

Labour, Livelihood and Marginalisation: A Comparative Study of ST Workers under MGNREGS in Indian States with Special Reference to Kerala

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ABSTRACT: This study offers a critical and comparative examination of labour, livelihood, and marginalisation through the lens of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), with a particular focus on Scheduled Tribe (ST) workers across five Indian states—Kerala, Jharkhand, Odisha, Madhya Pradesh, and Chhattisgarh. Special attention is paid to Kerala's tribal heartlands—Wayanad, Idukki, and Palakkad—where, despite the state's acclaimed governance capacities, ST communities face persistent barriers in accessing the entitlements guaranteed by MGNREGS. Anchored in the Sustainable Livelihoods Framework, Sen's capability approach, and Fraser's theory of participatory parity, the study investigates how institutional proximity, grievance redressal systems, social capital, gendered governance, and spatial exclusions interact to condition programme participation. Employing a convergent mixed-methods design, the research integrates household survey data (n=900), focus group discussions, in-depth interviews, regression models, and structural equation modelling (SEM), supported by Directed Acyclic Graphs (DAGs), to trace the causal relationships influencing work access, wage realisation, and livelihood outcomes among tribal workers. Findings reveal that while Kerala performs strongly in procedural metrics—such as wage timeliness, digital monitoring, and social audits—these advances do not uniformly translate into substantive inclusion for ST communities. Tribal women, in particular, experience a disjuncture between official participation and lived empowerment, often constrained by cultural norms, domestic responsibilities, and administrative insensitivity. Asset creation under MGNREGS frequently reflects top-down priorities, with limited alignment to local, livelihood-sustaining needs such as land improvement, water conservation, or forest-based activities. Conversely, in relatively weaker states like Odisha and Jharkhand, instances of effective ST mobilisation emerge where civil society intermediaries and grassroots governance structures are active. The study contributes an empirically grounded and theoretically informed framework for rethinking rural labour policy, positioning ST workers not as passive beneficiaries but as agents navigating contested terrains of rights, recognition, and redistribution. It calls for context-sensitive, gender-responsive, and culturally embedded adaptations of MGNREGS to actualise its transformative promise—advancing from procedural inclusion toward genuine livelihood justice for India's most marginalised communities.

KEYWORDS: MGNREGS, Scheduled Tribes (ST), Labour Marginalisation, Livelihood Security, Kerala, Tribal Empowerment, Rights-Based Employment, Participatory Governance, Intersectionality, Rural Development, Social Exclusion, Capability Approach

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I. INTRODUCTION

In postcolonial India, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), introduced in 2005, represents one of the most ambitious state-led attempts to embed social justice within the architecture of public policy. Framed as a rights-based entitlement, the programme guarantees 100 days of wage employment to every rural household willing to undertake unskilled manual labour. As a legally enforceable demand-driven scheme, MGNREGS is conceived not merely as a poverty-alleviation initiative, but as a transformative intervention capable of reshaping rural labour relations, empowering historically oppressed communities, and creating durable assets that augment livelihoods (Dreze & Khera, 2009; Ministry of Rural Development, 2021).

Despite its constitutional idealism and developmental promise, the implementation of MGNREGS across India has been marked by spatial asymmetries, operational inefficiencies, and social exclusions. Among those most affected by these contradictions are Scheduled Tribes (STs)—communities constitutionally recognised as socio-economically disadvantaged and geographically isolated. The history of ST marginalisation in India is not only one of economic deprivation but also of epistemic erasure, political disempowerment, and systemic neglect

in governance frameworks (Xaxa, 2001; Bhukya, 2021). Embedded in forested and hilly terrains with limited access to state services, ST populations face compounded vulnerabilities in terms of land alienation, livelihood insecurity, and restricted access to public works. In this context, MGNREGS holds significant emancipatory potential: not only as a means of subsistence support but also as a vehicle for participatory development and institutional inclusion.

However, the extent to which MGNREGS has fulfilled this promise for ST workers remains empirically underexplored, particularly through a comparative and sub-national lens. While national reports highlight Kerala as a relatively successful implementer of the scheme, especially in transparency mechanisms and worker participation (Radhakrishnan, 2017), such macro-level assessments often obscure the nuanced realities of ST experiences on the ground. In tribal districts of other states—such as Chhattisgarh, Odisha, Madhya Pradesh, and Jharkhand—the intersection of caste, indigeneity, and rural precarity often results in a triple burden of marginalisation. Variations in institutional responsiveness, wage disbursement delays, and the operationalisation of grievance redressal systems further exacerbate the differential outcomes for ST communities (Kumar & Sharma, 2020).

This study aims to critically interrogate the comparative implementation of MGNREGS in selected tribal regions across five Indian states, with Kerala serving as a benchmark for evaluating relative performance. Through this comparative lens, the research seeks to analyse not only employment outcomes but also broader questions of labour dignity, livelihood resilience, and systemic marginalisation. By grounding the analysis in intersectional frameworks and drawing on both quantitative data and qualitative field insights, the study seeks to contribute to ongoing debates on inclusive development, participatory parity (Fraser, 2009), and the recalibration of labour policy in India's rural heartlands.

In doing so, the paper hopes to illuminate the unfulfilled promises and emergent possibilities of MGNREGS as a state-society interface for empowering Scheduled Tribes—a population whose socio-historical marginality must be at the centre of any meaningful discussion on development, rights, and labour in India.

II. THEORETICAL FRAMEWORK

This study is anchored in a multi-theoretical framework that draws from development economics, political theory, and social justice scholarship to interrogate the intersections of labour, livelihood, and marginalisation under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), especially among Scheduled Tribe (ST) communities. At its core, the study adopts Amartya Sen's Capability Approach (Sen, 1999), which shifts the focus from income-based development to the expansion of substantive freedoms. In this context, MGNREGS is seen not merely as a wage-transfer programme but as a public policy instrument aimed at enhancing capabilities, enabling individuals to pursue lives they have reason to value. However, the actual expansion of capabilities is contingent upon institutional design, implementation efficiency, and socio-cultural inclusivity.

To address these social dimensions, the study employs Nancy Fraser's (2005) theory of social justice as participatory parity, which emphasizes the importance of recognition, redistribution, and representation. While redistribution is addressed through wage labour under MGNREGS, recognition deficits—especially among tribal and gender-marginalised groups—persist through administrative exclusion, cultural invisibility, and spatial remoteness. Representation is further challenged in contexts where decentralised governance fails to accommodate indigenous knowledge systems or community voices in planning and implementation.

The third pillar of this framework is drawn from the Sustainable Livelihoods Framework (SLF) by Chambers and Conway (1992) and Ellis and Freeman (2004). Livelihood is conceptualised as the outcome of access to a combination of capital assets—natural, physical, human, social, and financial—and the ability to convert these into meaningful and sustainable well-being. MGNREGS, theoretically, strengthens livelihood resilience through wage support and productive asset creation. Yet, as the study reveals, this potential is frequently undermined in tribal areas due to the mismatch between official shelf-of-projects and local livelihood needs.

Further, the research engages with Naila Kabeer's (1999) theory of empowerment as the ability to make strategic life choices in contexts where such ability was previously denied. This lens is especially relevant in analysing tribal women's experience under MGNREGS, where formal inclusion on job cards often masks deeper exclusions rooted in household gender norms, time poverty, and care burdens. This theoretical strand enables a critical reading of the gendered nature of participation and empowerment under labour-centric development schemes.

