

Public Private Partnership of Road Development in India

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Abstract:- The Government of India defines a P3 as "a partnership between a public sector entity and a private sector entity (a legal entity in which 51% or more of equity is with the private partner/s) for the creation and/or management of infrastructure for public purpose for a specified period of time (concession period) on commercial terms and in which the private partner has been procured through a transparent and open procurement system.

The major infrastructure development projects in the Indian state of Maharashtra (more than 50%) are based on the P3 model, other states such Karnataka, Madhya Pradesh, Gujarat, Tamil Nadu also adopted this model. Sector-wise, the road projects account for about 53.4% of the total projects in numbers, and 46% in terms of value. The Eleventh Five Year Plan has estimated that in order to sustain the envisaged high annual growth rate, the investments in the infrastructure sector.[2]

Keywords:-public private partnership, infrastructure, economic growth.

I. INTRODUCTION

Definition of PPP:-

A public-private partnership (PPP) is a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. These schemes are sometimes referred to as PPP, P3 or P3. Thus PPP refers to a long-term contractual partnership between the public and private sector agencies, specifically targeted towards financing, designing, implementing and operating infrastructure facilities and services in the State.[1]

Agreement between government and the private sector regarding the provision of public services or infrastructure. the main reason is to improve the economic growth in india.[3] India has a road network of over 4,689,842 kilometres(2,914,133 mi) in 2013,the second largest road network inthe world.

II. OBJECTIVE

To asses the Public Private Partnership project in India

Roads classification [8] :-

Road classification	Authority responsible	Total kilometres (as of 2011)
National Highways	Ministry of Road Transport & Highways (Central government)	92,851 ^{[21][22]}
State Highways	State governments (state's public works department)	1,63,898 ^[23]
Major and other district roads	Local governments, panchayats and municipalities	17,05,706 ^[24]
Rural roads	Local governments, panchayats and municipalities	27,49,805 ^[24]

National highway in india:-

The main highways running through the length and breadth of the country connecting major ports, state capitals, large industrial and tourist centers, etc. National Highways in India are designated as NH followed by the highway number. Indian national highways are further classified based on the width of carriageway of the highway.

The National Highways Authority of India (NHAI) is the authority responsible for the development, maintenance and management of National Highways entrusted to it. The NHAI is undertaking the developmental activities under National Highways Development Project (NHDP) in 5 phases. The NHAI is also responsible for implementing other projects on National Highways, primarily road connectivity to major ports in India

National Highway classification[5][6]

Lanes	Lengths(km)	Percentage
SingleLane / Intermediate	18350	26%
Double lane	36031	51%
Four Lane/Six lane/Eight lane	16553	23%
Total	70934	100%

In general, roads in India are primarily bitumen-based macadamized roads. However, a few of the National Highways have roads too. In some locations, such as in Kanpur, British-built concrete roads are still in use. Concrete roads were less popular prior to

1990s because of low availability of cement then. However, with large supplies of cement in the country and the virtues of concrete roads, they are once again gaining popularity. Concrete roads are durable, weather-proof and require lower maintenance compared to bituminous roads. Moreover new concrete pavement technology has developed such as cool pavement, quiet pavement and permeable pavement, which has rendered it more attractive and eco-friendly.

Expansion during Five-Year Plans [11]

Plan-wise addition to NH Network		
Period	Length added (km.)	Total length (km.)
As on 01-04-1947		21,378
Pre First Plan (1947-1951)	815	22,193
First Plan (1951-1956)		22193
Second Plan(1956-1961)	1514	23,707
Third Plan (1961-1966)	179	23,886
Interregnum Period(Rolling Plan) 1966-1969	52	23,938
Fourth Plan (1969-1974)	4819	28,757
Fifth Plan (1974-1979)	220	28,977
Interregnum Period(Rolling Plan) (1979-1980)	46	29,023
Sixth Plan (1980-1985)	2957	31,980
Seventh Plan (1985-1990)	1632	33,612
Interregnum Period (Rolling Plan Period) (1990-1992)	77	33,689
Eighth Plan (1992-1997)	609	34,298
Ninth Plan (1997-	23814	58,112

2002)		
Tenth Plan (2002-2007)	9008	66,590
Eleventh Plan (2007-2012)	10228	76,818

The National Highways are the backbone of the road infrastructure and the major roads in India. They carry most of India's freight and passenger traffic. State highways and major district roads constitute the secondary and interconnecting roads in India. The sort able table below lists national highway density in India per state

