

## **Public Private Partnership Projects in India-An Insight into available Knowledge Products and Learning from Project Development Experience**

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### **Abstract:**

India ranks first in the world in “Investment and Business Climate” for Public Private Partnership (PPP) projects, second in ‘Financing’ and fourth in ‘Regulations’ and fourth overall in terms of having an ideal environment for such projects. For success of PPP projects it is important that proper planning is made from the very conceptualization stage so that all issues are taken care of for its smooth implementation. As such it becomes important that a proper understanding of the core issues of PPP Project implementation and the hindrances in successful development is understood. Here comes the need for a “Knowledge Based Approach” for PPP project which stands on learning from previous experiences in PPP Project implementation and standard procedure for execution. The present paper is an attempt to look into the knowledge products in PPP structuring and analyse the learning experience of professionals engaged in project development and project structuring activities of PPP projects in India. The paper looks into the various factors impacting PPP project.

**Key words:** infrastructure, knowledge products, learning, public private partnership, risk analysis

### **1. Introduction:**

The Public Private Partnership format of infrastructure development has emerged as one of the most feasible, viable and result oriented structure of implementing infrastructure projects in India. According to the World Bank, India is one of the leading countries in terms of readiness for PPP with close to 1500 PPP projects in various stages of implementation. As per the 2018 Infrascope Report of the Economist Intelligence Unit, “Evaluating the environment for PPPs in Asia-Pacific 2018”, India ranks first in the world in “Investment and Business Climate” for PPP projects, second in ‘Financing’ and fourth in ‘Regulations’ and fourth overall in terms of having an ideal environment for PPP projects. According to the Report “PPP in India grew at a rapid pace between 2011 and 2013 but have since been on the decline. A total of 394 projects were awarded during the 2011-13 period, compared to just 263 projects over the past five years. The primary reasons for this decline according to the Report include limited access to finance, aggressive bidding by private contractors, delays in project implementation, and a high incidence of project renegotiation. Within the private sector, a lack of clarity and

weaknesses in the bidding process has resulted in speculation and gambling, leading to aggressive bidding.”<sup>1</sup>

For success of PPP projects it is important that proper planning is made from the very conceptualization stage so that all issues are taken care of for its smooth implementation. As such it becomes important that a proper understanding of the core issues of PPP Project implementation and the hindrances in successful development is understood. Here comes the need for a “Knowledge Based Approach” for PPP project which stands on learning from previous experiences in PPP Project implementation.

A look into the implementation of PPP Projects in India has shown that the success and failures is dependent on the activities taken up at the various phases of project implementation; a PPP Project primarily has the following phases from the Author’s experience in PPP project development;

- a) Project Conceptualization
- b) Project Analysis and Assessment
- c) Project Structuring
- d) Finalization Legal framework.
- e) Project implementation
- f) Project operation

Experiences have shown that PPP project can fail due to failure in one or more stages in the process. It is seen that projects which had failed to succeed are mainly because of one or more prominent faulty stages. These projects can be looked into as learning experiences so that similar loopholes in the process are not repeated. Some of the major reasons for failures noticed over the years are

- a) Not carrying out detailed technical assessment in the project conceptualization and analysis phase
- b) Limited financial and risk evaluation and not obtaining regulatory and statutory approvals at the project preparation stage.
- c) Improper due diligence studies of technical and legal implications to ensure the smooth progress of a project through the project life-cycle.
- d) Not carrying out land acquisition process prior to the project procurement process itself.
- e) Not much emphasis on importance for PPP projects to be financially independent to the extent possible and minimize reliance on government grants or scheme

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<sup>1</sup> The Economist, Intelligence Unit “ Evaluating the environment for public-private partnerships in Asia 2018” An index and study by The Economist Intelligence Unit

- f) Speculative bids from private players due to improper assessment which should be dealt with by the public entity without jeopardizing the long term prospects of the project.
- g) Loopholes in the contractual documents and not carrying out social and environmental impact assessment in the project formulation stage
- h) Delay in approvals and clearances due to multiple approving authority which leads to cost and time over run.<sup>2</sup>
- i) Absence of a favourable operating environment for the private sector to function optimally.
- j) The process of creating a PPP arrangement is very long and ridden with a lot of formalities

The present paper attempts to look into the learning aspects from PPP Projects and the extent of knowledge management in formulation, structuring, contracting, execution and operation of PPP projects. Since India is still new to the PPP structure of project implementation, it is felt that learning from its experience would help in executing smooth PPP projects. The research would primarily look into the process of KM in the PPP project and the extent of case studies, standard procedures of execution is being followed.

