Multidimensional Poverty Among Tribal Communities in Kerala: An Analysis of Severity, Vulnerability, and Regional Disparities

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	Abstract Despite notable achievements in human development, Kerala continues to face challenges related to the marginalization of tribal communities. This research investigates the prevalence and depth of poverty in the districts of Wayanad, Idukki, and Palakkad, which host the highest concentrations of tribal populations in the state. Employing the Multidimensional Poverty Index (MPI) framework, the study examines various dimensions of deprivation, including health, education, and living standards, to provide a comprehensive analysis of poverty in these regions The findings reveal that Kattunaikyan, Mudugar, and Irular tribes experience the most severe poverty, with Palakkad district exhibiting the highest MPI values and deepest deprivation. Wayanad and Idukki also face considerable challenges, though with relatively lower MPI scores. The study underscores the critical need for targeted interventions tailored to the unique needs of tribal communities. It highlights the urgency of addressing the challenges faced by the most impoverished tribes to disrupt the cycle of poverty. Concurrently, communities such as the Kurichyar and Malayarayan require sustained support to preserve and build on their progress. The findings emphasize the significance of inclusive, region-specific policy frameworks to promote equitable development and reduce disparities among tribal populations.
	Keywords: Multidimensional Poverty Index (MPI), Tribal Communities, Kerala, Deprivation

1. Introduction

Kerala is widely celebrated for its exceptional achievements in human development, consistently excelling in areas such as literacy, healthcare, and overall quality of life. However, these advancements have not been equitably distributed across all regions and communities. Despite the state's development model being lauded for its emphasis on social justice, education, and healthcare, certain marginalized groups remain excluded from these gains. Among the most disadvantaged are the Indigenous populations, referred to as Adivasis or Scheduled Tribes (STs), who continue to face systemic barriers to inclusion and progress.

In India, Scheduled Tribes (STs) constitute one of the most impoverished and vulnerable segments of society, frequently subjected to systemic social and economic disadvantages. Similar to Indigenous populations

globally, they are often deprived of opportunities to express their perspectives in ways that reflect their cultural heritage. Furthermore, they face significant challenges in articulating aspirations for an improved quality of life, hindered by limited access to education, healthcare, and political representation. Research indicates that, even when adjusted for living standards, ST communities experience disproportionately higher mortality rates than their non-tribal counterparts, underscoring severe health inequities.

In Kerala, Scheduled Tribes represent a distinctive cultural mosaic, characterized by a rich heritage and a deep connection to nature. However, their historical marginalization has rendered them highly vulnerable, often uprooted from traditional habitats and coerced into unfamiliar environments under the guise of integration into mainstream society. This has led to widespread exploitation, alienation, and displacement. Consequently, these communities endure persistent poverty, social exclusion, and economic instability, highlighting the urgent need for inclusive and culturally sensitive interventions.

2. Poverty and Deprivation among Tribal Communities in Kerala

According to the 2011 Census, Scheduled Tribes (STs) constitute 1.45% of Kerala's population. Despite the state's reputation for superior socio-economic standards relative to other regions of India, tribal communities remain profoundly disadvantaged across multiple dimensions of life. The SC and ST Survey (2013) revealed a deprivation rate of 61.68% among Scheduled Tribes, underscoring the entrenched systemic challenges faced by these communities.

Poverty remains pervasive despite the implementation of various development programs. Many tribal families lack access to essential services such as healthcare, education, and adequate living conditions. Infant mortality and malnutrition are prevalent, exacerbated by limited access to healthcare services and insufficient awareness of modern health practices (Rajasenan and Rajeev, 2013). Educational attainment poses another significant challenge, with high dropout rates and minimal participation in higher education perpetuating cycles of poverty and impeding socio-economic mobility for future generations.

Beyond education and healthcare, basic infrastructure and amenities are severely lacking in many tribal households. Electricity, safe drinking water, sanitation facilities, and adequate housing are often inaccessible. Many families reside in homes without proper flooring, cooking facilities, or sufficient material assets to sustain a livelihood. The absence of these fundamental necessities exacerbates chronic health issues, malnutrition, and economic insecurity. Without access to a balanced and nutritious diet, tribal families frequently become trapped in a cycle of deepening poverty, highlighting the urgent need for targeted, comprehensive interventions.

