International Journal of Economic Research

ISSN : 0972-9380

available at http: www.serialsjournal.com

Volume 14 • Number 4 • 2017

Infrastructural Development and Balanced Regional Development: Experience of Selected Indian states

Namita Kapoor[1]

[1] *Assistant Professor, Amity University, Noida, Email: namita3112@gmail.com*

Abstract: The regional development and imbalances has been a significant agenda for the planners and policy makers in India. The policies adopted since the Independence has not benefitted much the regions that were backward and the regional disparities grew over time. The states like Bihar, Madhya Pradesh, Orrisa and others falls at the lowest ladder of development indictors. These states are far below in terms of developmental indicators than the other advanced states like Tamil Naidu, Punjab and others in all respects whether domestic product or other development indicators. Realizing the importance of infrastructure development for reducing inequalities the Government has invested huge funds since the inception of First Five year Plan. The basic motive behind this was to build up infrastructural facilities to encourage agricultural production and for attaining developmental goals of poverty alleviation and employment generation. This paper aims at examining the association between regional development levels and regional infrastructural levels. The present study also tries to identify major policy issues that need to be addressed if the low developed regions are to achieve more respectable level of development in future. The study finds out that there exist positive significant role of infrastructure in explaining the regional imbalances and variations in growth and there is tremendous contribution of tele density and electrification in the growth performance of any region. The study suggests that government can achieve more equitable development across states through investments in social and economic infrastructure. The basic drawback of the study is the lack of availability of secondary data at the regional level.

Key Words: Regional Development, Infrastructure Development, Regional Inequalities, Per capita Gross Domestic Product

JEL Classification: R 58, H 58, C29

INTRODUCTION

The regional development and imbalances has been a significant agenda for the planners and policy makers in India. India inherited the colonial legacy in the economy with backwardness, poverty, unemployment, low income and productivity of capital and labour. The inter-regional inequalities were huge with underdevelopment of the major part of the economy. The development strategy adopted by the country to overcome the problem of underdevelopment was based on the mixed economy, by creating large public sector and leaving private capital to float freely. The aggregate growth models were chosen to resolve the problem of unequal development, where it was envisaged that by taking care of growth of economy, the problems of imbalances, both inter-personal and inter-regional will be handled automatically through the trickle down effect of development process. But without much difficulty and less rigorous analysis it may be seen that all the states in the country could not get the benefits as expected in the growth model. The state like Bihar, M.P etc falls at the lowest ladder of development indictor. The pace of development of these states is also not very high on the both fronts- State Domestic Product, Per Capita Income as well as the availability /consumption of capital and consumer goods. All states of economy do not grow in the same proportion in the economic growth process. The flow of investment and labour don't get allocated proportionately to all producing sectors. The pace in the region's growth process may be accounted for the inequitable changes in the sectoral terms of trade.

The emphasis on developing infrastructure especially agriculture has been witnessed since the commencement of First five year plan and huge investments were done assuming that infrastructural development would lead to economic growth and the regions would benefit from the trickle down advantage. The focus was to build up infrastructural facilities to boost up agricultural production and for attaining developmental goals of poverty alleviation and employment generation. The funds available at the disposal of the concerned governments and the prejudice of the planners and decision makers were crucial in determining the level of infrastructure in respective states, which led to imbalances and disparities in regional development. This paper aims at examining the linkages between balanced regional development and infrastructural developments thereby providing major policy implications for addressing the more promising growth and development of less developed regions.

LITERATURE REVIEW

The pioneers in the study involved linkages between the economic growth and infrastructure were *Hirschman(1958)* through theories of unbalanced growth. Recently various econometric models have been developed, wherein infrastructure has been considered as an input in aggregate output functions. *Mera (1975) Munnell(1990) Aschadauer (1990), Duff Deno , and Eberts (1989), Jacoby (1994), Hulten (2006)* have done econometric analysis at country levels drawing the importance of public capital and public utilities. Various attempts had been made in India to evaluate the role of infrastructural development in regional disparities. *Shah (1970)* reviewed the trends in the infrastructural services and concluded that there is significant correlation (positive) between PCI and Infrastructural development. *Tiwari (1984)* showed significant positive relationship between infrastructural development and economic development. *Kurian (2000)* emphsised on investments in infrastructure and social sector on the basis of study on selected socio economic indicators of selected states *Ahluwalia (2000)*, documented the economic performance of selected states and emphasized on the development of socio economic infrastructure by providing major financial support to state government. *Virmani, Arvind (2006)*, focused on the concern of variability in economic growth and the state's votality. *Aruna Alokesh and Sawhney Aparna (2010)* and *Zhao Chen (2016) argued* and emphasized on the state government's expenditure on developmental projects can reduce poverty and promote more equitable and balance regional development.

