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A Study On Public Private Partnership Road Projects In India With Special Reference To Uttar Pradesh

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Abstract

High-quality infrastructure is the most dynamic criteria for continuing growth rate of an economy. According to the Planning Commission, for 8% of GDP needs to be invested in infrastructure development that during the current 5-year plan. The investment sector includes telecommunications, transport, road, electric power, rail, air, water supply and irrigation as well. In order to satisfy the above demands, different public-private Partnerships (PPPs) are being promoted for the enactment of infrastructure approaches. PPPs comprise undertaking forms of the partnership of two sectors i.e. private sector and public-private sector. In this paper, researcher has studied the ongoing projects in Uttar Pradesh, India for a period of 2004-05 to 2016-17, and also analyzed the different models of Public Private Partnership preferred by the Indian Government.

Key Words: Public Private Partnership (PPP), Gross Domestic Product (GDP) and Uttar Pradesh (U.P.)

Introduction

Public Private Partnership is considered as an impactful co-ordination between both of the sectors i.e. Public and Private. PPP have shown a capability to provide more resources, managerial skills, new technology, and operational effectiveness, vested in private sector. Infrastructure sector is shattered in a very large manner, so the space for infrastructural development is enormous. But when public sector solely deals with the development of infrastructure like funds and sources availability and their proper use are coming on way as big challenges. In developing country like India, Public Private Partnership model has a huge space of development in different streams of infrastructure sector. The success of PPP model depends on its proper way of execution. Many of PPP projects failed on expectation, because of lack of proper application. Usually the non-public sector gains more advantages due to lack of attention. So there is a requirement of finding the optimum application ways for use of Public Private Partnership model. This can only be

achieved by analytical study of ongoing projects. Therefore this research examine the significance, rational, evolution, socio and economic aspect of the PPP in UP.

The progress of economy of any state is not possible without adequate infrastructure development. Developed infrastructure accelerates the event of the state. It has direct impact on industrial enterprise and investment. A large state like Uttar Pradesh basically needs huge investments so as to match international standards of infrastructure facilities. Therefore, for improved quality of infrastructure facilities, quicker implementation of comes, optimum risk allocation between the authorities and personal Participants and to satisfy out extra capital demand for investment in infrastructure, it's been thought of prudent to ask & encourage personal participation on an oversized scale for timesaving development of infrastructure facilities.

In province, numerous public private partnership projects comes in numerous segments like expressways, roads, energy, transport, education, urban rejuvenation and service sector etc. are already underway and lots of additional are open for bidding. The progress of economy of any state is not possible without adequate infrastructure development. Developed infrastructure accelerates the event of the state. It has direct impact on industrial enterprise and investment.

Review of Literature

Review of literature is done for gathering the present state of knowledge on a particular area. The main motto of reviewing the literature is compilation, classification and evaluation of what other researcher have written on a particular area and concluded accordingly.

Torio P.C et al. (2013) Study describes the demand for finance required in PPP models working in Asia. In further the study describes the different sources which have been used by the government to provide the financial support to PPPs.

'Qiu and Wang'(2011)The study shows that for increasing private participation by providing them incentives, in recent years, governments have been increasingly adopting Build–Operate–Transfer (BOT) contracts for large infrastructure projects.

Yang J B and Yang C C (2010) Researcher finds that political uncertainty is the main cause of delay. Delivery of BOT projects is in trend. This tendency is found worldwide. Reviewed points can be used to stop their repetition in future of BOT projects.

GunjeetKaur et al (2010) The development of basic infrastructure could be a vital necessity to encounter the growth requirements of a country. The financing needs of Infrastructure cannot be fulfil by the government alone therefore the participation of private sector is must to meet such challenge.

Thomas Cherian (2009) this paper entitles that financing of a PPP project is done with a mix of debt and equity. There is no fixed norm for an ideal Debt- Equity ratio for the success of a PPP project. The NPV and return on Equity of a BOT project are sensitive to the selected D/E ratio and these decline drastically as the concessionaire borrows more than the optimal amount. Optimal D/E ratio is project specific and country centric.

'Ghobadian et al.' (2004) In this research it is anticipated that there will be more PPP projects due to main reasons that is the private sector has more to give than the public

sector in terms of skills, technology and knowledge therefore providing better quality facilities.

Askar and Gab-Allah (2002) the public borrowings are reduced and the host government's credit rating can be improved by new source of capital from private sector financing. The ability to quicken the project development is possible through PPP otherwise have to wait for scarce sovereign resources. The use of capital of private sector has the proficiency to reduce the constructions costs of projects and to improve operating efficiency.

Jeffery et al. (2002) it explored CSFs for BOOT procurement system specific to Stadium Australia. Factor analysis approach is used to identify CSFs in PPP/PFI projects in the United Kingdom construction industry: effective procurement; project implement ability; government guarantee; favorable Economic conditions; and available financial market.

Need of Study

The major reflection of previous studies suggested that Public private Partnerships are the foremost viable choice to overcome constraints and challenges in provision of infrastructure in India. Some studies discuss challenges and constraints faced by operation at national level but none of the study has analyzed models of PPP road projects preferred by Indian government with special reference to U.P. Thus, in order to address this research issue, present study is designed and carried out in context of Uttar Pradesh, India.