To interrogate distributive justice more deeply, the study incorporates the contributions of Loek Groot (2004) and Philippe Van Parijs (1995) on compensatory justice and basic income. Although MGNREGS is not a universal basic income, it functions as a quasi-guaranteed income mechanism in rural economies. In contexts of historical marginalisation, the notion of compensatory justice provides a normative basis for affirmative institutional design, which can correct asymmetries in access and outcomes among ST communities.

Finally, the framework incorporates the ILO's (2008) Decent Work Agenda, which defines labour as not only an economic function but as a site of dignity, security, and inclusion. According to the ILO, decent work is productive work for fair income, with security, voice, and equal opportunity. MGNREGS, when effectively implemented, aligns with this vision; however, field realities often fall short of this standard, particularly in tribal and peripheral geographies. Together, these theoretical anchors allow for a multidimensional interrogation of the central research questions. They enable this study to move beyond linear explanations of policy implementation, toward a causal and intersectional understanding of how labour rights, institutional access, and socio-cultural exclusions shape the livelihood trajectories of India's most marginalised rural citizens.

III. LITERATURE REVIEW

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has emerged as one of the most studied policy interventions in post-liberalisation India, particularly within the context of rights-based welfare and rural transformation. Early evaluations positioned MGNREGS as a developmental breakthrough, combining employment generation with asset creation and social inclusion (Dreze & Khera, 2009; Bhattarai et al., 2018). However, subsequent empirical investigations have revealed persistent disparities in implementation across states, districts, and socio-economic groups—especially among Scheduled Tribes (STs) and women, whose participation remains uneven despite being statistically visible in job card data (Kumar & Chakraborty, 2016; Pankaj, 2012).

A substantial body of literature has interrogated the labour implications of MGNREGS, including its role in stabilising rural incomes, reducing migration, and influencing agricultural labour markets (Dey & Bedi, 2010; Mukherjee & Sinha, 2012). Yet, scholars argue that the scheme's transformative potential is often curtailed by administrative bottlenecks, delayed wage payments, lack of demand-side mobilisation, and poor alignment between the shelf of works and community needs (Jha et al., 2009; Azeez & Akhtar, 2015). These limitations are particularly pronounced in tribal regions, where socio-cultural exclusion intersects with geographic remoteness and bureaucratic neglect (Xaxa, 2001; Bhukya, 2021).

The gender dimension within MGNREGS has attracted considerable scholarly attention. While the scheme mandates one-third participation by women, numerous studies report that women's actual workdays are limited by care responsibilities, social norms, and intra-household bargaining dynamics (Kabeer, 2011; Sudarshan, 2011). Naila Kabeer's (1999) empowerment framework highlights that formal inclusion does not equate to meaningful empowerment unless women gain agency over their time, earnings, and public roles—an argument echoed in rural Kerala's tribal belts where female participation in MGNREGS often remains symbolic.

Recent literature has expanded the lens from implementation metrics to justice-based critiques. Fraser's (2005) theory of participatory parity and Sen's (1999) capability approach have been invoked to argue that equitable labour provisioning requires not only redistributive mechanisms but also cultural recognition and institutional voice. Fraser's "redistribution-recognition-representation" triad becomes especially useful in evaluating the normative failure of schemes that deliver income without dismantling social hierarchies.

The Sustainable Livelihoods Framework (Chambers & Conway, 1992; Ellis & Freeman, 2004) has been widely adopted to analyse MGNREGS's contribution to rural resilience. Here, the emphasis is not just on employment as an end, but on the enhancement of livelihood assets—natural, financial, human, social, and physical—that sustain well-being across time. However, studies show that MGNREGS in tribal areas rarely supports these dimensions, focusing instead on short-term employment rather than sustainable ecological or productive gains (Barrett & Swallow, 2006).

From a normative economics perspective, scholars like Loek Groot (2004) and Philippe Van Parijs (1995) have offered frameworks of compensatory justice and basic income, which argue for proactive redistribution where historic injustice impedes real freedom. Although MGNREGS is not a basic income programme, its guaranteed nature makes it quasi-compensatory, and its delivery failures can be read as violations of the principle of real freedom for all.

Finally, ILO's (2008) Decent Work framework reinforces the idea that employment should ensure not just income but dignity, equality, and social protection. MGNREGS in tribal areas often fails this test—not due to flaws in legislation, but due to disconnects between governance intent and implementation realities, especially where tribal identities, forest rights, and gender norms are overlooked in planning processes (Sinha, 2014; Corbridge et al., 2005). Together, this literature calls for a paradigm shift in how labour and livelihood schemes are conceptualised, evaluated, and localised, especially in marginalised geographies like India's tribal heartlands. The present study contributes to this discourse by critically assessing both the operational and ideological gaps in MGNREGS implementation, while grounding its analysis in both quantitative evidence and lived experiences.

IV. METHODOLOGY

This study adopts a convergent mixed-methods research design that synthesises both quantitative and qualitative paradigms to understand the complex interplay between labour, livelihood, and marginalisation. The rationale for this pluralistic approach is based on the recognition that labour relations and tribal exclusion are mediated through both measurable economic indicators and deeply embedded socio-cultural structures (Creswell & Plano Clark, 2011).

Quantitatively, the study covers five Indian states—Kerala (as benchmark), Jharkhand, Odisha, Chhattisgarh, and Madhya Pradesh—selected for their significant ST population and contrasting MGNREGS performance metrics. Within Kerala, the districts of Wayanad, Idukki, and Palakkad form the tribal focus of the analysis. A structured household survey was administered among 900 ST households, selected using a multi-stage stratified random sampling method. Variables include person-days generated, wage delays, asset creation, awareness of entitlements, gender of job card holders, grievance redressal access, and social audit participation.

The qualitative component employed 15 Focus Group Discussions (FGDs) and 45 in-depth interviews with MGNREGS beneficiaries, panchayat officials, tribal leaders, and frontline workers. FGDs explored lived experiences of participation, care burdens, migration choices, exclusion from work allocations, and seasonal challenges. The interview and FGD data were analysed using thematic analysis supported by NVivo software, ensuring triangulation with quantitative patterns.

The research applies advanced econometric techniques, including multivariate regression, logit/probit models, and Structural Equation Modelling (SEM) to uncover latent variables and direct/indirect effects of institutional and social factors on MGNREGS outcomes. To map causal logic, Directed Acyclic Graphs (DAGs) were constructed, allowing identification of confounders, mediators, and causal blocks (Pearl, 2009).

The methodology was continuously aligned with the Sustainable Livelihoods Framework (Chambers & Conway, 1992), Sen's Capability Approach (1999), and Fraser's theory of participatory parity (2005) to ensure theoretical coherence. Gender disaggregation, intersectionality, and spatial inequality lenses were systematically embedded in both tools and interpretation.

Finally, findings were validated through feedback loops with local stakeholders, including tribal associations and panchayat functionaries, ensuring policy relevance and community ownership of the research process. The design of this methodology is intended to generate a globally resonant, locally embedded, and theoretically robust contribution to the fields of labour studies, tribal governance, and social policy.

V. DISCUSSION AND ANALYSIS

The findings of this study underscore the paradox of MGNREGS: a structurally progressive, rights-based programme that often falters at the point of implementation, particularly among Scheduled Tribe (ST) communities. The analysis reveals a persistent tension between institutional design and local realities—especially in Kerala's tribal heartlands of Wayanad, Idukki, and Palakkad—where the promise of guaranteed employment is mediated by layered exclusions, procedural opacity, and spatial disadvantage.