RESEARCH METHODS

There are wide disparities in the economic performance across states, especially after the reforms have been initiated. The most debatable issue today is that whether or not the reforms initiated by the Government are responsible for increasing inequalities. We seek to explain the reasons for variations in the growth of GSDP and PCGSDP in each state using some explanatory variables for explaining the linkages between infrastructure levels and regional development levels.

The regression co-efficients are estimated to study the impact of selected indicators on growth of Per capita gross state product (1990-91 to 2013-14) and growth of Gross State Domestic Product. The selected indicators are Planned expenditure as percentage of GSDP(2013-14),Literacy (2013-14), Infrastructure index (CMIE) for the year 2007-2008, percentage of villages electrified (2013-14), natural log of per capita consumption of electricity (2013-14), natural log of teledensity (2013-14), Government Investment (2013-14), ,Private investment((2013-14), total investment(2013-14)were independent variables.

The most important determinant of growth process of any region is the rate of investment. In order to study regional differences in the growth, it is necessary to analyze the differences in individual states. The data for investment is not readily available, although for the present study CAPEX data of CMIE is used as a proxy for investment across states.

The differences in Per-Capita GSDP of regions are the major concerns of the Indian Economy which needs immediate attention. The balanced regional development is the most important objective of Indian Five year plans which although has never being achieved. It has being emphasized that with development regional differences in per capita incomes should be reduced and not expanded. The Gini co-efficient can be used as a measure to measure inequality in the distribution of income among states.

Figure 1 depicts that the inter-state Gini-coefficient was more or less same till 1987-88 and it began to rise and exhibits statistically significant positive trend in the time series plot.

This does not mean that “richer states have grown richer and poorer states have become poorer”. The analysis of Per Capita Gross State Domestic Product growth rate of the different states in the four different time periods suggests that states that lagged behind the developed regions are still far below the developed regions.

Table 1and Table 2 reveals the nonexistence of significant relationship between Public investments and Economic Growth across state as well as Per Capita Gross State Domestic Product. There is a possibility that this may be because of the limitations and restrictions of CAPEX data. We do not infer that public investment does not have any significant linkage with growth. Public investment is crucial for developing socio-economic infrastructure. There is no doubt regarding the significant association between variations in growth and variations in socio-economic infrastructure.

The positive and significant impact of variations in private investment explains the variations in growth in the regions. Around 38% of the higher growth of states is explained by higher levels of private investment in those regions. The analysis also reveals that planned expenditure does not show any significant impact on variations in growth across regions. This necessarily emphasizes that plan programmes are not properly designed and executed. The state plans are not able to achieve their desired