## 2. Objective of the Study

The Objective of the research is to look into the need of a 'Knowledge based approach' based on past learning for successful development of PPP Projects

- The objective is to look into the growth of PPP as a means for development of infrastructure projects in India
- It is to look into the need for adopting a knowledge based approach for structuring and developing PPP project based on learning from other projects.
- The endeavour is to look into the positive impact of incorporating learning from other PPP project so as to ensure smooth implementation and operation.
- To identify Critical Success Factors in PPP Projects

## 3. Research Methodology

This is a conceptual Research with explorative methodology. Both primary and secondary data was collected for the research.

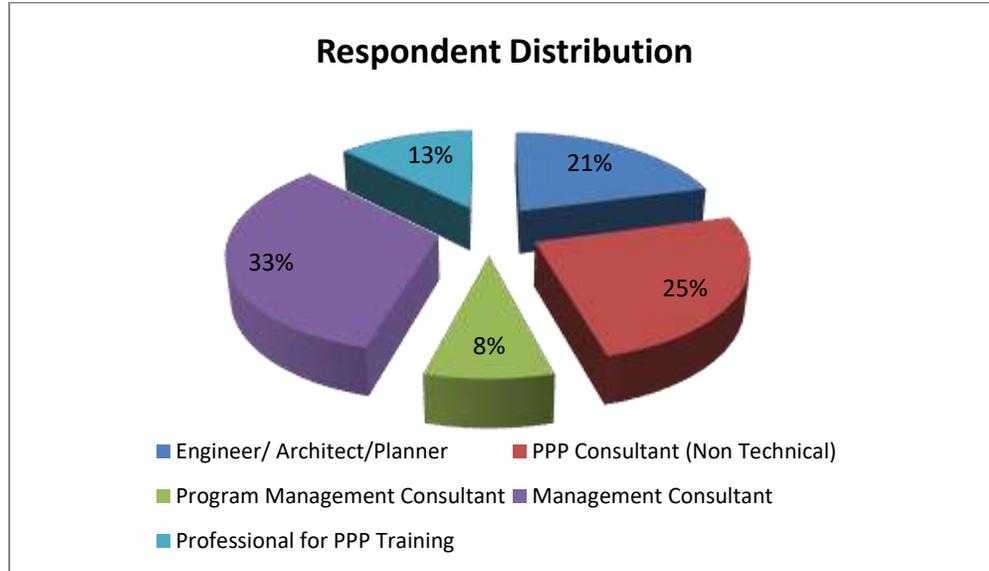
- a) Primary data was collected from Professionals experienced in development of PPP infrastructure mainly those engaged in the advisory sector
- b) The secondary data was collected from different sources like text books, research papers, articles, newspapers, internet etc.

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<sup>2</sup> [www.mbaskool.com/business articles /'How to improve PPP projects in India: learning from the past'](http://www.mbaskool.com/business%20articles/How%20to%20improve%20PPP%20projects%20in%20India%3A%20learning%20from%20the%20past)

This study was made to have an insight of the key requirements for success of PPP projects and how a ‘knowledge based approach’ enriched with learning from past experience can lead to successful implementation and operation.

For collection of primary data a structured questionnaire was administered among key professionals drawn from reputed consultancy organizations like E&Y, PWC, IL&FS, KPMG, SREI Infrastructure, etc. The distribution of sample respondents considered for the research is as graphically presented



#### 4. Literature Review

According to Department of Economic Affairs, Govt. of India, “PPP means an arrangement between a government or statutory entity or govt. owned entity on one side and a private sector entity on the other, for the provision of public assets and/or related services for public benefit, through investment being made by and/or management undertaken by the private sector entity for a specified time period, where there is a substantial risk sharing with the private sector and the private sector receives performance linked payments that conforms (or are benchmarked) to specified, pre determined and measurable performance standards” According to a World Bank report, India was the largest market for PPP projects in the developing countries of the world. India alone accounted for over half of the total investments in new PPP projects in developing countries in 2011, when it implemented 43 projects which attracted total investment of \$20 billion (Business Standard, 2013).

“The PPPs take several organizational forms between the government and private party, such as User-Fee Based Build-Operate-Transfer models, Annuity Based Build-Operate-Transfer models, Performance Based Management/ Maintenance Contracts and Modified Design-Build contracts. The need and objectives for PPPs could be that government

desires to tap into private investment, spread the risks over multiple partners in investments of high fixed and sunk cost intensive sectors and tap into organizational and technological efficiency of private sector and to reduce moral hazard behaviour of public agents” Murali Patibandla ( IIMB-WP N0. 564 2018)

According to Savas (2000) “Private capital and management of the design, construction and long-term operation of the infrastructure is characteristic of such projects, along with eventual public ownership”. The advent of PPP has also been linked with good governance in various researches. Kuriyan and Ray, (2009) stated that “The notion of good governance aims to increase accountability, professionalism and reliability in the delivery of public services”. Batterbury and Fernando, (2006) on the otherhand states that “As a part of good governance, reforms are being carried out for reengineering and privatization of state bureaucracies, decentralisation of power to citizen levels” while Clarke and Newman, (2008) emphasized on introduction of managerial practices in governance. Emphasising on good governance Lewis, (2000) stated that “One of the viable practices to promote good governance is PPP model that proposes to increase efficiency and responsiveness in delivery of government services”

