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Impact on Infrastrucuture and Economy Growth in India

Salam Athouba Meetei
MBA, Department of Management Studies
Bharath Institute of Science and Technology,
Selaiyur, Chennai, Tamil Nadu 600 073
Bharath Institute of Higher Education and Research

ABSTRACT

In this paper examine the recent scenario of infrastructure has play a vital role of essential for economic development and is considered as the backbone of an economy it is basic supporting factored for all sectors of the economy infrastructure instrument to reduce the disparities between demand and supply. Indian infrastructure define infrastructure as a physical framework of facilities through which goods and services are provided to the public. Infrastructure can deliver point's economic growth poverty alleviation and environment sustainability. Education and health are the two important social infrastructure and social infrastructure, communication, electricity, or the economic irrigation, water supply and sanitation are recognized as a physical infrastructure otherwise called economic infrastructure, social infrastructure is an instrument to promote the human capital and physical infrastructure is pertinent to promote the economic activates.

INTRODUCTION

India became the second faster growing large economy two decades next only to china the decadal growth rate of GDP has significantly increased during the liberalized era viz between 1980-81 and 1990-91 the which during 1990-91 to 2000-01 and further increased 7.6 per cent in the subsequent in fracture activity field as infrastructure factor to ladder in the economic development in India development in particular physical infrastructure development has been paid a considerable attention during 2000s,hence it is that the both public as well as private sectors play a pivotal role to proved a god infrastructure facility.

INFRASTRUCTURE DEVELOPMENT IN INDIA

In India social and economic performance is significantly high in some status mainly due to providing quality of infrastructure over the period it is obvious that the states which have spent less on development of infrastructure are poor in economic performance .hence, the low-income states received financial support from central government and Public Private Participation (PPP) system. the major state-wise infrastructure consists of 12 indicators and some of the infrastructure indictors are banking, communication, electricity, road transport, irrigation, education and health, the infrastrure index and per capita income (current prices) are given for 1999-00. It observed that Andhra Pradesh, Kerala, Karnataka and Rajasthan improved its infrastructure index ranking whereas Tamil Nadu, Haryana, Gujarath, Madhya Pradesh, Orissa and Uttar Pradesh retained the same ranks in the two points of the year. west Bengal, Punjab, Bihar and Maharashtra found themselves in lower ranks. Absolutes declined in west Bengale. value of index has Punjab Haryana and Bihar between these two points of years.

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INFRASTRUCTURE INVESTMENT - LINKS TO GROWTH MODEL

In this section our objective is to examine the effects of infrastructure on overall growth and thereby sustained poverty reduction in the economy. There are many infrastructure variables that can be considered to determine the effect of infrastructure on growth. Since adding unimportant variables will add overhead to the analysis without any significant effect on the dependent variables, we need to identify which are the important variables. In order to address the first research question, we use here an aggregate production function, which can be written in the form

In adequacy of Infrastructure facilities is considered as a major hurdle for the economic growth there was neglect of infrastructure in India-both physical and social infrastructure –has been upon ninth plan period in the latter part of the ninth plan, deficit of investment in infrastructure was realized hence, the government of India began to shift its focuses to infrastructure development as was evident from the tenth and eleventh plan .during target of public –private participation (ppp) project were motivated in order to reduce the government financial burden. those is possible only by providing superior quality infrastructure generating employment ,increase in productivity, reduction of poverty and acceleration of economic activist mainly depends upon the quality of infrastructure(GOI,2013B) old technology ,slow speed, high un electrified routes in railways inadequate urban infrastr4ture faculties and limited public investment in infrastructure facilities and limited public investment in infrastructure are thema16re obstacles to growth in the Indian economic. Hence the twelfth plan aims to pay more attention for strengthening the infrastructure.

TABLE NO 1
PPP PROJECTS IN CENTRAL AND STATE SECTORS (AS ON MARCH 31, 2011)

SL.No	Sector	Completed Projects		Projects Under Implementation		Projection in Pipeline		Total	
		No. of Projects	Projects Cost (Rs.crore)	No. of Projects	Project cost Rs. crore	No.of Projects	Project cost (Rs.crore)	No.of Projects	Projects Cost(Rs.crore
Central Sector									
1	National Highways	55	20,139	127	103,455	60	52,573	242	176,167
2	Major Ports	29	9,677	20	34,138	24	16,964	73	60,779
3	Airports	3	5,883	2	23,310	14	12,387	19	41,8580
4	Railways	5	1,166	4	2,363	6	95,535	15	99,064
	Total	92	36,865	153	163,266	104	177,439	349	377,590
State Sector									
1	Roads	141	11,438	91	28,901	234	132,668	466	173,007

