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## COMPARATIVE ANALYSIS OF SC, ST POPULATIONS AND LITERACY LEVELS IN ADONI DIVISION, KURNOOL DISTRICT, ANDHRA PRADESH

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### ABSTRACT

The spatial distribution of Scheduled Castes and Scheduled Tribes population in Adoni division of Kurnool district, along with their literacy levels, is examined using data obtained from the 2011 Census of India. Adoni division, known for its socio-cultural diversity and agrarian economy, comprises seven mandals: Mantralayam, Kosigi, Kautalam, Peddakaduburu, Yemmiganur, Nandavaram and Gonegandla. The analysis indicates that the SC population, representing 11.10% of the total population, is 136,891, with Gonegandla having the largest SC community. In contrast the ST population is comparatively small totaling 8,636 individuals with Yemmiganur identified as the main centre. The gender distribution among SC persons is relatively balanced; however, a slight male predominance is observed among the ST population. Literacy rates among both SC and ST populations are recorded at 11.10%, although significant disparities are evident across mandals. Adoni exhibits the highest SC literacy, with 20,863 literates, while Holagunda and Kosigi have alarmingly low literacy rates. The data underscores the need for targeted educational interventions, particularly for women and in mandals exhibiting low literacy levels. By using geospatial methods, this study elucidates regional disparities and provides insights for designing effective policies aimed at promoting social inclusion and equitable development. These findings underscore the critical need to address educational disparities to empower marginalized communities and facilitate inclusive growth in the region.

**KEYWORDS:** SC & ST, Literacy rate, Socio-economic Development & GIS.

## **INTRODUCTION:**

The spatial distribution of population and literacy serves as an indicator of socio-economic development in a particular region. In India, Scheduled Castes and Scheduled Tribes represent a significant segment of the population and an examination of their demographic characteristics, settlement patterns, and literacy rates provides crucial insights into social equity and regional progress. A comprehensive understanding of the geographical disparities among Scheduled Castes and Scheduled Tribes is essential for effective policy making, resource allocation and promoting inclusive growth.

Adoni division of Kurnool district in Andhra Pradesh comprises the mandals of Mantralayam, Kosigi, Kowthalam, Peddakaduburu, Yemmiganur, Nandavaram and Gonegandla. The region is characterizing by socio-cultural diversity and is located in the Rayalaseema region of the state. The division is predominantly agricultural, exhibits semi-arid climatic conditions, limited irrigation infrastructure and severe socio-economic disparities. The population of these mandals includes a significant number of Scheduled Castes and Tribes, who often depend on agriculture and wage labour for their livelihood.

Literacy, an important measure of human development, plays a key role in empowering the marginalized. However, persistent disparities in literacy rates among social groups, especially Scheduled Castes and Scheduled Tribes, are evident in rural areas. The 2011 Census of India provides comprehensive population and literacy statistics at village and mandal levels, which facilitates spatial analysis of patterns and variations in Adoni division.

Keeping this context in mind, the present study was designed to investigate the spatial distribution of the Scheduled Castes and Scheduled Tribes population and their literacy levels in the mandals of Adoni division. By using geographical methods, the research aims to shed light on regional disparities, identify areas of socio-economic disadvantage, and provide insights for development programmes aimed at enhancing literacy and promoting social inclusion among the Scheduled Castes in the region.

## **Study Area:**

The study encompasses seven mandals of the Adoni Revenue Division have Mantralayam, Kosigi, Kowthalam, Peddakadubur, Yemmiganur, Nandavaram and Gonegandla. Encompassing an area of 2,747 square kilometers are located in the northwestern part of

Kurnool District, Andhra Pradesh. The division borders Karnataka to the west across the Tungabhadra River and is situated within the Rayalaseema region.

The location and extent are generally between approximately 15.37°31' 03" N latitude and 77.16° 44'29" E longitude. The terrain is part of the Deccan Plateau, characterized by gently undulating pediplains and occasional residual hills. The topography and relief have elevations ranging roughly from 250 to 450 meters above sea level, sloping gently from the south and southwest towards the Tungabhadra River and its associated seasonal streams.

