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Mapping Geospatial Disparities in MGNREGA Implementation and Outcomes: A Study of Nashik District, Maharashtra

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Abstract The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is a law in India that helps rural areas to grow. It works, however, and performs different functions at different times. Prior research has shown differences between states and their effectson people's lives. However, there are not many studies on detailed, tehsil-level geospatial analysis that find local performance gaps and help policymakers decide where to focus their efforts. This study addresses this shortcoming by elucidating the disparities in MGNREGA implementation across the 15 tehsils of Nashik District, Maharashtra, from 2014 to 2025. This study utilizes a composite MGNREGA Performance Index (MPI) based on official job creation, social inclusion, and task fulfilment statistics, highlighting significant regional discrepancies. The results suggest that tribal tehsils, such as Surgana (MPI: 0.67) and Peint (MPI: 0.59), are doing quite well. They recruit many people, many of whom are women. They also accept people from the Scheduled Caste (SC) and Scheduled Tribe (ST) communities. Dindori (MPI: 0.49) and Kalwan (MPI: 0.47) are two tehsils that perform well. Chandwad (MPI: 0.27) and Nashik (MPI: 0.29) tehsils have a poor MPI. Deola and Nandgaon have the lowest performance notice (MPI: 0.18) because they do not finish their work very often, do not have many women involved, and do not do a good job of reaching out to individuals on the edges. The study shows that MGNREGA works best in areas where people live, manage things well, and are involved in their communities. The results reveal that the program must adjust its rules for each tehsil and enhance its run to ensure that it is fair and functions well.

Keywords: *MGNREGA, Job Card, Employment, Geospatial, Mapping, Composite Index*

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1. Introduction

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), passed in 2005, is a landmark program that aims to improve livelihood security by providing 100 days of paid employment per year to rural households willing to perform unskilled manual labor in India [1,2]. The MGNREGA, one of the world's most significant rights-based employment projects, aims to reduce rural poverty, create jobs, and build long-term assets of [3]. The plan has significantly increased rural employment and reduced poverty by raising household income and reducing distress-driven migration. Despite its success in Tamil Nadu and Rajasthan, it faces hurdles in Bihar and Uttar Pradesh, where salary payment delays and the short lifespan of the produced assets weaken its effectiveness [4]. Women's empowerment has also been a significant achievement, with female involvement reaching 58% nationally, although substantial regional disparities exist [5]. However, despite its consistent legislative structure, outcomes differ significantly between regions and are influenced by political will, administrative ability, socioeconomic conditions, and community engagement [6]. To identify gaps and regional inequalities, the objective of equitable rural development emphasizes the importance of spatial technologies such as Geographic Information Systems (GIS) [7,8]. Conflicting evidence exists regarding the MGNREGA's socioeconomic impact. Azam [9] found that benefits vary significantly depending on the quality of governance, whereas Imbert and Papp [10] found positive effects on household income and women's labor force participation. Scholars thus advocate finer-scale assessments at the taluka or block levels to capture local variability and promote decentralized planning [11,12,13]. Gender and inclusion are key concerns in MGNREGA

research. Shah and Mehta [14] found that women participated significantly (38-73%) in drought assistance, but low earnings and short employment durations limited poverty reduction. Despite issues such as delayed wages, skill mismatches, and decreased Scheduled Caste (SC) involvement, subsequent research highlights the importance of MGNREGA in empowering women through increased workforce engagement [15,16,17]. Similarly, Vedanthadesikan [18] and Benni and Nagaraja [19] investigated how MGNREGA increases women's agency and decreases seasonal migration. Comparisons at the state level show significant variations. Rajasthan, Madhya Pradesh, and Chhattisgarh consistently outperform in coverage and person-days generated, whereas Bihar and Uttar Pradesh struggle because of inadequate administrative capability [20]. Despite delays, nearly universal job coverage and self-help group-linked microfinance have improved lives in Odisha [15]. Tamil Nadu and Rajasthan performed better regarding asset generation and wage increases, while Maharashtra reported functional assets that helped small farmers but had limited SC/ST involvement [21]. The success of MGNREGA is influenced by transparency and governance. [22] assert that while accountability and equity lead to better employment outcomes, an overemphasis on transparency without adequate capacity building may reduce efficiency. Research from disaster-prone regions indicates that MGNREGA encourages climate resilience; however, its potential is constrained by ongoing funding shortages and a lack of awareness. Broader evaluations highlight its transformative role in wage growth, poverty reduction, and climate resilience; however, corruption, reliance on unskilled labor, and uneven regional performance persist [23,24,25]. Recent research has highlighted the persistence of geographical inequity. While most districts in Jammu and Kashmir fall short of the 100-day employment target, Doda and Poonch perform better than Badgam and Ganderbal [26,27]. They identified significant interstate disparities in employment quality, asset durability and female participation. Despite income and livelihood diversification gains in Bihar, the scheme's impact is hampered by poor governance, leading to calls for targeted changes and technology-driven transparency initiatives [28]. This includes regional disparities, governance deficits (such as corruption and wage delays), and concerns over the sustainability of created assets. [29] Their research highlighted the scheme's role in stabilizing rural income and strengthening the local agricultural economy. [42,49,54]. Through this paper, state-level secondary data analysis in Uttar Pradesh identified significant employment generation trends under MGNREGA, emphasizing enhanced participation and benefits for SC/ST communities and women, underscoring the scheme's role in promoting social inclusion. [43] A systematic review of studies across India established a clear linkage between women's participation in MGNREGA and improved household nutritional outcomes, highlighting the scheme's indirect role in enhancing food security and health benefits beyond direct employment generation. [44] Their analysis revealed the scheme's critical role as a social safety net during periods of economic distress, noting persistent challenges in meeting demand-based employment generation targets [46,59]. They identified key institutional, administrative, and community factors significantly influencing MGNREGA outcomes. [47] The study highlighted that MGNREGA significantly contributes to women's empowerment by enhancing their economic independence, increasing participation in household decision-making, and improving their social standing within communities [48]. The core focus is to evaluate how the scheme functions in a distinct local setting. By adopting a "geographical perspective [51,53], MGNREGA is a landmark social security scheme with significant potential to reduce poverty and empower marginalized groups [55]. However, sustained success requires political and administrative efficiency and civil society collaboration to address the gaps in implementation and sustainability [56,57]. The research likely examines aspects such as employment generation, fund utilization, social inclusion, and developmental impacts in the tribal-dominated state [59].

