



AN EVALUATION OF RURAL DEVELOPMENT'S PRADHAN MANTRI GRAM SADAK YOJANA SCHEME

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Abstract

A substantial percentage of the population resides in rural areas with inadequate services. Rural infrastructure is essential for regional development. As inequality increased, however, the government launched the Pradhan Mantri Gram Sadak Yojana (PMGSY) to expedite rural road construction. The purpose of this paper is to assess the PMGSY program in India. Road length, road density, funding trends, and budgetary distribution were used as indicators for the analysis. Analyzing changes in employment and income requires a thorough assessment of PMGSY's spillover effect.

JEL Classification: R1, R4, O18

Key Words: *Infrastructure Development, Rural Development, Pradhan Mantri Gram Sadak Yojana, Rural Roads*

Introduction

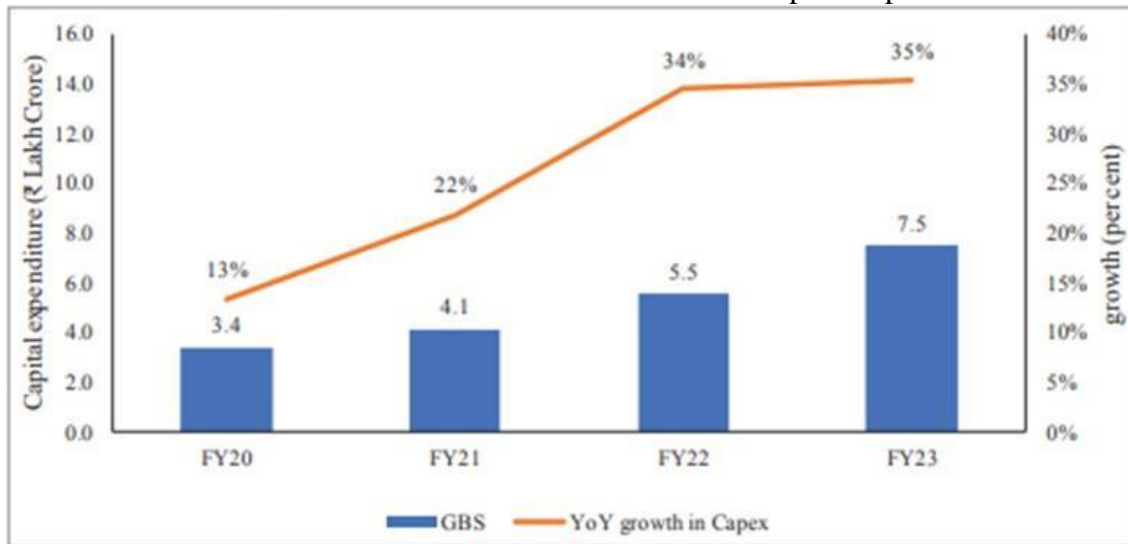
An effective infrastructure is essential to a country's economic development and progress. By definition, "infrastructure" refers to the essential services, installations, and transportation and communications networks, water and power lines, and public institutions like prisons, post offices, and schools that are necessary for the smooth operation of a community or society (American Heritage Dictionary Editors, 2002). The two main categories of infrastructure are "social infrastructure" and "economic infrastructure." Economic infrastructure is defined as infrastructure that promotes economic activity, such as roads, highways, railroads, airports, seaports, electricity, telecommunications, water supply, and sanitation, whereas social infrastructure includes schools, libraries, universities, clinics, hospitals, courts, museums, and parks. Infrastructure still acts as a roadblock to the expansion of the manufacturing, services, and agriculture sectors. Infrastructure development at the local level is crucial to promoting the sector's growth. According to the World Development Report (1994), "productivity growth is higher in countries with an adequate and efficient supply of infrastructure services. The provision of infrastructure services to meet the demands of businesses, households, and other users is a major challenge in economic development. The report also points out that adequate and good-quality infrastructure is a crucial factor in attracting foreign investments". The inequalities in infrastructure and the growth and development of the Indian economy at the regional and local levels have been the subject of numerous studies [Ghosh and De (1998); Majumder (2003); Raychaudhuri and Haldar (2009); Patra and Acharya (2011); Bhandari (2012); Bajar (2013); Pandya and Maind (2017)]. Neo-classical growth models predict a gradual decline in inequality with capital and labor mobility. Solow (1956) predicted that poor regions would grow much faster than rich regions and eventually converge to their steady state. Scholars such as Barro and Sala-i-Martin (1990, 1992), Mankiw, Romer, and Weil (1992), Islam (1995), Demurger (2001), Datta and Agrawal (2004), Ding, Haynes, and Liu (2008), and Brodzicki (2012) have examined convergence studies involving both exogenous and endogenous capital at various regional and national levels. Cashwin and Sahay (1996), Nagaraj, Varondakis, and Vezanones (1998), Adabar (2004), Nauriyal and Sahoo (2010), Bandyopadhyay (2011),



Somasekharan, Prasad, and Roy (2011), Das, Ghate, and Robertson (2013), Mukhopadhyay and Sarkar (2014), Chaterjee (2014), and Pandya and Maind (2017) have all done research on convergence in Indian development. Infrastructure and have a strong and positive correlation, as this study shows conditional convergence among states.