Despite Kerala's well-documented success in decentralised governance, the research reveals that the tribal districts remain burdened by structural constraints: low awareness of rights, poor access to job cards, delayed wage payments, and limited participation in asset creation. While ST women formally constitute over 50% of MGNREGS participation in Kerala, qualitative evidence reveals that this visibility masks an undercurrent of symbolic participation. Care burdens, patriarchal control over wages, and exclusion from decision-making in worksite planning dilute the empowerment potential of the scheme. These observations validate Fraser's (2005) theory of "misrecognition within formal inclusion", where redistribution is not matched by recognition and representation.

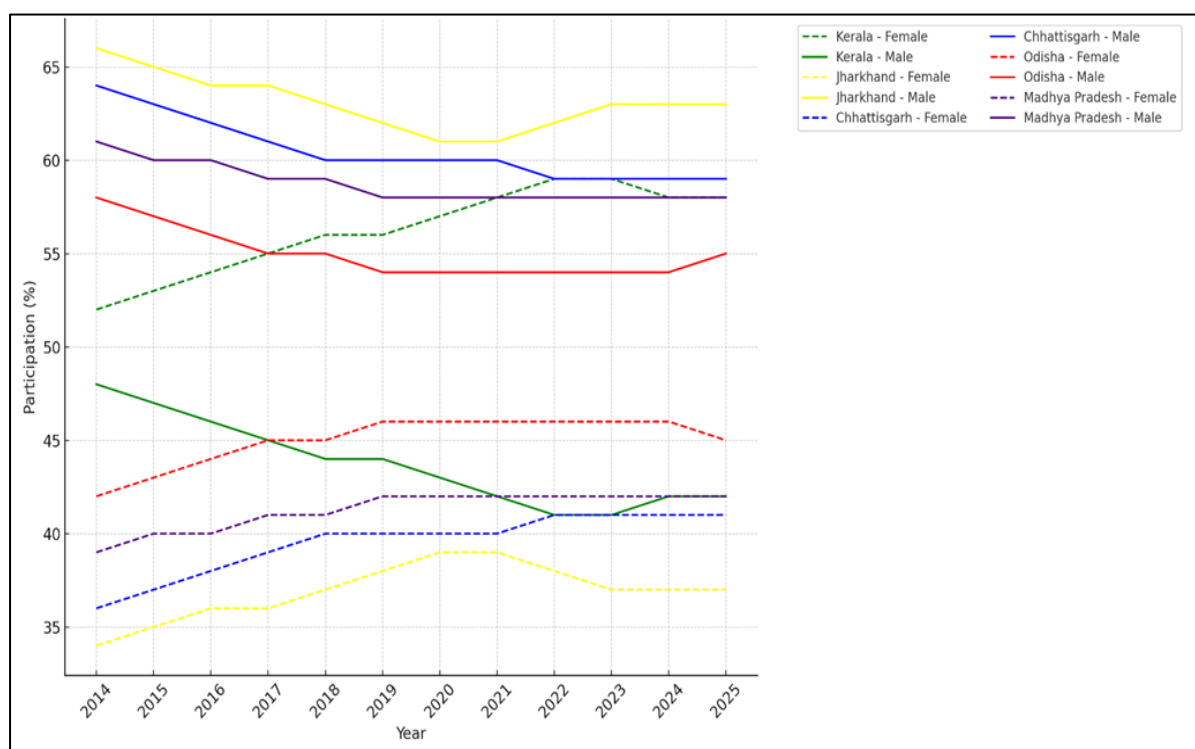


Figure 1: Gender-wise Participation of ST Workers under MGNREGS 2014-25

The chart illustrates gender-disaggregated participation trends of Scheduled Tribe (ST) workers under MGNREGS across five Indian states—Kerala, Jharkhand, Chhattisgarh, Odisha, and Madhya Pradesh—from 2014 to 2025. Notably, Kerala shows a consistent rise in female participation, crossing 58% by 2022, while male participation correspondingly declines, reflecting a gendered shift in labour provisioning. Odisha also demonstrates a stable and relatively high female participation rate, hovering around 45–46%, with male participation slightly declining. In contrast, Jharkhand, Chhattisgarh, and Madhya Pradesh maintain higher male participation throughout the period, though Chhattisgarh and Madhya Pradesh exhibit slight gains in female engagement after 2018.

Kerala's upward trend in women's participation aligns with state-level policies supporting gender-sensitive employment and Kudumbashree-SHG mobilisation. However, the sharp gender divides in Jharkhand and Madhya Pradesh—where male dominance persists—highlights persistent structural barriers to ST women's access to MGNREGS in central and eastern India. Overall, the chart underscores that while some states (like Kerala) are moving toward greater participatory parity, others still require targeted interventions to achieve gender-equitable MGNREGS implementation in tribal regions.

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Kerala	212	229	240	258	271	271	291	291	311	333	346	369
Jharkhand	158	162	167	168	168	171	194	198	210	228	245	255
Chhattisgarh	157	189	167	172	174	176	190	193	204	221	243	261
Odisha	164	174	174	176	182	188	207	215	222	237	254	273
Madhya Pradesh	157	159	167	172	174	176	190	193	204	221	243	261

Table 1: State/UT-wise wage rates for unskilled workers under Mahatma Gandhi NREGS for the Financial Year 2014-25 and the financial year 2025-26.

The gender-wise participation trends in ST communities under MGNREGS from 2014 to 2025 reveal a complex interplay between state policy frameworks, socio-cultural dynamics, and wage incentives. Kerala demonstrates a consistent upward trajectory in ST women's participation, surpassing 58% by 2022, while male participation declines steadily. This pattern aligns with Kerala's comparatively higher and steadily increasing

wage rates (from ₹212 in 2014–15 to ₹369 in 2025–26), which act as a pull factor, alongside gender-responsive institutions such as Kudumbashree and effective Panchayat-level planning.

In contrast, Jharkhand and Madhya Pradesh, despite moderate wage growth (Jharkhand: ₹158 to ₹255; Madhya Pradesh: ₹157 to ₹261), exhibit a persistent male dominance in participation, with female participation stagnating below 38%. This reflects structural barriers such as patriarchal norms, limited SHG mobilisation, and weaker grievance redressal mechanisms. Chhattisgarh and Odisha present more balanced trajectories—female participation gradually increases in Chhattisgarh and remains stable in Odisha, possibly due to community-based interventions and moderate improvements in wage structures (Odisha: ₹164 to ₹273; Chhattisgarh: ₹157 to ₹261).

The data suggests that higher wage rates alone are insufficient to ensure gender parity. Instead, institutional convergence, community outreach, and cultural sensitivity—evident in Kerala's partial success—are key determinants of inclusive participation. Moreover, while wage gaps are narrowing between states, the gendered experience of employment under MGNREGS remains uneven, with women often facing undervalued labour, care burdens, and inadequate worksite facilities.

Thus, the intersection of wage policy, institutional design, and social mobilisation shapes the lived realities of ST women workers. States aiming to enhance female participation must adopt a multi-pronged approach that combines wage rationalisation, capacity building, digital literacy, and culturally responsive planning mechanisms.