2. Study Area

The Nashik District, situated in northwest Maharashtra, India, is the geographical focus of this study. The district is roughly 15,582 Km2 in size and is located between latitudes 19°33′ and 20°53′ North and longitudes 73°16′ and 74°56′ East. It is one of the largest districts in Maharashtra and has a varied terrain that includes plains, hills, river valleys, and forests. (Figure 1) The 15 talukas (sub-districts) that make up Nashik—Nashik, Dindori, Igatpuri, Peint, Trimbakeshwar, Sinnar, Yeola, Niphad, Kalwan, Surgana, Baglan (Satana), Malegaon, Deola, Chandwad, and Nandgaon—are the central analytical units of this study. These talukas are appropriate for comparative geographical analysis because they show notable differences in infrastructure, population density, socioeconomic development, and public service accessibility [30,31].

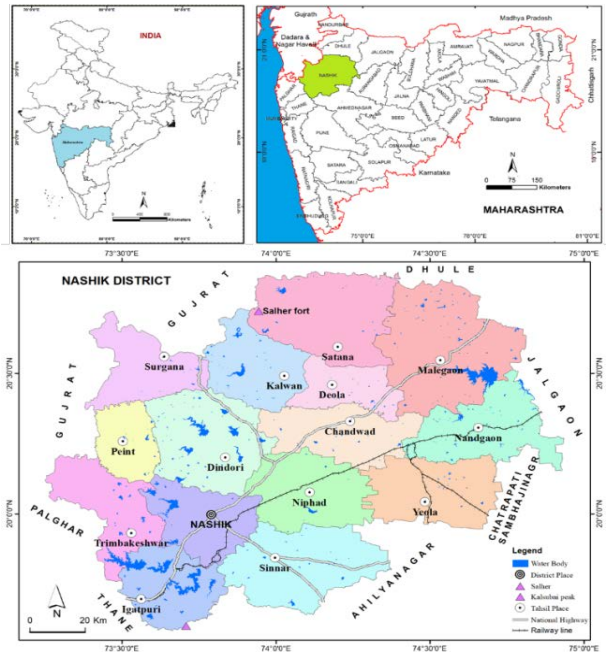

Figure 1. Location map of the study area

According to the 2011 Indian Census, approximately 6.1 million people live in the Nashik District, with more than 58% living in rural areas. The district is pertinent for assessing rural employment programs, such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), because of its primarily agrarian economy. One of the district's most notable demographic characteristics is the sizeable population of Scheduled Tribes (ST), which makes up 25.62% of the total population (1.56 million), and Scheduled Castes (SC), which make up 9.08% (554,687 people). These communities are mainly concentrated in talukas such as Peint, Surgana, and Kalwan, where MGNREGA is essential for livelihood security. The district's diversity, which ranges from more industrialized talukas like Nashik and Sinnar to more isolated and underdeveloped tribal belts like Palghar, makes it easier to analyze the spatial differences in the execution and results of rural employment programs in Maharashtra.

3. Study objectives

i. To evaluate employment, wages, and asset creation to determine the tehsil-level efficacy of the Mahatma Gandhi National Rural Employment Guarantee Act.
ii. To assess the program's inclusivity for women, Scheduled Tribes (ST), and Scheduled Castes (SC) in rural Nashik.

4. Database and Methodology

This study uses a quantitative and geospatial approach to examine the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) at the tehsil level in Nashik District, Maharashtra, India. This approach intended to produce a composite index for performance evaluation, akin to the Human Development Index (HDI) of the United Nations Development Programme (UNDP) [32]. Computer-based Geoinformatics techniques are not only helpful but essential for modern geomorphological studies, providing accurate and rapid analyses for both research and practical problem-solving [33]. By using geospatial data and fieldwork to analyze the land and resources, we can create a sustainable development plan for these villages [34]. The study concludes that MGNREGA is an effective "tool for employment generation" that impacts livelihoods by significantly increasing employment opportunities, income, and consumption levels for rural beneficiaries in the areas studied [35]. The methodology aimed to identify high- and low-performing districts, highlight governance and socioeconomic factors influencing outcomes, and provide evidence for targeted interventions and policy improvements [37]. The core of the methodology involved focusing on a specific, geographically bounded area, such as a block, district, or cluster of villages, to conduct an in-depth, localized analysis of MGNREGA implementation and its outcomes [39].

4.1. Database

The Ministry of Rural Development, Government of India, maintains the official national MGNREGA website, which served as the secondary data source for this study. [50] The data were compiled at the tehsil level for the Nashik District and spanned ten years, from 2014–15 to 2024–2025. The key indicators collected for the analysis included

- Households issued job cards
- The number of households on average days was provided with employment
- Number of women provided employment
- Work completion rate
- The number of Scheduled Caste (SC) and Scheduled Tribe (ST) households provided employ

4.2. MGNREGA Performance Index (MPI)

A Composite MGNREGA Performance Index (MPI) was created to assess the MGNREGA's efficacy. Five distinct dimension indices, each representing a crucial component of the program's execution, were combined to create the Index. A. Calculating the Dimension Index: To ensure that all values for the five indicators fell between 0 and 1 for a meaningful comparison, a Dimension Index was computed to normalize the data. This normalization applied the following formula: (Original Value - Minimum Value) / (Maximum Value - Minimum Value) is the dimension index. This mathematical method was used to evaluate the performance of each of the 15 tehsils in three dimensions.

