Role of Mgnregp in Rural Development of the Sangli District

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Abstract

Rural development is a broad concept, and scholars are often keen to explore its various dimensions. Given the complexity of its social, economic, and environmental aspects, precisely measuring rural development is always challenging. In this research, an attempt is made to measure the degree of rural development in the Sangli district of Maharashtra. The relationship between the Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP) and rural development is examined using empirical data. For this study, fifty villages from ten blocks in the Sangli district were purposively selected based on the extent of MGNREGP works. Data was collected through a well-designed questionnaire, focusing on social development, economic development, physical infrastructure development, and natural resource conservation in villages where MGNREGP activities were significant. A composite weighted rural development index was computed using these four indices, incorporating a total of 29 sub-indicators.

Additionally, the rank correlation between these indices and MGNREGP was analyzed. The survey, conducted in study region reveals that MGNREGP plays a significant role in the rural development of Sangli district, particularly in drought-affected areas. The study found a strong positive relationship between MGNREGP and improvements in social development, economic development, physical infrastructure, and natural resource conservation. Overall, a strong positive correlation was observed between MGNREGP activities and the degree of rural development.

Key Words: MGNREGP**,** Social Development, Economic Development, Physical Infrastructure, Natural Resource Conservation, Rural Development

1. Introduction

The Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP) is the flagship anti-poverty and employment generation initiative of the Indian government. Its aim is to provide 100 days of guaranteed work to rural unskilled unemployed workers within their villages. The program prioritizes projects such as water conservation, renovation of traditional water bodies, flood control, physical infrastructure development, social institutional framework, rural connectivity, farm pond construction, farm road construction, social forestry, and sanitation. These MGNREGP activities contribute to rural development and transformation, visualized in terms of socio-economic progress.

In this research, an attempt is made to measure the degree of rural development in the Sangli district of Maharashtra, exploring the nexus between MGNREGP and rural development using empirical data. Fifty villages from ten blocks in the Sangli district were purposively selected based on the extent of MGNREGP works, with the top five villages from each block chosen. Data was collected through a well-designed questionnaire, focusing on social development, economic development, physical infrastructure development, and natural resource conservation in villages where MGNREGP activities were significant. A composite weighted rural development index was computed using these four indices, incorporating a total of 29 sub-indicators. Additionally, the rank correlation between these

indices and MGNREGP was analyzed. The surveys of these 50 villages were conducted in 2020-21 and 2021-22.

2. Objectives of the Study

The main objectives of the present study are as below.

1. To examine the role of MGNREGP in rural development

2. To explore the correlation coefficient between MGNREGP works and degree of rural development.

3. Review of Literature

Usha Rani Ahuja (2011)[1], conducted research in Haryana to examine the effects of implementing MGNREGA in two districts: agriculturally-advanced (Karnal) and agriculturally-backward (Mewat). The study, which included 120 farm families (60 from each district), not only compared demographic characteristics but also highlighted differences in employment status, income, landholding size, herd size, and other assets among sample households in these districts. **Anil Kumar et.al. (2012)[2]** has examined the impact of Mahatma Gandhi National Rural Employment Guarantee Scheme on the living standards of rural poor and the functioning of MGNREGA in Kawalaga and Kesarhattigi villages, Gulbarga district. Their findings indicated a reduction in migration rates following the implementation of MGNREGA. **Vetrivel and Ragunath (2014)[3],** studied the Socio-economic Profile of MGNREGP Beneficiaries in Karikali Panchayat, Dindigul District, Tamil Nadu. Their findings indicated a predominance of female respondents (86%), with only 14% being male. Among the sample of 50 respondents, 92% were married, while 8% were widows. The study highlighted that the majority of respondents fell within the age range of 26 to 50 years (60%), and a significant portion (72%) were illiterate, while 14% had primary education. **Nandita Debnath and Debasis Neogi (2013)[4]** conducted a study on the Impact of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on Generation and Distribution of Sustainable Assets among Tribal and Non-Tribal Population in Tripura State, North-East India. Their research aimed to assess the fairness of asset distribution concerning income generation in rural Tripura. Findings revealed that in the ADC villages, there was a lower implementation of durable assets, while activities such as sustainable plantation, fisheries, and rural connectivity were marginally undertaken in these areas. **Vikas (2011)[5]** conducted a study on Employment Generation through MGNREGA in Gulbarga District, Karnataka, revealing that the program generated numerous employment opportunities, contributing to poverty reduction. However, it was noted that unskilled earth-digging work fell short of providing full 100 days of employment. **David Chella and Baskar (2013)[6]** have conducted a study to analyze the socio-economic impact of MGNREGA in Coimbatore District of Tamil Nadu. The study revealed that there are 33.33 percent of the sample belonged to the age group of 41-50 under the MGNREGA participants which showed that the elderly people were given employment for their livelihood in this government sponsor scheme.