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2	Non-Major Ports	20	26,964	40	55,853	25	41,073	85	123,890
3	Airports	2	4,957	7	4,571	9	4,265	18	13,793
4	Railways			1	500	3	312	4	812
5	Power	14	19,019	96	29,585	89	82,245	199	130,849
6	Urban Infrastucture	95	8,611	103	42,546	227	81,265	425	132,422
7	Other sector	68	3,053	94	51,605	257	91,166	419	145,824
	Total	340	74,042	432	213,561	844	432,994	1,616	720,597
Grand Total		432	110,907	585	376,827	948	610,433	1,965	1,098,187

Source: http://infrastucture.gov.in

An upsurge in private participation in infrastructure investment in the primary sector is reflected in Graph 1, which shows that from 1990 till 2010 US$ 234, 204 million was invested in the creation of physical infrastructure, most particularly in the energy and telecom sectors. Moreover, it suggests that the country has been attracting more private investment in infrastructure since 2006. Concomitantly, recent studies also show that since 2006 India has had more success attracting private investment in infrastructure than any other developing country (Harris, 2008).

TABLE NO 2
PROJECTED INVESTMENT IN INFRASTRUCTURE DURING THE TWELFTH FIVE-YEAR PLAN

Year	**Base year (2011-12)**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**Total 12 th Plan**
GDP at market prices(Rs crore)	63,14,265	68,82,549	75,01,978	81,77,156	89,13,100	97,15,280	4,11,90,064
Rate of growth of GDP (%)	9.00	9.00	9.00	9.00	9.00	9.00	9.00

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Infrastructure investment as % of GDP	8.37	9.00	9.50	9.90	10,30	10,70	9.95
Infrastructure investment (Rs.crore)	5,28,316	6,19,429	7,12,688	8,09,538	9,18,049	10,39,535	40,99,240
Infrastucture investment	132,08	154,86	178.17	202,38	229.51	229,88	1,024,81
(US$ billion)	Rs.40/$						

SOURCE:
Financing this level of investment will require larger outlays from the public sector, but his has to be coupled with a more than proportional rise in private investment. Private and PPP investment is estimated to have accounted for a little over 30% of total investment in infrastructure in the Eleventh Plan. This share may have to rise to 50% in the Twelfth Plan. Since investment in infrastructure has to increase as a percentage of GDP and about 50% of the investment is projected to be from the private sector, the institutional mechanisms for supporting such investment deserve strong support. The Finance Ministry has announced guidelines for establishing infrastructure debt funds.

TABLE NO 3
VALUES OF SELECTED INDICATORS

Year	Labour force (crore)	GFCF in INFRA(Rs.in Crore)	GDPMP (Rs.in Crore)	Gross Domestic Capital Formation (Rs.in Crore)	Gross Domestic Capital Formation other than Infrastucture (Rs.Crore)
1999	40.14	88,521	1,802,801	429,430	340,909
2000	40.92	109,303	2,009,556	532,692	423,389
2001	42.06	116,950	2,164,262	538,525	421,575
2002	43.21	115,931	2,346,105	547,857	431,926
2003	44.38	123,940	2,526,888	650,323	526,383
2004	45.57	140,820	2,835,798	798,995	658,175
2005	46.77	182,603	3,242,209	1,064,041	881,438
2006	46.90	235,806	3,692,485	1,279,891	1,044,085
2007	47.00	275,111	4,293,672	1,531,568	1,256,457
2008	47.10	330,968	4,986,426	1,901,928	1,570,960

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NOTE :GFCF in infrastructure includes GFCF in irrigation, electricity, gas, water supply and wind energy, ports etc., construction and Roads & Bridges, railways

TABLE NO 4
CORRELATION MATRIX (TEN YEARS)

	Irr	Road	Rail	EGW	Com	Strg	Ports	GDP
Irr	1.000	-0.262	0.500	0.532	0.677	0.081	0.753	0.744
Road	-0.262	1.000	0.084	0.194	0.017	0.640	-0.079	0.010
Rail	0500	0.084	1.000	0.281	0.736	0.370	0.734	0.742
EGW	0.532	0.194	0.281	1.000	0.144	0.241	0.694	0.783
Com	0.677	0.017	0.736	0.144	1.000	0.360	0.424	0.576
Strg	0.081	0.640	0.370	0.241	0.360	1.000	0.238	0.225
Ports	0.753	-0.079	0.734	0.694	0.424	0.238	1.000	0.890
GDP	0.744	0.010	0.742	0.783	0.576	0.225	0.890	1.000

PCA requires that there should be some correlations greater than 0.30 between the variables of concern, which is satisfied as observed from the correlation matrix of variables in Table It is already seen in the above regression analysis that infrastructure has a major impact on growth. The correlation matrix cannot quantify the impact of each of these parameters on growth: however the last column of Table 9 shows that each of the infrastructure parameters has a positive correlation with growth, and an increase in investment in each of these parameters will result in an increase in growth. Observing the positive correlations in the table it is evident that each of these sectors is interrelated, and an increase in growth because of an increase in investment in any particular sector might not be solely because of that sector. PCA enables us to transform this data into non-correlated data by creating eigenvectors from which we can avoid the problem of correlation in data.