Referring to traditional procurement model Hoppe and Schmitz, (2013) stated that “In public sector, the usual trend is to hire multiple agents for fulfilling the tasks. One agent would build the infrastructure while the other agent would deliver the public good or services” Hart, (2003) stated that “In Public-Private Partnerships building and service provision are bundled; that is the government agency contracts with a single party (a consortium) to build the infrastructure and to operate it”

## 5. PPP in India

Public Private Partnerships are an important option that has gained substantial relevance in the present period. It is an important implementation mechanism of high cost infrastructure projects so that there is lesser recourse to public fund and at the same time bringing in private sector efficiency in the operation and management of such projects. If we look into the relevance of such a structure it is seen that the relevance was felt in Pre-Independence India (1853) itself when the Great Indian Peninsular Railway Company started operating between Bombay (now Mumbai) and Thana (now Thane) and the Bombay Tramway Company running tramway services in Bombay (1874), The Great Indian Peninsular Railway Company and the Power Generation and Distribution companies in Bombay and Calcutta (now Kolkata) in the early 20th century are some of the earliest examples of PPP in India.

The positive aspect of PPP projects is that it leaves public fund for utilisation in fundamental public facilities as healthcare, education etc. as in other major infrastructure

projects the government is joining hands with the private sector. There is thus both direct and indirect impact of PPP projects on the economy

PPP has received special emphasis with the opening up of the Indian economy in 1991 and since then there have been several attempts to bring investments through PPPs in the country. In the recent years, India has emerged as one of the leading PPP markets in the world due to several policy and institutional initiatives taken by the Central and some State governments. PPP structure of infrastructure development has received substantial emphasis over the years and major sectors with high volume investment and technical expertise as airports and roads have emerged as core area of PPP investment. The following table comparing the infrastructure development through three approaches reflects on the growing role of PPP.

Year	Govt. Infra Project		Private infra Project		PPP Project		PPP % to total	
	No	Amount	No	Amount	No	Amount	No	Amount
2019-2020	261	106,359.51	3	2,296.00	2	3,090.01	0.76%	2.84%
2018-2019	27	84,637.65	1	124.15	3	4,079.38	10.71%	4.81%
2017-2018	222	110,111.70	25	18,526.50	18	14,862.30	7.29%	11.55%
2016-2017	1025	591,408.04	176	91,677.51	139	232,979.19	11.57%	34.11%
2015-2016	1045	403,859.81	230	128,632.50	93	221,337.95	7.29%	41.57%
2014-2015	705	281,462.26	279	89,369.22	94	232,938.38	9.55%	62.82%
2013-2014	733	326,536.19	182	73,800.56	92	82,576.09	10.05%	20.63%
2012-2013	386	232,069.91	162	89,425.92	125	130,411.66	22.81%	40.56%
2011-2012	360	232,514.71	87	42,546.66	161	475,178.32	36.02%	172.75%
2010-2011	295	135,239.30	51	106,325.38	172	203,582.34	49.71%	84.28%
2009-2010	261	130,035.54	27	64,479.13	121	226,810.82	42.01%	116.60%
2008-2009	237	296,098.75	15	23,933.33	109	111,190.69	43.25%	34.74%
2007-2008	115	176,359.19	10	32,527.50	136	119,763.82	108.80%	57.33%
2006-2007	98	81,737.04	5	9,629.00	83	143,320.60	80.58%	156.86%
2005-2006	50	31,656.88	3	2,510.00	85	82,397.35	160.38%	241.16%
	<b>5820</b>	<b>3220086.48</b>	<b>1256</b>	<b>775803.36</b>	<b>1433</b>	<b>2284518.9</b>	<b>20.25%</b>	<b>57.17%</b>

Source: [Infrastructureindia.gov.in](http://Infrastructureindia.gov.in)

It is seen that though in terms of numbers the average percentage of PPP projects to total infrastructure is 20.25%, in terms of investment PPP projects accounts for 57.17%. This shows that PPP is emerging as a tool for development of large infrastructure projects in the country. If we look into the sector wise PPP Projects in the country, it is seen that road sector has received the maximum importance. Sector-wise projects recommended by the Public Private Partnership Appraisal Committee (PPPAC) are tabulated below:

Sl.No.	Sector	Number of Projects Approved	Total Project Cost (In Rs. Crore)
1	Airports	10	9017
2	Housing	9	7633.55
3	Ports	37	51911.3
4	Railways	2	9796
5	Roads	257	302388
6	Sports	5	NA
7	Tourism	4	1220.87
	<b>Total</b>	<b>324</b>	<b>381966.72</b>

