Chapter - VII

Summary of Findings and Conclusions
"The success of development programmes cannot be judged merely in terms of their effects on incomes and outputs, and must, at a basic level, focus on the lives that people can lead."

- Jean Dreze and Amartya Sen

7.1 SUMMARY OF FINDINGS

7.1.1 Defining Economic Development

Economists define the term "economic growth" as sustained rise in the real GNP per capita over a long period of time. As such the 'per capita GNP' neutralizes the effects of population growth, 'real income' takes care of inflationary rises in the prices and 'the long-term growth' of income' iron out the cyclical variations in the growth of national output. GNP discloses the prevailing purchasing power in the economic system, but it is silent about the spatial and personal distribution of output and the character or quality of economic growth. GNP also does not take in to account the activities that are not expressed in terms of money such as household work, subsistence agriculture, and unpaid services. More importantly, GNP is one-dimensional and it fails to capture the cultural, social, political and many other choices that people would like to make. As such a comprehensive definition in terms of economic development is adopted. The term "economic development" is a much broader concept not restricted purely to economic phenomenon. In addition to improvement in incomes and output, it typically involves radical changes in institutional, social and administrative structures as well as in popular attitudes and, in many cases, even customs and believes. But economic development also does not truly reflect the welfare, choices and opportunities that the people want to make. As a result, economists began to search for more comprehensive measures of economic development that could capture all or many of the choices that people would like to make. Some economists introduced scores of economic and social indicators in relative terms on crucial infrastructure, economic, and social variables, but did not aggregate them into a composite index of economic development. Later some economists tried to construct composite index of economic development by using appropriate weights. In the beginning the weights to different variables were given arbitrarily.
and haphazardly. But with the development of super computers and suitable software solutions, several economists began to give scientific weights that were derived from factor analysis. In order to reflect the quality of the lives of the people more vividly, another important direct measure such as Physical Quality of Life Index was constructed. Nevertheless, it has been argued that these composite measures lacked a sound methodological base and were abandoned after brief trials. In fact, governments and policy makers did not evince keen interest in these measures and they did not provide enough financial investment for constructing the measures that were considered to be the alternatives to GNP.

7.1.2 Genesis of Human Development Index

In this context, the United Nations Development Programme (UNDP) entered into the picture in 1989 under the leadership of late Mahbub ul Haq and other leading development economists. They made efforts to construct a suitable measure that could truly reflect the lives of the people and their choices. Their efforts yielded fruitful result. The UNDP has come out with a new and innovative composite measure of development called Human Development Index (HDI). The HDI measures human development to reflect and enlarge people's choices. There may be several human choices like the desire to live long, to acquire knowledge, to have a comfortable standard of living, to get gainful employment, to breathe clean air, to get freedoms to lead a free, happy and dignified life, to express the inner feeling without fear or favour, to acquire political and administrative powers and many such. Some of these could not be quantified or measured. Hence, the Human Development Index took only three of the measurable choices mentioned above to keep the index simple and manageable. The intention of the economists at UNDP was to measure at least a few of the choices that the people make besides income and to reflect them in a methodologically sound composite index.

7.1.3 Components of Human Development Index

The HDI incorporates the three most important dimensions that are very basic to human life viz., longevity, knowledge and access to decent and dignified life. Life expectancy at birth was chosen as an index of longevity, adult literacy as
an index of knowledge; and GNP per capita adjusted for purchasing power parity (PPP) as an index of access to a multiplicity of economic choices that the people would like to make. Many other variables that were considered for inclusion had significant correlation with the variables chosen already and hence they had to be discarded. The life expectancy that measures the number of years that people live is expressed in terms of years. Adult literacy and combined enrolment ratio at primary, secondary and tertiary levels are measured in terms of percentages to total. Of course, the per capita income is denoted in terms of real income in PPP adjusted US dollars. These indicators were expressed in a common denominator. The actual achievement in each relative indicator is represented as a distance relative to the desirable goals. The maximum and minimum values called goal posts were fixed for each variable. The observed values for each variable were reduced to a scale between 0 and 1. Equal weights were given for all the three variables on the simple premise that all these choices were very important and that there was no 'apriori' rationale for giving a higher weight to one choice than to another. The alternative weights also did not give any significantly different results and hence equal weights are being given for all the three chosen dimensions of human development.

