

## **Incidence and Determinants of Human Development among the Caste categories in Andhra Pradesh**

**Dr.Karri Kishore Babu**

Guest Faculty, Department of Economics, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur District, Andhra Pradesh

### **Abstract**

The present article attempt to analyse the determinants of Human Development index of the different caste category households in Andhra Pradesh. The study is based on primary data, 450 sample respondents are selected through multi stage stratified random sampling method. The study concluded that the Human Development Index (HDI) is the simple average of the three indices: Longevity (as measured by life expectancy at birth), Knowledge (as adult literacy and mean school going) and Standard of Living (as measures by real per capita income). It may be seen from the study that the life expectancy index among the communities varied from 0.766 in OCs and 0.845 in case of STs. The aggregate life expectancy is recorded by 0.813. The per capita income index (PCI index) is positive manner. Interestingly the PCI is significant level in BCs (0.431) and least by STs (0.317). The educational index (EI) is positive manner. The highest EI is recorded by 0.699 in BCs and least by STs 0.644. The aggregate HDI of the communities are 0.687, 0.644, 0.699 and 0.657 respectively. The human development index which is the simple average of all the above three indices aggregated to 0.657. The life expectancy index among the communities in Guntur district varied from 0.698 in STs to 0.786 in case of OCs. The aggregate life expectancy is recorded by 0.743. The per capita income index (PCI index) is positive manner. Interestingly the PCI is significant level in BCs (584) and least by STs (0.584). The educational index (EI) is positive manner. The highest EI is recorded by 850 in OCs and least by STs 0.675. The aggregate HDI of the respective communities SCs, STs, BCs and OCs are 0.687, 0.652, 0.763 and 0.774 respectively. The human development index which is the simple average of all the above three indices aggregated to 0.719.

The Combined Human Development index of the respective communities SCs, STs, BCs and OCs are recorded by 0.687, 0.648, 0.731 and 0.716 respectively. The human development index which is the simple average of all the above three indices aggregated to 0.688. The aggregate HDI shows a disparity in human development between East Godavari and Guntur districts

## Introduction

The districts of Andhra Pradesh have geographical, socio and economic variations. It is expected that intra-district disparities in socio-economic indicators may lead to disparities in Human development and the determinants of Human Development are as important as the inter-district disparities for regional development policy making. It is with this view and backdrop, an attempt is made to study the intra-district disparities in Human Development Indices and its determinants as such a study has not been made so far relating to the two selected districts. Such a study will help in identifying lagging behind the average HDI of the districts at micro level. Meanwhile, it is found from the review of literature there is none of the study is conducted in the study area. This study fills the gap.

**objectives** of the study: to analyse the determinants of Human Development in sample mandals and revenue divisions of Guntur District.

## Methods and Meteriala

The study is based on primary sources of data. Multi stage stratified sampling method was employed for the study. In the first stage, Guntur and East Godavari districts of Andhra Pradesh has been selected for the study. Guntur and East Godavari district is one of the large populated; Geographical, well developed and the remaining are backward districts in the state. In the second stage of sample consists of selection of mandals in the districts. Total of six mandals i.e., three mandals from each district is selected for the study. The third stage of sample consists of selection of villages. To examine the objectives, along with the above said six mandals, three villages from each mandal have been selected for the study. The last stage of sample consists of selection of households from the selected areas. Each 25 households from 18 villages (total 450 households) is randomly selected for the study.

## Results and Discussions:

The paper attempt is made to examine the determinants of human development across sample mandals and different caste groups by revenue divisions using regression analysis with dummy variable model. Human development is a complex phenomenon. It is determined by a host of social, economic, political and institutional factors. These include such diversified factors as heredity, social environment, caste, religion, sex, income levels, consumption pattern, educational levels, availability of good medical and health facilities, good drinking water, comfortable home for decent living, political power, freedom of various types to enjoy fundamental rights required to ensure dignity of human beings. But many of these factors are not quantifiable and cannot be captured in an analytical study. As noted already, the human development index being computed at international level for various countries and at national level for various states in India incorporates only three of these dimensions of human development viz., per capita income, literacy and life expectancy. But an analytical study like this needs to go beyond these three narrow dimensions of human development. Accordingly in the present study an attempt is made to analyse the determinants of human development in the study area. A combined analysis is given due to there is a similarity in HDI of the both districts.

Accordingly in the present study an attempt is made to analyse the determinants of human development using regression analysis with dummy variable model. The model is

$$Y = \beta_0 + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_3 + \beta_7 D_4 + \beta_8 D_5 + \mu$$

$y$  = Human Development Index at the appropriate Geographical level.

$\beta_0$  = Intercept for quantitative variables if qualitative variables are held constant  
 Benchmark Category for qualitative variables if quantitative variables are held constant

- $D1$  = BC = 1 and 0 for Other Castes  
 $D2$  = SC = 1 and 0 for Other Castes  
 $D3$  = ST = 1 and 0 for Other Castes  
 $X1$  = Education Index  
 $X2$  = Per Capita Income  
 $X3$  = Proportion of population > 60 years  
 $D4$  = Bore-well water facility = 1 and 0 for Other Sources  
 $D5$  = Well water facility = 1 and 0 for Other Sources  
 $\mu$  = Error term

The values taken by the variables including the two qualitative variables viz., caste, and the type of drinking water facilities are detailed below:

- Caste group variable taken the following categories viz., OC, BC, SC and ST
- Average Education is in terms of index values of both districts
- Average Per capita income of the respondents of both districts
- Number of people above 60 years in the families
- Drinking water variable takes three categories, well, bore well and tap water

These variables are included only for the total of selected mandals of the both districts level analysis. The increasing values of these variables indicate increased importance in the society or their quality. The regression analysis is attempted the three selected mandals as one unit each of the districts. As noted already, there are 225 observations in each district.