B. Five-dimensional indices:

i. Employment Generation Index (EGI): The number of households that received employment-related benefits is measured by the Employment Generation Index (EGI).
i i. Women Provided Employment Index (WPEI): Evaluates the number of women enrolled in the program.
i i i. Average Days Employment Provided Index (ADEPI): Assesses the average number of workdays each household receives.
iv. Work Performance Index (WPI): Indicates how often projects started under the program are completed.
v. Scheduled Caste and Scheduled Tribe Households Provided Employment Index (SCSTI): This Index tracks employment provided to SC/ST households to determine social inclusivity.
vi. Composite Index Calculation: The simple arithmetic mean of the five-dimensional indices (EGI, WPEI, ADEPI, WPI, and SCSTI) was used to determine the final MGNREGA Performance Index (MPI) for each tehsil. The overall performance was evaluated by assigning each dimension an equal weight of one-fifth. A higher MPI value denotes better program outcomes and superior implementation in a particular tehsil. [26] The study documented best practices in efficient administration and sustainable asset creation,

proposing them as viable models for improving outcomes in other, less effective regions. [45] The Papar examines that spatial data, creates thematic maps, and calculates runoff for each unit. [61]

vii. **Calculating the MENREGA Performance Index**

MPI= 1/5(EGI) +1/5(ADEPI) +1/5(SCSTI) +1/5(WPEI) +1/5(WCI) [26-27]

4.3. Geospatial Mapping and Analysis

Geospatial tools were used to map and examine the spatial differences in MGNREGA performance. Thematic maps showing the tehsil-level variations for each indicator and the final composite MPI were created using ArcGIS software. This mapping method supports the study's primary goal of using a geospatial approach to identify regional disparities.[36]

Performance gaps and spatial patterns throughout the Nashik District. A growing body of work uses Geographic Information Systems (GIS) and remote sensing to evaluate the quality and impact of assets created under MGNREGA [38,60]. We use Bhuvan's Geo MGNREGA platform for spatial analysis of geotagged assets, highlighting patterns and implications for rural development. [40] The case study highlights the Yuktdhara portal's role in facilitating Gram Panchayat-level planning of MGNREGA activities using GIS and satellite data. [41]

5. Results and Discussions

5.1. Households Provided Employment (2014-15 to 2024-2025)

The data presented in Table No 1 (Figure 2) reflect that Malegaon has the highest MGNREGA coverage rate, with 70% of families employed, owing to industrial migration and fertile plains that support rural job demand. Baglan (0.63), Dindori (0.62), Niphad (0.53), Yevla (0.52), and Sinnar (0.51) are among the top achievers, with excellent government, effective project planning, prompt wage payments, and substantial participation from women and marginalized groups all contributing to success. Despite substantial tribal populations, seasonal migration, and administrative capacity limits, Kalwan (0.40), Surgana (0.36), and Peint (0.34) performed moderately. Igatpuri (0.49), Trimbakeshwar (0.43), Chandwad (0.47), and Nandgaon (0.31) have sectorial imbalances, including low afforestation and underperforming housing projects. Nashik (0.26) and Deola (0.28) are the weakest performers, highlighting urban implementation issues such as a lack of water conservation, restricted finances, fewer job prospects, and inefficient administrative processes. The data reveal significant disparities in MGNREGA employment across Nashik tehsils, driven by geographic, economic and social factors. These patterns highlight how terrain, livelihood opportunities, and systemic inequalities shape socioeconomic outcomes, necessitating tailored interventions, such as tribal welfare programs and urban development initiatives, to address regional imbalances.

Table 1. Employment Generation Index (EGI)

Tehsil	SC Index	ST Index	Others Index	Composite Score
Baglan	0.83	0.47	0.59	0.63
Chandwad	0.93	0.11	0.38	0.47
Deola	0.55	0.03	0.27	0.28
Dindori	1	0.61	0.25	0.62
Igatpuri	0.89	0.29	0.3	0.49
Kalwan	0.32	0.69	0.19	0.4
Malegaon	1	0.11	1	0.7
Nandgaon	0.39	0.04	0.49	0.31
Nashik	0.42	0.17	0.18	0.26
Niphad	1	0.12	0.47	0.53
Peint	0.02	1	0.01	0.34
Sinnar	0.98	0.09	0.46	0.51
Surgana	0.05	1	0.04	0.36
Trimbakeshwar	0.54	0.56	0.2	0.43
Yevla	0.98	0.04	0.55	0.52

Source - Calculated by author

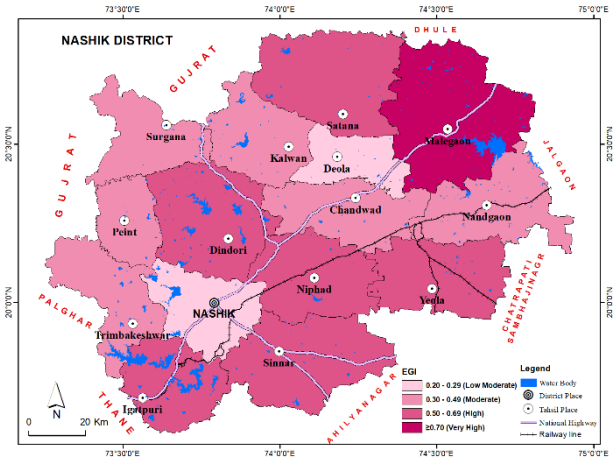

Figure 2. Nashik District: Households Provided Employment-(2014-15 to 2024–2025)

