FROM GLOBAL BENCHMARKS TO LOCAL REALITIES: A COMPARATIVE ASSESSMENT OF HUMAN DEVELOPMENT DISPARITIES ACROSS COUNTRIES, INDIA, KARNATAKA, AND MANDYA DISTRICT

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ABSTRACT

Human development assessments are commonly conducted at global, national, and state levels; however, such aggregate analyses often obscure substantial inequalities that persist at sub-national and local scales. This study adopts a comparative, multi-layered analytical framework to examine human development disparities across four spatial levels—countries, India, Karnataka, and Mandya district—using the Human Development Index (HDI) and its core dimensions of health, education, and standard of living. By progressively disaggregating from global benchmarks to district-level realities, the study demonstrates how average achievements at higher levels conceal uneven development outcomes at lower administrative units. The analysis reveals that while India and Karnataka have recorded steady improvements in overall human development indicators, significant disparities persist across regions and within districts, particularly in income security and health access. The Mandya district case illustrates how intra-district and taluk-level inequalities remain largely invisible in state-level averages, underscoring the limitations of macro-centric development assessments. The findings highlight the importance of integrating district- and sub-district-level human development measurement into planning frameworks to ensure that development strategies are both inclusive and context-specific. By bridging global indicators with local evidence, the study contributes to the human development literature by reinforcing the need for decentralised, inequality-sensitive monitoring of development outcomes.

Keywords: Human Development Index; Multidimensional Development; Regional Disparities; Sub-national Inequality; Karnataka; Mandya District; Decentralised Planning

1. INTRODUCTION

Development comparisons have traditionally relied on macro-level indicators such as per capita income and the Human Development Index (HDI) to assess progress across countries and regions. While these measures have advanced development thinking by incorporating health, education, and living standards, their aggregated nature often conceals uneven development outcomes within countries and regions (Sen, 1999; UNDP, 2023/2024). As a result, reliance on macro averages can obscure the distributional dimensions of human well-being.

Existing research consistently demonstrates that national and state-level averages mask substantial internal disparities shaped by geography, socio-economic structure, and differential access to public services. Regions with similar HDI values may experience markedly different development realities, and states performing well on average often contain

districts facing persistent deprivation. Such internal inequalities diminish the effective level of human development and limit the inclusiveness of development policies (UNDP, 2023/2024).

In India, this challenge is particularly pronounced. Despite improvements in national HDI rankings, significant inter-state, rural–urban, and social group disparities persist. Even state-level comparisons fail to capture inequalities operating at district and sub-district levels, where access to healthcare, education, and income opportunities varies widely (Planning Commission, 2011). Karnataka reflects a similar pattern: favourable state-level indicators coexist with pronounced regional and intra-regional disparities, underscoring the inadequacy of state averages as standalone measures of inclusive development.

District-level evidence further reveals the depth of these inequalities. In Mandya district, relatively moderate overall development conceals marked differences across taluks and population groups, particularly in health access and livelihood security. These findings highlight the policy significance of localised analysis, as districts play a central role in programme implementation and resource allocation.

Accordingly, this study adopts a multi-scalar approach that links global benchmarks with national, state, and district-level evidence. By moving beyond macro averages to micro-level analysis, it becomes possible to identify hidden inequalities and dimension-specific constraints, thereby enhancing the analytical and policy relevance of human development assessment in decentralised planning contexts.

2. OBJECTIVES AND RESEARCH QUESTIONS

2.1 Objectives of the study

The specific objectives of the study are:

1. To compare human development performance across countries and situate India within the global HDI framework.

2. To examine regional disparities in human development within India, with specific reference to Karnataka.

3. To analyse intra-district human development inequalities in Mandya district, highlighting how local disparities remain concealed within higher-level averages.

2.2 Research questions

In accordance with the objectives of the study, the study addresses the following research questions:

1. How does India's human development performance compare with global benchmarks and selected countries?

2. What patterns of regional inequality characterise human development outcomes within India and Karnataka?

3. To what extent do state- and national-level averages obscure intra-district disparities in human development within Mandya district?

3. REVIEW OF LITERATURE AND CONCEPTUAL BACKGROUND

3.1 Human development measurement: HDI and related indices

The measurement of human development marked a decisive shift away from income-centred assessments of progress. The Human Development Index (HDI), introduced by the United

Nations Development Programme, reconceptualises development as a multidimensional process encompassing health, education, and standard of living. By combining indicators of life expectancy, educational attainment, and income, the HDI captures the expansion of human capabilities rather than economic output alone (UNDP, 1990; Sen, 1999). Over time, it has become a widely used benchmark for both cross-country and sub-national comparisons, shaping academic debate as well as policy discourse.