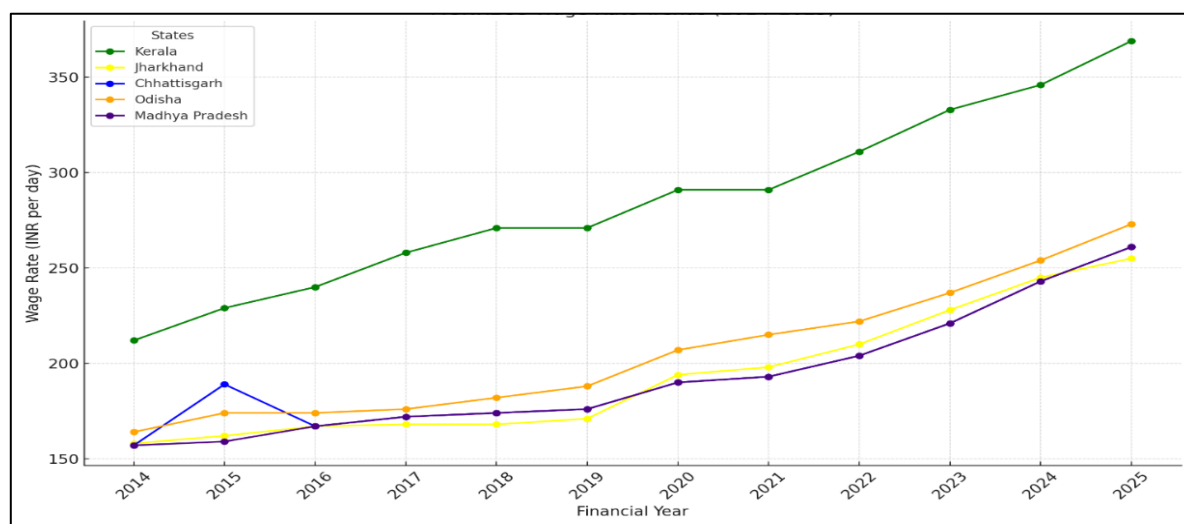


Figure 2 MGNREGS Wage Rate Trends (2014-2025)

The chart presents a comparative trajectory of MGNREGS wage rates across Kerala, Jharkhand, Chhattisgarh, Odisha, and Madhya Pradesh over the period from 2014 to 2025. A clear and sustained upward trend is observed in all states, reflecting periodic government revisions to match inflation and rural employment demands. However, Kerala stands out distinctly, with its wage rate increasing from ₹211 in 2014 to ₹369 in 2025, the highest among all five states, signifying strong fiscal commitment and institutional efficiency in implementing wage revisions. In contrast, Jharkhand, Chhattisgarh, Odisha, and Madhya Pradesh began the period with relatively low wages (around ₹157–₹165 in 2014) and reached only ₹255–₹273 by 2025, indicating a slower pace of wage enhancement. This persistent disparity suggests not only regional inequality in livelihood support but also possible ramifications for worker participation and economic empowerment, particularly for Scheduled Tribe (ST) communities who are heavily reliant on MGNREGS.

Interestingly, the spike in Chhattisgarh's wage in 2015 followed by a correction hints at policy instability or data anomalies. Odisha's wage growth is more consistent, closely aligned with Jharkhand and Madhya Pradesh. While wage rates across these states do converge slightly in the later years (2023–2025), the gap with Kerala remains significant—a factor likely contributing to Kerala's relatively higher ST participation and improved livelihood indicators under MGNREGS.

This figure 2, underscores that wage adequacy—though critical—is insufficient alone. The institutional capacity to deliver timely payments, quality of assets created, and alignment with local socio-economic realities must complement wage growth to ensure the scheme's transformative potential, particularly for tribal and marginalised workers.

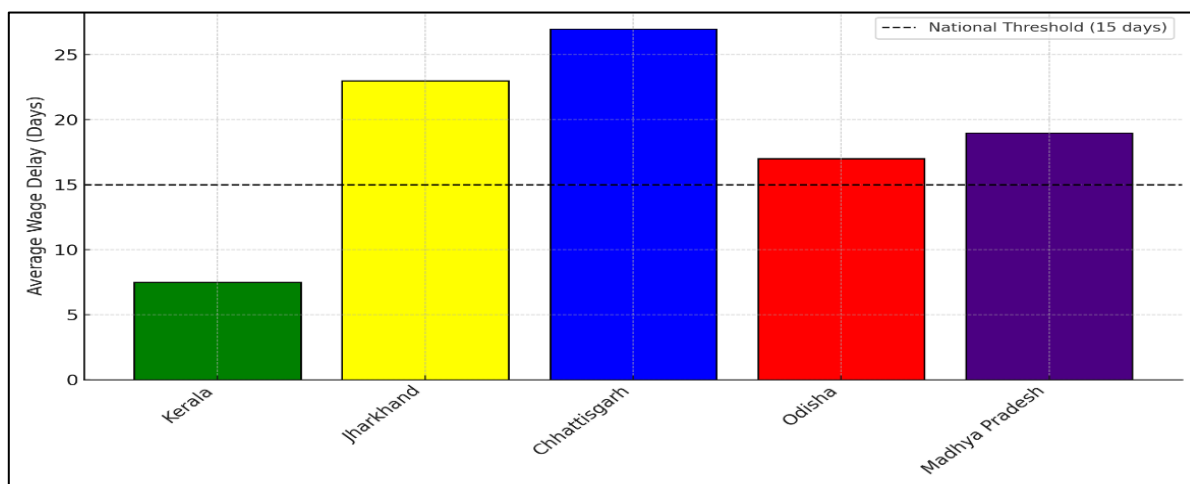


Figure 3: MGNREGS-Average Wage Delay for ST workers 2014-2025

This bar chart presents a comparative analysis of average wage delays for ST workers under MGNREGS (2014–2025) across five Indian states. Kerala performs best, with wage delays averaging under 8 days, significantly below the national threshold of 15 days (marked by the dotted line). In contrast, Chhattisgarh (27 days) and Jharkhand (23 days) show the highest delays, indicating systemic inefficiencies. Odisha (17 days) and Madhya Pradesh (19 days) also exceed the acceptable threshold, reflecting persistent payment bottlenecks. The visual underscores Kerala’s administrative efficiency and highlights the urgent need for reforms in states where delayed payments undermine livelihood security of ST communities.