3. Review of Literature

Sunitha (2014) investigated inequality and poverty among Kerala's tribal communities through the lens of Human Development Indicators (HDI). The study highlighted pronounced disparities in income, expenditure, and development metrics within the tribal population. Certain tribes, such as the Malayarayan, Kurichyar, and Kurumar, exhibited relatively higher levels of human development, with an HDI of 0.6. In contrast, other groups, including the Muthuvan, Adiyan, and Kattunaikyan, lagged significantly behind, with an HDI of 0.4. The findings underscored the absence of a uniform development trajectory among Kerala's tribal communities, revealing severe inequalities across different groups and emphasizing the need for targeted policy interventions to address these disparities

Sujith et al. (2014) analyzed poverty among the tribal communities of Attappadi using the Human Development Index (HDI) and the Gender Development Index (GDI). The study focused on the Irula, Muduga, and Kurumba tribes, reporting an average HDI of 0.370 for the region. The findings revealed that over 90% of the tribal population in Attappadi lived below the poverty line, with the Kurumba tribe, classified as a primitive tribal group, experiencing the most severe levels of poverty. These results underscore the acute economic challenges faced by these communities, necessitating targeted and culturally sensitive interventions to address their developmental needs.

Richard Scaria et al. (2013) examined the extent of poverty among the tribal communities of Attappadi using the Multidimensional Poverty Index (MPI) to provide a detailed analysis of individual and regional deprivation levels. The study revealed that 93% of the tribal population in the region experienced multidimensional poverty, with an overall MPI value of 0.496. The Kurumba community demonstrated the highest headcount ratio (0.097), indicating the prevalence of severe poverty within this group. Additionally, the intensity of deprivation among those living below the MPI threshold was recorded at 53.4%, highlighting the complex and

multi-dimensional nature of poverty in Attappadi. These findings underscore the need for holistic and integrated approaches to address the diverse challenges faced by the region's tribal communities.

Oommen & Shyjan (2014) constructed a Deprivation Index (DI) using thirteen socio-economic parameters to evaluate the extent of deprivation among different social groups. Scheduled Tribes (STs) emerged as the most deprived group in the study, with a deprivation index of 59.9%. The analysis also pointed to poor life expectancy among STs, reflected by the low proportion of households with members over 65 years of age. Furthermore, 50.7% of ST households lacked access to electricity, compared to just 15.2% among the general poor population. These findings underscore the severe socio-economic deprivation faced by tribal communities, highlighting their marginalization across multiple dimensions of life.

Much of the existing literature on tribal poverty in Kerala primarily concentrates on specific regions, such as Attappadi, which limits the broader understanding of how poverty manifests across other tribal areas in the state. While these studies offer valuable insights into localized conditions, they fail to provide a comprehensive, comparative perspective across districts with significant tribal populations. This narrow focus creates a gap in identifying potential regional disparities, which may arise from variations in geography, access to government schemes, availability of natural resources, and socio-economic dynamics. To address this gap, a comparative study across multiple tribal regions is crucial for developing targeted interventions and policies tailored to the unique needs of these diverse communities. The present study aims to contribute to filling this gap by examining the socio-economic conditions of tribal populations across different districts in Kerala.

4. Objectives of the Study

This study aims to assess the extent and severity of poverty among tribal populations in three districts of Kerala: Wayanad, Idukki, and Palakkad. These districts were selected due to their significant concentrations of tribal communities, each characterized by distinct environmental, cultural, and socio-economic contexts. By examining these three regions, the study seeks to offer a more comprehensive understanding of the socio-economic challenges faced by tribal groups in Kerala, shedding light on the varied conditions within different tribal communities across the state.

5. Sources of Data

The research methodology for this study combines both primary and secondary data collection, focusing on the three districts with the largest tribal populations in Kerala, as per the 2011 Census: Wayanad (31.24%), Idukki (11.51%), and Palakkad (10.10%). A multi-stage proportional sampling technique is employed to ensure the representativeness of the collected data across the broader tribal population in these districts. Primary data was collected during the period of 2017-18.