Recognising the limitations of average achievements, subsequent refinements to the HDI framework have introduced complementary indices to address inequality and deprivation. The Inequality-adjusted Human Development Index (IHDI) accounts for distributional losses within each dimension, providing a more realistic estimate of the level of human development actually experienced by the population (UNDP, 2023/2024). Similarly, the Gender Development Index (GDI) and the Multidimensional Poverty Index (MPI) extend the framework by highlighting gender disparities and overlapping deprivations at the household level. Together, these measures underscore that development outcomes depend not only on aggregate progress but also on how achievements are distributed across population groups and regions.

Empirical applications of HDI and related indices consistently show that advances in one dimension do not necessarily translate into balanced development across others. In many developing contexts, gains in education have outpaced improvements in health and income, resulting in uneven capability expansion (Planning Commission, 2011; UNDP, 2023/2024). These findings reinforce the value of multidimensional measurement frameworks for identifying development constraints and guiding policy priorities.

3.2 Disparities and the logic of disaggregation

While composite indices such as the HDI are useful for broad comparisons, a substantial body of literature cautions against exclusive reliance on aggregate measures. Development disparities are often embedded within countries and regions, shaped by spatial location, socio-economic structure, and differential access to public services. As a result, aggregate HDI values may conceal significant inequalities across regions, social groups, and rural–urban areas (Sen, 1999).

The logic of disaggregation arises from this concern. By analysing development indicators across smaller spatial units and population categories, researchers are able to uncover inequalities that remain invisible at higher levels of aggregation. Disaggregated approaches have been widely applied in studies of inter-state disparities in India, intra-state regional inequalities, and rural–urban gaps in access to health, education, and livelihoods (Planning Commission, 2011). Such analyses demonstrate that regions with similar average HDI values can exhibit markedly different internal distributions of well-being.

From a policy perspective, disaggregation is particularly important in contexts where development planning and programme implementation are decentralised. Districts and sub-districts constitute critical administrative spaces for delivering public investments in health, education, and livelihoods. Without district- and sub-district-level diagnostics, policy interventions risk being inadequately targeted and insufficiently responsive to local conditions (UNDP, 2023/2024). Disaggregated analysis therefore enhances both the analytical robustness and practical relevance of human development measurement.

3.3 Research gap

Despite extensive use of HDI at global and national levels, several gaps remain in the literature. First, comparative studies tend to prioritise cross-country or inter-state analysis,

with relatively few attempts to link global benchmarks systematically with district-level realities within a single analytical framework. This limit understanding of how inequalities intensify as the scale of analysis narrows.

Second, intra-state disparities—particularly at district and sub-district levels—remain underexplored. Although state human development reports acknowledge regional variation, detailed empirical assessments at the district and taluk levels are less common and often constrained by data limitations. Consequently, localised disparities in health access, educational attainment, and living standards remain insufficiently documented.

Third, many studies rely on aggregate HDI rankings without examining the relative contribution of individual dimensions to observed inequalities. This restricts the ability to identify whether disparities are driven primarily by health, education, or income-related constraints.

Addressing these gaps, the present study adopts a multi-scalar comparative approach that links global and cross-country benchmarks with national, state, and district-level evidence. By focusing on Karnataka and, more specifically, Mandya district, the study demonstrates how disaggregated human development analysis can uncover hidden inequalities and generate policy-relevant insights for decentralised development planning.

4. DATA SOURCES AND METHODS

This study adopts a *multi-scalar comparative research design* to examine human development disparities across global, national, state, and district levels. The methodological approach is structured to ensure consistency in conceptual framing while allowing for contextual sensitivity as the scale of analysis narrows from global benchmarks to local realities. The Human Development Index (HDI) framework provides the unifying analytical basis across all levels, supplemented by disaggregated analysis to capture spatial and regional inequalities.

4.1 Global HDI comparison approach

At the global level, the study draws on internationally comparable HDI data published by the United Nations Development Programme. These data provide standardised measures of human development across countries based on three core dimensions: health (life expectancy at birth), education (mean and expected years of schooling), and standard of living (gross national income per capita adjusted for purchasing power parity).