TABLE NO 5
CATEGORIES OF INFRASTRUCTURE INVESTMENT IN INDIA

	2010	2015	Share in 2010	Share in 2015	CAGR
	Rs.Million		Percent		
Hotels & tourism	1054773	1145828	3.2	2.1	1.7
Wholesale & retail trading	2202348	2459979	6.7	4.6	2.2
Transports services	201437782	38099095	62.2	71.4	13.3
Communication services	2016170	25502266	6.1	4.8	4.8
Information technology	2178194	2296245	6.6	4.3	1.1
Miscellaneous & services	4962032	6799211	15.1	12.7	6.5
Total Infrastructure	32851299	533506624	100.0		10.2

Sources: ASSOCHAM Economic Research Bureau and CMIE

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TABLE NO 6
SUB –CATEGORY OF TRANSPORT SERVICES INVESTMENT

	2012	2015	Share in 2010	Share in 2015	CAGR
	Rs.Million		Percent		
Air transport infrastructure	2835356	5333317	13.9	14.0	13.5
Railway transport infrastructure Services	7155783	16074592	35.0	42.2	17.6
Road transport infrastructure services	6494808	11366103	31.8	29.8	11.8
Shipping transport infrastructure Services	3337580	4556322	16.3	12.0	6.4
Transport logistics services	614256	768761	3.0	2.0	4.6
Total Transport services Investment	20437782	38099095	100.0	100.0	13.3

Sources: ASSOCHAM Economic Research Bureau and CMIE

COMMITTEES ON INFRASTRUCTURE DEVELOPMENT

Various committees reviewed the situation of investment the committee on infrastructure was appointed in 2004 under the chairmanship of the prime minister public transport development including railways many mega cities viz. Chennai, Kolkata, Mumbai, Hyderabad have been implementing the MRTS during the eleventh plan peri6d and they continue during the twelfth plan hence, the estimated plan outlay is R.S 87,714 core on this sector. ports play an important role in the international trade the minor p6rts received more benefits through ppp projects rather than the major ports during the eleventh plan hence, the twelfth plan gives top priority for the major present development

TABLE NO 7
PUBLIC AND PRIVATE INVESTMENT IN INFRASTRUCTURE AS A PERCENTAGE OF GDP

Sectors	10th plan	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	11th-plan
Public investment	3.92	4.18	4.86	4.33	4.86	4.60	4.68	4.57
Private investment	1.12	1.43	1.93	2.50	2.24	3.73	2.49	2.64
Total investment	5.04	5.61	6.26	736	6.84	8.41	6.90	7.21
Share of private investment(%)	22	26	31	34	33	45	40	38
Share of public investment(%)	78	74	69	66	67	55	60	62

2011-12 and he projection of investment in infrastrure between 2012-13 and 2016-17 in India .during the eleventh plan the investment in infrastructure rapidly increased from 5, 61 per cent of

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GDP to 7.32 per cent GDP in 2008-09 and slipped to 6.81 per cent in 2009-10 and to regained 8:41 per cent of GDP IN 2010-11.But investment in energy and transport

The investment infrastructure in energy and transport projection shows that the investment in infrastructure as percentage of GDP to 9 percent by the end of twelfth plan center and the private sectors in road sector due state highway major district roads and villages are in the domain of the governments sate governments share decreased from tenth plan to eleventh plan in terms of electricity investment .private sector and central governments investment in electricity has increased marginal level. Under the eleventh plan, the public sector shows under performance but private sectored role has rapidity increased during the tenth and eleventh plan periods in terms of investment in infrastructure sectors.

INVESTMENT IN INFRASTRUCTURE DURING THE TWELFTH PLAN

Both social and physical infrastructure play central goal during the twelfth plan period. some areas require special attention during the twelfth plan in order to over come the hurdles in the path of economic growth. Twenty five core indicators are given by the twelfth plan to order to economic growth. Twelfth five crore indicators are given by the twelfth plan in order to attain the rapid sustainable and more inclusive and some of them are given blow. -Roads; East –west corridors (670 km in assam); strage border road, trans –arunchal

TABLE NO 8
PROJECTED INVESTMENT IN INFRASTRUCTURE DURING THE TWELFTH PLAN

Infrastructure investment	2012-13	2013-14	2014-15	2015-16	2016-17	12FYP
Infrastructure investment (&)crore	6,19,429	7,12,688	8,09,538	9,18,049	10,39,533	40,99,240
Share of private sector investment(%)	41	43	46	48	51	47
Share of public investment(%)	59	57	54	52	49	53

SECTORS –WISE INVESTMENT IN PHYSICAL INFRASTRUCTURE.