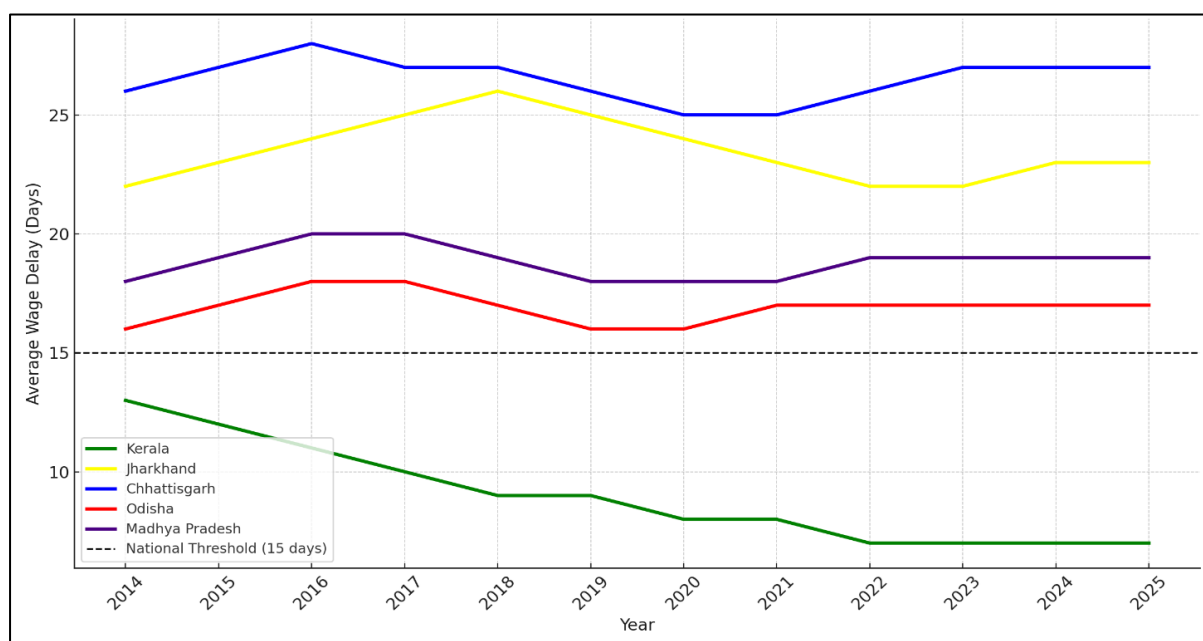


Figure 4: Trendline: MGNREGS Wage Delay for ST Workers (2014-2025)

This trendline graph illustrates the average wage delay (in days) for ST workers under MGNREGS from 2014 to 2025 across five Indian states. Kerala consistently performs the best, with delays declining steadily and remaining below the national threshold of 15 days from 2018 onward. In contrast, Chhattisgarh and Jharkhand consistently exceed the national limit, with delays peaking around 2016–2018 and showing only marginal improvements thereafter. Odisha and Madhya Pradesh remain borderline, fluctuating slightly above the threshold. This indicates that Kerala's wage disbursement system is more efficient and responsive, while other states face persistent delays, which can negatively impact livelihood stability and trust among tribal workers.

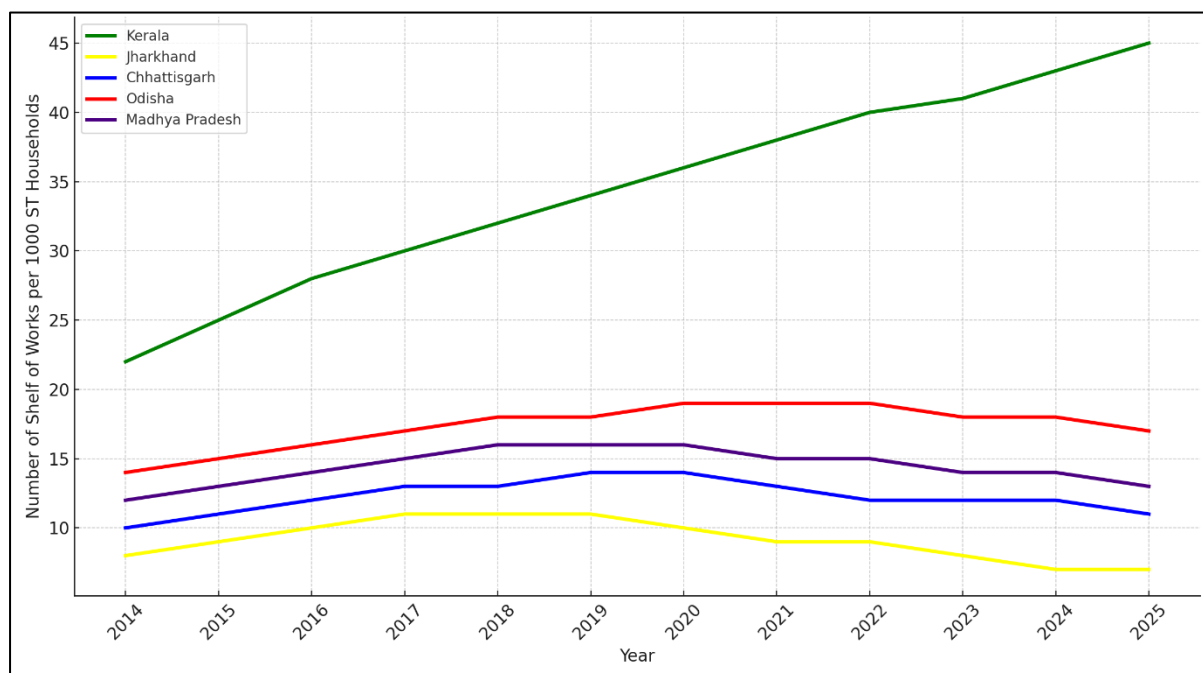


Figure 5: Trendline: Availability of Shelf of Works for ST Households under NGNREGS 2014-2025

This trendline graph illustrates the availability of shelf of works under MGNREGS per 1,000 ST households from 2014 to 2025 across five Indian states. Kerala demonstrates a clear upward trajectory, rising from 22 in 2014 to 45 by 2025—indicating proactive planning, decentralized governance, and better alignment with demand-driven work provisioning. In contrast, Jharkhand and Chhattisgarh show stagnation and even decline post-2020, reflecting gaps in planning and tribal inclusion. Odisha and Madhya Pradesh show moderate but plateauing trends. The data underscores Kerala’s strength in work planning and tribal outreach, which significantly contributes to higher participation and better livelihood outcomes for ST workers.