In terms of drainage and hydrography, the Tungabhadra River a major tributary of the Krishna River serves as the primary perennial water system, flowing near Mantralayam and impacting irrigation and floodplain soils. Seasonal drainage includes minor tributaries and streams of the Handri Tungabhadra system. The climate is classified as tropical semi-arid monsoon are annual rainfall typically ranging from 550 to 700 mm.

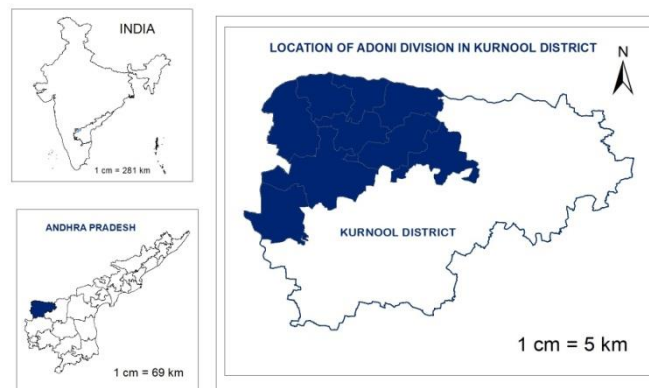


Fig:1

### **OBJECTIVES:**

1. To study the demographic profile and spatial distribution of SC and ST population will be analyze at the mandal level in Adoni division focusing on concentration patterns in different mandals.
2. To study the literacy levels among SC and ST will be probable and compared with the total population of the division identifying disparities in educational attainment.
3. Thematic maps illustrating spatial variations in the population and literacy rates of SC and ST will be prepared by GIS techniques.

### **Data collection:**

The 2011 Census data provided comprehensive population statistics of Scheduled Castes and Scheduled Tribes in each mandal of Adoni division, derived from the Preliminary Census

Abstract of the Census of India. In addition, literacy data including total literate, male and female literate, as well as specific statistics for Scheduled Castes and Scheduled Tribes were obtained from the census tables. To facilitate spatial mapping and analysis, administrative boundary shape files for mandals in Kurnool district were extracted from the Survey of India and Census GIS databases. Socio-economic data related to education, literacy and population structure were collected from the District Census Handbook and Handbook of Statistics for Kurnool District published by the Government of Andhra Pradesh. Base maps were prepared using Survey of India topographical sheets and district plan maps, while thematic maps illustrating the distribution of population and literacy rates of Scheduled Castes and Scheduled Tribes were integrated into GIS software (ArcGIS) to produce thematic maps illustrating the distribution of population and literacy rates of Scheduled Castes and Scheduled Tribes. Furthermore, relevant secondary literature including books, research articles, reports and government publications were consulted to provide conceptual background and facilitate comparative analysis.

#### **METHODOLOGY:**

A comprehensive data collection and processing approach was used in this study to analyze the demographic and literacy patterns of Scheduled Castes (SC) and Scheduled Tribes (ST) population at the mandal level. The demographic data including population and literacy statistics were collected from the Census of India 2011 preliminary census summaries, while the spatial data in the form of mandal boundary shapefiles for Adoni division were obtained from the Census GIS database and Survey of India. After data collection, the processing stage included tabulation of SC and ST population, total population statistics and literacy data (disaggregated by male, female and total) for each mandal. This helped in calculating various percentages and ratios, which enabled an in-depth understanding of the demographic and literacy patterns. The key indicators used in the analysis included percentage of SC and ST population, total literacy rates, SC literacy rates and male-female literacy gap, which collectively provided insights into the educational disparities and demographic characteristics of the region.

