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## Research Article

# A Geographical Analysis of The Iruliga Tribal Population Status in Karnataka: A Statistical Evaluation

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## Abstract

This study provides a geographical analysis of the Iruliga tribal population in Karnataka, examining their spatial distribution, demographic characteristics, and settlement patterns within the state. By analysing the 2011 Census data, the study highlights the community's concentration in rural and forest-fringe environments, their ecological relationship with the Western Ghats region, and the socio-demographic variations observed across space. The analysis situates the Iruliga population within the broader framework of human–environment interactions, regional development disparities, and tribal geographies of southern India. They are a Scheduled Tribe belonging to the Dravidian ethnic group and are also known as Irular. The Iruliga tribal population is concentrated in southern India, with their largest populations in Tamil Nadu, followed by Kerala and Karnataka.

According to the 2011 census, the total population was approximately 213,641, with 189,621 in Tamil Nadu, 23,721 in Kerala, and 10,259 in Karnataka. This study uses the Two-Proportion Z-test because we are comparing two proportions ( $p_1$  and  $p_2$ ) from two large, independent samples. This involves calculating the pooled sample proportion, standard error, and the final Z-statistic. Given  $p_1 = 0.495$  and  $p_2 \approx 0.400$  with large sample sizes, the resulting Z-statistic would be extremely large (far exceeding the critical Z-score of 1.645 for  $\alpha=0.05$ ). *Determine p-value:* Because the difference in proportions is large and the sample sizes ( $n \approx 5,000$  each) are very high, the *P-value will be extremely close to zero* ( $P\text{-value} \approx 0.0000$ ). This test addresses the significant 9.5%-point difference in literacy observed between Iruliga males and females.

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**KEYWORDS:** Iruliga Tribal Population, Geographic Analysis, Socio-cultural Stats and Livelihood.

## 1. INTRODUCTION

The Scheduled Tribes (STs) constitute a culturally rich yet socially marginalised segment of India's population, characterised by distinct languages, traditions, and long-standing dependence on forest ecosystems. In southern India, particularly across the Western Ghats, numerous Dravidian-speaking tribal groups are found, including the Irula (Iruliga), one of the region's oldest indigenous communities. Primarily inhabiting the Nilgiri Mountains across Tamil Nadu and Kerala, with additional

populations in Karnataka, the Irula represent Tamil Nadu's second-largest Adivasi group. The community self-identifies as Erlar or Poosari, while neighbouring groups employ names such as Eralollu, Irulas, Shikari, and Pujari. Their language, Irula, is closely related to Tamil and Kannada. Irula settlements, known as mottas, consist of clustered dwellings typically located on steep hill edges and surrounded by dry fields, gardens, forests, or plantations. The Iruliga are the local nomenclature for the Irula community in Karnataka, where their presence is comparatively

smaller but distinct. According to the 2011 Census, their population in Karnataka is officially 10,259, concentrated predominantly in the southern districts such as Ramanagara and Bengaluru Rural, often bordering their larger populations in Tamil Nadu. The term 'Irula' itself is believed to derive from the Dravidian root *irul*, meaning "darkness," possibly referencing their dark complexion or their traditional life within deep forests.

## 2. OBJECTIVES OF THE STUDY

1. To study the origin and geographical distribution of the Iruliga tribal population in India, with a focus on Karnataka.
2. To examine the socio-cultural status of the Iruliga tribal community in Karnataka

### Hypothesis

1. The literacy rate of Iruliga males is significantly higher than that of Iruliga females.

## 3. MATERIALS AND METHODS

The study is mainly based on secondary data collected from authoritative and published sources. The use of secondary data is justified by the study's objective to analyse established

demographic and census figures. The data has been collected from the following sources: Ministry of Home Affairs, Census of India, 2011, published books, academic articles, reputable periodicals, official government websites, and journals related to tribal studies, demography, and the specific Iruliga community. This study used of statistical tool of

### Iruliga Tribal Population in India and Karnataka: Geographical Analysis

The Iruliga (Irula) tribal population is predominantly concentrated in the southern states of India, with Tamil Nadu accounting for the highest share, followed by Kerala and Karnataka. As per the 2011 Census of India, the community's total population stood at 213,641, of which 189,621 resided in Tamil Nadu, 23,721 in Kerala, and 10,259 in Karnataka. This spatial distribution reflects a strong ecological association with the forested landscapes of the Nilgiri Mountains and the foothills of the Western Ghats, where the tribe has historically lived. The following table presents the geographical distribution of the Iruliga population based on the 2011 census data.