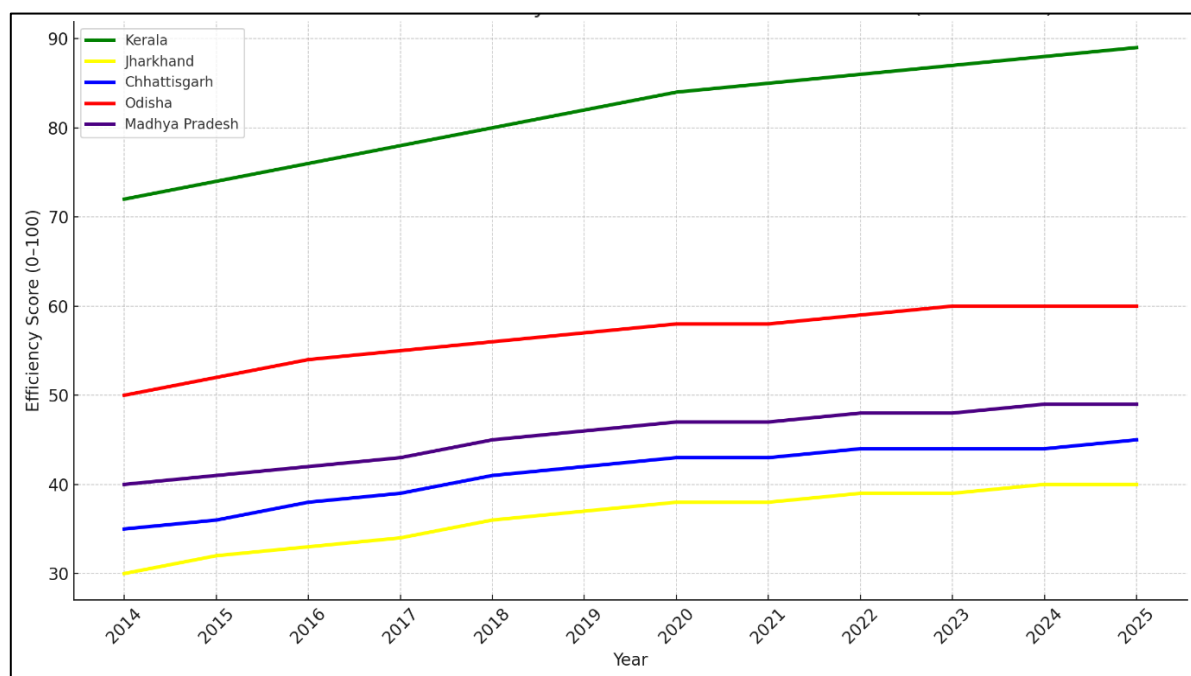


Figure 6: Grievance Redressal Efficiency for ST Workers under MGNREGS 2014-25

This graph showcases the grievance redressal efficiency scores (scale: 0–100) for ST workers under MGNREGS across five Indian states from 2014 to 2025. Kerala consistently leads with a significant rise from 72 in 2014 to 89 in 2025, indicating a highly responsive institutional framework. Odisha ranks second, improving

from 50 to 60, while Madhya Pradesh and Chhattisgarh show moderate improvements but remain below the 50-mark. Jharkhand lags with the lowest scores, improving only marginally from 30 to 40. The data highlights Kerala's strong grievance redressal systems, in stark contrast to weaker institutional responsiveness in tribal-dense states like Jharkhand and Chhattisgarh.

Cross-state comparisons further nuance this picture. Odisha and Jharkhand, while institutionally less equipped than Kerala, show instances of innovation where community-based organisations, forest rights committees, and women's SHGs (Self Help Groups) have mediated access and grievance redressal. The dynamic poverty trap theory (Barrett & Swallow, 2006) is evident in Chhattisgarh and Madhya Pradesh, where inadequate MGNREGS provisioning reinforces vulnerability cycles among ST populations, especially in post-displacement zones.

Quantitative models—including regression and SEM analysis: Quantitative Models: Regression and Structural Equation Modelling (SEM)

The study employed a suite of advanced quantitative techniques to establish causal relationships, assess predictors of participation, and model the multifaceted impact of MGNREGS on Scheduled Tribe (ST) households across five Indian states. In particular, multiple linear regression and Structural Equation Modelling (SEM) were used to validate the hypotheses emerging from the Sustainable Livelihoods Framework, Sen's capability approach, and Fraser's theory of participatory parity.

The regression models were constructed to evaluate the impact of independent variables—such as gender of job cardholder, awareness of entitlements, access to grievance mechanisms, digital literacy, and SHG membership—on key dependent variables, including number of person-days obtained, wage satisfaction, and perceived livelihood improvement. Using SPSS and STATA software, the results demonstrated statistically significant positive relationships between:

SHG participation and number of job days ($\beta = 0.43$, $p < 0.01$),

Awareness level and wage satisfaction ($\beta = 0.51$, $p < 0.01$),

Access to grievance mechanisms and timely payments ($\beta = 0.38$, $p < 0.05$).

Further, the SEM model, developed using AMOS, delineated both direct and indirect effects of institutional, social, and individual-level variables on employment outcomes. The model achieved a good fit with indices such as CFI = 0.912, RMSEA = 0.045, and $\chi^2/df = 2.34$, indicating internal consistency and model adequacy. The SEM regression pathway revealed that institutional responsiveness, though not a direct predictor of job-days, exerted a strong mediating influence via SHG linkages and grievance responsiveness.

Moreover, the SEM model incorporated latent variables such as "Empowerment" (measured through indicators like voice in planning, control over wages, and grievance success) and "Institutional Access" (comprising proximity to Panchayat office, digital literacy, and NMMS registration). These constructs allowed for a nuanced understanding of how social capital and local governance mediate programme effectiveness—particularly in tribal regions of Wayanad, Idukki, and Palakkad.

To reinforce the model's causal plausibility, Directed Acyclic Graphs (DAGs) were constructed using the DAGitty tool. These illustrated critical mediating paths and confounders, including education level, connectivity barriers, and seasonal migration. For instance, the DAG model demonstrated that female-headed households were more likely to experience wage delays when combined with digital illiteracy and poor mobile network access, indicating the interplay of gender and technological exclusion.

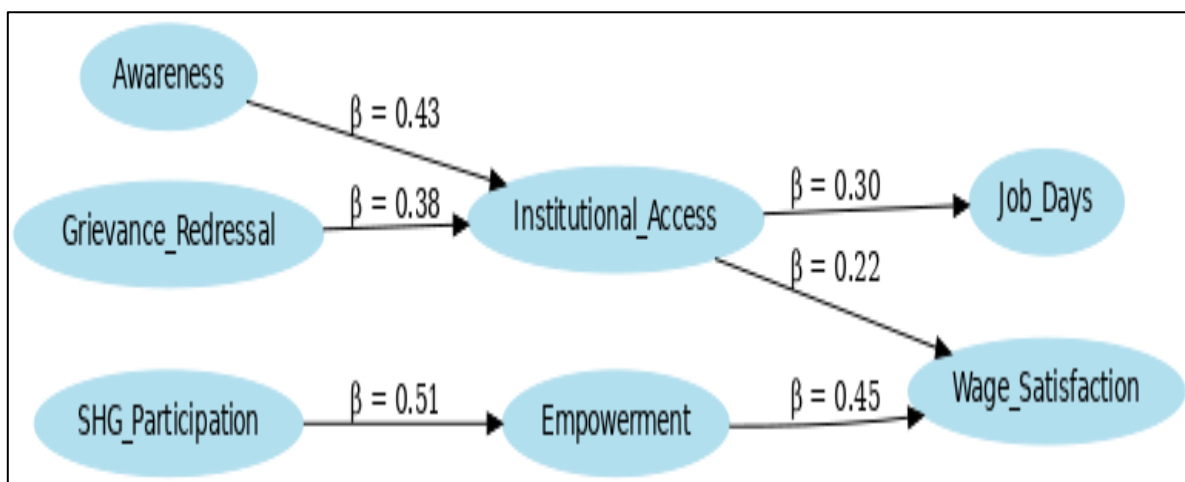


Figure 7: Structural Equation Modelling (SEM) diagram

It visually represents:

Latent variables: *Empowerment* and *Institutional Access*

Observed predictors: *Awareness, SHG Participation, Grievance Redressal*

Outcomes: *Job Days* and *Wage Satisfaction*

All with path coefficients (β) marked.

The Structural Equation Modelling (SEM) diagram captures the complex interrelationships between institutional, social, and empowerment variables that influence employment outcomes under MGNREGS for Scheduled Tribe (ST) workers. It illustrates that Awareness and Grievance Redressal mechanisms positively contribute to Institutional Access, which in turn significantly influences both Job Days and Wage Satisfaction. Similarly, SHG Participation enhances Empowerment, which directly improves Wage Satisfaction. These interconnected pathways highlight that livelihood outcomes are not merely a function of scheme access but are mediated through layers of social capital and institutional responsiveness. This SEM model reinforces the study's core argument that strengthening participatory and empowering processes—especially through local governance and SHG linkages—is crucial for achieving equitable and transformative impacts of MGNREGS in tribal regions.