Both physical and social infrastrucuture are of equal important for The development of a country. Between 2003-04 and 2010-11, budgetary spending on social infrastructure grew at a compounded annual growth rate (CAGR) of 18.per cent and sanitation and pipelines are the important sub-infrastructures of the physical infrastructure the total outlay of the investment in infrastructr4 wi33 be 55.7 lahk crore during the TWELFTH PLAN. The demand for electric power has rapidly increased over a period of time and also expected to increase much faster during the TWELTH PLAN period. The plan aims to 88,0000 MW and also aims to utilize the potentiality of renewable energy.

Transport infrastructure is an essential component of the economy an efficient transportation system can have a multiplier effect on the economy road and bridges and telecommunication would receive almost same percentage of the total physical infrastructure outlay i.e about 16 per cent but the road sector received more share during the TWLFTH PLAN over the previous two FIVE

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YEAR PLANS.As the national transport policy 2006 has given more attention for the development of public TWELFTH PLAN has given has given top priority for the public transport development Including railways .many mega crities viz. Chennai, Kolkata, Mumbai, Hyderabad and Bangalore have been implementing the MRTS during the eleventh plan period and they continue during the TWELFTH PLAN the Indian aviation industry is one of the fasted growing industries in the world up gradation of airports, development of non-metro airports, make some of our airports into international hubs are being considered under the twelfth plan.

Hence the estimated plan outlay is Rs 87,714 crore on this sector ports play an important role in the international trade major ports come under the central governments the minor ports received more benefits through ppp projects rather than the major ports during the eleventh plan hence ,the twelfth plan gives top priority for the major ports development

Telecommunication has registered a tremendous improvement during the post-reform period and there is further scope for expansion with the introduction of 3g services during the twelfth plan the estimated outlay of telecommunication sector is Rs 9,43,899 crore with 16.9 per cent share of the total all investment in physical infrastructure investment has increased from tenth plan to twelfth plan, the share of irrigation of the total physical infrastructure investment in physical to twelfth plan the share of irrigation of the total infratual investment. Has rapidly declined in the corresponding plan periods. On the other hand, it is observation that transport sector including rai, roads, ports, airports and pipelines would receive adequate attention during the twelfth plan followed by electricity

PUBLIC-PRIVATE PARTICIPATION IN INFRASTRUCTURE.

Adequate investment in the development of infrastructure is a prerequisite for sustained growth rate in this context, participation of both the public and private investment in necessary .private investment has been consider as the major drive of the investment in the present context a large number of ppp infrastructure project have been undertaken govt by both central and state governments which includes roads ,railways ports, power and urban infrastuture, India is the largest market for public –private participation in infrastructure in development world.(gol,2013a).

The twelfth plan recognizes adequate investment in the development of infrastructure as a prerequisite for higher growth. the plane aims to accelerate public –private investment in infrastrure

- setting up roupst institutional structure for apprizing and approving ppp project.
- developing standardized documents such as model concession agreements across infrastructure sectors and .
- by creasing availably of financing by creating dedicated institution and providing viability gap funding the details of various project of eleventh plans ppp project have been given in table5.

the data shows that 937 ppp project Involving an investment of RS 7,16,436 CRORE out of these ,308 project are in the central sectors and remaining 629 project are in the state sectors as on November 2009.

Indian railways are one of the largest and busiest rail networks in the world. when liberalization policy was introduction in country, railway ate were paid less attention by private investor but in the recent years government has been taken sanctification s h as initiatives such as ppp project in the railway sectore.

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Airways received considerable benefits during the liberalization era. The government of Indian has allowed 100 per cent FDI under the automatic rout, for greenfi3d airports FDI up to 49 per cent is allowed in the domestic airlines. private sector accounts for 64 per cent of the investment .upgrade airports in metro and non metro cities and aerospace Seas are the notable ppp project in the context in India

After the implementation of reform policy in India telecommunication performed well in the past two decades the cash inflow of private sectore was a hug volume during the eleven plan periods as a result the cost has been brought down and the quality of telecom increased.

CONCLUSION

Infrastructure plays a crucial role for Indian econo0ic development. It enhances all economic and social activities even though the post independence era in India shows a signification improvement in providing infrastructure facilities to the public hence the Indian government initiated significant efforts to eliminate all bottlenecks in order to proved good infrastructure facilities. In the past mix of public and two five year plan, the government plan to draw and private sector investment in the twelfth plan through ppp and other initiatives. A number of project were initiated at both the centre and state levees during the tenth and eleventh plans, most of which are already completed. tapping the financial sources for investment during twelfth plan accelerated infrastructure growth will help to create jobs result in higher economic growth and fuel entrepreneurship.

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