

# The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

経済学研究科経済学専攻博士後期課程在学

フヤル モハン

**Phuyal Mohan**

## Abstract

This paper analyzes the current potential of Public Private Partnership procurement to develop the railway industry and economy of India. Previous studies were not enough to discuss the clear features, policies and opportunities of PPP in Indian railway. The motto of this paper is to clarify the role of PPP in development of Indian Railway. The research is based on secondary data, acquired from various related sources.

Keywords: Indian Railway, Infrastructure, PPP

## 1. Introduction

Since the 1980s, PPP arrangements have emerged all around the world as a response to infrastructure deficits and the need to refurbish existing infrastructure services. Many of the countries (emerging markets)<sup>1</sup> started participating with national and international partners in infrastructure projects. The way and the process of partnering and structural organizations, depends upon the country's policy.

In India, after the economic liberalization in 1990s, the economy has expanded with fast speed, with the implementation of private and foreign investment on friendly policies. Many of the infrastructure sectors has received enormous amount of Investment. The natures of investment process and policies are developed as a bypass to public budget constraints in terms of emerging market for public services.

Currently, Indian government has targeted to achieve 8% GDP growth (world bank , 2015).

---

<sup>1</sup> Countries whose economies are undergoing a significant transition through a series of reform

To increase the economy by 8%GDP the government needs a tremendous new and better infrastructure (roads, railways, schools, ports, and telecommunications) therefore, the GOI has been focusing on the development of enabling tools and practicing to encourage private sector investments. Therefore, Foreign Direct Investment (FDI) and PPP are the permitted and advanced best policy to develop and to reform Indian infrastructure.

The aim of this paper is to understand the development of Indian railway and the role of PPP. Then, it assesses the role of PPP in Indian railway.

## 2. Literature Review

The literature on public-private partnership is relatively new, but the concept itself is not new. It has been already used in the countries like, France and United Kingdom (UK) since 17th century (Darrin Grimsey, 2005). The definitions of PPP varies from countries but are very similar, In simple language we can say “PPP is an arrangement in which the private sector supplies infrastructure assets and services traditionally provided by governments” (Michel, 2008). The various definition of PPP is widely used concept, It is impossible to define in some arguable points. Therefore, the World Bank says “there is no any single accepted international definition of what a PPP is (World Bank , 2015).”

However, there has been lot of literature written about the effect and impact of PPP on host countries. A lot of authors have said that public and private participation has a positive benefit on the economic efficiency and the development growth of the emerging markets. But some argues that the PPP model allows for the government to focus the scarce public resources on areas are not covered by PPP projects or that the competition and the scrutiny of capital markets by the private sector makes the use of capital resources more effective (Engel E F. G., 2009). The term Partnership involves cooperation ‘to work together’ and in a public policy can be defined as cooperation between people or organizations in the public or private sector for mutual benefit (Holland & D.C., 1984). Mostly in emerging markets PPP have huge advantages (new capital, technology, managerial expertise, and access to foreign markets in affordable contract) with little or no downside. From the experiences, we cannot say that there are only positive and successful impacts of PPP projects. It depends upon the time period and way of implementation of project.

In emerging countries there are lots of commercial and legal environment barriers. Sometimes these barriers may cause unnecessary negotiations and the long term project may

## The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

create dilemmas. The companies competing for the contract sometimes plan to engage in abusive behavior (Engel E F. R., 2009a), means that the project may be cancel or should be in monopoly. Therefore for the successful implement of PPP, there needs a lot of research on the past successful projects.

### 3. Historical Background of Indian Railway

The Indian railway is one of the largest rail networks in the world. It is the only system, which generates operation under the single government organization (MoR) Ministry of Railways. It has been contributing to the development of the country' s industrial and economic landscape since last 162 years. The history starts from April 16, 1853, when the first wheels rolled on rails from Bombay to Thane it was 53km in journey. Today, it runs 12,000 trains to carry over 23 million passengers per day connecting about 8,000 stations spread across the sub-continent (Phuyal, 2015). It has 65,000 Kilometers route, and has joined the select club of countries comprising Chinese, Russian and United States Railways with an originating freight loading of 1008.09 million tones (GoI, 2015). As historical background of the development of Indian railway it is analyzed in two parts: a) railway in colonial period and b) after Independence.