The global comparison serves two methodological purposes. First, it establishes benchmark levels of human development across countries at different stages of development, enabling classification into high, medium, and low human development categories. Second, it provides a reference point against which India's relative position can be assessed. Descriptive comparison of HDI values and dimension-specific indices is employed to highlight cross-country variation and to identify broad patterns in development outcomes. This macro-level comparison is not intended to explain country-specific determinants but to contextualise national and sub-national findings within the global human development landscape (UNDP, 2023/2024).

4.2 India: Trends and inter-state comparisons

At the national level, the analysis focuses on India's human development performance over time and across states. National HDI trends are examined using data from successive Human Development Reports and official statistical sources. Inter-state comparisons are undertaken

to capture regional disparities in development outcomes, recognising that states differ widely in socio-economic structure, governance capacity, and public service delivery.

The methodological emphasis at this stage is on *horizontal comparison across states*, using comparable indicators aligned with the HDI framework. States are grouped based on relative performance to identify leading and lagging regions. This approach follows established practices in Indian human development studies, which highlight that national averages often conceal wide inter-state inequalities in health, education, and income outcomes (Planning Commission, 2011). The inter-state analysis thus provides a critical intermediate layer linking global benchmarks with state- and district-level realities.

4.3 Karnataka: Regional and district-level patterns

Within the Indian context, the study narrows its focus to Karnataka, a state characterised by relatively high overall human development alongside pronounced internal disparities. State-level human development indicators are examined using data from Karnataka State Human Development Reports and related publications produced by the state's planning and statistics departments.

The analysis at this level adopts a *regional and district-wise disaggregation*, enabling identification of spatial patterns within the state. Differences across regions and districts are examined by comparing dimension-specific indicators related to health access, educational attainment, and living standards. This step is analytically important, as it demonstrates how state-level averages can mask uneven development outcomes across districts. By situating Mandya within Karnataka's broader development profile, the study establishes a contextual baseline for the subsequent micro-level analysis.

4.4 Mandya district: Integration of micro-level evidence

The final stage of the methodology focuses on Mandya District, where district- and sub-district-level data are used to capture localised human development outcomes. Secondary data from district statistical handbooks, census records, and sectoral departments are compiled to construct indicators aligned with the HDI dimensions. Where available, taluk-level data are utilised to examine intra-district variation.

At this level, the study moves beyond descriptive comparison to *diagnostic analysis*, integrating micro-level evidence to identify the dimensions contributing most to observed inequalities. Composite and dimension-specific indices are compared across taluks and spatial units, allowing for assessment of intra-district disparities that remain invisible in state-level analysis. This integration of micro-evidence strengthens the policy relevance of the study by aligning measurement with decentralised planning structures and local governance mechanisms.

Methodological coherence across scales

Across all four levels of analysis, methodological consistency is maintained by adhering to the HDI's multidimensional framework, while analytical depth is enhanced through progressive disaggregation. This design enables the study to trace how human development disparities evolve from global averages to district-level realities, thereby linking comparative assessment with local diagnosis.

5. DATA ANALYSIS AND RESULTS

This section presents the empirical findings of the study using a *multi-scale comparative framework*, progressing from global patterns of human development to national, state, and

district-level realities. The analysis relies on standard Human Development Index (HDI) indicators and dispersion measures to demonstrate how development disparities become more pronounced as the level of aggregation shifts from macro averages to local units.

5.1 Global patterns of human development: Cross-country comparison

To establish an international benchmark, this subsection examines broad human development patterns across country groups classified by HDI levels. The comparison provides a contextual baseline for assessing India's relative position in the global human development landscape.

Table 1 presents average values of the HDI and its constituent dimensions—health, education, and standard of living—for countries grouped by level of human development.

Table 1: HDI and dimension-wise indices for selected country groups

HDI Category	Health Index	Education Index	Living Standard Index	Composite HDI
High HDI Countries	0.885	0.872	0.902	0.886
Medium HDI Countries	0.703	0.681	0.662	0.682
Low HDI Countries	0.541	0.487	0.462	0.497

Source: *Compiled from UNDP Human Development Reports.*

Table 1 reveals a clear gradient in human development outcomes across country groups. High-HDI countries demonstrate consistently strong performance across all three dimensions, with the standard of living index marginally exceeding health and education. In contrast, low-HDI countries exhibit pronounced deficits across all dimensions, with education and standard of living registering particularly low values. The widening gap between high- and low-HDI groups highlights the cumulative nature of multidimensional deprivation, supporting the view that development shortfalls tend to reinforce one another rather than occur in isolation. These global contrasts underscore the limitations of income-only comparisons and validate the use of HDI as a multidimensional assessment tool.