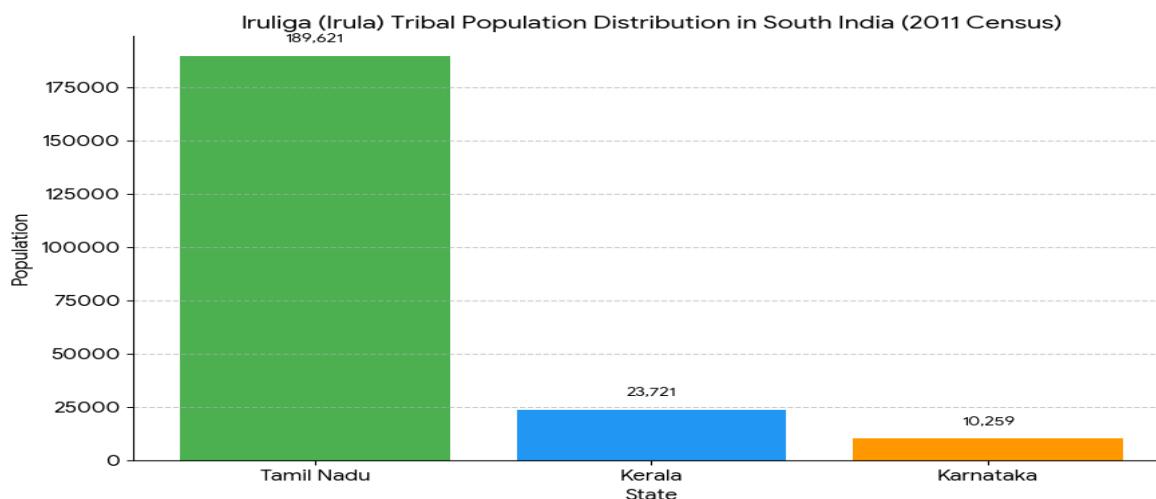
Table 1: Total Population of Iruliga Tribal Population in India 2011

S. No	State	Population	Geographical Location
1	Tamil Nadu	189,621	Northern and Western Tamil Nadu (The main population centre, extending from the Nilgiris)
2	Kerala	23,721	Primarily concentrated in the Palakkad District, notably the Attappadi Valley, a region that directly borders the Coimbatore and Nilgiris districts of Tamil Nadu.
3	Karnataka	10,259	The population, known as Iruliga, is concentrated in Southern Karnataka, specifically the Ramanagara and Bengaluru Rural districts, which are geographically close to Northern Tamil Nadu.
<b>Total</b>		<b>223,591</b>	

Source: Based on the 2011 Census of India, Ministry of Home Affairs.

As per the table, the total Iruliga population across South India is estimated at over 200,000, with the 2011 Census confirming a figure of 213,641 across the three main states. Tamil Nadu is the epicentre of the Irula/Iruliga population, accounting for the vast majority with 189,621 individuals. Their settlements are primarily concentrated in the northern districts, including Tiruvallur and Kancheepuram, as well as the foothills of the

Nilgiris in Coimbatore and Erode. Kerala has the second-largest population of 23,721, mainly inhabiting the Palakkad District, particularly the Attappadi valley region. Karnataka has the smallest officially recorded population of 10,259. In Karnataka, Iruliga settlements are found in the southern part of the state, specifically concentrated in Ramanagara and Bengaluru Rural/Urban districts, near the border with Tamil Nadu.



A geographical area chart is the ideal way to visualise this data, where the colour of each state (Tamil Nadu, Kerala, and Karnataka) would correspond to the Iruliga population size.