5.2. Number of Average days Households Provided Employment (2014-15 to 2024–2025)

The data provided in Table 2 (Figure 3) show significant disparities in deprivation throughout the Nashik tehsils. Tribal regions such as Peint (0.76) and Surgana (0.73) are top achievers (≥0.70) driven by high tribal participation and geographical necessity. Many residents rely heavily on the MGNREGA. Other top performers, such as Dindori (0.55) and Trimbakeshwar (0.51), benefited from competent administration and program management. Notably, the Nashik city scores (0.53) were remarkably high for an urban region, implying novel system applications. Tehsils with moderate scores (0.30-0.49) have sector-specific strengths but lack overall performance. Malegaon's low-moderate score (0.25) is surprising, given its lush grounds, indicating governance weaknesses. Yevla and Nandgaon, the weakest performers, demand immediate improvement. Tribal areas outperform farming regions, demonstrating how local variables

influence MGNREGA effectiveness and the need for personalized strategies.

What works in tribal belts may not work in cities or agricultural zones.

Table 2. Average Days Households Provided Employment (ADEPI)

Tehsil	SC Index	ST Index	Others Index	Composite Score
Baglan	0.55	0.28	0.67	0.25
Chandwad	0.68	0.05	0.31	0.30
Deola	0.35	0.02	0.24	0.27
Dindori	1.00	0.31	0.23	0.55
Igatpuri	0.52	0.14	0.33	0.38
Kalwan	0.29	0.51	0.24	0.56
Malegaon	0.82	0.05	1.00	0.25
Nandgaon	0.38	0.02	0.52	0.18
Nashik	0.23	0.06	0.13	0.53
Niphad	1.00	0.05	0.3	0.33
Peint	0.01	1.00	0.01	0.76
Sinnar	0.52	0.04	0.33	0.28
Surgana	0.06	1.00	0.05	0.73
Trimbakeshwar	0.44	0.43	0.32	0.51
Yevla	0.92	0.03	0.64	0.16

Source - Calculated by author

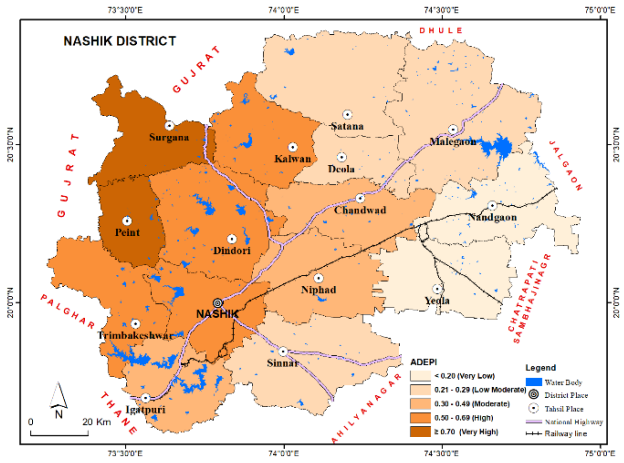

Figure 3. Nashik District: Average Dyes Households Provide Employment (2014-15 to 2024–2025)

5.3. SCs and STs Households Provided Employment: (2014-15 to 2024–2025)

The data presented in Table 3 (Figure 4) for SC/ST households in the Nashik district reveal a substantial advantage for tribal households. Surgana (0.79) and Peint (0.78), which have virtually 100% tribal populations, outperform owing to geographic necessity, remoteness, mountainous terrain, limited alternative jobs, significant community dependence, and superior mobilization of tribal people. Other strong performers are Kalwan (0.58), Dindori (0.56), and Trimbakeshwar (0.52), which combine significant SC/ST shares (59-71%), capable local administration, and timely project delivery. Moderate performers, such as Igatpuri (0.38), Nashik (0.37), Baglan (0.32), and Niphad (0.30), have moderate SC/ST populations and variable government quality, with Nashik standing out for targeted outreach, despite its urban location. Low achievers, such as Chandwad (0.28), Sinnar (0.26), and Malegaon (0.21), suffer from poor planning, sectoral imbalances, and a lack of awareness. The lowest scorers—Yevla (0.15), Nandgaon (0.14), and Deola (0.20)—have small SC/ST populations, poor targeting, and inefficient administrative processes. (Figure 4) Overall, the findings confirm that tribal concentration, administrative capability, geographic conditions, and community participation are the primary drivers of MGNREGA effectiveness, whereas urbanization and a low SC/ST presence frequently limit the program's impact.

Table 3. SCs and STs Households Provided Employment Index (SCSTI)

Tehsil	SC+ST Pop.	SC+ST	SCSTI
Baglan	1,48,160	0.47	0.32
Chandwad	44,740	0.14	0.28
Deola	14,709	0.05	0.2
Dindori	2,09,142	0.67	0.56
Igatpuri	1,00,046	0.32	0.38
Kalwan	2,21,029	0.71	0.58
Malegaon	46,032	0.15	0.21
Nandgaon	15,717	0.05	0.14
Nashik	57,046	0.18	0.37
Niphad	52,841	0.17	0.3
Peint	3,09,017	0.99	0.78
Sinnar	39,502	0.13	0.26
Surgana	3,13,562	1	0.79
Trimbakeshwar	1,83,388	0.59	0.52
Yevla	23,455	0.07	0.15