According to Aschauer (1990), infrastructure is a merit good that increases growth, productivity, and human capital. Government spending stimulates the economy. No one can dispute the government's role in post-COVID crises where private investment has been restrained. Capital Expenditure from Rs. 5.5 lakh crore increased to Rs. 7.5 lakh crore, an exponential growth of 35 percent from financial year 2021–22 to 2022–23.

Chart 1: Central Government investment in capital expenditure



Source: Economic Survey 2022–23

Note: All figures are Budget estimates for respective years

The table 1 below demonstrates that urban road density is greater than rural road density. Due to their lower population density, rural areas have lower densities than urban ones. India has a road length per 1000 square kilometers of 1652 kilometers, with an urban length of 1.4 kilometers and a rural length of 4.3 kilometers. The road's length is 4.5 kilometers per thousand people in India.

Table 1: Road Density in Urban and Rural in India

Urban Road Density	5296.3
Rural Road Density	1167.9
Road Length per 1000 Sq. Km. (Entire Country)	1652
Urban Road Length per 1000 Sq. Km.	1.4
Rural Road Length per 1000 Sq. Km.	4.3
Road Length per 1000 population (Entire Country)	4.5

Source: Ministry of Road Transport and Highways, Govt. of India.

Note: Total length excludes JRY roads.



National highways, state highways, other PWD, Panchayat Raj roads, rural and urban roads, project roads, and surfaced roads are the different categories under which roads are classified in table 2. From an average of 12 kilometers per day in 2014 to 29 kilometers per day in 2022, the construction of National Highways (NH) has increased dramatically. As of right now, there are 145,155 kilometers of national highways instead of the previous total of 97,830 kilometers. However, in terms of the total length of roads, the percentage share of state and national highways has decreased. Conversely, the proportion of other PWD, Panchayat Raj, and rural roads has increased. It is essential for rural development that local roads are well-built and integrated with highways. Since PMGSY, the percentage of rural roads has dramatically increased. Out of all the roads in India, it makes up 70.99 percent.

Total Table 2: Percentage Share of Each Category of Roads to Total Road Length In India Road

	National Highways	State Highways	Other PWD Roads	Panchayat Raj Roads	Rural Roads (JRY and PMGSY Roads)	Urban Roads	Project Roads	Surfaced	Total
1951	4.95	#	43.44	51.61	NA	0	0	39.26	100
1961	4.54	#	49.02	37.6	NA	8.84	0	50.16	100
1971	2.61	6.2	30.26	38.75	NA	7.88	14.31	43.49	100
1981	2.13	6.35	28.4	42.34	NA	8.29	12.49	46.03	100
1991	1.45	5.47	21.89	40.01	14.14	8.03	9.01	46.84	100
2001	1.71	3.92	21.82	31.66	26.8	7.47	6.63	47.48	100
2011	1.52	3.5	21.36	32.72	26.07	8.8	6.02	53.98	100
2018	2.04	2.93	9.9	-	70.99	8.57	5.58	-	-

Source: Ministry of Road Transport and Highways, Govt. of India. & Past Issues.

Note: ¹Rural Road include PMGSY launched in December 2000 & JRY in operation from 1989-90 till 1999.

²Total includes 9 lakh Km of Rural roads constructed under Jawahar Rozgar Yojana.

³Includes roads constructed under PMGSY launched in December 2000 and JRY launched in 1989-90.

⁴# : Included in other PWD Roads.