Source: Public Private Partnership, India database, Department of Economic Affairs, Ministry of Finance, Government of India

- Road sector has the maximum investment in PPP accounting for 79.17% of total PPP investment. Major roads under East West Corridor and Golden Quadrilateral are developed under PPP besides other roads.
- Ports constitute 13.59% with Development of Offshore Multipurpose Cargo Berth at Mumbai Port in the State of Maharashtra on DBFOT basis with a cost of 696 crore and Machilipatnam Port Development with Rs.1860 Crore and Multipurpose Cargo Port (Redi) Project at Maharashtra with an investment of Rs.4413 crore under Build-Own-Operate-Share-Transfer (BOOST) structure

If we look into the other PPP projects in the country as a whole, it is seen that diverse projects across sectors have been taken up. The types of projects taken up till 2019 is as tabulated

Sl no	Sector/Sub-sector	No	Total Project Cost (in Rs Crore)
<b>1</b>	<b>Communication</b>	<b>60</b>	<b>875,934.76</b>
a)	Telecommunication Network and Services	60	875,934.76
<b>2</b>	<b>Energy</b>	<b>469</b>	<b>821,317.97</b>
a)	Electricity Distribution	16	28,757.24
b)	Electricity generation (grid)	79	399,370.61
c)	Electricity transmission	34	29,213.68
d)	Oil/ Gas/ LNG Storage	1	905.00
e)	Renewable energy (grid)	339	363,071.44
<b>3</b>	<b>Social and Commercial Infrastructure</b>	<b>161</b>	<b>18,319.15</b>
a)	Cold Chain	8	1,610.51
b)	Common infrastructure for industrial parks, SEZ	29	7,089.30
c)	Education	37	468.81

d)	Health Care	14	1,412.61
e)	Post-harvest storage infrastructure for agriculture and horticulture produce including cold storage	20	649.50
f)	Tourism	53	7,088.42
<b>4</b>	<b>Transport</b>	<b>1015</b>	<b>764,007.38</b>
a)	Airports	11	35,923.94
b)	Ports (excluding captive)	99	139,100.04
c)	Railway track, tunnel, viaducts, bridges	9	15,397.43
d)	Roads and bridges	824	538,820.03
e)	Urban public transport (except rolling stock)	72	34,765.94
<b>5</b>	<b>Water Sanitation</b>	<b>119</b>	<b>15,960.66</b>
	Irrigation (dams, channels, embankments, etc.)	1	9.50
	Sewage collection, treatment and disposal system	21	1,421.98
	Solid waste management	70	8,375.06
	Water supply pipeline	20	4,759.88
	Water treatment plants	7	1,394.24
	<b>Total</b>	<b>1824</b>	<b>2,495,539.92</b>

Source: Public Private Partnership, India database, Department of Economic Affairs, Ministry of Finance, Government of India

- The highest PPP investment is noticed in Communication sector with a share of 35.1% which was mainly in telecommunication network and services. However in terms of numbers it is only 3.29% of total PPP projects.
- The next important sector in terms of percentage share to total investment is the energy sector with a share of 32.91% and electrical generation and renewable energy received the maximum importance in terms of investment. In terms of numbers the share of this sector is 25.71%
- Transportation with a share of 30.61% is the third important sector in terms of total investment and 55.65% in terms of number of projects.. Roads and bridges received the major chunk of investment in the transportation sector and various toll roads came up in the country developed under PPP structure

A look into the state specific PPP project shows that 29 states of the country took up project in PPP structure. A total of 1824 PPP projects are in various stages of implementation across the states including Multi State/ Centre with a total project cost of Rs. 2,495,539.92 crore. The data relating to this is as given below:

Sl no	State	No	Rank	Total Project Cost (in Rs Crore)	Average Cost	Rank
1.	Andaman & Nicobar (UT)	4	27	265.72	66.43	29