Source - Calculated by author

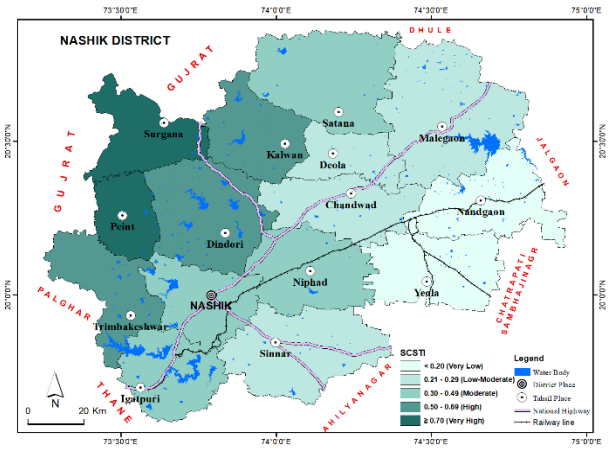

Figure 4. Nashik District: SCs and STs Households Provided Employment

5.4. Number of Women Provided Employment (2014-15 to 2024–2025)

Table No 4 (Figure 5) shows that women's participation in MGNREGA across Nashik tehsils reflects the combined influence of tribal concentration, geography, economic dependence, governance capacity, and cultural norms. Surgana (WPI 1.00, CS 1.00) and Peint (WPI 0.70, CS 0.92) dominate due to near-total tribal populations, geographic isolation that limits private employment, and high community mobilization, where women's labor is essential for household survival. Trimbakeshwar (0.54, 0.57) pairs strong WPI with balanced sectorial

performance, while Malegaon (0.51, 0.22) shows a mismatch—high female engagement but low composite results—likely due to sectorial imbalance or possible reporting anomalies. Mid-range performers (0.30-0.49) like Baglan, Dindori, Yevla, Igatpuri, Kalwan, and Nandgaon, benefit from seasonal agricultural work and partial tribal participation, yet face issues such as administrative delays and migration-related disruptions. The lowest WPI level (0.20-0.29) seen in Niphad, Chandwad, Sinnar, Nashik, and Deola are often linked to urban employment alternatives, social norms restricting women's labor, and weak program outreach. The data show that a high WPI is closely tied to tribal presence, rural isolation and effective local governance. At the same time, urbanization, cultural constraints, and administrative inefficiencies remain key barriers to women's inclusion.

5.5. Work Completion Rate (2014-15 to 2024–2025)

Table 5 (Figure 6) shows the differences in MGNREGA work completion across Nashik tehsils from 2014 to 2024. Moderate performers like Surgana, Malegaon, and Sinnar Yevla succeeded by focusing on specific areas - Surgana in water projects, tree planting, and Sinnar in housing - with strong community support. Low-Moderate level tehsils like Kalwan, Trimbakeshwar, Peint, and Igatpuri maintained steady progress by balancing different workinput. The worst performers, including Nashik, Baglan, Deola, Chandwad, Dindori Nandgaon, Niphad, and Peint, struggled due to poor planning, lack of local engagement, and, in Nashik's case, the completeneglectof water projects. Areas with tribal populations and good local leadership generally performed better, whereas urban zones, such as Nashik, faced unique challenges. Success depended on choosing the right projects for each area's needs and involving the local communities. The analysis of job completion rates under the MGNREGA reveals significant differences among tehsils, which are affected by administrative efficiency, resource distribution, geography, and community participation. These patterns underline the importance of tehsil-specific policies that address administrative weaknesses, use effective models, and customize resource allocation to geographic and socio-economic conditions.

Table 4. Women Provided Employment Index (WPEI)

Tehsil	No. of Women	WPI	Composite Score (WPEI)
Baglan	23527	0.47	0.42
Chandwad	11562	0.15	0.15
Deola	7051	0.05	0.07
Dindori	20853	0.41	0.58
Igatpuri	17401	0.33	0.32
Kalwan	17112	0.33	0.61
Malegaon	25127	0.51	0.22
Nandgaon	15916	0.29	0.12
Nashik	7212	0.05	0.19
Niphad	15142	0.27	0.21
Peint	33061	0.7	0.92
Sinnar	11323	0.15	0.14
Surgana	42743	1	1
Trimbakeshwar	26372	0.54	0.57
Yevla	19567	0.38	0.16

Source - Calculated by author

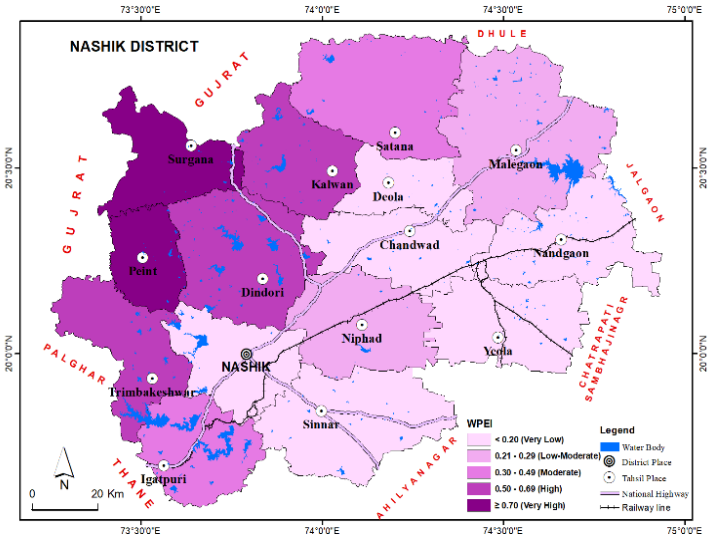

Figure 5. Nashik District: Number of Women Provided Employment (2014-15 to 2024–2025)