#### 3.1 Railways origin in Colonial Period

In the section of colonial period, the history of rail transport in India began in the mid-nineteenth century. The core pressure for building Railways in India came from London. Before 1848, there was not a single kilometer of rail line. The technology and investment of (IR) was from UK, therefore IR can be described as: "British in origin, British in model, and financed by British share-holders, built by British engineers, managed by British railway men, the right arm of the British army, the life line of the British Indian Empire". (Malik, 1962).

Some of the major motives of UK government to build railway line in India can be described as follows:

##### 1) **Military Motives**

The need for a railway system was felt because of the need for the improvement in commerce and troop movements, which was of primary concern to the British government in India (S. Thulaseedharan Assary, 2009).

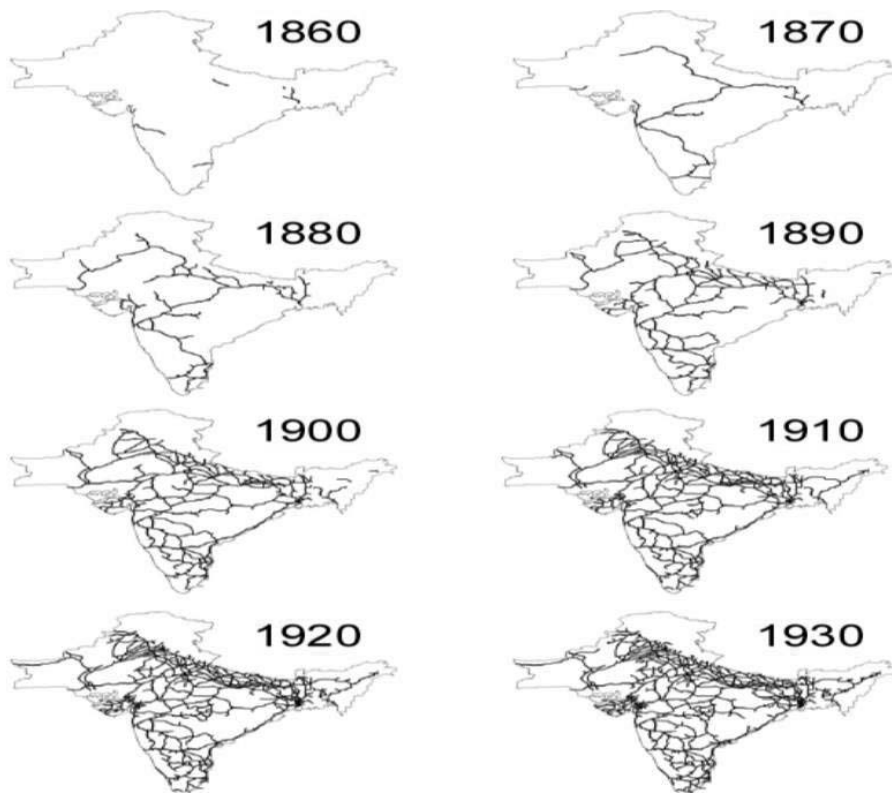
## 2) British commercial Interest

British wanted to get an uninterrupted supply of raw materials to their factories. So they penetrated to the Indian life through infrastructural developments, which were meant to serve their interest. India became a source of raw materials for the British textile industries and a profitable market for their factory goods (Robbins, 1962).

## 3) Capital Investment

The Indian railways were one of the protected monopolies sponsored by the British mostly to provide scope for the fruitful investment of their capital in India. The successful running of the first train in England and opportunities and profits which accompanied it attracted the attention of the capitalist who were searching for new areas for investments (Thorner Daniel, 1950).