2.	Andhra Pradesh	85	9	71,677.02	843.26	14
3.	Arunachal Pradesh	126	6	277,204.63	2200.04	4
4.	Assam	13	23	3,053.84	234.91	28
5.	Bihar	21	20	20,529.01	977.57	12
6.	Chandigarh (UT)	1	30	15.00	15.00	30
7.	Chhattisgarh	22	19	73,846.01	3356.64	2
8.	Delhi (UT)	21	20	44,756.28	2131.25	5
9.	Goa	11	24	8,937.23	812.48	16
10.	Gujarat	130	5	131,008.62	1007.76	11
11.	Haryana	28	16	31,353.84	1119.78	10
12.	Himachal Pradesh	110	7	46,817.43	425.61	23
13.	Jammu & Kashmir	9	26	27,922.13	3102.46	3
14.	Jharkhand	16	22	5,944.47	371.53	26
15.	Karnataka	139	4	70,717.84	508.76	22
16.	Kerala	33	14	21,439.43	649.68	17
17.	Madhya Pradesh	187	2	98,773.58	528.20	21
18.	Maharashtra	219	1	178,386.11	814.55	15
19.	Meghalaya	2	29	762.11	381.06	25
20.	Multi State/ Centre	110	7	943,569.13	8577.90	1
21.	Odisha	44	13	77,818.87	1768.61	6
22.	Puducherry (UT)	3	28	2,678.20	892.73	13
23.	Punjab	62	12	35,798.06	577.39	19
24.	Rajasthan	175	3	62,598.59	357.71	27
25.	Sikkim	11	24	17,787.00	1617.00	8
26.	Tamil Nadu	80	10	48,485.97	606.07	18
27.	Telangana	27	17	30,687.64	1136.58	9
28.	Uttar Pradesh	77	11	134,133.45	1741.99	7
29.	Uttarakhand	26	18	10,802.05	415.46	24
30.	West Bengal	32	15	17,770.66	555.33	20
	<b>Total</b>	<b>1824</b>		<b>2,495,539.92</b>	<b>1368.17</b>	

*Source: Public Private Partnership, India database, Department of Economic Affairs, Ministry of Finance, Government of India*

It is seen that Maharashtra has the highest number of PPP projects with a total of 219 PPP projects in various stages. However an asymmetry is noticed in terms of no of projects and average cost of project.

- Maharashtra ranks no 1 in terms of no of PPP project in various stages of implementation. However in terms of average project cost the state ranks 15<sup>th</sup>.
- In terms of average project cost Multi State/ Centre sector has the highest average cost and ranks 1<sup>st</sup> with a average project cost of Rs.8577.90 crore which is much higher than the National average of Rs.1368.17 crore. In terms of numbers this sector ranks 7<sup>th</sup> if we look into the number of projects handled.

- Meghalaya ranks 29<sup>th</sup> in terms of PPP projects handled and in terms of average cost it ranks 25<sup>th</sup> with an average cost of Rs. 381.06 crore

## 6. Analysis and Findings--:

An analysis of the “**Knowledge based approach for PPP Structuring**” and knowledge management have shown that this has been attached substantial importance and Government of India, under the Ministry of Economic Affairs have a PPP Cell which is the major source of knowledge management in the PPP Sector. According to Report of PPP Cell, “The transactions involved in implementing PPP projects are complex and critical. The high initial investments, transfer of public assets to the private sector partner for the concession period, the need to balance the divergent needs of the commercial private interests with the objectives of inclusive growth underline the criticality of project structuring”.<sup>3</sup> Recognising these requirements, Government of India has notified guidelines for formulation, appraisal and approval of central sector PPP projects to ensure speedy appraisal of projects, adopt international best practices and have uniformity in appraisal mechanism and guidelines

It is important that the country adopts a standardized PPP project implementation process for which there is a need of a knowledge base approach, which provides guidelines, standard operating procedure as well as case studies for learning experiences.

To fill this gap various knowledge products developed in the PPP cell for sharing PPP best practices to enhance the ability of the public officials as well as private developers to implement PPP projects. These knowledge products include

- a) Guidance material like manuals, green books, reports of committees on PPPs,
- b) Case studies containing PPP initiatives in India
- c) Online toolkits pertaining to implementation of PPP projects in infrastructure in five sectors
- d) Standard Procedure for formulation, appraisal and approval of Public Private Partnership (PPP) Projects
- e) Model Concession Agreement for BOT projects
- f) Model Concession Agreement for Private Sector Projects
- g) Model RFQ for Pre-Qualification of Bidders for PPP Projects
- h) Model Request for Proposals (RFP) for Selection of Financial Consultants and Transaction Advisers
- i) Format for Approval and Appraisal
- j) Guidance Material and Reference Documents

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<sup>3</sup> Guidelines for Formulation, Appraisal and Approval of Central Sector Public Private Partnership Projects, Ministry of Finance Department of Economic Affairs (2013)

The study attempted to find out the opinion towards the utility of these knowledge products for PPP implementation. The finding is presented below based on scores assigned:

Sl no	Response	SA	AG	NAND	DA	SDA
1	Useful for standardisation of procedure	0.060	0.074	0.013	0.007	0.000
2	Helps in speeding up the process	0.074	0.060	0.027	0.000	0.000
3	Sector based variance required	0.094	0.020	0.047	0.000	0.000
4	Useful reference for project execution	0.040	0.114	0.013	0.000	0.000
5	Help identify major issues	0.020	0.060	0.040	0.027	0.007
6	Knowledge Product updation required	0.114	0.047	0.027	0.013	0.000

SA=Strongly Agree, AG=Agree, NAND=Nether Agree nor Disagree, DA=Disagree, SDA=Strongly disagree