Research Gap: Few studies were attempted to examine the role of MGNREGP in rural development. It is also noticed from the study that majority of the researchers have explore the impact of MGNREGP in terms of percentage and correlation between MGNREGP works and degree of rural development in missing. Likewise the scientific study of measuring composite rural development index is also missing except the Reddy's study (2014).

4. Research Methodology

This empirical research involves gathering facts and figures from the grassroots level to explore the connection between MGNREGP activities and the degree of rural development. Field surveys were conducted in fifty villages during the 2020-21 and 2021-22 periods. The sample design of the study is outlined below.

Table No.1 Sample Design

Geographical Conditions	Talukas	Work Completed under MGNREGP	Total No. of Villages	Sample villages (top five villages)
Drought-hit Talukas*	Atpadi	6216	56	5
	Jath	8610	128	5
	Kavathe-Mahankal	2717	59	5
	Kadegaon	1698	54	5
	Khanapur	2230	64	5
	Palus	3022	35	5
	Tasgaon	5285	68	5
Non Drought Talukas*	Miraj	3024	64	5
	Shirala	2199	93	5
	Walwa	3820	96	5
Total		**38821**	**717**	**50**

Source: MGNREGP report

Note: 1.* As per the '**Socio-economic Review of Sangli District**, the base year for the drought hit tehsils and non drought hit tehsil is consider to 2017

Parameters of the Study

Table No. 2 Indictors of the Rural Development

	Domains of Rural Development	Indicators
I. Economic Development	I. Physical and Financial Assets	a) Changes in physical assets (land, water, livestock) b) Other assets (house, vehicles, T.V) c) Changes in access to markets (transport, roads, storage and communication facilities) d) Changes in savings. e) Changes in access to Financial Services (credit, saving insurance, etc...)
II. Physical Infrastructure	I .Institutions, Policies and Regulatory Frame Work	a) Changes in rural infrastructure. b) Changes in service provision by local institutions.
III. Social Development	I. Human Assets	a) Changes in access to potable water b) Changes in access to basic health and disease prevention services. c) Changes in women's and children's work load.
	II. Social Capital and Peoples Empowerment	a) Changes in Rural Peoples Organizations and Institutions. b) Changes in Social Cohesion and local self-help capacity of rural communities. c) Changes in gender equality or Women's conditions d) Participation of rural people in decision making. e) Better price for the produce.
	III. Food Security (Production, Income and consumption)	a) Changes in food security. b) Changes in frequency of food storages c) Changes in cropping pattern.
IV. Natural Resource	I. Geographical, Environmental and	a) Changes in natural resource base. b) Changes in exposure to environmental risks.

Conservation	Common Resource Base	c) Social forestry
		d) Water resources
		e) Sanitation, Drinking Water Access
		f) Rural connectivity
		g) Rural infrastructure

Source: International Fund for Agriculture Development (IFAD)

5. Discussion

The impact assessment of MGNREGP on rural development can be effectively carried out by examining the correlation coefficient between the completed MGNREGP works and the degree of rural development. To compute this correlation, a weighted rural development index was first calculated based on four main dimensions of rural development. Each of these dimensions was given equal weight in the computation of the composite rural development index. The four key dimensions of rural development considered in this study are as follows:

1. Social Development: This dimension includes indicators related to education, healthcare, social equity, and community engagement. It measures improvements in the quality of life and social well-being of the rural population.
2. Economic Development: This dimension encompasses indicators such as income levels, employment rates, productivity, and economic diversification. It assesses the economic growth and financial stability of rural communities.
3. Physical Infrastructure Development: This dimension involves indicators related to the development and enhancement of physical infrastructure, such as roads, bridges, public buildings, and utilities. It evaluates the availability and quality of infrastructure that supports daily living and economic activities.
4. Natural Resource Conservation: This dimension includes indicators related to environmental sustainability, such as water conservation, soil preservation, and forest management. It assesses efforts to maintain and improve natural resources crucial for long-term rural viability.