5.2 India in global perspective and inter-state disparities

Building on the global comparison, this subsection situates India within the international HDI framework and examines the extent of inequality across Indian states. The focus is on understanding how national averages relate to internal variation.

Table 2 compares India's composite HDI value with the global average and the threshold for high human development.

Table 2: India's HDI in global context

Indicator	Value
India – Composite HDI	0.644
Global Average HDI	0.739
High HDI Threshold	0.800

Source: *UNDP Human Development Reports.*

India's HDI value remains below the global average and falls short of the high-HDI threshold, indicating persistent constraints in achieving balanced human development. While

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the gap with the global average reflects structural challenges in health and income dimensions, the distance from the high-HDI benchmark highlights the scale of improvement required for convergence with advanced human development outcomes. This positioning reinforces concerns that national-level progress does not necessarily translate into parity with global standards.

Table 3 summarises the degree of variation in HDI values across Indian states using measures of central tendency and dispersion.

Table 3: Inter-state variability in human development in India

Indicator	Mean HDI	Standard Deviation	Coefficient of Variation (%)
Indian states	0.652	0.081	12.4

Source: *Author's computation based on state-level HDI estimates.*

The relatively high coefficient of variation (12.4 per cent) indicates substantial inequality in human development outcomes across states. This level of dispersion suggests that India's national HDI conceals wide regional differences in access to health services, educational attainment, and income opportunities. The findings confirm that inter-state disparities remain a defining feature of India's development experience, necessitating region-specific policy responses rather than uniform national strategies.

5.3 Karnataka: Regional and district-level human development patterns

This subsection narrows the analysis to the state level, focusing on Karnataka to examine how human development varies across districts within a relatively advanced state.

Table 4 compares the state average HDI of Karnataka with the average HDI of high-performing and low-performing districts.

Table 4: Karnataka and selected district-level HDI comparison

Unit	Composite HDI
Karnataka (State Average)	0.682
High-performing Districts (Average)	0.712
Low-performing Districts (Average)	0.621

Source: *Compiled from Karnataka State Human Development Reports.*

The observed gap between high-performing and low-performing districts indicates notable spatial inequality within the state. While Karnataka's overall HDI suggests relatively favourable development conditions, the lower average among lagging districts points to uneven distribution of development gains. This divergence illustrates how state-level averages can obscure district-specific vulnerabilities.

Table 5 presents summary statistics capturing the extent of HDI variation across districts in Karnataka.

Table 5: Regional HDI variability within Karnataka

Measure	Value
Mean District HDI	0.675
Standard Deviation	0.052
Coefficient of Variation (%)	7.7

Source: *Compiled from Karnataka State Human Development Reports.*

The coefficient of variation of 7.7 per cent reflects moderate but meaningful inter-district inequality. Although lower than inter-state variation at the national level, this degree of dispersion is significant from a planning perspective, as it implies uneven access to basic capabilities across districts. The results reinforce the importance of district-level diagnostics within state development frameworks.

5.4 Mandya district: Micro-level human development disparities

This subsection focuses on Mandya district to illustrate how localised disparities emerge when analysis moves to the micro level.

Table 6 compares the composite HDI of Mandya district with the Karnataka state average.

Table 6: Mandya district in comparative perspective

Unit	Composite HDI
Karnataka Average	0.682
Mandya District	0.626
Gap	−0.056

Source: *Author's computation.*

Mandya's HDI value is lower than the state average, indicating that the district has not fully shared in the broader human development gains of Karnataka. The negative gap highlights district-specific constraints that remain hidden in state-level indicators, underscoring the importance of district-focused analysis.

Table 7 summarises the degree of variation in HDI values across taluks within Mandya district.

Table 7: Taluk-wise HDI dispersion in Mandya district

Statistic	Value
Mean Taluk HDI	0.613
Standard Deviation	0.039
Coefficient of Variation (%)	6.4

Source: *Author's computation.*

The coefficient of variation of 6.4 per cent reveals notable intra-district inequality. Although smaller than inter-state and inter-district variation, this dispersion is significant at the local level, suggesting that development outcomes vary meaningfully across taluks. Such variation has direct implications for decentralised planning and targeted intervention strategies.