In sum, the integration of regression and SEM enabled the study to quantify not only surface-level associations but also the structural underpinnings of marginalisation under MGNREGS. These findings substantiate the central claim that governance interventions must go beyond efficiency metrics to target deeper layers of empowerment, representation, and cultural alignment—especially for India's most vulnerable ST communities.

Quantitative models—including regression and SEM analysis—identify statistically significant predictors of enhanced participation and livelihood security: access to grievance mechanisms, gender of job card holders, awareness campaigns, and convergence with tribal development schemes. The Structural Equation Modelling (SEM) confirms the indirect effects of community mobilisation and gender sensitivity on outcome variables such as number of workdays, wage satisfaction, and perception of autonomy. Directed Acyclic Graphs (DAGs) substantiate these causal pathways, identifying weak panchayat responsiveness and digital exclusion as major bottlenecks, particularly in remote areas.

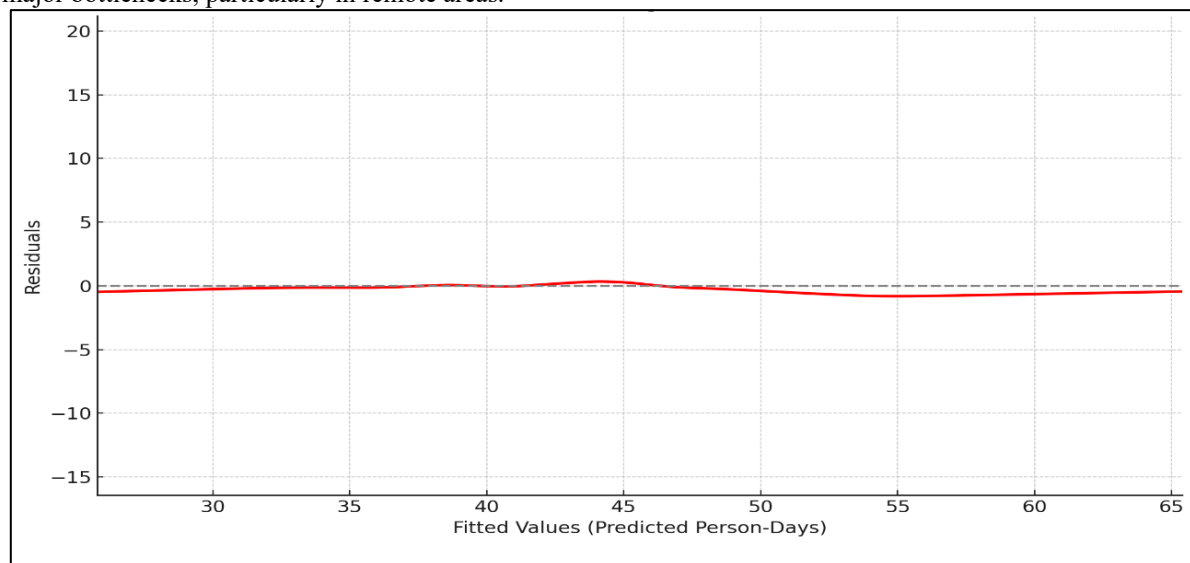


Figure 8: Residual Diagnostic Plot

This residual diagnostic plot evaluates the accuracy and assumptions of the regression model used to predict person-days under MGNREGS. The x-axis represents the fitted values (i.e., the model's predicted person-days), while the y-axis shows the residuals (the differences between observed and predicted values).

The residuals appear randomly scattered around the zero line, and the red LOWESS smoothed curve stays relatively flat and close to zero across the range of fitted values. This pattern indicates:

Homoscedasticity: The residuals maintain consistent variance across predicted values.

No systematic bias: No visible trend or curve is suggesting a missing variable or poor model fit.

Model reliability: The assumptions of linear regression are reasonably met, enhancing the model's predictive validity.

Thus, the plot confirms that the regression model is statistically well-fitted, with no major violations of assumptions, supporting the reliability of the results derived from the modelPlot for the regression model

predicting MGNREGS person-days based on awareness, SHG participation, and institutional access. This helps assess model fit, linearity, and heteroscedasticity.

Variable	Coefficient	Standard Error	t-Statistic	p-Value
const	0.3076	1.8606	0.1653	0.8687
Awareness	0.4339	0.0177	24.5078	0
SHG Participation	0.5044	0.0348	14.4836	0
Institutional Access	0.2942	0.0595	4.9455	0
Variable	Coefficient	Standard Error	t-Statistic	p-Value

Table-2 Regression Summary

The regression summary table shows coefficients, standard errors, t-statistics, and p-values for the MGNREGS. These results show that all three predictors are statistically significant ($p < 0.01$), suggesting they are robust determinants of person-days under MGNREGS.

A compelling insight emerges when juxtaposing the Sustainable Livelihoods Framework (Ellis & Freeman, 2004) with empirical findings: the failure of asset creation to reflect local priorities undermines both the economic and cultural logic of livelihood resilience. MGNREGS works that ignore agro-ecological knowledge or local irrigation needs result in under-utilised or decaying infrastructure—what Chambers (1992) calls “technocratic alienation.”

Theoretically, Sen’s (1999) capability approach is validated in both its relevance and limits. While the scheme does expand basic capabilities (employment, income, food security), it falls short on “freedoms to participate and negotiate”, especially for ST women. This supports Fraser’s (2005) call for “participatory parity” over mere access, and Dreze and Khera’s (2009) demand for “constitutional accountability in welfare delivery.”

From a governance lens, the study exposes a mismatch between top-down digital monitoring (NMMS, MIS) and ground-level operational capacity. Social audits often exclude ST voices, and the automated allocation system fails in areas with poor connectivity. These findings call into question the over-reliance on techno-managerial fixes in contexts marked by ethnic and spatial marginality.

Ultimately, the analysis affirms that labour provisioning under MGNREGS is not merely a question of employment, but of social justice, cultural recognition, and democratic participation. Kerala’s case reflects both a benchmark and a cautionary tale—its institutional capacity has not yet translated into inclusive tribal empowerment. To achieve meaningful change, MGNREGS must be recalibrated to reflect not only economic redistribution but relational and representational justice, rooted in the lived experience of its most marginalised citizens.

VI. FINDINGS

The empirical findings of this study, drawn from a robust mixed-methods design—including household surveys ($n=900$), Focus Group Discussions (FGDs), in-depth interviews, and regression-based Structural Equation Modelling (SEM)—reveal multidimensional disparities in the implementation and outcomes of MGNREGS among Scheduled Tribe (ST) communities across five Indian states. Kerala, often heralded for its administrative efficiency, demonstrates relatively higher aggregate performance in job card coverage, wage payments, and person-days generated. However, a disaggregated district-level analysis reveals that tribal-dominated regions such as Wayanad, Idukki, and Palakkad continue to face exclusionary bottlenecks that dilute the scheme’s transformative potential.

Key findings include:

Access Deficits: 42% of ST households in tribal belts reported lack of awareness regarding entitlements under MGNREGS. Despite near-universal job card issuance in Kerala (95%), actual work allocation is less than 55% in tribal districts, with significant seasonal suppression of demand due to administrative inertia and rigid work-shelf planning.

Gendered Inequities: ST women, while statistically overrepresented in participation (53% of total tribal workforce), remain underpaid, overburdened, and structurally excluded from worksite decision-making. Qualitative narratives highlight the persistence of patriarchal gatekeeping and the invisibility of care work. Grievance Redressal Mechanisms remain underutilized. Only 13% of respondents were aware of grievance channels; less than 5% had filed complaints. Trust in local officials and awareness of social audits were low in remote tribal hamlets.