### Iruliga Tribes in Karnataka: Geographical Location

The Iruliga tribal population in Karnataka is a relatively small part of the state's total Scheduled Tribe population. While the exact figures vary between sources and years, the Iruliga population is estimated to be around 10,259 (2011 census) or 8,427 (2001 census), whereas the total Scheduled Tribe population in Karnataka was 4,248,978 as of the 2011 census. Therefore, the Iruliga constitute a small fraction of Karnataka's total Scheduled Tribe population. Through this study, the Iruliga tribal population in Karnataka estimates their number at around 10,259 to 25,000, with a significant portion residing in Ramanagar and Bengaluru urban districts, as per the 2011 Census of India. Many Iruliga communities face challenges such as poverty, low literacy rates, and unemployment, resulting in a

low standard of living; however, some are transitioning to agriculture and floral decoration.

### Iruliga Tribal Population in Karnataka: Geographical Location Analysis

The Iruliga peoples are a Dravidian ethnic group found in southern India. While their total population across India (including Tamil Nadu and Kerala) is over 200,000, their presence in Karnataka is smaller. The Iruliga tribal population in Karnataka is primarily located in Ramanagara and Bengaluru Urban districts, with smaller populations in other districts like Kolar, Chitradurga, and Chikkamagaluru. Their settlements are often near forested areas. The total population of the Iruliga tribe in Karnataka is 10,259 (as per the 2011 Census of India). This population is not evenly distributed but is heavily concentrated in the following districts and their respective taluks, particularly in the Southern Karnataka region bordering Tamil Nadu and Kerala.

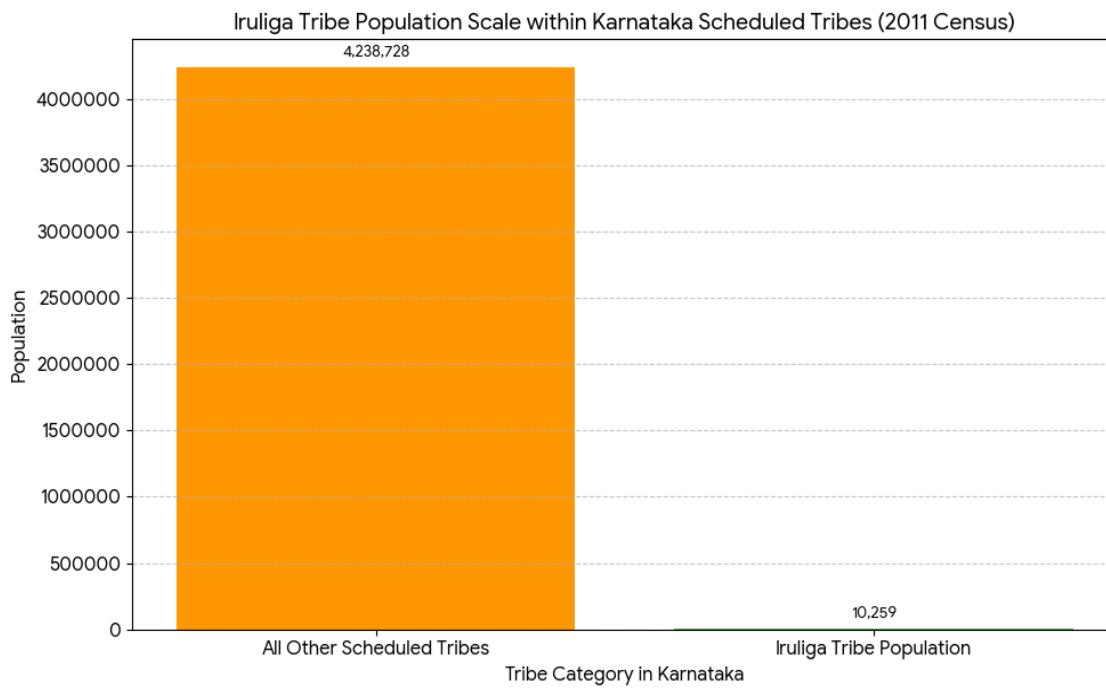
Table 2: Geographical Area of Iruliga Tribal Population in Karnataka

S. No	Primary Geographical Concentration Area	Secondary Concentration Area (Taluks)	Estimated Proportion
1	Ramanagara District	Kanakapura, Magadi, Channapatna	Major concentration area.
2	Bengaluru Urban & Rural Districts	Parts of the districts bordering Ramanagara	Significant concentration.
3	Mysore District	Hunsur, Piryapattana, H.D. Kote	Bordering regions with a presence.
4	Chamarajanagara District	Regions bordering Tamil Nadu	Noted presence.