By calculating the weighted indices for each of these dimensions and then combining them into a composite rural development index, the study aims to provide a comprehensive measure of rural development. The correlation coefficient between this composite index and the extent of MGNREGP works allows for a quantitative assessment of how effectively the program contributes to various aspects of rural development.

Table No.3 Rural Development Dimensions and their Weight in Composite Rural Development Index

Sr. No	Dimensions	No. of Indicators	Allotted weight in Composite Rural Development Index
1	Social Development	11	25%
2	Economic Development	9	25%
3	Physical Infrastructure Development	6	25%
4	Natural Resource Conservation	3	25%
	Total	29	100

Source: Based on methodology used by **Reddy, D. N et.al. (2014)**[7]

By applying the Reddy D.N. et.al (2014) methodology the composite rural development index of the Sangli district has prepared by using below formula.

$$RDI = \frac{\sum x_1 * P_1 + \sum x_2 * P_2 + \sum x_3 * P_3 \ldots \ldots \ldots \ldots + \sum x_n * P_n}{\sum p_1 + \sum p_2 + \sum p_3 + \sum p_4}$$

Here,

$X_1, X_2, X_3, X_4, \ldots X_n$, are the concern dimension indicators of the rural development

P_1, P_2, P_3, P_4 is stand for the concern dimension allotted weight.

The value of index lies between 0 to 1.The zero value indicates no development at all in concern dimension. The value one indicates complete development in concern development. Index value and its implication is as below.

0 Value	No development in concern dimension at all
0 to 0.25	Low rural development
0.26 to 0.50	Moderate rural development
0.51 to 0.75	High moderate rural development
0.75 to 0.99	High rural development
1	Complete Rural Development

The table No,4 and Graph 1 clearly indicate that rural development in non-drought-affected tehsils is superior than that of in drought-affected tehsils. The average indices for social, economic, physical infrastructure, natural resource conservation, and overall rural development in drought-affected tehsils are 0.59, 0.51, 0.56, 0.59, and 0.56, respectively. In contrast, the average indices for non-drought-affected tehsils are 0.79, 0.78, 0.80, 0.74, and 0.78, respectively. Overall, for the entire Sangli district, the average indices for social, economic, physical infrastructure, natural resource conservation, and rural development are 0.65, 0.59, 0.64, 0.64, and 0.63, respectively.

The maximum social development value was found to be 0.86 in Miraj tehsil, while the lowest value was recorded in Atpadi tehsil i.e. at 0.54. Similarly, the highest economic development value was observed to be 0.89 in Miraj tehsil, with the minimum value found to be 0.43 in Khanpur tehsil. In terms of physical infrastructure development, Miraj tehsil again recorded the highest value at 0.92, while the lowest value was 0.44 in Khanpur tehsil. Additionally, the maximum value for natural resource conservation was recorded at 0.88 in Miraj tehsil, whereas the minimum value was 0.42 in Khanpur tehsil.

## Table No.4
Rural Development Index of the Sangli District

Sr. No	Tehsils	Social Development	Economic Development	Physical Infrastructure Development	Natural Resource Conservation	Rural Development
1	Atpadi	0.54	0.62	0.58	0.71	0.61
2	Jath	0.61	0.44	0.46	0.64	0.54
3	Kavathe-Mahankal	0.58	0.59	0.62	0.57	0.59
4	Kadegaon	0.62	0.49	0.55	0.59	0.56
5	Khanapur	0.66	0.43	0.44	0.42	0.49
6	Palus	0.55	0.52	0.68	0.79	0.64
7	Tasgaon	0.59	0.47	0.62	0.43	0.53
8	Miraj	0.86	0.89	0.92	0.88	0.89
9	Shirala	0.74	0.77	0.78	0.69	0.76
10	Walwa	0.76	0.68	0.71	0.64	0.70
	Drought Hit	**0.59**	**0.51**	**0.56**	**0.59**	**0.56**
	Non- Drought Hit	**0.79**	**0.78**	**0.80**	**0.74**	**0.78**
	Total	**0.65**	**0.59**	**0.64**	**0.64**	**0.63**