Objectives of Study

The objectives of the research paper are as follows:

1. To study and review the ongoing PPP road projects in Uttar Pradesh.
2. To analyses the different models of PPP preferred by Uttar Pradesh and Indian Government as well.

Research Hypotheses

For the purpose of this study, null hypotheses have been formulated as follows:

Ho: All models of Public Private Partnership (User-fee based BOT models, .Annuity based BOT models, Toll Based BOT model, Design Build Finance Operate Transfer (DBFOT), Engineering Procurement Construction (EPC) and HybridAnnuity Model (HAM)) are equally preferred by Government of Uttar Pradesh and in India.

Data Analysis

Ongoing PPP Road Projects in U.P

PPP includes the investment in different sectors such as infrastructure, airports, housing, ports, railways, roads, sports and tourism etc. The Summary of all the ongoing projects in different sectors and in different states, recommended by the Public Private Partnership Appraisal Committee from 20th December, 2005 to 22nd September, 2017 has total 312

number of projects with total cost of Rs. 367014 crores. Here is the list of ongoing road projects in Uttar Pradesh recommended by the public private partnership appraisal committee, department of economic affairs. The data have taken for a period of December 2005- to September 2017.The details of all ongoing projects have been shown as following:

Table- List of Ongoing Road Projects in Uttar Pradesh

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
2006	Construction of Elevated Six Lane Highway (Flyover) from Km.16100 (In Delhi) to Km.20.500 (Haryana) and its approaches on NH-2 (Delhi Agra Section) on BOT basis.	19-Dec-2006	Under Construction	294.00	NHAI	Badarpur Faridabad toll way (BFTL) on HCC concession company
2008	Four/Six laning of Ghaziabad-Aligarh section of NH 91under NHDP Phase III on BOT Basis.	30-Apr-2008	Under Construction	1,325.30	NHAI	Ghaziabad Aligarh Expressway Pvt. Ltd
	Four laning of Muzzafarnagar-Nepali farm section of NH 58 in the State of Uttar Pradesh and Uttrakhand	04-Aug-2008	Under Construction	1,251.42	NHAI	-

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	from Nepali to ISBT Dehradun					
2009	Four laning of Sitapur-Bareilly section of NH 24 in the State of UP on BOT basis under NHDP III	09-Jul-2009	Under Construction	1,046.00	NHAI	Bareilly Highways Project Limited
	Four/Six laning of Bareilly-Moradabad section of NH 24 from km 148 to km 262 in the state of UP on DBFOT basis under NHDP III	27-Jul-2009	Operation and Maintenance Stage	1,484.93	NHAI	Moradabad-Bareilly expressway Limited
2010	Two laning with pave shoulder from Aligarh to Kanpur from Km 140.100 to Km 418.760 on NH 91 in the UP State	10-Feb-2010	-	723.25	NHAI	LancoInfratech Ltd
	'Two laning with Pave shoulder from Varanasi to Gorakhpur section Km 2 to Km 208 of	10-Feb-2010	Under Construction	538.88	NHAI	Package II- PNC Infratech Ltd Package III & IV- Jaiprakash Associates Ltd

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	NH 29 in the State of UP'					
2011	'Four-laning of Meerut-Bulandshahar section of NH-235 from km 7.469 to km 73.156 in the State of UP under NHDP Phase IV B on DBFOT (Toll) basis: TPC ` 505.0 crore.'	19-Apr-2011	Under Construction	505.00	NHAI	C & C Constructions Limited AP Co InfratechPvt Ltd
	Four laning of Lucknow - Sultanpur section of NH 56 under NHDP Phase IV, length 123.40 km	20-Jun-2011	Pre-construction Stage	1,013.00	NHAI	ESSAR-Atlanta(JV)
	Six laning of EtawahChakeri (Kanpur) section of NH 2 under NHDP Phase V, length 160.21 km	14-Sep-2011	Under Construction	1,573.00	NHAI	EtawahChakeri Kanpur highways pvt.ltd.
	'Four laning of LucknowRaebarelly Section of NH-24 B from km 12.700 to km 82.700 on BoT (Annuity)	14-Sep-2011	Operation and Maintenance Stage	635.90	NHAI	EsselLucknowRaebarelly toll roads private limited

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	under NHDP Phase-IV B in the State of U.P.'					
	'Four laning of Rampur-Kathgodam section of NH-87 from km 0.000 to km 88.000 in the state of Uttar Pradesh and Uttarakhand under NHDP Phase-III on BoT (Toll) basis'	14-Sep-2011	Under Construction	790.00	NHAI	Arctech Consultant Pvt. Ltd. (ACPL), Kolkata.
2012	'Two laning with paved shoulders of Raibarelly-Jaunpur Section of NH-231 from Km 0.000 to Km 166.4 in the state of Uttar Pradesh under NHDP - IV on BoT (Annuity) basis.'	17-Feb-2012	Operation and Maintenance Stage	569.36	NHAI	PNC Raibarelly Highway Pvt. Limited. (PNC infratech ltd.)
2014	'Four-laning of Ghaghar Bridge (Indo Nepal Border) to Varanasi section from	27-Feb-2014	Operation and Maintenance Stage	1,954.29	NHAI	Package I-DilipBuildcon Ltd, Varah Infra Ltd