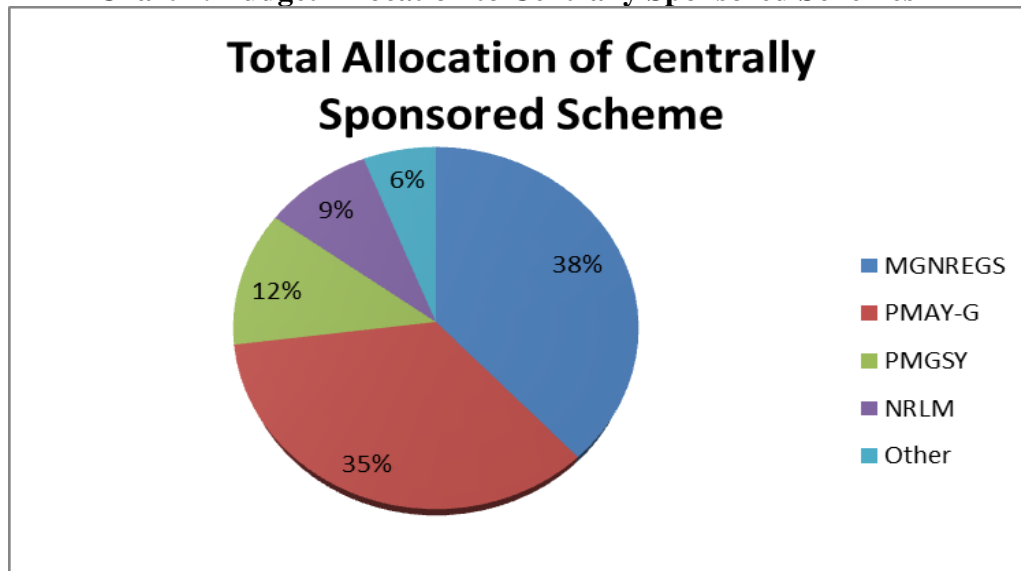
⁵JRY road lengths for year after 1996-97 are same as on 31.03.1996.

⁶Totals may not add up because of rounding off of decimals.

The development of rural infrastructure is positively and significantly correlated with the advancement of regional development. The economic survey 2022-23 notes that 65 percent (2021 data) of the population lives in rural areas, and 47 percent of the population is dependent on the agriculture sector. Since the planning era of development, inclusive and balanced regional development has been the objective of India. The objective has been to improve the quality of life of the rural population by increasing access to safe roads, health and sanitation services, social security, and job creation. By enhancing rural infrastructure, the Ministry of Rural Development is tasked with promoting welfare activities in rural areas. The budget allocation for all centrally sponsored schemes increased by 7.84 percent, from Rs 1.08 billion to Rs 1.57 billion.



Chart 2: Budget Allocation to Centrally Sponsored Schemes



Source: Ministry of Rural Development, 2023-24

The Pradhan Mantri Gram Sadak Yojana (PMGSY) scheme was introduced by the Indian government in December 2000. The scheme is a 100 percent centrally sponsored scheme that was launched with the goal of providing all-weather access to unconnected habitations. The PMGSY has constructed more than 3.5 lakh kilometers of rural roads in the last nine years. For the fiscal year 2023–2024, the PMGSY scheme has been allocated Rs. 19000 crore, or 12% of the total funds allotted to centrally sponsored schemes. For the last seven years annual growth rate of PMGSY is 3.03 percent. The highest allocations of funds are given to Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) with 38%. In the years following the pandemic, the program has emerged as a safety net to create employment opportunities in rural areas. It is followed by Pradhan Mantri Awas Yojana-Gramin (35 percent), National Rural Livelihood Mission (9 percent), and other schemes (6 percent). The Pradhan Mantri Gram Sadak Yojana is divided into three phases.

Phase I

With the aim of providing all-weather road connectivity to areas with a designated population size of more than 500 in plain areas and more than 250 in hilly, desert, and northeastern areas. The goal was to connect 1,35,436 residents to road networks over 3.68 lakh km of road. Grants from the central government covered all costs during this phase.

Phase II

In May 2013, Phase-II approval was granted. Under this phase, roads constructed for village connectivity were upgraded to improve rural infrastructure. The 12th five-year plan aimed to build 50,000 kilometers of road. Grant distribution was split between the state and the central government. The federal government contributes 75% of the funds, while the state government contributes 25%. For North-Eastern states, hilly, desert, and naxal-affected districts, the central government provides 90% of grants and the state provides 10%.



Road Connectivity Project for Left Wing Extremism Affected Areas (RCPLWEA)

The government launched a separate vertical under PMGSY for areas affected by left-wing extremism in 2016. Providing all-weather road connectivity and cross drainage structures throughout 44 districts. The total authorized road length is 11467 kilometers, with 606 bridges; however, only 6087 kilometers and 196 bridges have been constructed. The funding pattern is 60:40 between the center and the states, with the north eastern states and three Himalayan states (Jammu and Kashmir, Himachal Pradesh, and Uttarakhand) receiving 90:10 allocations.