**RESULT AND DISCUSSION:****Table: 1 Scheduled Caste & Tribe population in Adoni Division-2011.**

S.No	Name of the Mandal	Total SC population	Percentage out of Division population	Total ST population	Percentage out Of Division population
1	Mantralayam	9730	7.10	1406	16.28
2	Kosigi	8906	6.50	235	2.72
3	Kowthalam	14376	10.50	669	7.74
4	Peddakadubur	8814	6.43	90	1.04
5	Yemmiganur	23726	17.33	1414	16.37
6	Nandavaram	12928	9.44	114	1.32
7	Gonegandla	45319	33.10	2577	29.84
8	Adoni	7779	5.68	1951	22.59
9	Holagunda	5313	3.88	180	2.08
Total		1,36,891	11.10	11.10	8636

As per table.1, a detailed demographic analysis of the Scheduled Caste (SC) and Scheduled Tribe (ST) population in Adoni division, based on 2011 census data. It shows the total SC and ST population in various mandals, along with their respective percentages in relation to the total population of the division.

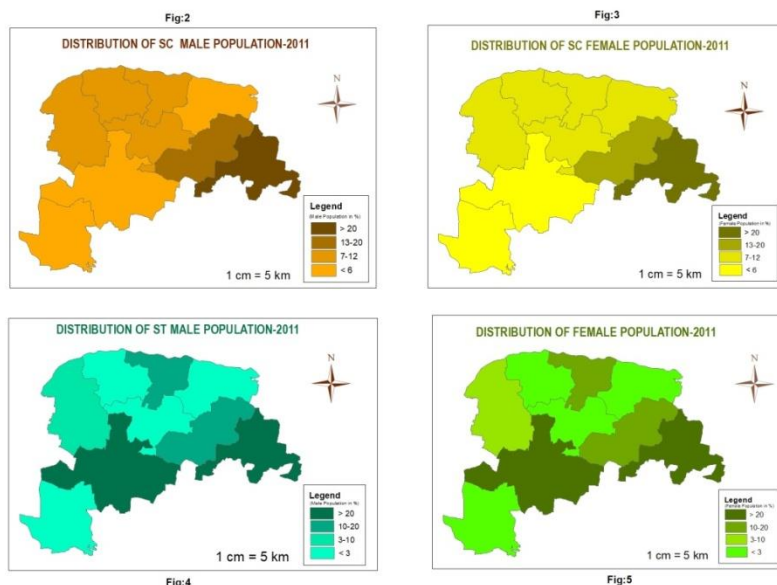
Overall, Adoni division has a Scheduled Caste population of 136,891, which is about 11.10% of the total population of the division. Among the mandals, Gonegandla stands out with the highest SC population of 45,319, which is 33.10% of the SC population of the division. This significant representation reflects historical, social or economic factors that have contributed to the large SC community in the region. In contrast, Holagunda has the lowest SC population of 5,313, which is only 3.88% of the SC population of the division.

When the Scheduled Tribe population is examined, a total of 8,636 individuals were registered, which is also 11.10% of the total population of the division. Yemmiganur has the highest ST population of 1,414 which is 16.37% of the ST population in the division, while Peddakaduburu has the lowest ST population of just 90, which is just 1.04% of the total ST population.

The data reveals notable disparities in the distribution of SC and ST populations across mandals. For example, despite a sizeable SC population in Gonegandla, it has a ST population of 2,577, which is 29.84% of the total ST population in the division. This suggests

that some mandals may act as focal points for these communities due to factors such as resource availability, social networks or historical settlement patterns.

The analysis of this table highlights the diversity of the population in the Adoni division, showing how the percentage of SC and ST populations varies across different mandals. This information is crucial for understanding socio-economic statistics and for planning intervention aimed at effectively behind these communities.