Table 5. Work Completion Index

Tehsil	Water WCR	Afforestation WCR	House WCR	Other WCR	Composite WCI
Baglan	0.03	0.09	0.07	0.184	0.09
Chandwad	0.27	0.07	0.14	0.22	0.17
Deola	0.08	0.04	0.18	0.14	0.11
Dindori	0.38	0.03	0.03	0.168	0.15
Igatpuri	0.28	0.40	0.09	0.112	0.22
Kalwan	0.10	0.38	0.13	0.332	0.23
Malegaon	0.07	1.00	0.08	0.34	0.37
Nandgaon	0.36	0.24	0.12	0.17	0.17
Nashik	0.09	0.24	0.20	0.13	0.13
Niphad	0.37	0.08	0.09	0.144	0.17
Peint	0.44	0.06	0.20	0.08	0.19
Sinnar	0.16	0.13	1.00	0.16	0.36
Surgana	1.00	0.33	0.23	0.38	0.48
Trimbakeshwar	0.15	0.25	0.32	0.216	0.23
Yevla	0.10	0.28	1.00	0.34	0.34

Source - Calculated by author

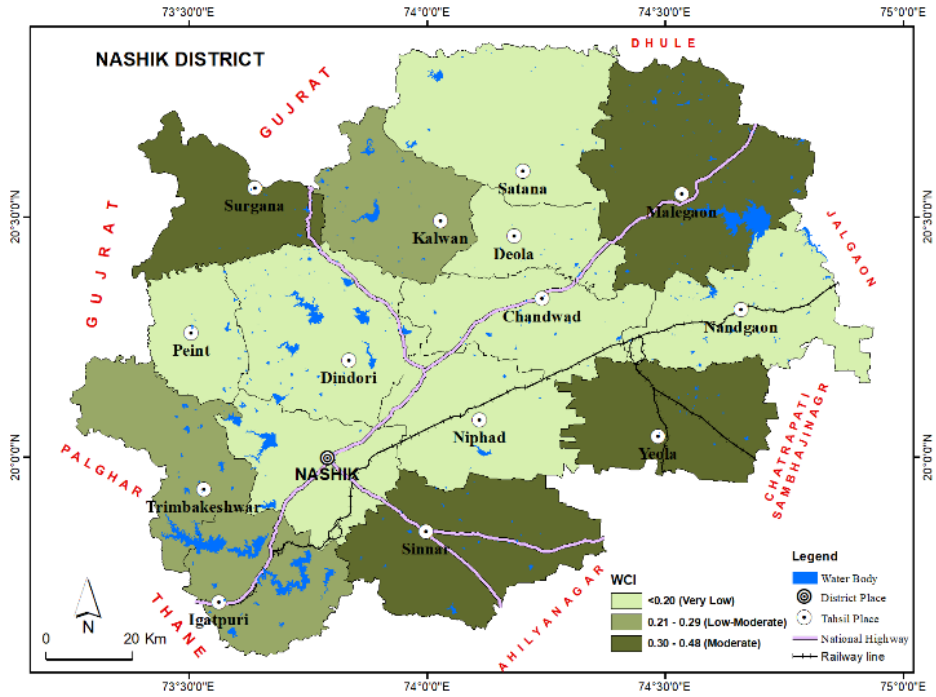

Figure 6. Nashik District: Work Completion Rate (2014-15 to 2024–2025)

6. Dimension Indices (MPI-Index) for Different Indicators Under the MGNREGA Scheme

The data presented in Table No 6 and (Figure 7) show various dimension indices for MGNREGA implementation in all the tehsils of Nashik for 2014–15 to 2024-25. These include the Employment Generation Index (EGI), Women Participation Employment Index (WPEI), SC/ST Employment Inclusion Index (SCSTEII), Average Days Employment Provided Index (ADEPI), and Work Performance Index (WPI). Together, they capture critical aspects such as job creation, gender equity, social inclusion, adequacy of workdays, and efficiency in project execution. The combined MGNREGA Performance Index (MPI) offers a composite measure of how effectively the scheme is implemented in various regions. Factors such as local demand for work, administrative efficiency, geographic accessibility, household awareness, and infrastructure availability influence variations in MPI scores. High MPI scores reflect strong community participation and effective management, whereas low scores often indicate structural and operational gaps that require targeted policy intervention. (Figure 7)

6.1. Very High Performing Tehsil

No tehsil received a “Very High” rating, showing that even top performers encounter challenges in fully realizing MGNREGA’s potential of MGNREGA. Common difficulties include seasonal changes in employment demand, delayed wage payments, and a lack of project variety. Achieving this level necessitates

consistently high task completion rates, active community participation and efficient administration. (Figure 7)

6.2. High Performing Tehsil

Surgana and Peint tehsils fall under the very high-performance category of the MGNREGA. Surgana was the best-performing tehsil, with an MGNREGA Performance Index (MPI) of 0.67 (Figure 7). It has the highest Women's Participation in Employment Index (WPEI) of 1.000, indicating exceptional female participation, as well as an Employment Generation Index (EGI) of 0.36 and an Average Days of Employment per Household Index (ADEPI) of 0.73, indicating strong job creation and consistent work performance in the state. Surgana also has good scores on the SC/ST Employment Inclusivity Index (SCSTEII) at 0.79 and the Work Performance Index (WPI) at 0.48, indicating its commitment to social inclusion and to gender equity. In contrast, Peint tehsil also ranks in the very high-performance category under MGNREGA, with an MGNREGA Performance Index (MPI) of 0.59 (Figure 7). It records a Women's participation in Employment Index (WPEI) of 0.92, highlighting strong female workforce engagement, along with an Employment Generation Index (EGI) of 0.35 and an Average Days of Employment per Household Index (ADEPI) of 0.72, indicating a robust employment provision. Its SC/ST Employment Inclusivity Index (SCSTEII) score of 0.78 underscores the emphasis on social inclusion, particularly in tribal communities. MGNREGA has been especially impactful in Peint, supporting livelihoods, strengthening economic resilience, and fostering inclusive rural development in the region.