Fig. 1: The development of India's railroad network, (1860-1930)



Source: (Donaldson, 2015)

The above figure.1shows the decadal development of the railroad network (railroads depicted with thick lines) in colonial India, in different phases. It means that the demand of railway is

## The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

increasing year by year.

### 3.2 Railway development After Independence

After political Independence from Britain on 1947, the entire Indian transportation system has attuned to the developmental needs of the economy (C.Kashyap, 1986). The whole transport system has increasingly been oriented to serve the needs of industrial development and movement of people from one parts of country. As initial phase, all the railways in India were brought under the direct management of the government of (M.A.Rao, 1988). This phase from the Indian government shows initial changes to increase the railway track in Indian market.

**Table 1: Growth Mileage in State Railways**

Name of Railway	Mileage	Date from which taken over by the Centre
Gaekwar's Baroda State Railway	736	1August 1949
Bikaner State Railway	883	1April 1950
Cutch State Railway	72	1April 1950
Dholpur State Railway	55	1April 1950
Jaipur State Railway	275	1April 1950
Jodhpur Railway	811	1April 1950
Mysore State Railway	712	1April 1950
Nizam's State Railway	1375	1April 1950
Rajasthan State Railway	197	1April 1950
Saurashtra Railway	1342	1April 1950
Scindia State Railway	294	1April 1950

Source: (Nathan, 2014) Composed by author

With a view to secure uniformity in practice and improving efficiency and for better and more economic use of the assets of the railways, the central Government decided to establish a smaller number of railways (Natesan, 2015 ). As a progress the railway board decided to regroup the state railways into six zonal railways.

**Table 2: Regrouping the six Zonal railways**

Southern Railway	Formed on 14 April 1951 by the amalgamation of Madras and southern Maharatta railway, the south Indian Railway and the Mysore State Railway. Route mileage was 6016(9682km) (R. N. Saxena, 1991).
Central Railway	Formed on 14 April 1951 by the amalgamation of Great Indian peninsula Railway Company, the Nizam's state, the Scindia and Dholpur state railways. Route mileage was 5428(8735) (J. Johnson)
Western Railway	Formed on 5 November 1951 by the integration of the Bombay, Baroda and the Central India Railway Company, Sourashtra Railway, the Jaipur State Railway, the Rajasthan Railway, the Cutch State Railway and the Marwar pulad section of the Jodhpur Railway. Route mileage was 5461( 8788)
Northern Railway	Formed on 14 April 1952 by the integration of the Jodhpur Bikaner state and Eastern Punjab Railways, Lucknow Moradabad and Allahabad divisions of the East Indian Railway and the Delhi-Rewari-Fazilka section of the Western Railway 6000(9656).
Eastern Railway	Formed on 14 April 1952 by the amalgamation of the Bengal-Nagpur Railway with the divisions of the East Indian Railway not transferred to the Northern Railway. Its route mileage was 5667 (9120kms)
North Eastern Railway	Formed on 14 April, 1952 by the integration of the Oudh-Tirhut and the Assam Railways and the Kanpur-Achnera section of the western Railway. In 1958 the North Eastern Railway was divided into the North East and North East Frontier railways (India, 1987)

Source: Composed by author based upon: (Aivelu, 2010)

Due to workload and geo-political variation of states, the six zonal systems fragments to eastern railway to south eastern railway and North eastern railway to north east frontier railway up to 1951, nine in 1952 and 16 in 2003. It illustrates that the demand of railway in Indian transportation sector is increasing (White Papers , 2009). However, before Indian independence in 1947, most of the design and manufacturing of rolling stock and infrastructure was entrusted to foreign consultants.

#### 4. Indian Railways and Economy

Indian railways are operating in the core sector of the economy (GOI, 2012). It has always relatively large impact in transportation market, although the technology itself is not sufficient. As a means of historical transportation, Bullock carts and inland waterway network, Automobiles were not effective to substitute to railways.