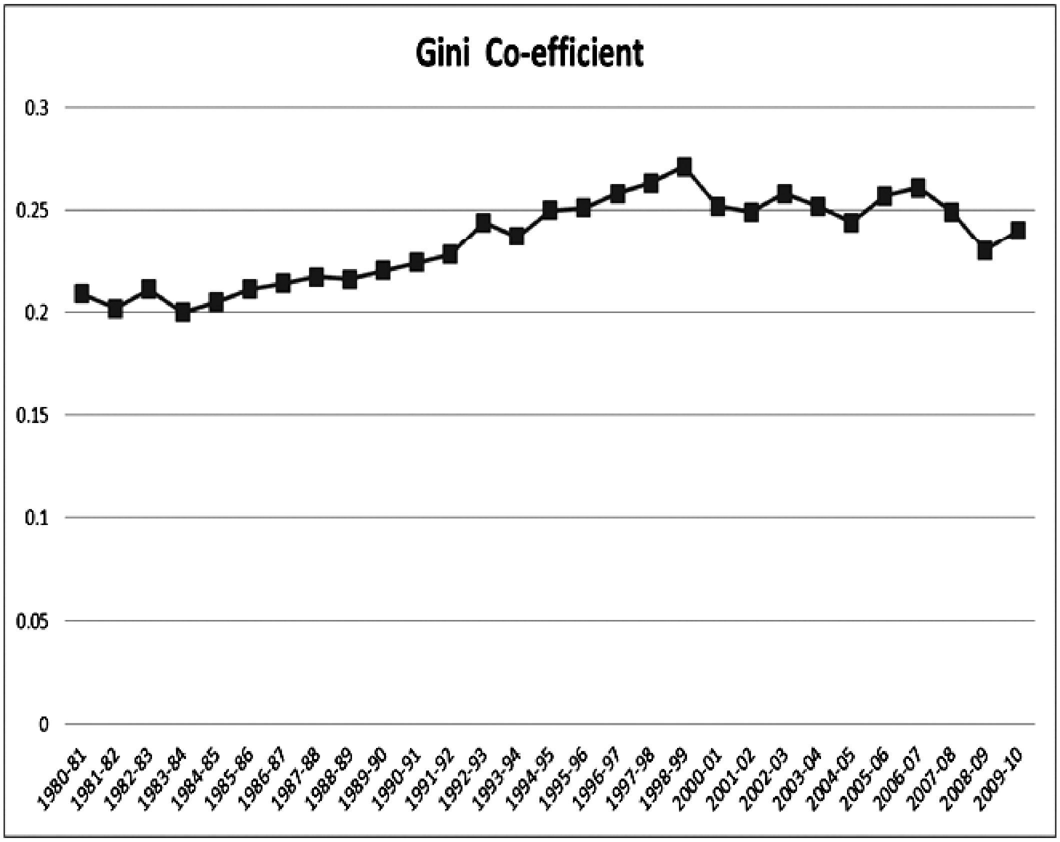

Figure 1: Inter-State Gini Coefficient

Table 1
Results of Regression Analysis Dependent Variable: AGGSDP

Independent Variable	*Intercept*	β *Co-efficient*	*R- Square*	*P-value*
GFCF	2.49	+ 0.0469	17.3%	0.123
Literacy	5.62	+ 0.0072	0.5%	0.794
Infrastructure	4.87	+ 0.01073	12.0%	0.098
Percentage of Villages Electrified	1.33	+ 0.0517	8.1%	0. 03
Per Capita Consumption of Electricity	4.83	+ 0.00291	11.2%	0.08
Teledensity	5.37	0.0703	4.5%	0.47
Lnper Capita Consumption of Electricity	- 0.89	+ 1.18	12.6%	0.194
Lnteledensity	3.76	+ 1.09	13.3%	0.182
Government Investment	5.05	+ 0.0489	6.8%	0.125
Private Investment	4.77	+ 0.0879	37.8%	0.015
Planned Expenditure	4.92	+ 0.246	2.6%	0.567
Private Investment * Literacy	4.91	+ 0.00119	35.4	0.19
Total Investment*Literacy	4.23	+0.000817	33.1	0.025

Source: Authors Calculation from EPWRF DATABASE SDP and www. Indiastat.com

Table 2
Results of Regression Analysis (Dependent Variable : AGPCGSDP)

Independent Variable	*Intercept*	*β Co-efficient*	*R- Square*	*P-value*
Planned Expenditure	2.08	+ 0.447	7.6%	0.319
Literacy	3.45	+0.0114	1.2%	0.694
Infrastructure	2.98	+ 0.0106	2.6%	0.565
Percentage of Villages Electtified	4.94	- 0.0086	0.2%	0.874
Per Capita Consumption of Electricity	4.20	- 0.00010	0.0%	0.968
Tele Density	3.68	+ 0.0481	1.9%	0.626
Ln Percapita Consumption of Electricity	3.64	+ 0.088	0.1%	0.930
Ln Teledensity	2.87	+ 0.611	3.7%	0.035
Government Investment	2.79	+ 0.0656	10.9%	0.229
Private Investment	3.47	+ 0.0463	9.3%	0.056
Total Investment	3.77	+ 0.0647	36.9%	0.016
Investment *Literacy	2.83	+0.00593	15.6%	0.145
Private Investment* Literacy	3.56	+0.0610	8.3%	0.045