Source: Data compiled by researcher based on field work
`**Graph No. 1**

Composite Rural Development Index of the Sangli District
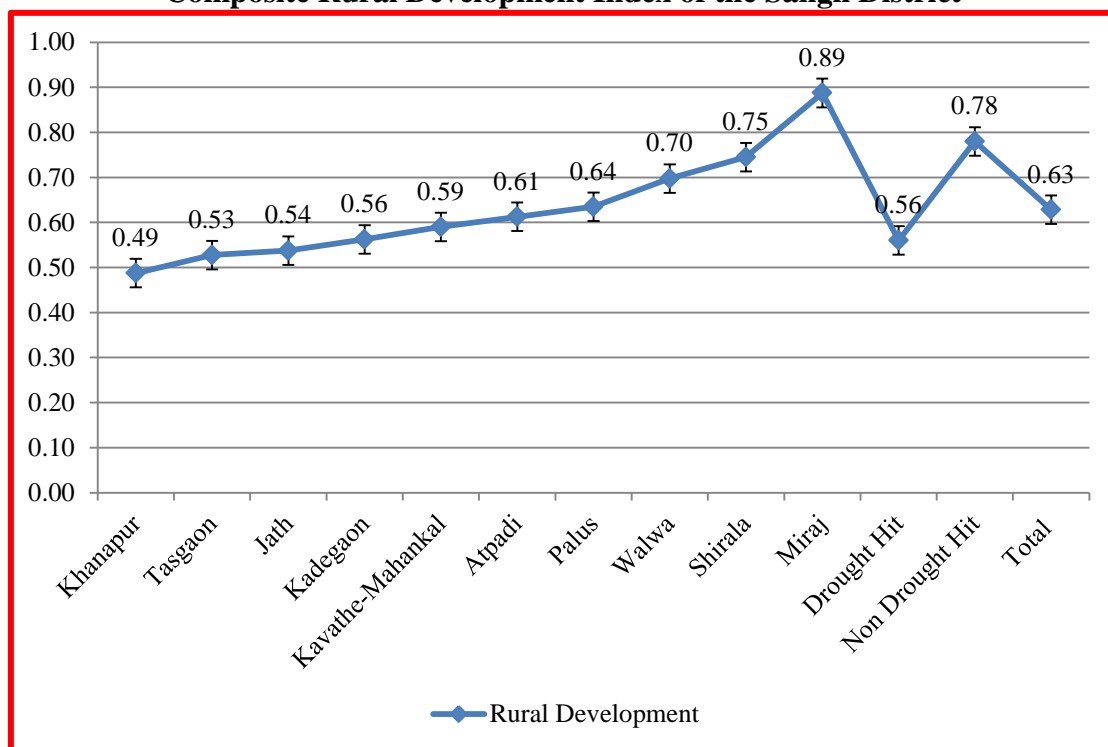
Source: Compiled by Researcher

The lowest rural development index is found in Khanapur tehsil, with a value of 0.49, indicating relatively moderate rural development. In contrast, tehsils like Atpadi, Jath, Kavathe-Mahankal, Kadegaon, Palus, and Tasgaon fall under the high-moderate rural development zone. The non-drought tehsils, Miraj and Shirala, are categorized under the high rural development zone. Walwa tehsil also falls under the high-moderate rural development zone.

Correlation Matrix

The Spearman's rank correlation coefficient is a nonparametric measure of rank correlation, assessing the statistical dependence of rankings between two variables. Given the nonparametric nature of the measures, the Spearman's rank correlation coefficient is particularly suitable for this analysis. The formula used to compute the correlation is as follows:

$$p = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Here

|		
p	=	Spearman's rank correlation coefficient
d_i	=	Difference between the two ranks of each observation
n	=	Number of observations

Table No. 5

Correlation Coefficient between MGNREGP and Rural Development

Area	Particulars	Social Development Index	Economic Development Index	Physical Infrastructure Development Index	Natural Resource Conservation Index	Rural Development Index
Drought Hit	MGNREGP Work	0.68	0.79	0.82	0.74	0.75