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	Km 121.800 to Km 298.450 of NH 233 in the State of Uttar Pradesh under NHDP IV on BOT (Toll) basis'					Package II & III-Gayatri Projects Ltd
	'Four laning of Sultanpur-Varanasi Section of NH-56 from km 134.700 to km 271.300 in the State of Uttar Pradesh under NHDP - IV on DBFOT (Toll) basis.'	27-Feb-2014	Under Construction	1,778.00	NHAI	Gayatri Projects Ltd-Package 1 & II
	'Four laning of Lucknow-Sultanpur Section of NH 56 from KM 11.5 to KM 135 under NHDP IV'	31-Jul-2014	Under Construction	1,276.00	NHAI	ESSAR - Atlanta (JV)
	'Six laning of Handia-Varanasi from km 713.146 to km 785.544 under NHDP-V	27-Nov-2014	Pre-construction Stage	2,356.16	NHAI	GR Infra-projects Limited.
	Six laning of Chakeri-Allahabad	23-Dec-2014	-	1,661.60	NHAI	PNC Infratech Limited

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	section of NH-2 from km 483.687 to km 630.0 under NHDP Phase-V on BOT (Toll) basis.'					
2015	'Six laning of Agra-Etawah Section of NH 2 from Km 199/660 to km 323.525 on BoT (Toll) in the state of Uttar Pradesh under NHDP Phase V.'	18-Feb-2015	Under Construction	1,650.20	NHAI	AE Toll Private Limited
2016	Four Laning of LucknowSultanpur Section of NH-56 on Hybrid Annuity Mode	02-Feb-2016	Under Construction	1,638.44	NHAI	DilipBuildcon Ltd
	Eight/Six Laning of Delhi Meerut Expressway from Km. 8.360 to Km. 27.740 (UP Border to Dasna) oh NH-24 on Hybrid Annuity Mode (Package II)	02-Feb-2016	Under Construction	1,376.51	NHAI	ApcoInratech Private Limited

Year	Project Name	Year of Commencement	Status as on Sept. 2017	Cost (In Cr.)	Public Partner	Private Partner
	'Six Laning of Handia Varanasi Section of NH-2 from KM 713.146 to KM 785.544 in the State of Uttar Pradesh under NHDP Phase V on Hybrid Annuity Mode'	28-Oct-2016	Pre-construction Stage	2,064.99	NHAI	GR Infraprojects Limited.
2017	'Six laning of Chakeri - Allahabad section of NH 2 (from KM 483.687 KM 628.753) in the State of State of Uttar Pradesh under NHDP Phase V on Hybrid Annuity Mode.'	14-Feb-2017	Yet to be started	1,735.20	NHAI	PNC Infratech Limited
	TOTAL			**29241.43**		

Source: www.pppinindia.gov.in, www.InfrastructureIndia.gov.in, and www.nhai.gov.in

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Ho: All models of Public Private Partnership (User-fee based BOT models, Annuity based BOT models, Toll Based BOT model, Design Build Finance Operate Transfer (DBFOT), Engineering Procurement Construction (EPC) and Hybrid Annuity Model (HAM)) are equally preferred by Government of Uttar Pradesh and India.

The Chi-Square test of independence is often used to examine the relationship and significance. Here it is used to analyze the different models of PPP preferred by U.P. and Indian Government.

Table: 2- Chi Square Test for PPP Models

PPP Models	Observed Value (O)	Expected Value (E)	(O-E)	$(O-E)^2$	$(O-E)^2/E$
BOT	11	5.75	5.25	27.5625	4.793478
DBFOT	6	5.75	0.25	0.0625	0.01087
EPC	2	5.75	-3.75	14.0625	2.445652
HAM	4	5.75	-1.75	3.0625	0.532609
	Chi-Square Statistic				7.782609

Source: Computed by Researcher

In the above table the calculate value of T-statistic is 7.78 which is much lower than its table value i.e.7.815 at 3 degree of freedom and 5% level of significance. Therefore the researcher has accepted the above hypothesis and concludes that all models of Public Private Partnership are equally preferred by Government of Uttar Pradesh and promoters.

Conclusion

The Need for investment in infrastructural development is required in huge amount whereas there is a massive gap in the funds available for it. Therefore the government of India is looking for and promoting Public Private Partnership model for funding, designing, constructing and make it operational. So far this model is giving a new success story for the Indian infrastructural development. Acquisition of land, overrun of cost and improper assessment of traffic are the real practical problems of PPP. The essential factors for success of a project are Stability of government conditions and allocation of risks. For cooperation between PPP parties, team of experts should be appointed. Like any other developing country there is a huge scope for PPP in India, particularly in infrastructure development. If a well-planned approach is adopted, the PPP may prove a boon to the country and developing state like Uttar Pradesh. The PPP model to be treated a new business model where the two different entities are working altogether for a common goal.

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