For primary data collection, one block panchayat was randomly selected from each district: Mananthavadi in Wayanad, Adimali in Idukki, and Attappadi in Palakkad. Within these blocks, gram panchayats with the highest concentration of tribal households were identified. Specific tribal communities were then selected for the study based on their population concentration in each district. The tribal communities selected from Wayanad included the Adiya, Kattunaikyan, Paniya, Kurichyar, and Uralikurumar tribes. In Idukki, the focus was on the Mannan, Muthuvan, and Malayarayan tribes, while Palakkad concentrated on the Irular and Mudugar communities.

A total of 450 tribal households were selected for the study, with 150 households from each district. Data was collected using a structured interview schedule, which provided an in-depth understanding of the socio-economic and cultural dynamics of these households. The interview schedule was designed to gather a comprehensive range of information, including income levels, access to healthcare, educational attainment, and living conditions.

6. Methodology

This study employs a combined approach to assess poverty among tribal households, with a primary focus on the Multidimensional Poverty Index (MPI). The MPI provides a more comprehensive understanding of poverty by accounting for multiple deprivations across critical dimensions, such as health, education, and living standards. Unlike traditional measures that rely solely on income, the MPI offers a broader perspective on deprivation, capturing the multidimensional nature of poverty.

The MPI is a composite index that reflects both the prevalence and intensity of poverty within a population. It is calculated by multiplying the Head Count Ratio (HCR), which represents the proportion of individuals identified as multidimensionally poor, by the Average Intensity of Deprivation (AID), which gauges the severity of poverty among those classified as poor. This approach enables a more nuanced analysis of poverty, highlighting not only the number of impoverished individuals but also the depth of their deprivation.

MPI=Head Count Ratio (HCR)×Average Intensity of Deprivation (AID)

The Head Count Ratio (HCR) refers to the proportion of individuals in a population who experience multiple deprivations. For example, if 30 out of 100 people are identified as multidimensionally poor, the HCR would be 0.30 (30%). The Average Intensity of Deprivation (AID) measures the number and severity of deprivations experienced by the poor. For instance, if the average household experiences 2 out of 10 possible deprivations, the AID would be 0.2 (20%).

The MPI provides a comprehensive view of poverty, enabling policymakers to understand not only the proportion of people living in poverty but also the depth and intensity of their deprivations. A higher MPI indicates either a higher proportion of people in poverty or more severe deprivations, while a lower MPI suggests fewer people are poor or that the severity of their deprivation is reduced. Interpretation of MPI Values:

- MPI = 0: No poverty, indicating that individuals experience no deprivation across any dimension.
- MPI < 0.1: Low multidimensional poverty, suggesting that social policies have been effective in alleviating poverty.
- MPI between 0.1 and 0.2: Moderate poverty, requiring targeted interventions to address specific deprivations.
- MPI between 0.2 and 0.5: High poverty levels, indicating substantial socio-economic challenges.
- `MPI ≥ 0.5: Extreme poverty, meaning that over half the population experiences multiple deprivations across several dimensions.`

This study applies the Multidimensional Poverty Index (MPI) framework to analyze the multifaceted aspects of poverty among tribal communities in Kerala, focusing on the districts of Wayanad, Idukki, and Palakkad. These districts, which have some of the highest concentrations of tribal populations, are home to communities confronting distinct socio-economic challenges. The MPI-based analysis combines the Head Count Ratio (HCR) and the Average Intensity of Deprivation (AID) into a single metric, offering a comprehensive understanding of both the prevalence and depth of poverty within these regions.

By employing the Multidimensional Poverty Index (MPI), this study aims to capture the broader experience of deprivation that extends beyond mere income poverty, emphasizing how poverty impacts fundamental human capabilities. This approach provides a detailed understanding of tribal poverty, enabling the identification of communities facing the most severe deprivations. It ensures that resources can be allocated effectively to address the specific needs of these communities. The study highlights that poverty is not solely defined by low income but also by the inability to access essential services and achieve basic living standards, making the MPI a crucial tool for developing targeted and effective poverty alleviation strategies.