The expenditure on Railways as a percentage of total transport expenditure has declined considerably. Railway expenditure as percentage of transport sector expenditure used to be about 56% in 7th Plan (1985-90) but it has reduced to 30% in 11th Plan (2007-12). As result IR in last two decades has remained under-invested whereas the road sector has witnessed a surge in investments. The share of IR in overall GDP has been static at 1% and has, in fact, gone down to 0.9% in 2012-13 (GOI, 2015).

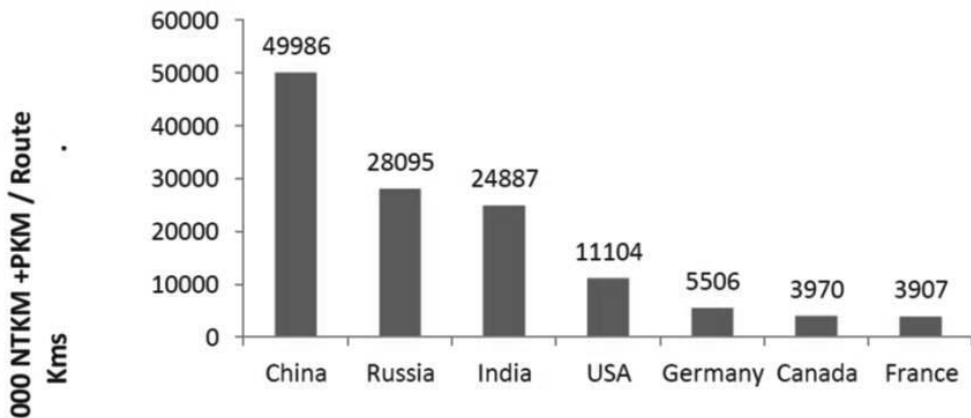
**Table 3: Share of Transport sector in GDP (%)**

Sectors	2008-09	2009-10	2010-11	2012-12	2012-13
Overall transport	6.6	6.6	6.5	6.6	6.7
Railways	1.0	1.0	1.0	1.0	0.9
Road Transport	4.7	4.7	4.6	4.8	4.9
Water transport	0.2	0.2	0.2	0.2	0.2
Air transport	0.2	0.2	0.3	0.3	0.3
Services incidental to transport	0.4	0.4	0.4	0.4	0.4

Source: (GOI, 2015)

The above Table 3: shows that the railway sector overall in GDP growth has gone down on Fiscal year 2012-13. Therefore for the growth of railway sector in GDP the investment in railway sector is needed. In addition, the day to day increasing population is demanding the healthy railway transportation. The traffic density in India is quite high as per world standards, the growth network of the traffic can be illustrated as following.

**Fig. 2: Comparing Traffic Density**



Source: (GOI, 2015)

Comparing traffic density with foreign countries from the Fig.2 it is illustrated that the traffic density can be compared with several developed countries and shows the tremendous demand of transportation investment in India.

## 5. Evolution of PPP in India

In the last one decade, the Indian government has been faced with a huge resource crunch. The deficit of the central government resulted 10% of GDP. The government borrowing has been capped through the fiscal responsibility and Budgetary Act, Thus the government started to limit the state participation and opened the door in infrastructure financing to innovative approaches, for private sectors, such as PPP and FDI.



**Table 4: Evolution of PPP in India**

Phase I 19 <sup>th</sup> century and early 20 <sup>th</sup> century	Phase II (1991-2006)	Phase III After 2006-
The Great Indian peninsular Railway Company (1853)	Only 86 PPP project worth INR 340billion were awarded till 2004(world bank study 2005)	Increasing acceptance of PPP model due to favorable policy reforms and innovative PPP structures
The Bombay Tramway Company's tramway service in Mumbai (1874)	Most of the projects were in bridges and road sectors	Growth in PPP from 450 projects costing INR 2,242 billion in November, 2009 to 758 PPP projects costing INR3,833 billion in July 2011
PPP models were there in power generation and distribution in Mumbai and Kolkata in the early 20 <sup>th</sup> century	Large-scale private financing has been limited to Vishakapatnam and Tirupur	

Source: (Bank, 2013)

Table 4, shows the different phase of PPP evolution in India. And the main attraction of PPP history is, the Railway sector has already used PPP investment with UK in 1953, (The Great Indian peninsular Railway Company on 1853).