**Table: 2 Scheduled Caste, Tribe population Male and Female in Adoni Division – 2011.**

S.No	Name of the Mandals	SC Male population	%	SC Female population	%	ST Male population	%	ST Female population	%
1	Mantralayam	4770	6.99	4960	7.22	702	16.19	704	16.36
2	Kosigi	4470	6.55	4436	6.45	119	2.74	116	2.69
3	Kowthalam	7068	10.36	7308	10.64	336	3.36	333	7.74
4	Peddakadubur	4483	6.57	4331	6.30	42	0.96	48	1.11
5	Yemmiganur	11723	17.18	12003	17.47	666	15.36	748	17.39
6	Nandavaram	6648	9.74	6280	9.14	49	1.13	65	1.51
7	Gonegandla	22427	32.87	22892	33.33	1296	29.89	1281	29.78
8	Adoni	3935	5.76	3844	5.59	1029	23.73	922	21.43
9	Holagunda	2697	3.95	2616	3.80	96	2.21	84	1.95
	Total	68221	11.10	68670	11.10	4335	11.10	4301	11.10

The table.2, fig,2,3,4&5, analysis of population statistics for Scheduled Castes (SC) and Scheduled Tribes (ST) recorded in the Adoni division during the 2011 census. It categorizes

the data by mandal and presents specific numbers for the male and female populations within the SC and ST groups.

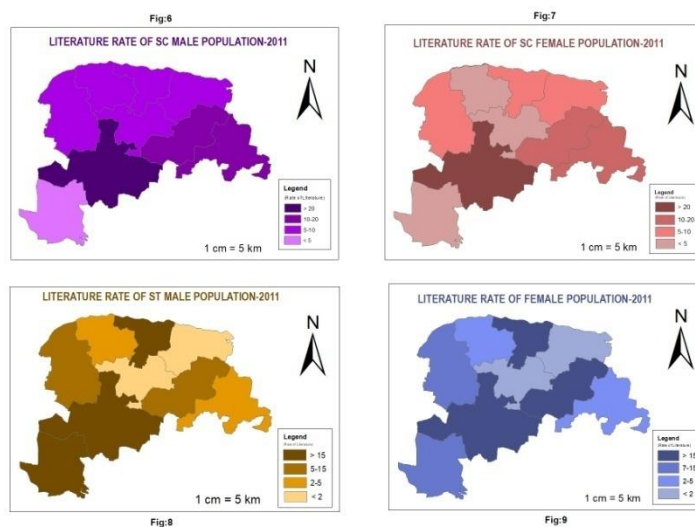
In the Adoni division, the total male SC population is 68,221, which accounts for approximately 11.10% of the total SC population. The female SC population is 68,670, also indicating 11.10%. This percentage equality suggests a balanced gender distribution within the SC population. Gonagandla stands out with the highest male SC population of 22,427, representing 32.87% of the total SC males in the division. Additionally, it has the highest female SC population of 22,892, which constitutes 33.33% of the total SC females. This indicates that Gonagandla is a significant centre for the SC community in the Adoni division.

In contrast the ST population is smaller, with a total of 4,335 males and 4,301 females, also indicating 11.10% of the total ST population. The highest male ST population is in the Yemmiganur mandal, with 666 individuals, representing 15.36% of the total ST males. Similarly, the female ST population in the same mandal is 748, which constitutes 17.39% of the total ST females. This suggests a significant concentration of ST individuals in Yemmiganur, paralleling the trends observed in the SC population.

The data also reveals disparities in gender ratios among different mandals. For instance, while the presence of males is strong in the SC and ST categories in Gonagandla, other mandals, such as Holagunda, show very small populations, particularly in the ST category, with only 96 males and 84 females.

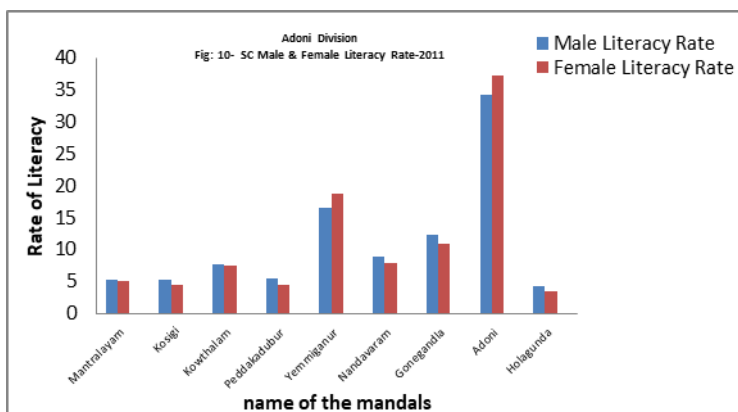
Overall this table highlights the demographic characteristics of the SC and ST populations in the Adoni division, showcasing variations in population sizes across different mandals and particularly illustrating gender distribution within these communities. The analysis is crucial for understanding the socio-economic dynamics of these populations in the region and informing the design of targeted policies and resource allocation.