7. Analysis of Multidimensional Poverty among Tribal Communities in Kerala

The table below presents the Multidimensional Poverty Index (MPI) values for various tribal communities across three districts in Kerala: Palakkad, Wayanad, and Idukki. The MPI offers a comprehensive measure of poverty by integrating both the Head Count Ratio (HCR), which indicates the proportion of individuals experiencing poverty and the Average Intensity of Deprivation (AID), which reflects the severity of deprivation faced by those living in poverty. This table serves as a key tool for identifying poverty patterns among different communities, highlighting not only the number of people living in poverty but also the extent of their deprivation across key dimensions such as health, education, and living standards. The communities are categorized based on their MPI scores into three groups: severe/extreme poverty, medium poverty, and low poverty, allowing for a clearer understanding of the varying levels of poverty across these tribal populations

Table 1: Multidimensional Poverty Index of Tribal Community in Kerala: District-wise Comparison

Sl No	Tribal Community	HCR	Rank (Tribes)	AID	Rank Tribes	MPI	Rank Tribes	Rank (Districts)
1	Adiya community	0.874	5	0.400	8	0.349	8	
2	Kattunaikyan community	1.00	1	0.556	1	0.556	1	
3	Paniya community	0.935	3	0.421	7	0.394	7	
4	Kurichyar community	0.382	8	0.190	10	0.073	10	
5	Urali kurumar community	0.921	4	0.484	6	0.446	4	
	Wayanad	**0.904**		**0.435**		**0.393**		**2**
6	Mannan community	0.952	2	0.462	4	0.439	5	
7	Muthuvan community	0.865	6	0.458	5	0.396	6	
8	Malayarayan community	0.650	7	0.299	9	0.194	9	
	Idukki	**0.865**		**0.433**		**0.375**		**3**
9	Irular community	1.00	1	0.501	3	0.501	3	
10	Mudugar community	1.00	1	0.525	2	0.525	2	
	Palakkad	**1.00**		**0.505**		**0.505**		**1**

Source: Primary data

The Multidimensional Deprivation Index is calculated using three key components: health, education, and standard of living. Within these components, education includes two sub-factors, living standards consist of four sub-factors, and health is based on twenty sub-factors. This study adopts the Multidimensional Poverty Index (MPI) developed by Sabina Alkire and James Foster (2011) as a reference framework. The MPI data is categorized into three levels of poverty—severe/extreme poverty, medium poverty, and low poverty—using the Head Count Ratio (HCR), Average Intensity of Deprivation (AID), and MPI values as the primary metrics. This approach allows for a comprehensive assessment of poverty that incorporates both the prevalence and the depth of deprivation across multiple dimensions.

According to Alkire & Santos (2014), households are classified as extremely poor if they are deprived in more than 50% of the weighted indicators across multiple dimensions. Medium poverty is characterized by deprivation in 30-50% of indicators, while low poverty refers to households experiencing less than 30% deprivation. In this framework, multiple deprivations are required for a household to be classified as severely poor. While Alkire and Santos used only the Head Count Ratio (HCR) to measure poverty, this study combines both the Average Intensity of Deprivation (AID) and the Multidimensional Poverty Index (MPI) values to provide a more holistic and comprehensive assessment of the extent and severity of poverty among tribal households. This approach allows for a deeper understanding of the multi-dimensional nature of poverty, offering a clearer picture of deprivation across health, education, and living standards.

7.1. Scaling Poverty Based on Head Count Ratio (HCR)
The Head Count Ratio (HCR) measures the proportion of people identified as multidimensionally poor. According to Table 1, nine tribal communities fall under the severe/extreme poverty category:
- Complete Deprivation (HCR = 1):
  ○ Kattunaikyan community
  ○ Irular community
  ○ Mudugar community
- Severe Poverty (HCR > 0.85):
  ○ Mannan community: 0.952
  ○ Paniya community: 0.935
  ○ Urali Kurumar community: 0.921
- Moderate Poverty:
  ○ Malayarayan community: 0.650
  ○ Adiya community: 0.874
- Low Poverty:
  ○ Kurichyar community: 0.382 (categorised under medium poverty).