## Determinants of human development in the study area

The regression results regarding the determinants of human development in the study area is presented in Table 5.1. Among the three quantitative variables, education index and per capita income variables are having positive signs while the proportion of population above 60 years variable has negative sign on improving human development index. By increasing one year of education leads to 0.34 per cent improvement in human development by holding other variables constant. One per cent increase in per capita income increases 4.39 times human development index and an increase in proportion of population above 60 years by one per cent leads to a decrease of human development by 0.01 per cent by holding other variables constant. Education index and per capita income index variables are statistically significant at 1 per cent level while the proportion of population above 60 years variable is not significant.

Regarding the caste which is qualitative variable, OC is here considered as reference group which is to be compared by other castes. The OC expected human development is represented by the constant in the regression equation which is 0.427. The coefficient for BC estimates the net difference between expected human development for OC and BC once variation in human development caused by controlling other independent variables. The BC dummy variable coefficient value for expected human development is lower by 0.012 compared with OC. The actual expected human development value for BC is found by the net difference between reference and BC caste group variable coefficient and it is 0.415. SC expected human development is lower by 0.016 compared with OC and its actual expected value is 0.411. In the same way ST expected human development is also lower by 0.062 compared with OC and the actual expected value of ST is 0.365. Among the three dummy caste variables, only ST dummy variable is statistically significant at 1 per cent level and the remaining two caste dummy variables are not significant.

Table -1  
Determinants of Human Development in the study area: Regression Results

Dependent Variable: HDI				
Independent Variables	Parameter	Estimated Value	t	Sig.
OC Caste / Tap Water Facility	(Constant)	.427*	23.986	.000
Caste Variable	BC	-.012	-1.308	.204
	SC	-.016	-1.348	.192
	ST	-.062*	-4.363	.000
Education Variable	EDI	.344*	17.030	.000
Income Variable	PCY	4.398*	12.457	.000
Population > 60 Age Variable	Above 60	-.010	-1.377	.182
Drinking Water Facility Variable	Bore-Well	-.002	-.272	.788
	Well			
R Square	0.977			
Adjusted R Square	0.970			

Note: \*significant at 1per cent level.

Source: Computed from primary data.

The second qualitative variable considered in the regression as independent variable is drinking water facility. In the study area, tap and bore-wells are the sources of water facility. Tap water is considered as the reference group and it is to be compared by the bore-well and well water facilities. The expected human development by using tap water facility is represented by the constant in the equation and its value is 0.427. The bore-well dummy variable coefficient value estimates the net difference between expected human development by using bore-well water facility compared with reference group and it is lower by 0.425 than tap water facility which is the reference group. The bore-well dummy variable coefficient is not significant.

The differences in caste dummies, water facility dummies along with education index variable, per capita income variable and proportion of population above 60 years variable together explain about 97 per cent of the variation in human development in the study area which is denoted by adjusted  $R^2$  in the model.

It is clear from the study that the results of the empirical analysis at the districts level reveal that the education and income variables have become significant determinants while the variable >60 year population years has become insignificant. Similarly the quantitative variable of ST castes has emerged as significant determinants while the water variables have become insignificant. This implies that the district needs to provide more and more medical and health and drinking water facilities to increase the HD further.

## Conclusion

The Human Development Index (HDI) is the simple average of the three indices: Longevity (as measured by life expectancy at birth), Knowledge (as adult literacy and mean school going) and Standard of Living (as measures by real per capita income). It may be seen from the study that the life expectancy index among the communities varied from 0.766 in OCs and 0.845 in case of STs. The aggregate life expectancy is recorded by 0.813. The per capita income index (PCI index) is positive manner. Interestingly the PCI is significant level in BCs (0.431) and least by STs (0.317). The educational index (EI) is positive manner. The highest EI is recorded by 0.699 in BCs and least by STs 0.644. The aggregate HDI of the communities are 0.687, 0.644, 0.699 and 0.657 respectively. The human development index which is the simple average of all the above three indices aggregated to 0.657. The life expectancy index among the communities in Guntur district varied from 0.698 in STs to 0.786 in case of OCs. The aggregate life expectancy is recorded by 0.743. The per capita income index (PCI index) is positive



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Interestingly, the state HDI is recorded at 0.650 as 27<sup>th</sup> place in Indian states and the national average of HDI was 0.647 in 2018. Thus, it can be said that the HDI of the study area is (0.688) more than the State as well as national average. It is clear from the study that the results of the empirical analysis at the districts level reveal that the education and income variables have become significant determinants while the variable >60 year population years has become insignificant. Similarly the quantitative variable of ST castes has emerged as significant determinants while the water variables have become insignificant. This implies that the district needs to provide more and more medical and health and drinking water facilities to increase the HD further.

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