### SC & ST Literature Rate of Adoni Division:



**Table: 3 Scheduled Caste & Tribe Literacy Rate Male & Female in Adoni Division – 2011.**

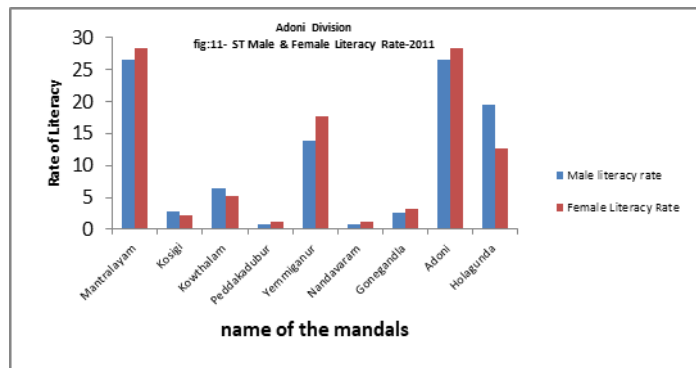
S. No	Name of the Mandals	Total SC Literatures	Rate out of Division Literature	SC Male Literature	Rate	SC Female Literature	Rate	Total ST Literatures	Rate out of Division Literature	ST Male Literature	Rate	ST Female Literature	Rate
1	Mantralayam	3070	5.22	1910	5.30	1160	5.10	1064	27.29	623	26.55	441	28.41
2	Kosigi	2941	5.00	1913	5.31	1028	4.52	97	2.48	64	2.72	33	2.12
3	Kowthalam	4438	7.58	2752	7.64	1686	7.41	232	5.95	151	6.43	81	5.21
4	Peddakadubur	2981	5.07	1949	5.41	1032	4.53	40	1.02	20	0.85	20	1.28
5	Yemmiganur	10250	17.44	5972	16.57	4278	18.81	600	15.39	326	13.89	274	17.65
6	Nandavaram	5018	8.54	3234	8.97	1784	7.84	37	0.94	20	0.85	17	1.09
7	Gonegandla	6882	11.71	4412	12.24	2470	10.86	109	2.79	60	2.55	49	3.15
8	Adoni	20863	35.31	12364	34.32	8499	37.38	1064	27.29	623	26.55	441	28.41
9	Holagunda	2309	3.93	1514	4.20	795	3.49	655	16.8	459	19.56	196	12.62
	Total	58752	11.10	36020	11.10	22732	11.10	3898	11.10	2346	11.10	1552	11.10



Based on above fig & table.3 analysis of the literacy rates of Scheduled Castes (SC) and Scheduled Tribes (ST) in the Adoni division (2011). This table is designed to present information on the literacy rates of both men and women within these communities across various regions.(fig.6,7, 8,9,10 &11)

The data reveals that the total number of literate SC individuals in the Adoni division is 58,752, with an overall literacy rate of 11.10%. This figure indicates a similar literacy rate for both male and female SC individuals. Among the regions, Adoni has the highest number of SC literates with 20,863 individuals, accounting for 35.31% of the total SC literates in the Adoni division. Following this, Kowthalam and Yemmiganur show significant numbers with literacy rates of 7.58% and 17.44% respectively.

When considering the literacy rates of SC males, Adoni again leads with 12,364 literate individuals, achieving a rate of 34.32%. This is slightly higher compared to other regions like Holagunda, which has a literacy rate of 4.20%. Conversely, the literacy rate for SC females vary significantly has Yemmiganur showing a high female literacy rate of 18.81%, while Kosigi has a much lower rate of 4.52%.