6.3. Moderate Performers Tehsil

Table 6. MGNREGA Performance Index (MPI)Index

Tehsil	EGI	ADEPI	SCSTI	WPEI	WCI	MPI Index
Baglan	0.63	0.25	0.32	0.42	0.09	0.34
Chandwad	0.47	0.3	0.28	0.15	0.17	0.27
Deola	0.28	0.27	0.2	0.07	0.11	0.18
Dindori	0.62	0.55	0.56	0.58	0.15	0.49
Igatpuri	0.49	0.38	0.38	0.32	0.22	0.35
Kalwan	0.4	0.56	0.58	0.61	0.23	0.47
Malegaon	0.7	0.25	0.21	0.22	0.37	0.35
Nandgaon	0.31	0.18	0.14	0.12	0.17	0.18
Nashik	0.26	0.53	0.37	0.19	0.13	0.29
Niphad	0.53	0.33	0.3	0.21	0.17	0.3
Peint	0.34	0.76	0.78	0.92	0.19	0.59
Sinnar	0.51	0.28	0.26	0.14	0.36	0.31
Surgana	0.36	0.73	0.79	1	0.48	0.67
Trimbakeshwar	0.43	0.51	0.52	0.57	0.23	0.45
Yevla	0.52	0.16	0.15	0.16	0.34	0.26

Source: Calculated by the author.

The moderately performing tehsils of Dindori, Kalwan, Trimbakeshwar, Igatpuri, Baglan, Malegaon, Sinner, and Niphad have MPI values between 0.40–0.49. They integrate MGNREGA operations with the agricultural lean season (ADEPI 0.51-0.56), assuring consistent labor availability, and demonstrate partial women's empowerment (WPEI 0.57-0.61) through selective SHG participation and tailored initiatives. Tribal engagement is moderate (SCSTI 0.52-0.58), but it is constrained by a lack of work sites, and opportunities for skill development are scarce. Economic inclusion (EGI 0.40-0.62) is limited, with traditional earthworks as the primary income source. The lack of advanced measures, such as year-round employment scheduling, tribal market linkages, and comprehensive women's capacity building, maintains these tehsils below the 0.50 MPI level, emphasizing the importance of targeted interventions to achieve high performance.

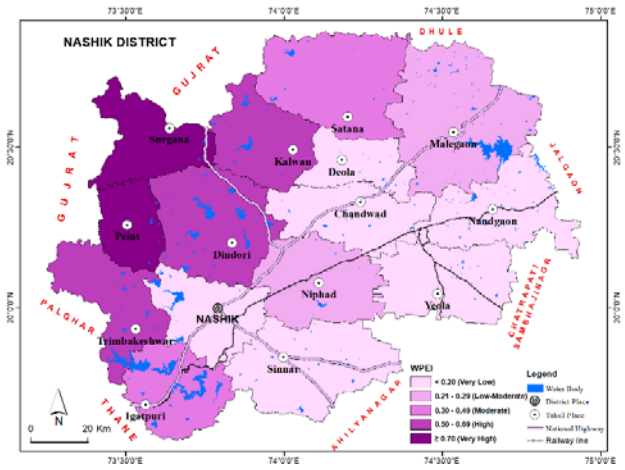

Figure 7. Nashik District: Dimension indices for different indicators under the MGNREGA

6.4. Low Moderate Performers Tehsil

MPI values ranging from Chandwad (0.27), Nashik (0.29), and Yevla (0.26) have low-moderate MGNREGA performance due to poor economic generation (EGI 0.26-0.52), low women's involvement (WPEI 0.15-0.19), and restricted tribal inclusion (SCSTI 0.13-0.17). Fund delays, a lack of diverse projects, and poor GramSabha participation impede achieving positive outcomes. Targeted interventions, particularly speedier pay-outs, women-focused schemes, and community mobilization, are critical for improving the success of these programs. (Figure 7)

6.5. Very Low Performers Tehsil

MPI values ranging from Deola (0.18) and Nandgaon (0.18) rank very low on the MGNREGA index, reflecting poor employment generation (EGI: 0.28–0.31), minimal women's participation (WPEI: 0.07–0.12), and weak work completion rates (WCRI: 0.11–0.17). Chronic fund delays, limited project variety, and almost no community engagement keep these tehsils trapped in persistent underperformance status. Strengthening local governance, diversifying work, and improving payment systems are critical for improvement (Figure 7). The variation in the composite MPI across the Nashik district tehsils reveals significant differences in MGNREGA performance. High-performing tehsils, such as Surgana and Peint, effectively create jobs, ensure substantial SC/ST participation, and sustain high work completion rates. Low-performing tehsils, such as Deola and Nandgaon, face inadequate job creation, low female involvement, and poor project

implementation. Moderate performers, such as Dindori, Kalwan, Trimbakeshwar, Igatpuri, Baglan, Malegaon, Sinnar, and Niphad, have mixed At the same time, Chandwad, Yevla, and Nashik suffer owing to community mobilization gaps, payment delays, and limited diversification of jobs. This inconsistent performance emphasizes the need for tailored actions to overcome local restrictions and improve the effectiveness of the scheme. (Figure 7)

An analysis of the MGNREGA Performance Index (MPI) and its five underlying dimensions reveals significant geospatial disparities in the program's implementation and outcomes across Nashik's 15 tehsils. The findings show a clear pattern in which tribal-dominated, geographically remote tehsils outperform more urbanized or agriculturally developed ones. This indicates that local socioeconomic conditions, administrative capacity, and community dependence are critical to the scheme's success.