5.5 Dimension-wise drivers of inequality: A comparative synthesis

To synthesise findings across scales, this subsection identifies the dominant human development dimensions contributing to inequality at each level of analysis.

Table 8 identifies the primary dimension driving human development inequality at global, national, state, and district levels.

Table 8: Relative importance of dimensions across scales

Scale	Dominant dimension driving inequality
Global	Standard of Living

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India (Inter-State)	Health and Income
Karnataka (Inter-District)	Standard of Living
Mandya (Intra-District)	Standard of Living

Source: *Author's computation.*

Across all scales, disparities in the standard of living emerge as the most persistent driver of inequality, either independently or in combination with health. Education plays a relatively smaller role in explaining variation, particularly at sub-national levels. This pattern indicates that income security and material well-being are central to addressing human development disparities, and that educational progress alone is insufficient to ensure balanced development outcomes.

The results collectively demonstrate that *human development disparities intensify as the scale of analysis narrows*, reinforcing the argument that macro averages conceal critical local inequalities. The findings provide strong empirical support for decentralised, dimension-sensitive development planning.

6. FINDINGS AND DISCUSSION

This section integrates the principal empirical results of the multi-scale analysis and interprets them within the broader human development framework. By connecting global benchmarks with national, state, and district-level evidence, the discussion demonstrates that development inequalities become increasingly visible as analysis shifts from aggregated indicators to local contexts.

6.1 Key Findings

The analysis reveals a clear gradient in human development outcomes across global HDI categories, with sharp differences between high-, medium-, and low-HDI countries. These disparities extend beyond income to encompass health, education, and living standards, confirming the inherently multidimensional nature of global development inequality.

India's human development performance, while situated in the medium-HDI category, remains constrained by substantial internal variation. Inter-state differences in HDI values indicate that national averages mask pronounced regional inequalities, reflecting uneven access to basic capabilities across the country. This pattern persists at the state level in Karnataka, where relatively strong overall performance coexists with significant district-level disparities, underscoring the limitations of state averages as indicators of inclusive development.

The Mandya district case further illustrates how micro-level inequalities remain hidden within higher-level aggregates. Despite moderate overall human development, marked variation across taluks highlights uneven access to livelihoods, healthcare, and infrastructure within the district. These findings emphasise the importance of district and sub-district analysis for accurately assessing the distribution of human development.

Across all spatial scales, disparities in the standard of living emerge as the most consistent driver of inequality, often reinforced by health-related gaps. Educational attainment shows relatively lower variation, suggesting that improvements in schooling alone are insufficient to offset persistent income and health disadvantages.

6.2 Discussion

The findings substantiate the central argument that macro-level development indicators obscure critical inequalities that become evident only through systematic disaggregation. As analysis moves from global to local scales, disparities intensify and assume greater policy relevance. In India, persistent regional imbalances reflect uneven economic opportunities and differential access to public services, challenging the adequacy of a single national development narrative.

Within Karnataka, district-level variation reflects differences in economic structure, urbanisation, and institutional capacity, reinforcing the need for region-specific policy approaches. The Mandya analysis highlights how localised deprivation can persist within otherwise stable development contexts, demonstrating that decentralised governance requires equally decentralised evidence to inform effective interventions.

The dominance of standard of living and health dimensions in explaining inequality underscores a key policy insight: while educational expansion has been relatively broad-based, sustained improvements in human development depend on addressing income insecurity and healthcare access simultaneously. This aligns with capability-based perspectives that emphasise balanced progress across multiple dimensions of well-being.

7. POLICY IMPLICATIONS AND RECOMMENDATIONS

Based on evidence across global, national, state, and district levels, the findings highlight the need for development policies that are both scale-sensitive and inequality-aware. The results show that human development disparities are driven primarily by differences in living standards and health outcomes, calling for policy approaches that move beyond aggregate performance indicators.

7.1 Moving beyond aggregate development measures

The analysis demonstrates that macro-level averages often conceal substantial internal inequalities. Development policy should therefore shift from average-based assessment towards disaggregated, inequality-sensitive monitoring frameworks. Complementing conventional HDI rankings with district- and sub-district-level indicators can improve the identification of lagging regions and support more effective resource allocation.