The research elicited the opinion of professionals working on PPP project development on few important parameters and the findings are as given below:

### 6.1 Advantages of PPP Structure

From the experience of implementing PPP project it is seen that the structure has various advantages. The research based on scores assigned to responses shows the following:

Sl no	Advantages	Score
1	Less use of public money	0.0977
2	Risk Transfer and Sharing	0.0677
3	Multiple projects can be implemented simultaneously	0.1353
4	Cost Efficiencies due to competition	0.1278
5	Private sector management skills	0.1429
6	Efficient management of the project during its life span	0.1203
7	Low Gestation period	0.1053
8	Value for Money	0.1203
9	Competition like lower prices, Innovative Practices, Increased Investment, Better services	0.0827

The professionals surveyed stated that PPP projects are value for money as these are delivered with the superior quality for same amount of money. Further using PPP Government will have access to new skills and management of private sector and better management of project risks as the service provider is not paid until the project is completed

## 6.2 Successful Sector in PPP Model in India

Though PPP projects have been implemented across sectors, not all projects yielded the same results in terms of execution and management. The opinion of the surveyed professional from their experience shows the following

Sl no	Sectors	Score
1	Roads and Transport	0.833
2	Tourism Infrastructure	0.111
3	Healthcare	0.056
4	Ports and Railways	0.111
5	Airports	0.389
6	Power	0.222
7	Urban Development	0.076
8	SEZ and Industrial Infrastructure	0.289
9	Agriculture and Storage	0.024
10	Others	0.056

Roads and transport sector emerged as the most successful sector in PPP in India followed by airports as opined by the professionals engaged in PPP development. It is noticed that a substantial number of road and bridges projects are being developed in India in the annuity mode which are yielding good results in terms of execution period as well as maintenance. Moreover airports being developed under PPP are doing exceptionally well in terms of infrastructure facilities and management.

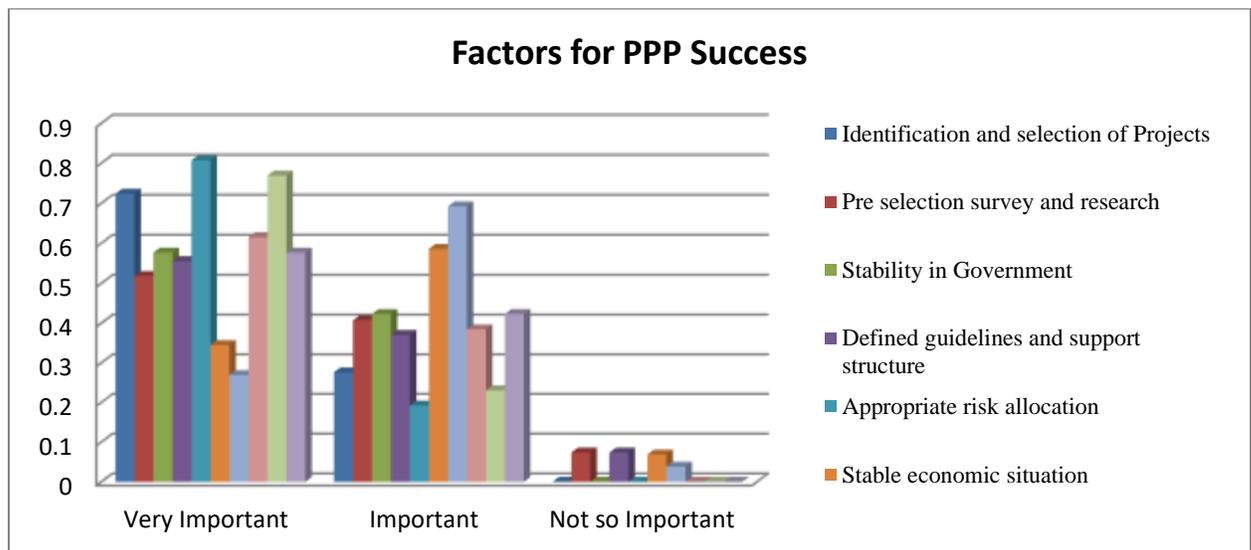
## 6.3 Factors important for successful implementation of PPP Projects

Identification of projects to be implemented under PPP structure is crucial for its successful implementation. The learning experience of the professionals shows that proper scanning of opportunities and analysis for their suitability in PPP format is important. The findings of the research are presented below;

Sl no	Factors for PPP Success	Very Important	Important	Not so Important
1	Identification and selection of Projects	0.7241	0.2759	-
2	Pre selection survey and research	0.5185	0.4074	0.0741
3	Stability in Government	0.5769	0.4231	-
4	Defined guidelines and support structure	0.5556	0.3704	0.0741
5	Appropriate risk allocation	0.8077	0.1923	-
6	Stable economic situation	0.3448	0.5862	0.0690
7	Innovation and proven technical solutions	0.2692	0.6923	0.0385
8	Transparency in selection and	0.6154	0.3846	-

	operation			
9	Availability of finance	0.7692	0.2308	-
10	Monitoring and evaluation	0.5769	0.4231	-

Availability of finance and proper and regular payment terms for annuity projects is crucial for success of such projects as opined. Proper identification of suitable project is the core to its success as it is seen that selection of project not analysed in detailed has lead to failures of the projects. Further transparency in selection process and selection of the suitable private partner both in terms of technological background and financial strength is important for PPP projects.