Source: Census of India 2011

Ramanagara district is often cited as the primary area of study for the Iruliga tribe in Karnataka, highlighting its significance as a major hub for the community. Bengaluru urban and rural districts. Approximately 50% of the Iruliga population in the state may be concentrated in the Bengaluru Urban and Rural districts.

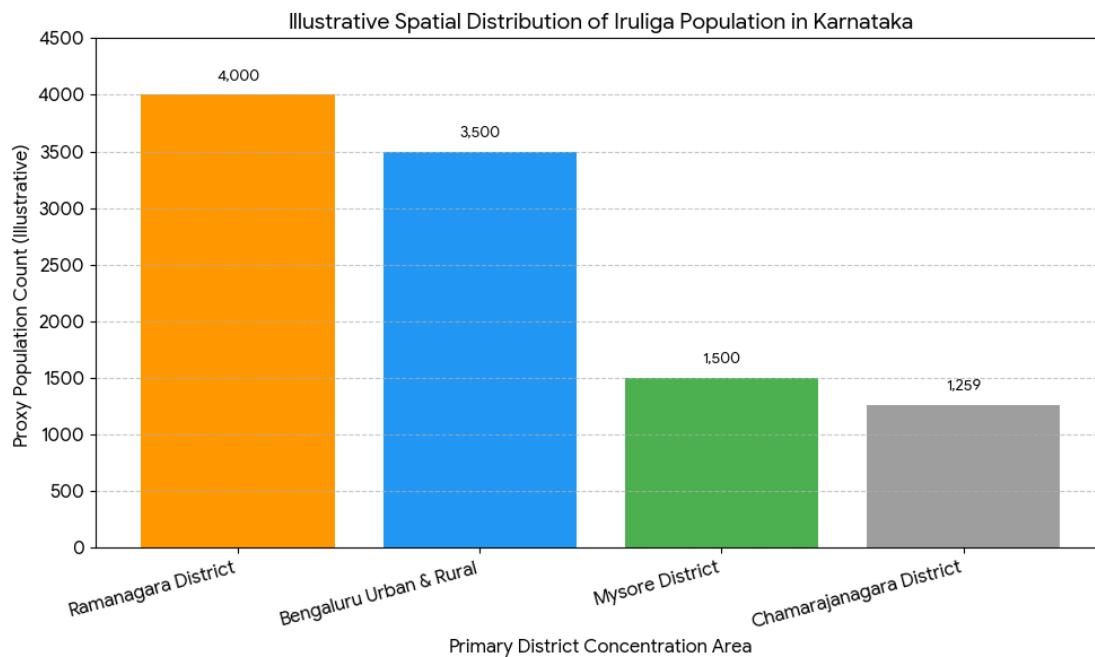
Combined, with the remainder spread across other areas like Ramanagara, Hassan, and Gulbarga. The Iruliga communities are generally found in the forested and semi-forested patches of Southern Karnataka, linking them geographically to the larger Irula populations in the Nilgiri Hills of neighbouring Tamil Nadu and Kerala.



Source: Census of India 2011

The geographical analysis of the Iruliga tribe in Karnataka shows they are a small, highly localised community concentrated in the southern border regions of the state. The Iruliga tribe represents

a tiny fraction of the state's overall Scheduled Tribe population (approximately 0.24%), underscoring their status as a small, ethnically and geographically distinct group within Karnataka.