### 5.1 PPP models of India

PPP models have been gaining greater acceptance in developing countries. Since 2002, there has been a steady recovery of private investments in infrastructure (Bhatia, 2010). In India in the process of Implementation of PPP, it doesn't have any single available PPP which can satisfy all the conditions and criteria's. The models are selected in suitable circumstances like socio- political, legal policies, and socio-cultural perspectives. The Government is actively encouraging PPP through several initiatives. The appraisal mechanism for the PPP projects has been streamlined to ensure speedy appraisal of projects, eliminate delays, adopt international best practices and have uniformity in mechanism guidelines (PPP India, 2015).

**Table 5: Common PPP model in India**

<p>BOT(build-operate-transfer) models</p>	<p>Most common form of PPP model used In India accounting for almost two thirds of PPP projects.</p> <ul style="list-style-type: none"> <li>➤ User-free based BOT model: Medium to large scale PPP for the energy and transport (road, ports and airports)</li> <li>➤ Annuity –based BOT model commonly used in sector/ projects not meant for cost recovery such as rural, urban, health and educational sectors</li> </ul>
<p>Modified Design-Build (Turnkey) contracts</p>	<p>Design-build contract yields benefits in the form of time and cost savings, efficient risks-sharing and improved quality.</p> <ul style="list-style-type: none"> <li>➤ Linked with payment and penalties</li> </ul>
<p>Performance Based Management/maintenance contracts</p>	<p>This model leads to improve efficiency are encouraged in an environment that is constrained by the availability of economic resources. Sectors as sanitation, water supply solid waste management road maintenance etc.</p>

Source: (FICCI , 2015)

the common forms of PPP model is the one which the ownership of underlying asset remains with the public entity during the contract period and the completed project gets back to public entity on contract termination. As the main attraction the final decision on the form of PPP is determined using the value for money Analysis<sup>2</sup>.

## 5.2 PPP in Indian Railway

In a competitive global environment, governments around the world are focusing on new ways to finance infrastructural projects. Lots of the world leading countries are using PPP as successful means to contribute their domestic economy. Efficient rail transport can be an important catalyst for economic growth and development. PPP in railways can bring opportunities for investment, to upgrade operating efficiency and modernizing technology (PPPIRC, 2015).

Therefore for the sustainable growth and to make competitive investment, the major part of

<sup>2</sup> PPP projects yield value for money: it means if it results, a net positive gain to society which is greater than that which could be achieved, through any alternative procurement.

## The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

private sector participation in IR is going to be through Public-Private Partnership (PPP) model. As per the Expert Group on Indian railways 2001 the Indian Railway as an ongoing transportation organization has to modernize and expand its capacity to serve the emerging needs of growing economy (Expert Group , 2015).

**Table 4: Current PPP projects undertaken by ( MoR)**

SI. No.	Projects	Name of the SPVS/SPC and date of formation	Distance in Km.
1.	Surendranagar-Pipavav Gauge Conversion (Western Railway)	Pipavav Rail Corporation Ltd (PRCL) ( <b>May 2000</b> )	271
2.	Viramgam -Mahesana Gauge Conversion (Western Railway)	Viramgam Mehesana Private Ltd (VMPL) ( <b>October 2002</b> )	65
3.	Hasan –Mangalore Gauge Conversion ( South western Railway)	Hassan Mangalore Rail Development Corporation (HMRDC) ( <b>July 2003</b> )	183
4.	Gandhidham – Palanpur Gauge Conversion (Western Railway)	Kutch Railway Company Ltd ( <b>January 2004</b> )	301
5.	Haridaspur-Paradip, New line (East Coast Railway)	Haridaspur Paradip Railway Company Ltd(HPRCL) ( <b>September 2006</b> )	82
6.	Obulavaripalle –Krishnapatnam, New (South Central Rly)	Krishnapatnam Railway Company Ltd (KRCL) ( <b>October 2006</b> )	114
7.	Bharauch –Dahez, Gauge conc-version (Western Railway)	Bharuch Dahej Rail Development Corporation (BDRCL) ( <b>June 2008</b> )	62.36
8.	Angul –Sukinda Line (East Coast Railway)	Angulo Sukinda Railway Limited (ASRL) ( <b>February 2009</b> )	98.76