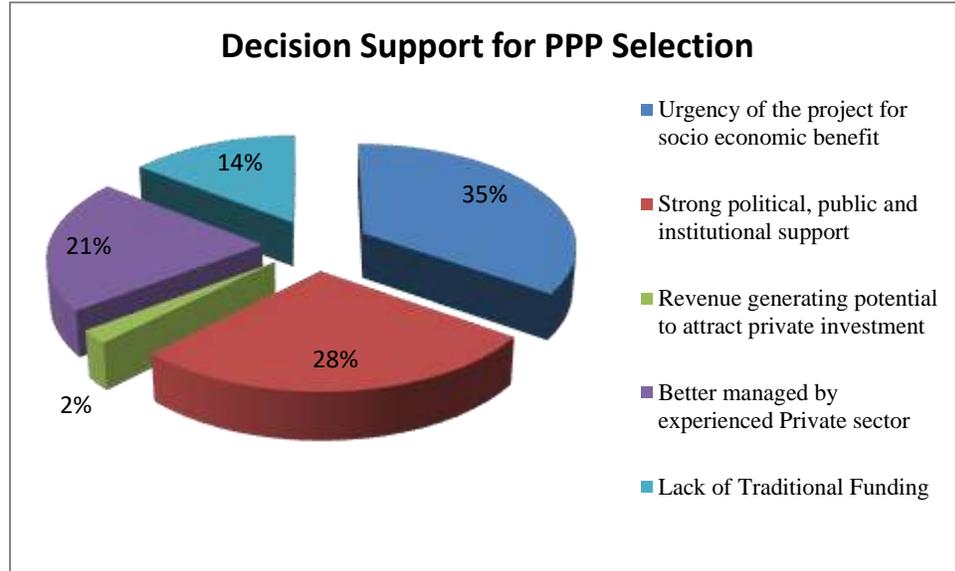


#### 6.4 Criteria for decision making regarding adoption of project in PPP

Now the issue is why projects are being implemented in PPP in India. The criteria for decision making for adoption of PPP projects revealed the following

Sl no	Sectors	% response
1	Urgency of the project for socio economic benefit	27.8%
2	Strong political, public and institutional support	22.2%
3	Revenue generating potential to attract private investment	1.7%
4	Better managed by experienced Private sector	16.7%
5	Lack of Traditional Funding	11.6%
6	Project acceleration potential	-

It is seen that projects are being selected based on the requirement for overall socio economic development with less recourse to public fund so that these can be expended in other public utility projects. PPP helps reduce the capital demands on the public treasury for infrastructure development. Strong political, public and institutional support is another criteria for adoption of projects in PPP. It is noticed that most of the PPP projects are being structured based on Govt. Policy on PPP



### 6.5 PPP Project and protection of public interest

Since PPP projects involves leasing out of public property, management of public utilities by private sector and emergence of issues as toll and other enhanced fees, it is important that protection of public interests is looked into. As regards the important activities to be taken up for protection of public interests, the research shows the following as tabulated:

Sl no	Activities	Very Important	Important	Not so Important
1	Comprehensive evaluation of Cost benefit of project	77.78%	16.67%	5.56%
2	Public participation in decision for project selection	33.33%	61.11%	5.56%
3	Avoidance of conflict of interest	5.56%	77.78%	16.67%
4	Access to information for public	16.67%	66.67%	11.11%
5	Agreement terms considers public interest	61.11%	33.33%	5.56%
6	Continuous evaluation and monitoring of project	66.67%	27.78%	5.56%
7	Defined roles of public and private sector	83.33%	16.67%	

8	Determining performance standards	77.78%	16.67%	5.56%
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A balanced cost benefit analysis is crucial to protect public interest. The professionals revealed that a proper CB Analysis is to be made prior to execution of projects in PPP. In addition to this the Private sector needs to be made accountable for operation and management of PPP project and as such determining performance standards becomes important. The protection of public interests needs to be incorporated in the agreements so that no issue crops up later on.

