) represent collaborative agreements between the public and private sectors, with the goal of facilitating project development or the provision of services typically within the purview of the public sector. PPPs amalgamate the strengths of both the private partner and the public entity, ensuring the efficient distribution of project-related risks and responsibilities among the parties best equipped to handle them. The government's role in PPP encompasses various aspects, including strategizing PPP development, formulating designs, crafting contracts, securing financing, and implementing vigilant monitoring.

In response to the current challenging business environment, it is imperative to devise new models for Public-Private Partnerships (PPPs). The evolution of the country's PPP agenda is anticipated to be a gradual process. A crucial aspect involves delineating clear distinctions regarding the risks assumed by public and private entities. In a well-structured PPP framework, each party can efficiently fulfill its responsibilities, fostering a mutually beneficial arrangement for both the public and private sectors. Recognizing this reality, the government has been actively working to establish a conducive environment for infrastructure investments in the country. Public-private partnerships have emerged as a highly viable and potentially sustainable means of addressing the pressing need for infrastructure development in our nation.

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