Source: (Railways, 2013)

Indian railways executed eight PPP projects consisting of five gauge Conversion and three New Line projects since 2000 through Special Purpose (SPVs) and one Special Purpose Company (SPC) in collaboration with private partners. The four Gauge Conversion projects namely Surendra Nagar ?Pipavav, Viramgam ?Mahesana, Hassan-Mangalore and Gandhidham-

Palanpur projects executed by Pipavav Railway Corporation Ltd (PRCL) Viramgam Mahesana Private Ltd (VMPL), Hassan Mangalore Rail Development Company Limited (HMRDC) and Kutch Railway Company Ltd respectively and two ongoing New Line projects namely Company Ltd (HPRCL) and Krishnapatnam Railway Company Ltd (KRCL) respectively under the PPP projects.

The Private sector participation shows that the Indian railway sector needs a lot of reformation.

### 5. 2. 1 PPP Thrust in IR

IR made several attempts to tie private sectors in areas such as catering, wagon Ownership and leasing and joint ventures for rail infrastructure. The thrust areas includes of high density network-investment towards building up capacity, technological up gradation of assets for improving efficiency, throughput and increasing average speed of trains, utilizing information technology, improving safety of operations by replacements of over-aged assets through Special Railway Safety Fund, mobilization of additional resources through public-private participation in Railway projects and to increase share of passenger and freight traffic (GOI, 2011).

IR has strategy to leverage capital through PPP to maximum extent areas. The Department of Economic Affairs, ministry of Finance has identified railway projects should be implemented partially or fully on PPP route (Phuayl, 2015).

### 5. 2. 2 Bottlenecks of PPP in IR

Public Private Partnership became increasingly relevant as means to address Indian railway development. Currently the Indian Railway doesn't have a fixed rules and regulations in the Constitution. Varying the state governments it also varies the way of participation. Some of the pointed bottlenecks in IR are can be discussed in some points which are as follows:

- Bottle necks at the Institutional level

Several PPP proposals for projects at the state level face roadblocks due to the lack of proper enabling PPP legislation (Mahalingam, 2008 ). The institutional bottlenecks may outline considerable increase in transaction costs, projects which may leads to extend delays, and in some cases, project cancellations. Therefore there is not any fix clear roadmap for implementation of PPP in IR.

## The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

- Organizational bottleneck

PPP in Indian railway are recent phenomenon and therefore are not well understood in both public and private spheres at the state level. A PPP can only be successful if the Government can implement discipline on part of the private player to enforce the contract.

- Contractual incompleteness

Contractual incompleteness has been one of the main weaknesses identified in both a theoretical and an empirical level. The long duration of most PPP projects and the complexity of these projects may give up on the way. Political climate, threat of Private monopolies and unhealthy contracts between partners may be a reason to leave a project incomplete.

Therefore for the need of massive changes in Indian economy Indian railway has the massive potential to reduce poverty and create opportunity both in investment and employment.

### Conclusion

Indian Railway has gone through continuous process of reformation with few factors causing delay in this process, while some helping to speed up. Earlier government policies definitely had taken toll on the development of the railway transportation. Unfortunately FDI& Public Private Partnership PPP policy of government has barred to Indian rail industry to link with foreign technology.

The British colonization in India has paced the development of the railway transportation. The private Partnership was already held in construction of Indian Railway. Only the national investment was not sufficient to lay the rail tracks to whole India. Therefore government has taken the policy of regrouping the Indian dispersed railway under the one management of IR. Government has taken this policy to spread the railway track and to develop into significance means of transportation for socio-economic development of a welfare society like India.