### 6.6 Risks associated with PPP Projects

It is important to understand the risks associated with PPP projects. Risks as in any other infrastructure projects are imminent in both execution and operational stage. The respondents mostly emphasized on market and revenue risk for the PPP projects followed by financial risks, the opinion as regards this as found during the study are as tabulated:

Sl no	Risks	1st	2nd	3rd	4th
1	Market and Revenue risks	32.3%	6%	2%	19%
2	Construction risk	9.7%	19%	10%	13%
3	Operation risk	6.5%	19%	17%	
4	Financial risk	16.1%	13%	10%	19%
5	Legal risk	6.5%	13%	15%	13%
6	Political risk	12.9%	6%	22%	6%
7	Environment risk	6.5%	15%	15%	6%
8	Force Majeure risk	9.7%	10%	10%	25%

Market & revenue risk mainly evident due to insufficient income available from fares or tolls in transport project in addition to lower traffic than estimated. Next to follow is the financial risk pertaining to debt and debt servicing which may arise due to irregular revenue stream, long gestation period leading to cost overrun and legal issues during implementation stage. Political risk arising out of changes in Government, change in policies and public opinions are some of the issues encountered. The delay in approval process and non specification in details in the contract agreements are also important factors that emerged during the study. The political risks can be:

- Public unease around putting infrastructure assets in the private hands,
- The bottom-up and decentralized planning and decision-making approach that leads to fragmentation in infrastructure development processes,
- The political fragmentation resulting from different states having different sets of political culture and rules of engagements,

### 6.7 Important tools for PPP structuring

It is important that proper assessment of PPP projects is made so that there is no problem during implementation and the contract period. Professionals engaged in project development activities are using various tools for assessment and PPP India too is providing various guidelines for evaluation of projects. The research shows the importance of various measuring tools as below:

Sl no	Assessment Tools	Very Important	Important	Not so Important
1	Cost Benefit Analysis	0.2909	0.0345	0.1667
2	Demand and Revenue studies	0.0018	0.1724	0.1667
3	Legal framework	0.1636	0.2759	0.1667
4	Legislative and Policy Research	0.1091	0.0034	0.1667
5	Risk allocation between public and private sector	0.0018	0.1379	0.3333

As evident learning from project development of PPP projects shows that cost Benefit analysis is crucial as most of the PPP projects are public utility or projects that are transferred to private sector from the public sector. There is a need for proper assessment of CB analysis so that no issue emerge in terms of legal and policy issues of the subsequent government. A proper allocation of risk between public and private entity is also cited as important as this leads to smooth implementation and success of project.

### 6.8 Problems associated with developing PPP Projects

It is important that the problems associated with implementation is understood from the experience so that these can be taken care of in subsequent projects. When looked into the problems encountered, the experiences show the following:

Sl no	Response	SA	AG	NAND	DA
1	Longer approval time by public authority	0.531	0.406	0.000	0.063
2	Lack of funds	0.333	0.389	0.111	0.167
3	Payment delays in Annuity Project	0.458	0.292	0.083	0.083
4	Time and cost overruns	0.464	0.357	0.179	
5	Socio political and environment issues	0.158	0.737	0.105	
6	Lack of coordination between public and private sector	0.278	0.611	0.111	
7	Frequent change in policies	0.222	0.500	0.278	

SA=Strongly Agree, AG=Agree, NAND=Nether Agree nor Disagree, DA=Disagree,

The experiences shows that approval process is longer in majority of the cases as multiple department/authorities are involved. For road projects land acquisition takes

a long time which leads to cost and time overrun. Further projects requiring environmental and forest clearances takes a long time in the process. The learning is that these need to be taken care of before bidding out the project so that project can be implemented at a faster pace after selection of private partner. Such activities needs to be part of the project development activities

## 7. Conclusion and Recommendation

Project development under the PPP structure requires substantial project development activities and since the public projects are transferred to private sector under a contract arrangement a detailed analysis of the impact is to be made. Further since PPP projects are guided by a Policy of the Government, the need for Knowledge Products, standardizing the process and implementation structure is of utmost importance. It is seen that major delays in large infrastructure projects is due to the delays in acquisition and clearances from concerned authorities. There is no doubt that PPP projects are an important development approach which can significantly impact the economy by accelerating the process of project execution and bringing in private sector expertise in project O&M. Though through PPP's Govt. try to reduce the pressure on govt. exchequer however initial project development costs are generally higher. As such a proper knowledge management and recording of learning experience and case studies needs to be made which can minimize many of the costs. In PPP structure the private sectors motive is to mainly make profits but the motive of public sector is service oriented as such a proper balancing needs to be made in the selection and contract arrangement so that desired benefits reaches the public. Moreover, changing Governments and major changes in law sometimes lead to very bad impact on PPP projects and so there is a need of a defined policy, standardized knowledge products, proper regulations, standard documents and use of professional expertise in the project identification and transaction process. PPP is a growing subject and there is substantial scope in further research in terms of case studies of projects, the impact of guidelines and the requirement of acceptable contract agreements.

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