In terms of ST literacy, the total number of literates is 3,898, reflecting a literacy rate of 11.10%. The distribution of ST literates across regions shows that Adoni has the highest number, with 1,064 individuals, achieving a literacy rate of 27.29%. This is significantly higher than the rates observed in other regions like Pedkadubur and Nandavaram, which have rates of 1.02% and 0.94%, respectively. In Adoni, the literacy rate for ST males is 26.55%, while the rate for females is slightly lower at 28.41%. (fig.11)

Finally these are the data highlights the disparities in literacy rates between SC and ST populations in Adoni division, underscoring progress and ongoing challenges. The significant

variations in literacy rates across regions, particularly among women and in regions with low literacy rates suggest the need for targeted interventions to address educational needs. This analysis not only reveals the current literacy status of marginalized communities but also underscores the importance of continued efforts to achieve education and outcomes in these regions.

### **Comparison of SC & ST population and literacy rate in Adoni division**

The analysis of the Scheduled Castes (SC) and Scheduled Tribes (ST) population in Adoni division reveals significant disparities in both population size and literacy rates. The SC population is 136,891 persons, constituting 11.10% of the total population, with Gonegandla being the largest centre, home to 45,319 SC persons, while Holagunda has the lowest representation at 5,313. In contrast, the ST population is much smaller, comprising 8,636 persons, with Yemmiganur serving as the primary centre for ST persons and Peddakaduburu having the lowest at 90 persons. The gender distribution in the SC population is substantially balanced, with males and females constituting approximately 50% each, while the ST population shows a slight male predominance. Both groups exhibit a literacy rate of 11.10%, but this figure masks significant variations across mandals; For example, while Adoni SC leads in literacy with 20,863 literates, Holagunda and Kosigi report alarmingly low male and female literacy rates respectively. The clear disparities in literacy rates, especially among females, underscore the urgent need for targeted educational interventions in backward areas, highlighting the importance of addressing these disparities to promote equitable development in society.

**Population Disparities:** The SC population is significantly higher than the ST population in Adoni division, Gonegandla is a notable hub for SC individuals while Yemmiganur serves as a focal point for the ST community.

**Gender Distribution:** The SC population exhibits a balanced gender distribution with the ST population showing a slight male predominance.

**Literacy Rates:** Both the SC and ST populations have 11.10%. However, there are significant variations across mandals indicating that while some areas have made progress others are lagging behind, especially in female literacy.

Need for Targeted Interventions: The disparities in population sizes and literacy rates across different mandals highlight the need for targeted educational interventions especially in areas with low literacy rates and among the female population.

A comparative analysis of the SC and ST population and their literacy rates in Adoni division reveals important demographic trends and educational challenges. Appreciative these dynamics is essential for effective policy formulation and resource allocation aimed at improving the socio-economic conditions of these marginalized groups.

### **CONCLUSION:**

In conclusion, the analysis of the Scheduled Castes (SC) and Scheduled Tribes (ST) population in Adoni division reveals key insights into the socio-economic dynamics of the region. The significant population disparity between the SC and ST groups, with the SC population being significantly larger, underscores various historical, social and economic factors influencing settlement patterns. While Gonegandla has emerged as a prominent hub for the SC community, Yemmiganur plays a similar role for the ST population. The balanced gender distribution in the SC population contrasts with the slight male predominance observed in the ST group, indicating different socio-cultural contexts influencing community dynamics and resource allocation.

Moreover, literacy rates among SC and ST populations, although reported to be similar at 11.10%, mask significant inter-district variations, highlighting the urgent need for targeted educational interventions. The barren differences in literacy rates especially among women, underscore the ongoing challenges in achieving equitable educational outcomes. Addressing these disparities is critical to fostering inclusive growth and social equity in Adoni division. Policy makers and stakeholders should prioritize educational programs that address the specific needs of marginalized communities, ensuring that all individuals, regardless of caste or gender, have access to quality education and opportunities for advancement.

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