Government policy of letting foreign private investment and participation in all infrastructure sectors has paid off, to foster economic growth and to reduce poverty. For the reason GOI envisages a substantive role for PPP as a means for promoting private sector investment and operational efficiencies in the provision of Public assets and services.

## Reference

- Accelerating PPPs in India. (2015, 07 10). *PPP India summit* (p. 8). New Delhi : FICCI & E-Y.  
Retrieved from Public Private Partnerships India 2011:  
<http://www.pppinindia.com/database.php>
- Alivelu, G. (2010, April). Salient Aspects of the Growth Story of Indian Railways. *Centre For Economic And Social Studies*, 1-27. Retrieved from Salient Aspects of the Growth Story of Indian Railways: [http://www.cess.ac.in/cesshome/wp/WP\\_86.pdf](http://www.cess.ac.in/cesshome/wp/WP_86.pdf)
- Bank, W. (2002). India's Transport Sector. *The challenges Ahead Vol II Background paper*.
- Bhatia, B. (2010). *Public Private Partnership for infrastructure development in developing countries*. Bahaduragarh Haryana 124507: Baba Barkha Nath .
- Bogart, D. &. (2012). "Engines of Growth: The Productivity Advance of Indian Railways before World War1. *Working Paper*.
- Bogart, D. &. (2012). "Engines of Growth: The Productivity Advance of Indian Railways before World War1.
- C.Kashyap, S. (1986). *Transport in India*. New Delhi: p;4.
- Darrin Grimsey, M. K. (2005). *The Economics of Public Private Partnerships*. Montpellier Parade Cheltenham Glos GL50 1UA, UK : Edward Elgar publishing Limited Glensanda House .
- Deloche, J. (1994). *Transport and communications in India Prior to Steam Locomotin volumeI:Land Transport*. Oxford: Oxford University Press.
- Donaldson, D. (2015, 07 04). *Railroads of the Raj: Estimating the Impact of Transportation Infrastructure*. Retrieved from <http://economics.mit.edu/files/6038>
- Engel E, F. G. (2009). The basic public finance of public-private partnerships. *Cuwles Foundation* (p. Discussion Paper 12339). Yale university .
- Engel E, F. R. (2009a). Soft budgets and renegotiations in public-private partnerships. *working paper no 15300*. Yale university.
- Expert Group* . (2015, 07 10). Retrieved from  
[http://www.rakeshmohan.com/docs/Railway\\_Report.pdf](http://www.rakeshmohan.com/docs/Railway_Report.pdf)
- GOI. (2009). *THE RAILWAY SECTOR IN INDIA* . India: Department of Economic Affairs, Ministry of Finance.
- GOI. (2011). Retrieved 12 12, 2014, from  
[http://dipp.nic.in/English/Investor/Investers\\_Gudlines/Rail.pdf](http://dipp.nic.in/English/Investor/Investers_Gudlines/Rail.pdf)
- GOI. (2015, February). Retrieved from  
[http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance\\_budget/Budget\\_2015-16/White\\_Paper\\_-\\_English.pdf](http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance_budget/Budget_2015-16/White_Paper_-_English.pdf)
- GOI. (2015, 07 10). Retrieved 12 12, 2014, from Report of the Comptroller and Auditor General of India:  
[http://www.saiindia.gov.in/english/home/Our\\_Products/Audit\\_Report/Government\\_Wise/union\\_audit/recent\\_reports/union\\_performance/2014/Railway/Report\\_3/chap\\_1.pdf](http://www.saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2014/Railway/Report_3/chap_1.pdf)
- GoI. (2015, 05 21). *white paper*. Retrieved from Indian railways:  
[http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance\\_budget/Budget\\_2015-16/White\\_Paper\\_-\\_English.pdf](http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance_budget/Budget_2015-16/White_Paper_-_English.pdf)
- GOI, G. o. (2012). core sector of Indian economy. *Government of India Ministry of Railways*, 3.
- Group, E. (2001). The Indian Railways Report .
- Holland, R., & D.C., S. (1984). *The new era in public-private partnerships,Rebuilding America's Cities: Roads to Recovery*. New Brunswick: NJ: Centre for Urban Policy Research .