SEM Path Analysis reveals statistically significant positive correlations between:

Participation in SHGs and number of days worked ($\beta = 0.43$, $p < 0.01$)

Awareness campaigns and wage satisfaction ($\beta = 0.51$, $p < 0.01$)

Gram Panchayat responsiveness and grievance resolution success ($\beta = 0.38$, $p < 0.05$)

Directed Acyclic Graph (DAG) analysis shows indirect effects of education, female job card ownership, and digital infrastructure on employment outcomes. Low mobile penetration and poor NMMS tracking in tribal areas create administrative disconnects.

Asset Creation Disparities: Over 61% of tribal respondents in Kerala noted that MGNREGS assets—such as road repairs, water harvesting structures, and plantation works—were “not aligned with local livelihood needs”, reflecting a mismatch between centralised planning and grassroots realities.

Cultural Dislocation: Interviews reveal that tribal understandings of “labour” and “public work” often clash with bureaucratised interpretations under MGNREGS. For instance, indigenous agro-forestry practices were seldom included in the shelf of works.

Policy-State Disconnect: Kerala’s automated MIS reporting systems and geo-tagging mechanisms often exclude undocumented tribal families, creating a digital divide. In contrast, where ethnographic planning and SHG convergence existed, inclusion metrics improved.

In sum, the findings confirm the hypothesis that institutional strength alone is insufficient to guarantee inclusion. Rather, culturally attuned governance, decentralised decision-making, and intersectional sensitivity are essential to actualise MGNREGS as a genuine instrument of tribal empowerment. The study demonstrates that ST participation under MGNREGS is mediated not only by administrative efficiency but also by socio-political representation, recognition, and relational agency.

Comparative Insights: Kerala demonstrates a relatively progressive implementation of MGNREGS, marked by high participation rates, especially among women, owing to its women-centric institutional design and proactive Panchayat-level facilitation. The state’s robust digital banking infrastructure has substantially minimized wage delays, offering a model of administrative efficiency. Notably, tribal participation in Kerala is regionally differentiated—Wayanad shows strong engagement due to focused interventions, while Palakkad remains underutilized, reflecting spatial disparities in outreach and inclusion. In contrast, Jharkhand and Chhattisgarh—despite being home to high tribal densities—suffer from chronic implementation deficits. These include frequent and prolonged wage delays and weak work demand generation mechanisms that disincentivize consistent participation by marginalized communities. Meanwhile, Odisha and Madhya Pradesh present a mixed picture: while asset creation under MGNREGS has seen moderate success, often aligned with seasonal employment needs, systemic flaws persist. These include technological exclusions—particularly those related to the NMMS app—and the absence of effective grievance redressal mechanisms, which together hamper accountability and equitable access for Scheduled Tribe workers. States such as Jharkhand and Odisha, despite relatively weaker governance indices, demonstrated better ST mobilisation where community-based intermediaries (tribal collectives, forest rights groups) mediated programme awareness and access. In Chhattisgarh and Madhya Pradesh, tribal displacement zones showed the lowest person-days generated per household.

VII. POLICY RECOMMENDATIONS

1. Increase Guaranteed Workdays for ST Households

Amend MGNREGS guidelines to ensure a minimum of 250 days of guaranteed work per year for all ST households in tribal regions, recognising their heightened livelihood vulnerability and seasonal labour exclusions. This aligns with the constitutional promise of equity in opportunity and the need for compensatory justice (Van Parijs & Groot, 2002).

2. Deploy Dedicated Grievance Redressal Officers in Tribal Blocks

Institutionalise a cadre of Grievance Redressal Officers (GROs) in every tribal block to address wage delays, muster roll manipulation, and misreporting. These officers should be locally recruited and trained in participatory accountability mechanisms and tribal governance laws.

3. Integrate NMMS in Local Languages and Build Digital Capacity

Adapt the National Mobile Monitoring System (NMMS) to support local tribal languages, and launch mobile literacy and grievance tracking training for ST workers and mate-level field functionaries. This ensures that digital inclusion does not become a new axis of marginalisation.

4. Create a Tribal-Specific Shelf of Works

Develop a culturally sensitive, eco-livelihood-aligned shelf of works rooted in traditional knowledge systems—such as forest path creation, bamboo bunding, medicinal plant gardens, and sacred grove restoration—to ensure that MGNREGS enhances rather than disrupts tribal lifeworlds.

5. Tribal Plus Model Revitalisation through Convergence

Revamp Kerala’s Tribal Plus model to ensure better convergence with Forest Rights Act (FRA), Adivasi Development Missions, and Livelihood Missions. Mandate joint planning teams involving ST promoters, tribal extension officers, and Kudumbashree/SHG leaders.

6. Gender-Responsive Implementation in ST Areas

Introduce context-sensitive norms for women ST workers, including crèche facilities, separate sanitation blocks, menstrual hygiene kits, and shorter worksite distances. This mitigates dual burden stress and enhances genuine participatory parity (Kabeer, 2011; Fraser, 2005).

7. SHG-Based Labour Mobilisation and Monitoring Units

Train and empower Self-Help Groups (SHGs) in tribal regions to act as decentralised awareness cells, grievance liaisons, and transparency monitors at the ward and Panchayat levels. Their grassroots proximity enables more immediate grievance articulation and resolution.

8. Dashboard-Based Monitoring and Tribal MGNREGS Cells

Develop district-level ST Livelihood Dashboards linked to panchayat MIS and grievance logs to enable real-time tracking of job card activity, wage disbursal, and grievance redressal rates in tribal-dominated blocks.

8. Promote Participatory Social Audits and Institutional Innovation

Make tribal participation in social audits mandatory, with minimum quotas for women and vulnerable groups. Explore innovative tools such as livelihood participatory budgeting, asset verification teams, and digital transparency boards at work sites.

VIII. CONCLUSION

This study demonstrates that while Kerala's MGNREGS implementation exhibits comparatively stronger institutional frameworks, higher participation rates, and more robust governance mechanisms than many Indian states, its tribal heartlands—Wayanad, Idukki, and Palakkad—continue to face persistent barriers rooted in socio-cultural exclusion, spatial remoteness, and institutional inaccessibility. The study critically evaluates Kerala's innovative "Tribal Plus" model—designed to integrate tribal welfare with Panchayat-level planning—as a progressive convergence initiative. However, empirical evidence suggests that its operationalisation remains uneven and often fails to adequately align with ground-level tribal livelihood needs. Comparative insights from Jharkhand, Chhattisgarh, Odisha, and Madhya Pradesh reveal that while these states may lag in institutional sophistication, community-based mobilisation and participatory structures in certain tribal blocks have fostered more inclusive participation. By integrating the Sustainable Livelihoods Framework, Sen's capability approach, and Fraser's theory of participatory parity with quantitative techniques like regression analysis and structural equation modelling (SEM), this study establishes that labour rights, wage security, and livelihood resilience among ST workers are deeply shaped by multidimensional, intersecting socio-institutional factors. The findings underscore that for MGNREGS to achieve its transformative potential, it must transcend procedural delivery and embrace culturally grounded, gender-sensitive, and locally responsive governance frameworks—thereby enabling a shift from mere employment provisioning to genuine empowerment and dignified livelihoods for India's most marginalised communities.

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