Source: Census of India 2011

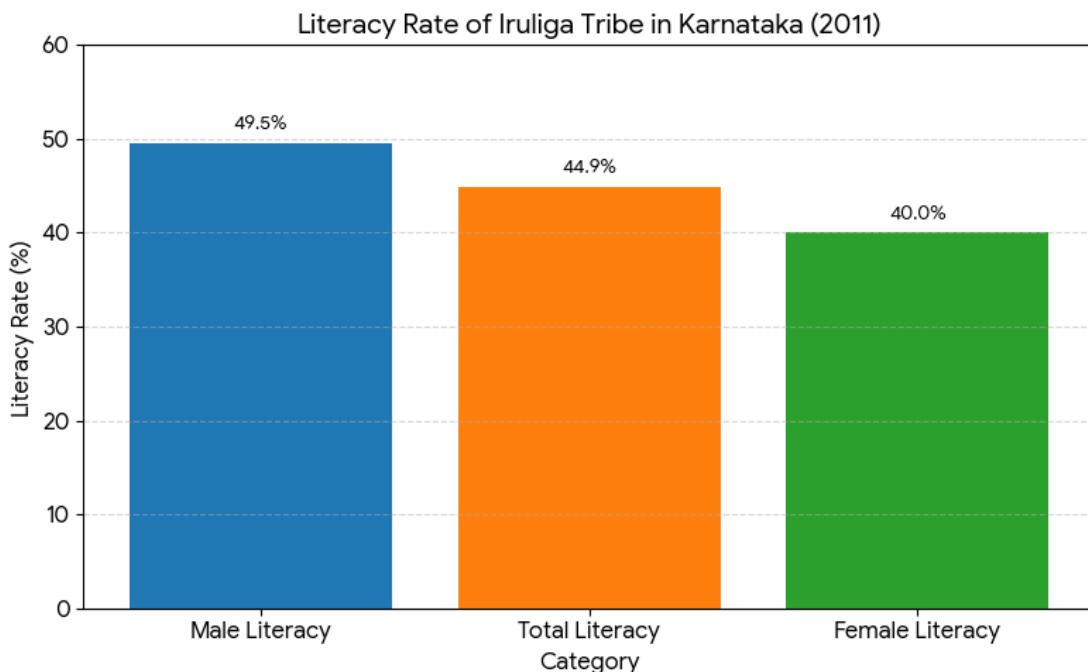
The above graph indicates that the spatial distribution of the Iruliga tribal population in Karnataka is highly concentrated in the state's southern region, particularly near the border with

Tamil Nadu, reflecting their historical ties to the Western Ghats ecosystem.

**Table 3: Profile of Iruliga Tribal Population in Karnataka 2011**

Particular	Category	Karnataka
Iruliga Tribal Populations	No of Households	2507
	Male	5267 (51.34%)
	Female	4992 (48.66%)
	Total Population	10259 (100.00%)
	Sex Ratio	948
	Child Sex Ratio	991
Literacy Rate (%)	Total	44.9
	Male	49.5
	Female	40.0
Work Participation (%)	Work Participation Rate	52.3
	Main Worker	80.5
	Marginal Worker	19.5

Source: Government of India (2013), Ministry of Tribal Affairs Statistics Division, Statistical Profile of Scheduled Tribes of India, New Delhi.



According to the 2011 Census, the Iruliga tribal community in Karnataka comprises 10,259 individuals, distributed across 2,507 households. The population includes 5,267 males (51.34%) and 4,992 females (48.66%), resulting in a sex ratio of 948 females per 1,000 males. The child sex ratio, at 991, indicates a more balanced gender distribution among younger age groups. Literacy levels within the community remain low,

with an overall literacy rate of 44.9%. Male literacy stands at 49.5%, while female literacy is significantly lower at 40.0%, reflecting a persistent gender gap in educational access and attainment. In terms of economic participation, the Iruliga exhibit a work participation rate of 52.3%. Among these workers, 80.5% are classified as main workers, indicating engagement in regular or long-term employment, while 19.5% are marginal workers, involved in seasonal or short-term economic activities.

**Table 4:** Total Iruliga Tribal Population in Karnataka (2011)

Rural (%)	Urban (%)	Total (%)
9901 (94.66)	558 (5.34)	10459 (100.00)

Source: Population Census of 2011.

The Iruliga tribal population in Karnataka is overwhelmingly rural in character. Of the total 10,459 individuals, 9,901 (94.66%) reside in rural areas, while only 558 (5.34%) live in

urban settlements. This distribution highlights the community's strong association with traditional, forest-based rural landscapes, with minimal migration toward urban centres.