## The Role of Public Private Partnership (PPP) in Development of Indian Railway (IR)

- India, N. A. (1987). *Published Under the Auspicious of UNESCO*, p:116.
- J.Johnson. (n.d.). *The Economics of Indian Transport*. Madras: Allied Publisherpvt.Ltd.,.
- M.A.Rao. (1988). National Book Trust India . *Indian railway*, p 33.
- M.Rao. (1988). National Book Trust India. *Indian railway*, p 33.
- Mahalingam, A. (2008 ). PPP Experiences in Indian States. *Indian Institute of Technology*, 1-14.  
Retrieved 13, 2015, from <http://www.epossociety.org/LEAD2008/Ashwin.pdf>
- Malik. (1962). *Oxford University press*, 57.
- Michel. (2008, February 22). *Public Financial Management Blog*. Retrieved from International Monetary Fund: <http://blog-pfm.imf.org/pfmblog/2008/02/a-primer-on-pub.html>
- Natesan, L. (2015 , 17). *Colonial Power and the introduction of Railway in India*. Retrieved from [http://shodhganga.inflibnet.ac.in/bitstream/10603/12705/9/09\\_chapter%201.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/12705/9/09_chapter%201.pdf)
- Nathan, V. (2014, 12 12). *Important state railways*. Retrieved from colonial Power and introduction of railways in India :  
[http://shodhganga.inflibnet.ac.in/bitstream/10603/12705/9/09\\_chapter%201.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/12705/9/09_chapter%201.pdf)
- Phuayl, M. (2015 ). *Role of Public Private Partnership in Indian railway* . Hachioji Tokyo : Soka university .
- Phuyal, M. (2015). *Role of Public Private Partnership in Indian railway*. Hachioji Tokyo: Soka University.
- Phuyal, M. (2015). *Role of Public Private Partnership in Indian Railway, Feasibility of High Speed railway*. Tokyo, Hachioji: Soka University.
- PPPIRC. (2015, 07 10). Retrieved from World Bank Group:  
<http://ppp.worldbank.org/public-private-partnership/sector/transportation/railway-trains>
- R. N. Saxena. (1991). *Four Decades of Indian railways 1950-1990*. Delhi: Academic Foundation Publication.
- Railways, P. P. (2013, march). Retrieved 12 12, 2014, from  
[http://www.saiindia.gov.in/english/home/Our\\_Products/Audit\\_Report/Government\\_Wise/union\\_audit/recent\\_reports/union\\_performance/2014/Railway/Report\\_3/chap\\_1.pdf](http://www.saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2014/Railway/Report_3/chap_1.pdf)
- Railways, P. P. (2015, 2 3). *Report of the Comptroller and Auditor General of India*. Retrieved 12 12, 2014, from  
[http://www.saiindia.gov.in/english/home/Our\\_Products/Audit\\_Report/Government\\_Wise/union\\_audit/recent\\_reports/union\\_performance/2014/Railway/Report\\_3/chap\\_1.pdf](http://www.saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2014/Railway/Report_3/chap_1.pdf)
- Robbins, M. (1962). *The Railway age*. New Delhi.
- S. Thulaseedharan Assary. (2009). *Colonialism: Princely States and struggle for liberation, Travancore 1938-1948*. New Delhi. p .36: A. P .H Publishing Corporation.,.
- Thorner Daniel. (1950). *Great Britain and the Development of India's Railways*., Philadelphia, 1950, P:94.
- White Papers . (2009 ). *Government of India Ministry of Railways Railway Board* , 1-80.
- world bank . (2015, 06 23). Retrieved from  
<http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>
- World Bank . (2015, 06 30). Retrieved from  
PPPIRC<http://ppp.worldbank.org/public-private-partnership/>