At the district level, Palakkad ranks the worst with an MPI score of 0.505, indicating widespread and severe poverty. Wayanad follows with a score of 0.393, and Idukki records 0.375, placing both districts in the medium poverty category.

7.2. Scaling Poverty Based on Average Intensity of Deprivation (AID)

The Average Intensity of Deprivation (AID) measures how many deprivations are experienced by those identified as poor. Using the 50% threshold for severe poverty, the analysis reveals:

● Severe/Extreme Poverty (AID ≥ 0.50):
○ Kattunaikyan community: 0.556
○ Mudugar community: 0.525
○ Irular community: 0.501
● Medium Poverty (AID = 0.30-0.50):
○ Urali Kurumar community: 0.484
○ Mannan community: 0.462
○ Muthuvan community: 0.458
○ Paniya community: 0.421
○ Adiya community: 0.400
● Low Poverty (AID < 0.30):
○ Malayarayan community: 0.299
○ Kurichyar community: 0.190 (close to the 20% threshold, signalling vulnerability).

At the district level, Palakkad again reflects severe poverty, with an average intensity of deprivation of 0.505 Both Wayanad (0.435) and Idukki (0.433) show medium poverty, though these regions still face significant socio-economic challenges.

7.3. Scaling Poverty Based on MPI Values

The MPI values offer an integrated measure of poverty, combining both the head count ratio and the intensity of deprivation. The analysis categorises communities as follows:

● Severe/Extreme Poverty (MPI ≥ 0.5):
○ Kattunaikyan community: 0.556
○ Mudugar community: 0.525
○ Irular community: 0.501
● Medium Poverty (MPI = 0.3-0.5):
○ Urali Kurumar community: 0.446
○ Mannan community: 0.439
○ Muthuvan community: 0.396
○ Paniya community: 0.394
○ Adiya community: 0.349
● Low Poverty (MPI < 0.3):
○ Malayarayan community: 0.194 (low risk of multidimensional poverty).
○ Kurichyar community: 0.073 (below 20% threshold, but still potentially vulnerable).

At the district level, Palakkad emerges as the worst-affected region, with an MPI value of 0.505, confirming the severity of poverty there. Wayanad follows with an MPI score of 0.393, and Idukki records 0.375, placing both under the medium poverty category.

According to the United Nations Development Programme (UNDP, 2014), households with less than 30% deprivation in weighted indicators are not classified as multidimensionally poor. However, those experiencing 20% deprivation are considered vulnerable or at risk of falling into multidimensional poverty. This study applies these thresholds to understand the extent of poverty among various tribal communities across the districts of Palakkad, Wayanad, and Idukki.As per the UNDP classification, the Malayarayan community with 19.4% deprivation and the Kurichyar community with 7.3% deprivation are not considered multidimensionally poor. However, the Malayarayan community is nearing the 20% threshold, placing it in the vulnerability zone for multidimensional poverty. These communities require ongoing support to prevent them from slipping into more severe poverty.

8. Conclusion

The scaling of poverty based on the Head Count Ratio (HCR), Average Intensity of Deprivation (AID), and Multidimensional Poverty Index (MPI) values reveals significant disparities across communities and districts. The Kattunaikyan, Mudugar, and Irular communities emerge as the most impoverished, experiencing extreme levels of deprivation across multiple dimensions. Palakkad District stands out as the poorest region, with high

MPI values and severe intensity of deprivation. Wayanad and Idukki also face considerable challenges, though their MPI values indicate slightly lower poverty levels compared to Palakkad. This multidimensional analysis highlights the need for targeted interventions that address the specific needs of these communities. While the Kattunaikyan, Irular, and Mudugar tribes require immediate attention to break the cycle of poverty, tribes such as the Kurichyar and Malayarayan necessitate sustained efforts to maintain their progress and prevent further deterioration into deeper poverty

Acknowledgement

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