Phase- III

Phase III, which will connect the gramin agricultural market, hospitals, and secondary schools, was approved by the cabinet in 2019. This phase is tasked with achieving a road length of 125 000 km. The duration of the program is 2024–2025. 60:40 funding ratio between the center and the states, excluding the north-eastern states and the three himalayan states. Since its inception, a total of 1,84,984 roads measuring 8,01,838 km and 10,383 Long Span Bridges (LSBs) have been sanctioned under all the interventions/ verticals of PMGSY. 1,73,775 number of roads measuring 7,23,893 km and 7,789 LSBs have been completed. (Economic survey 2022-23)

Researchers assess the effects of PMGSY on agriculture, employment, and education. According to Adukia (2017), middle school enrolment increases in response to the PMGSY program; the gains are greater in areas where nearby markets offer higher educational returns and smaller in areas where there are higher opportunity costs associated with education. the impact of rural roads on human capital accumulation that is mediated through the opportunity cost of schooling. Using the perspective of access to urban labor markets, Asher and Novosad (2016) assess PMGSY as well and discover evidence of a sectoral reallocation away from agriculture. Four years later, workers began to leave the agricultural sector. With a slight shift in employment, there was no change in agricultural income. Shamdasani's (2021) research indicates that the PMGSY has led to the replacement of subsistence farming with market-oriented farming. All-weather roads enabled farmers to diversify their crop varieties, modernize their techniques by implementing better inputs and technologies, hire more workers, and market their agricultural products. The spillover effect of PMGSY must be properly evaluated in order to analyze changes in income and employment.

Table 3: Phase I, II and III project sanctioned and completed

Verticals	Sanctioned			Completed		
	No. of Roads	Road Length	No. of Bridges	No. of Roads	Road Length	No. of Bridges
		(In Km.)			(In Km.)	
PMGSY-I	164770	645590	7515	160619	616708	6152
PMGSY-II	6700	49885	765	6005	47462	626
RCPLWEA	1246	11467	606	441	6087	194
PMGSY-III	10973	83867	1051	3162	39320	161
Total	183689	790809	9937	170227	709577	7133

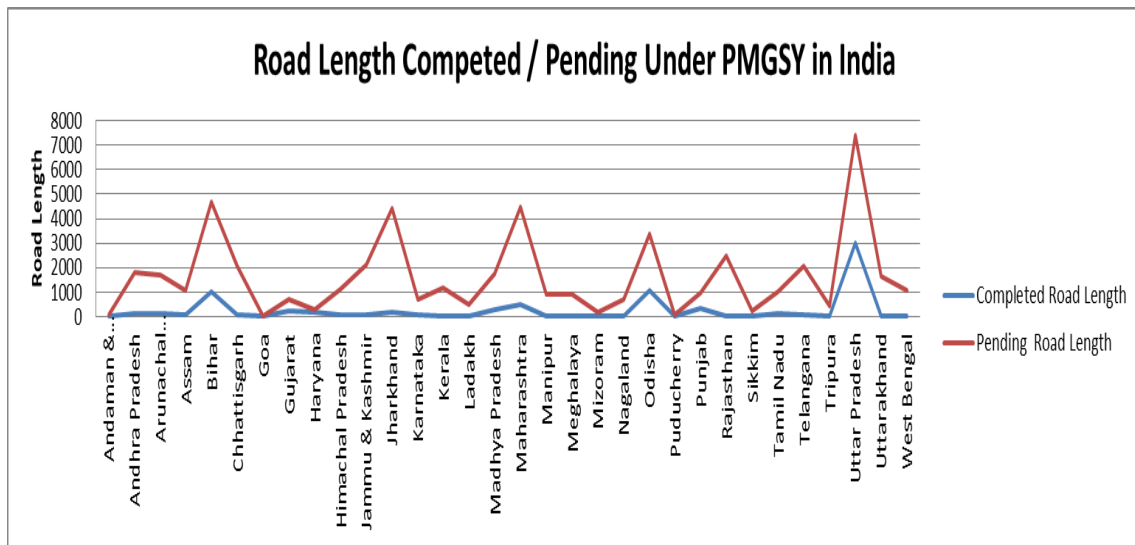
Source: Indiastat (2023)

Abbrev: RCPLWEA : Road Connectivity Project for Left Wing Extremism Affected Areas.



There is a significant disparity between the number of roads to be completed and the number of roads that are pending. Uttar Pradesh, Odisha, Bihar, Maharashtra, Madhya Pradesh, and Telangana have the greatest number of unfinished PMGSY-funded road construction projects. With the exception of Pondicherry, the majority of states have similar circumstances with numerous unfinished projects. It amply illustrates the fact that projects require additional funding to be completed.

Chart 4: State-wise Road Length Completed / Pending Under PMGSY in India



Source: India state (08.08.2023)

Conclusion

The emphasis on rural development is crucial to achieving more equitable and balanced regional development. Prioritizing public spending on social infrastructure with PMGSY is necessary. To increase labor productivity, rural communities must have easy access to reasonably priced health care and education. The relationship between physical infrastructure and social infrastructure is complementary. It increases the region's productivity, growth, and development. Nevertheless, the effects would take time to manifest themselves. Several states are still far behind in terms of the connectivity of paved roads, even though PMGSY seeks to connect rural India via all-weather roads. The study found that lower levels of development were found in several states with poorer rural road availability, density, and connections. Thus, the focus should be on proper planning and the building of more rural surfaced country roads in relation to the current condition of PMGSY rural roads in India.

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