**Table 5:** Gender wise Distribution of Iruliga Tribal Population in Karnataka (2011)

Male (%)	Female (%)	Total (%)
5467 (52.27)	4992 (47.73)	10459 (100.00)

Source: Population Census of 2011.

The sex composition of the Iruliga population in Karnataka shows a slight male predominance. Out of a total of 10,459 individuals, 5,467 (52.27%) are males, and 4,992 (47.73%) are females. This indicates a modest gender imbalance within the community, consistent with broader demographic patterns observed in many tribal and rural populations.

### Testing Hypothesis

**H0:** There is no statistically significant difference between the mean literacy rate of Iruliga males and Iruliga females.

**H0:**  $\mu_{\text{Male Lit}} = \mu_{\text{Female Lit}}$

**H1:** The literacy rate of Iruliga males is significantly higher than that of Iruliga females.

**H0:**  $\mu_{\text{Male Lit}} > \mu_{\text{Female Lit}}$

This study uses the Two-Proportion Z-test because we are comparing two proportions ( $p_1$  and  $p_2$ ) from two large, independent samples. This involves calculating the pooled sample proportion, standard error, and the final Z-statistic. Given  $p_1 = 0.495$  and  $p_2 \approx 0.400$  with large sample sizes, the resulting Z-statistic would be extremely large (far exceeding the critical Z-score of 1.645 for  $\alpha=0.05$ ). **Determine p-value:** Because the difference in proportions is large and the sample sizes ( $n \approx 5,000$

each) are very high, the *P-value will be extremely close to zero* (*P-value*  $\approx 0.0000$ ). This test addresses the significant 9.5%-point difference in literacy observed between Iruliga males and females.

So, the study result decision:

$$P\text{-value} (0.0000) \leq \alpha (0.05) \rightarrow \text{Reject } H_0$$

We reject the Null Hypothesis ( $H_0$ ). There is statistically sufficient evidence to conclude that the literacy rate of Iruliga males is significantly higher than the literacy rate of Iruliga females in Karnataka. This finding statistically validates the substantial gender gap observed in the raw data.

#### 4. RECOMMENDATIONS

The important recommendations are:

- **Educational Interventions:** Implement targeted literacy programs, particularly for women and children, and promote culturally sensitive schooling that acknowledges and preserves the Iruliga language and traditions.
- **Livelihood and Employment Support:** Develop skill-building programs for sustainable forest-based occupations and introduce income diversification initiatives, including agroforestry, handicrafts, and small-scale entrepreneurship.
- **Healthcare Access:** Strengthen rural healthcare infrastructure in Iruliga-dominated areas and implement health awareness programs, with a focus on maternal and child health.
- **Infrastructure Development:** Enhance connectivity of remote settlements (mottas) to markets, schools, and healthcare facilities, while ensuring access to clean water, sanitation, and electricity.
- **Policy and Governance:** Improve the implementation of tribal welfare schemes and encourage participatory planning by involving the Iruliga community in decision-making processes.
- **Conservation and Sustainable Resource Use:** Promote the sustainable use of forests and natural resources to safeguard livelihoods and ecosystems, and encourage community-based eco-tourism initiatives that generate additional income.

#### 5. CONCLUSION

This study, based on a comprehensive analysis of secondary demographic data and qualitative research, confirms that the Iruliga tribe in Karnataka is a small, geographically concentrated, and socio-economically vulnerable community within the state. In the geographical context of Karnataka, the Iruliga tribe exists as a peripheral and marginalised group, overshadowed by both the larger Scheduled Tribe populations and the rapid economic development of the Bengaluru region surrounding their traditional habitats. Their demographic and socio-cultural indicators necessitate urgent intervention to prevent further socio-economic degradation.

Demographically, the Iruliga exhibit a slightly higher male population and a moderate sex ratio, while the child sex ratio indicates near parity among younger age groups. Literacy levels are low, particularly among women, highlighting persistent gender disparities in educational access. Economic participation

is moderate, with a significant proportion engaged in marginal or seasonal work, underscoring vulnerabilities in livelihood security. Overall, the spatial and statistical patterns point to a community that is closely linked to its ecological surroundings but faces developmental challenges in education, employment, and social infrastructure.

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