	Sig(2-tailed)	0.02	0.01	0.03	0.04	0.02
	N	**35**	**35**	**35**	**35**	**35**
Non Drought Hit	MGNREGP Work	0.72	0.84	0.89	0.92	0.84
	Sig(2-tailed)	0.03	0.02	0.02	0.01	0.03
	N	**15**	**15**	**15**	**15**	**15**
Total	MGNREGP Work	**0.70**	**0.81**	**0.85**	**0.83**	**0.79**
	Sig(2-tailed)	0.02	0.01	0.03	0.02	0.04
	N	**50**	**50**	**50**	**50**	**50**

Source: Compiled by the Researcher based on field work

Graph No. 2
Correlation Plot between MGNREGP and Rural Development
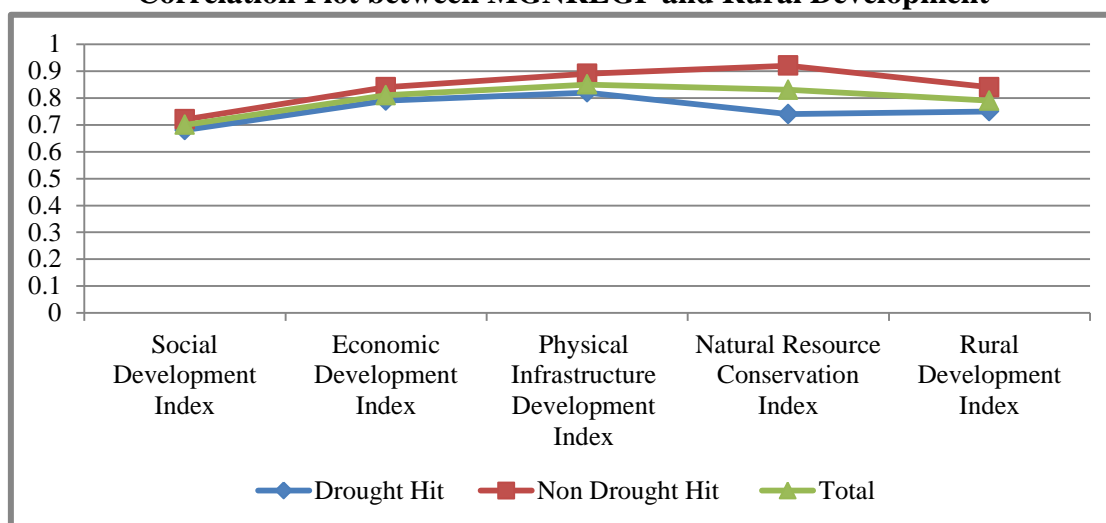
It is noteworthy that all the development indices for the drought-hit tehsils, non-drought-hit tehsils, and the entire Sangli district exhibit strong positive correlations with MGNREGP. The correlation coefficients between MGNREGP and various aspects of rural development in the drought-hit tehsils are as follows: 0.68 for social development, 0.79 for economic development, 0.82 for physical infrastructure development, 0.74 for natural resource conservation, and 0.75 for overall rural development.

In the non-drought-hit tehsils, the correlation coefficients are 0.72 for social development, 0.84 for economic development, 0.89 for physical infrastructure development, 0.92 for natural resource conservation, and 0.84 for overall rural development.

For the entire Sangli district, the correlation coefficients between MGNREGP and the respective dimensions of rural development are 0.70 for social development, 0.81 for economic development, 0.85 for physical infrastructure development, 0.83 for natural resource conservation, and 0.79 for overall rural development.

6. Conclusions

The study conducted on the relationship between Mahatma Gandhi National Rural Employment Guarantee Program (MGNREGP) works and rural development in Sangli district indicates a robust positive correlation between MGNREGP initiatives and rural development in areas of the district affected by drought. This suggests that in regions affected by drought conditions, the implementation of MGNREGP projects significantly contributes to overall rural development. Conversely, the study also reveals that there is a moderate positive correlation between MGNREGP works and rural development in tehsils that are not

affected by drought. These findings highlighting that the role of MGNREGP plays in fostering rural development within Sangli district, especially in mitigating the adverse effects of drought and enhancing the-economic conditions. By providing the employment opportunities and facilitating infrastructure development, MGNREGP acts as a catalyst for progress and empowerment in rural communities, and ultimately contributing to the broader goal of holistic rural development in the district.

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