State union territory	National highway length, km	Km per 1000 people	National highway numbers
Gujrat	3245	0.064	NEI,6, 8, 8A, 8B, 8C, 8D, 8E, 14, 15, 59, 113 & 228
Chhattisgrah	2184	0.105	6, 12A, 16, 43, 78, 200,202, 216, 217, 111, & 221
Uttarakhand	2042	0.241	58, 72, 72A, 72B,73, 74, 87, 94, 108, 109, 123, 119, 121, 87 Ext. & 125
Arunachal pradesh	1992	1.816	52, 52A, 153, 229, 52B Ext. & 37 Ext.
Orissa	3704	0.101	5, 5A, 6, 23, 42, 43, 60, 75, 200, 201, 203, 203A, 215, 217 & 224
Goa	269	0.2	4A, 17, 17A & 17B
Puddcherry	53	0.054	45A & 66
Mizoram	927	1.044	44A, 54, 54A, 54B, 150 & 154

Tripura	400	0.125	44 & 44A
Meghalaya	810	0.349	4, 5, 7, 9, 16, 18, 18A, 43, 63, 202, 205,
Andhra pradesh	4537	0.06	214, 214A, 219, 221, 222 & 234
Tamil nadu	4832	0.077	4, 5, 7, 7A, 45, 45A, 45B, 45C, 46, 47, 47B, 49, 66, 67, 68, 205, 207, 208, 209, 210, 219, 220, 226, 226E, 227, 230 & 234
Karnataka	4396	0.083	4, 4A, 7, 9, 13, 17, 48, 63, 67, 206, 207, 209, 212, 218 & 234
Manipur	959	0.418	39, 53, 150 & 155
Nagaland	494	0.248	36, 39, 61, 150 & 155
Sikkim	62	0.115	31A
Rajasthan	5585	0.099	3, 8, 11, 11A, 11B, 11C, 12, 14, 15, 65, 71B, 76, 79, 79A, 89, 90, 113, 112, 114, 116, 148D, 458, 758 & 58
Madhya pradesh	4670	0.077	3, 7, 12, 12A, 25, 26, 26A, 27, 59, 59A, 69, 75, 76, 78, 86 & 92
Maharashtra	4176	0.043	3, 4, 4B, 4C, 6, 7, 8, 9, 13, 16, 17, 50, 69, 204,

			211 & 222
Andaman nikobar island	300	0.843	223
Chandigrah	24	0.027	21
Jharkhand	1805	0.067	2, 6, 23, 31, 32, 33, 75, 78, 80, 98, 99 & 100
Bihar	3642	0.044	2, 2C, 19, 28, 28A, 28B, 30, 30A, 31, 57, 57A, 77, 80, 81, 82, 83, 84, 85, 98, 99, 101, 102, 103, 104, 105, 106, 107 & 110
West bengal	2578	0.032	2, 2B, 2B Ext., 6, 31, 31A, 31C, 31D, 32, 34, 35, 41, 55, 60, 60A, 80, 81 & 117
Uttar pradesh	6774	0.041	2, 2A, 3, 7, 11, 12A, 19, 24, 24A, 24B, 25, 25A, 26, 27, 28, 28B, 28C, 29, 56, 56A, 56B, 58, 72A, 73, 74, 75, 76, 86, 87, 91, 91A, 92, 93, 96, 97, 119, 231, 232, 232A, 233, 235 & NEII
Himachal pradesh	1409	0.232	1A, 20, 20A, 21, 21A, 22, 70, 72, 72B, 88 & 73A
Jammu & kashmir	1245	0.123	1A, 1B, 1C & 1D

Kerala	1457	0.046	17, 47, 47A, 47C, 49, 208, 212, 213, & 220
Haryana	1512	0.072	1, 2, 8, 10, 21A, 22, 64, 65, 71, 71A, 72, 73, 73A, 71B & NEII
Delhi	72	0.005	1, 2, 8, 10 & 24
Punjab	1557	0.064	20, 21, 22, 64, 70, 71, 72 & 95

“with effective use of PPP, we can achieve the desired level of growth”. Considering the above statement, we can conclude that mere PPP is not sufficient for India, but an effective PPP is required. There are many issues which need to be identified, addressed and resolved in order to facilitate a better understanding on making use of PPP in a better way to develop Indian infrastructure effectively.

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National highways development project (NHDP) [9]

- NHDP's prime focus is on developing International standard roads with facilities for uninterrupted flow of traffic
- Enhanced Safety Features
- Better Riding Surface.
- Better Road Geometry
- Better Traffic Management and Noticeable Signage.
- Divided Carriageways and Service Roads
- Grade Separators
- Over Bridges and Underpasses
- Bypasses
- Wayside Amenities

Advantages of having a well developed network of world class highways are many for a nation like India -poised to surge ahead.[7]

- Savings in vehicle operating costs
- Faster, comfortable journeys
- Reduced fuel consumption
- Safer travel
- Benefits to trade especially in movement of perishable material
- Reduced maintenance costs
- Safer travel

III. CONCLUSION

Considering India's infrastructural needs, PPPs are not just an option, but a necessity. It has been seen that PPP has many merits such as large investment in public (both urban and rural) infrastructure, efficient service delivery, cost-effectiveness, contracts that are performance-based, sharing of risks, effective use of assets and opportunities of long-term investment. Though a mixed economic approach is followed by India, which is reliant on public private involvement in economic activities,