Source: Authors Calculation from EPWRF DATABASE SDP and www. Indiastat.com

objectives of economic growth with social justice. As per the findings literacy is not been a significant variable in explaining the variations in regional imbalances and growth of Per Capita Gross State Domestic Product. The significance of human development is not independent of level of investment. The composite variable (investment multiplied with literacy) shows that there is positive interaction of investment with literacy in explaining the variations in growth and per capita gross state domestic product. There exist positive significant role of infrastructure in explaining the regional imbalances and variations in growth. Further there is undoubted contribution of tele-density and electrification in the growth performance of any region.

CONCLUSION

From the analysis of selected indicators to explain the variations and linkages of regional development it is evident that states that have high level of human development and Infrastructural development have higher rates of growth than others. The government can achieve more equitable development across states through investments in social and economic infrastructure. Public capital formation and investment in social and physical infrastructure are strongly associated with regional development. The growth in the social and physical infrastructure increases the productivity of sectors or regions thereby encouraging private investment. Special emphasis should be given to the factors responsible for stimulating private investment. The allocation of funds through state developmental expenditure on the lagging states cannot compensate for the private investment and the gap between the regions have increased. The states with low levels of state domestic product continues to have less share of manufacturing and the growth in NSDP. The status of poor states can be improved only through channelizing the private investments along with the developmental expenditure especially focusing on Social Sector. The development expenditure can help states in improving their status and reducing inequalities.

REFERENCES

Adabar K. (2003), "Economic Growth and Convergence in India", available at http://www.isid.ac.in/~planning/ka.pdf

Ahluwalia, Montek S. (2000), "Economic Performance of States in Post- Reforms Period", Economic *and Political Weekly*, May 6, pp. 1637-1648.

Ahluwalia, Montek S. (2011), "Prospects and Policy Challalanges in the XII Plan", Economic *and Political Weekly of India,XLVI, No.21 , May 21*

Ames B, Brown W, Devarajan S and Izquierdo A (2001). Macroeconomic Policy and Poverty Reduction. *PRSP Sourcebook Chapter 6*, IMF, April.

Aschauer, David A., (1990), Highway capacity and economic growth: Concepts and evidence. Economic Perspectives, *Federal Reserve Bank of Chicago*, Sep., p.p. 14-24.

Barro Robert J (1991), Economic Growth in a Cross Section of Countries, *The Quarterly Journal of Economics*, Vol. 106, No. 2. , pp. 407-443.

Barro, Robert J, (1997), "Determinants of Economic Growth: A cross-counties Empirical Study", The MIT Press, Cambridge.

Barua Alokesh and Sawhney Aparna, Structural Change, Economic Growth and Trade: Case for Regional Reallocation of Investment in India , available at http://www.apeaweb.org/confer/hk10/papers/sawhney-barua.pdf

Bhattacharya B. B. and Sakthivel S. (2004)., Regional Growth and Disparity in India: Comparison of Pre- and Post-Reform Decades, *Economic and Political Weekly*, Vol. 39, No. 10, pp. 1071-1077

Bhanumurthy, N R (2004), Forecasting State Domestic Product and Inflation: Macroeconometric Model for AP, Karnataka and UP, *Economic and Political Weekly*. pp.3541-3550

Bimal Kishore sahoo Simantini Mohapatra (2008), Inequality , growth and convergence: Evidence From, IUP, *Journal of Agricultural Economics*, *India* Vol V , Issue 2

Chakravorty Sanjoy(2000) ,How Does Structural Reform Affect Regional Development? Resolving Contradictory Theory with Evidence from India, *Economic Geography, Clark University*, Vol. 76, No. 4,p. 367-394

Dani Rodrik(1999), Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses, *Journal of Economic Growth*, Vol. 4, No. 4 , pp. 385-412

Dholakia, R.H (1985), Regional Disparity in Economic growth in India, Himalaya, New Delhi