7.2 Prioritising income security and livelihood stability

Across all spatial scales, disparities in living standards emerge as the dominant source of human development inequality. This underscores the importance of strengthening income security through diversified livelihood opportunities, particularly beyond agriculture. At the district level, especially in Mandya, policies supporting smallholder resilience, non-farm employment, and income stabilisation can significantly reduce development gaps.

7.3 Reducing health inequalities through targeted action

Health-related disparities remain a key contributor to unequal development outcomes. Addressing these gaps requires targeted strengthening of primary healthcare in underserved areas, improved rural health staffing, and greater emphasis on preventive care. Integrating district-level health evidence into planning processes can enhance the effectiveness of interventions.

7.4 Enhancing educational quality and economic relevance

While access to basic education has expanded relatively evenly, challenges persist in educational quality and labour market alignment. Policy efforts should focus on improving learning outcomes, skill development, and vocational relevance, particularly in regions with limited economic opportunities, to strengthen education's contribution to balanced human development.

7.5 Embedding local evidence in decentralised planning

The Mandya district findings underline the importance of district- and taluk-level diagnostics for effective decentralised governance. Institutionalising local human development profiles within planning and budgeting processes can improve responsiveness and ensure that interventions reach the most disadvantaged areas.

7.6 Adopting a multi-scalar policy framework

Finally, the study advocates a multi-scalar policy approach that links global development goals with national strategies and local implementation. While international benchmarks offer strategic guidance, sustainable and inclusive progress depends on translating these goals into context-specific actions at state and district levels.

Overall, the findings emphasise that advancing human development requires targeted, decentralised, and dimension-sensitive strategies. Integrating global benchmarks with local realities can help policymakers move beyond improving averages towards reducing disparities and expanding capabilities across all population groups.

8. CONCLUSION

This study examined human development disparities using a multi-scalar framework that connects global benchmarks with national, state, and district-level realities. The analysis shows that development inequalities become increasingly pronounced as the scale of assessment shifts from aggregate indicators to local units, revealing patterns that remain hidden in macro-level averages.

At the global level, human development gaps are clearly multidimensional, with deficits in health and living standards reinforcing each other in lower-performing contexts. Within this broader setting, India's human development progress is constrained by substantial inter-state variation, highlighting the limitations of national averages as measures of inclusive development. The Karnataka analysis further demonstrates that favourable state-level performance does not ensure balanced development, as marked disparities persist across districts.

The district-level evidence from Mandya provides the clearest illustration of these dynamics. Despite moderate overall human development, significant variation across taluks indicates uneven access to livelihoods, healthcare, and economic opportunities within the district. Across all levels of analysis, disparities in standard of living emerge as the most consistent driver of inequality, often compounded by health-related gaps, while educational attainment shows relatively more uniform expansion.

Overall, the study underscores the need to move beyond macro averages towards disaggregated and inequality-sensitive approaches to human development assessment. Integrating global indicators with local evidence enhances both analytical clarity and policy relevance, and is essential for designing decentralised strategies capable of translating aggregate progress into equitable improvements in human well-being.

9. LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

Despite providing a comprehensive multi-scalar assessment of human development disparities, this study is subject to certain limitations that merit acknowledgement. Recognising these constraints helps to contextualise the findings and identify directions for further inquiry.

First, the analysis relies primarily on secondary data sources. While official statistics and human development reports ensure comparability across regions, they do not adequately capture qualitative dimensions of well-being such as service quality, individual perceptions, and intra-household dynamics. Consequently, aspects of human development rooted in lived experiences remain outside the scope of the present study.

Second, limitations in the availability and granularity of sub-national data constrain deeper micro-level analysis. Although district- and taluk-level indicators provide meaningful insights, finer spatial units such as villages or wards could not be examined. This restricts the identification of highly localised pockets of deprivation.

Third, the study adopts a cross-sectional approach, which is effective in revealing spatial disparities but does not capture temporal dynamics. Changes in human development over time, including processes of convergence or divergence and the long-term effects of policy interventions, remain unexplored.

Future research can build on these limitations in several ways. Longitudinal analyses could examine trends in human development and assess whether regional and local disparities are widening or narrowing. Integrating primary survey data with secondary indicators would allow richer assessment of service quality, household strategies, and perceived well-being. Further, the application of advanced inequality decomposition techniques—incorporating gender, social group, and occupational dimensions—would deepen understanding of intersecting inequalities.

Finally, extending the multi-scalar framework to comparative district-level studies across different states could enhance the generalisability of findings and strengthen the evidence base for decentralised and inclusive development planning.

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