6.6. High Performance Driven by Tribal Concentration and Geographic Necessity

The most interesting discovery is that Surgana (MPI: 0.67) and Peint (MPI: 0.59) are tehsils that perform very well. The MPI map (Figure 7) shows that these two tehsils are in the northwestern tribal belt of the district, which is a high-performance area for the MPI. It is not a coincidence that they are doing so well; it is because of the participation of the people.

Social Inclusion (SCSTI): The SC and ST Households Provided Employment Index (SCSTI) shows that Surgana and Peint have the highest scores in the district, with values of 0.79 and 0.78, respectively (Table 3, Figure 4). This is because most of the people in their tribes live in villages that rely on MGNREGA for jobs, especially in places where there are not many other jobs because of the mountains and the fact that there are not many private enterprises. Women's Participation (WPEI): These tehsils are working to make things fair for men and women. Surgana achieved a flawless score of 1.00 on the Women Provided Employment Index (WPEI), and Peint followed closely with a score of 0.92 (Table 4, Figure 5). This high number of women working illustrates how crucial their employment is for families to survive in these remotelocations and how well the community has banded together to support each other. Employment Intensity (ADEPI): To show how much they depend on the program, Surgana (0.73) and Peint (0.76) have the highest average days of work (Table 2, Figure 3). This means that MGNREGA is not only supplementary income for these communities; it is also a significant way for themto make a living.

However, even the best performers have difficulties,as no tehsil has achieved a "Very High" performance grade. This is partly because they only performed well on the Employment Generation Index (EGI) and Work Performance Index (WPI). These results demonstrate that they are strong in including people and making jobs available. However, there may be flaws in the administration that make it difficult to complete projects or provide more coverage for all households.

6.7. Moderate Performance

A mix of strengths and weaknesses: Dindori (MPI: 0.49), Kalwan (MPI: 0.47), and Trimbakeshwar (MPI: 0.45) are all tehsils that do okay. The MPI map (Figure 7) illustrates that these tehsils are typically near tribal regions that perform well. They have both positive and negative characteristics.

Dindori and Kalwan often work with marginalized groups (SCSTI scores of 0.56 and 0.58) and offer regular workdays, especially during the agricultural lean season (ADEPI values of 0.55 and 0.56). However, their performance is hindered by very low Work Completion Index (WCI) values of 0.15 and 0.23, respectively. This indicates that starting projects and building something that lasts a long time are very different. This is mainly dueto problems with management or poor project preparation. Malegaon is a strange contradiction. It has the highest EGI score in the district (0.70), suggesting that it is good at encouraging families to join. However, its overall MPI is only 0.35, since it obtained very low scores in women's participation (WPEI: 0.22) and social inclusion (SCSTI: 0.21). This implies that the program in Malegaon may cover a lot of ground but not go very deep, and it does not do a good job of reaching and empowering the groups that are most at risk. These mixed results suggest that middling performers still have no plans. They perform well in one area but not in another.

6.8. Low and Very Low Performance

The tehsils in the district's middle, southern, and eastern regions performed the worst. These areas are usually more urbanized or have more advanced agricultural economies than the other areas. Chandwad (MPI: 0.27), Nashik (MPI: 0.29), and Yevla (MPI: 0.26) are all thought to be low-to moderate-achievers. Nashik, an urban tehsil, has difficulty finding jobs (EGI: 0.26) and encouraging women to join the workforce (WPEI: 0.19). This highlights the difficultyof carrying out a plan centered on rural areas in a metropolis, where there may be other work options and the administration's attention is stretched too thin.

Deola and Nandgaon were the worst, with an MPI of only 0.18. The maps (Figure 2-7) demonstrate that these tehsils have problems with almost all indicators. They have relatively few women involved (WPEI of 0.07 and 0.12), very little social inclusion (SCSTI of 0.20 and 0.14), and very little work (WCI of 0.11 and 0.17). The scores are consistently poor, indicating significant difficulties, such as persistent delays in funding, a lack of project variation, and little community involvement. The fact that these tehsils continue to perform poorly demonstrates that they require specific help to fix problems with their structure and operations. For example, they need to strengthen the local government and add more work projects besides merely earthworks.

7. Conclusion

According to the study, there are notable differences in MGNREGA performance between the tehsils of Nashik.

High-achieving tribal-dominated tehsils, such as Surgana and Peint, are notable for their remarkable job creation, high female participation, and robust inclusion of SC/ST households. Dindori, Kalwan, and Trimbakeshwar are examples of tehsils with moderate performance. They frequently succeed in creating jobs during the agricultural lean season but fall short of achieving high work-completion rates. Tehsils like Chandwad, Yevla, and Nashik perform poorly due to inadequate project diversification, payment delays, and gaps in community mobilization. The lowest-ranked tehsils, Deola and Nandgaon, have poor project implementation, low women's participation, and chronic fund delay. These results demonstrate how geography, administrative capability, and community involvement significantly impact program effectiveness. There are notable differences in creating jobs at the tehsil level in the MGNREGA implementation in the Nashik district. Particularly in areas where tribal people predominate, Surgana and Peint stand out for their high employment generation and inclusivity. However, there are significant differences in work completion rates and gender participation levels, and most tehsils do not offer the desired 100 days of employment per year. In tribal tehsils, SC/ST household inclusion is strong, whereas it is weak in more urbanized areas. For equitable and prosperous results across districts, these trends highlight the necessity of location-specific policies that address governance shortcomings, promote gender inclusivity, and strengthen community involvement.

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