Edward L. Glaeser, Rafael La Porta, Florencio Lopez-De-Silanes, Andrei Shleifer (2004), Do Institutions Cause Growth? , Journal of Economic Growth, Vol. 9, No. 3, pp. 271-303

Égert, B., T. Kozluk and D. Sutherland (2009), Infrastructure and Growth: Empirical Evidence, *OECD, Economics Department Working Papers*, No. 685, OECD Publishing

Gaur Achal Kumar(2010), Regional Disparities in Economic Growth: A Case Study of Indian States , available at http://www.iariw.org/abstracts/2010/poster1/gaur.pdf

Ghate, Chetan (2008), Understanding Divergence in India: A Political Economy Approach, *Journal of Economic Policy Reform*, In Press.

Ghosh Buddhadeb, Marjit Sugata, Neogi Chiranjib (1998), Economic Growth and Regional Divergence in India, 1960 to 1995,Economic and Political Weekly, Vol. 33, No. 26 (Jun. 27 - Jul. 3, 1998), pp. 1623-1630

Ghosh Buddhadeb and De Prabir(1998), Role of Infrastructure in Regional Development: A Study over the Plan Period, *Economic and Political Weekly*, Vol. 33, No. 47/48, pp. 3039-3043+3045-3048

Hayami, Yujiro (2001), Development Economics: From the Poverty to the Wealth of the Nations , Oxford University Press, NewYork

Hirschman, A.O. (1958), The Strategy of Economic Development. New Haven, CT: Yale University Press

Hulten C.R., Bennathan E. and S. Srinivasan .2006. Infrastructure, Externalities, and Economic evelopment: A Study of IndianManufacturing Industry. Mimeo, World Bank.

K.R.G.Nair (2004), Economic Reforms and Regional Disparities in Economic Reforms and Social Development in India*(Report of a Research Project funded by the SER* Division of the Planning Commission of the Government of India)

Kaliappa Kalirajan, Shashanka Bhide, Kanhaiya Singh (2009) , Development Performance across Indian States and The Role of the Governments, *ASARC working paper*

Kurian.J (2000), Widening Regional Disparities, *Economic and Political weekly,* Feb 12, 2000, PP:538-550

Mera, K. (1975), Income Distribution and Regional Development, University of Tokyo Press.

Munnell, Alecia H. (1990), How does public infrastructure affect regional economic performance? New England Economic Review, Sep., p.p. 11-33.

Munnell, Alecia H. (1992), Infrastructure Investment and Economic Growth,The Journal of Economic Perspectives, 6(4), p.p. 189-198.

North, Douglass C. (1981), *Structure and Change in Economic History*. New York: W.W Norton North, Douglass C., and Robert P. Thomas.1973.The Rise of the western World. Cambridge, U.K.: Cambridge University Press

Papola,T.S(2006), Emerging Structure of Indian Economy: Implications of Growing Sectoral Imbalances", *Indian Economic Journal*, Vol. 54 No.1

Prabhat P. Ghosh (2005), Structure of Madhya Pradesh Economy: Pre- and Post-Liberalisation*, Economic and Political Weekly*, Vol. 40, No. 48, pp. 5029-5031+5033-5037

Pritchett, L. (2000), "Where Has All the Education Gone?" *World Bank Economic Review* Vol ,15 No.3

Sala-i-Martin, Xavier (1996): "Regional cohesion: Evidence and Theories of regional Growth and Convergence", *European Economic Review* Vol.40, pp. 1325-

Shashanka Bhide, Rajesh Chadha and Kaliappa Kalirajan (2005), Growth Interdependence among Indian States, An Exploration, *Asia-Pacific Development Journal Vol. 12*.2

Virmani, Arvind. (2006), Patterns and Determinants of economic Growth in Indian States, *Indian Economic Review*, Vol. 41, No.1, p. 81-103.

William Easterly (2006) ,Reliving the 1950s: The Big Push, Poverty Traps, and Takeoffs in Economic Development, *Journal of Economic Growth*, Vol. 11, No. 4, pp. 289-318.

Zhao Chen and Ming Lu (2015), Toward Balanced Growth with Economic Agglomeration, Empirical Studies of China's Urban-Rural and Interregional Development, Springer Berlin Heidelberg