7.1.4 Advantages and Accomplishments of HDI

The HDI incorporates both social and economic aspects of human development. Earlier two separate indices one for reflecting economic life and another for reflecting the social life of individuals used to be constructed. For example, GNP was supposed to represent economic progress achieved by the individuals in the society and physical quality of life index (PQLI) was supposed to reflect the social progress of the individuals in the society. Such a formulation ignores the interaction that exists between social and economic progress. Economic growth increases the resources and options available for social progress. And social progress creates an enabling environment for economic progress. Progress of nations and individuals must be measured on both fronts, not separately, in any comprehensive index of development. The greatness of HDI lies
in this aspect that it combines both economic and social progress in a single index. The coverage and methodology of HDI have been kept quite flexible and whenever new and more relevant data are made available and, and whenever analytical research suggests new methodology, refinements are made to the HDI.

The HDI has many accomplishments to its credit. The ranking of countries according to level of human development kindled the interests of the policy makers in individual countries to invest adequate amounts in producing relevant data and to take up studies at national and international level. The UNDP, in turn, over the last 20 years sought to develop new concepts, measurement tools and policy analysis in a variety of areas in its annual Human Development Reports. The new human development paradigm has influenced human development debates and policies all over the world. More than 135 countries have prepared human development reports for their individual countries focusing several aspects of human development. The reports are used extensively by non-governmental organizations for giving suggestions and advices to the governments. The governments, in turn, use these reports for reviewing development priorities and development policies. The international financial institutions and the donor agencies use these indices for extending financial assistance to individual for eradicating poverty and for furthering human progress in these countries. The academicians, media, and the NGOs employ them to draw attention to research, news and campaigns for improving human welfare. Thus the emergence of Human development Reports have changed the entire development scenario of the countries across the developing world.

7.1.5 Mushroooming Literature on Human Development

Apart from the UNDP that has been providing rich data base and literature on many aspects of human development for over the last 20 years; many individual researchers at international, national and state levels have done considerable research work on human development. The Indian Planning Commission has prepared National Human Development Report in the year 2002 and computed HDIs for the years 1981, 1991 and 2001. Many state governments in India have
also prepared such reports for their individual states or at least improved the database for the human development reports. The Government of Andhra Pradesh in the year 2000, as a part of Janmabhoomi Programme made a futile attempt to collect micro level data on human development in every village. Of late, the Centre for Economic and Social Studies (CESS) has taken up the stupendous task of collecting data on human development with a view to computing HDI for various districts in Andhra Pradesh. Many individual researchers have also attempted to compute human development indices at the state level.

7.1.6 Research Gaps and Design of the Study

Nevertheless, there were no more micro level studies at regional and district levels on human development in Andhra Pradesh. The need for such micro level studies at regional and district levels arises because they provide valuable insights on the intricacies of human development paradigm and enable to pool the rich experiences at micro level for the use at the state and national level. Moreover, there are no studies on human development of Kurnool district of Andhra Pradesh. In the light of the identified research gaps, the present study was proposed in Kurnool district of Andhra Pradesh through a sample survey.

The specific objectives of the present study were:

I. To understand progress of adult illiteracy, students' enrollment at primary, secondary and tertiary levels in Kurnool District;

II. To analyse mortality levels of population in Kurnool District;

III. To estimate income levels of population in Kurnool District;

IV. To compute human development indices for the households in Kurnool district and to assess its relative performance in human development vis-a-vis Andhra Pradesh and other states and

V. To analyse the determinants of human development in Kurnool district.

Five related hypotheses were formulated to test against the findings of the study. The study was based both on secondary and primary sources of data. Since the available secondary data were not adequate to fulfill the objectives of the study, primary data were collected from the sample households in Kurnool district
of Andhra Pradesh using a multi-stage random sampling technique. There are three revenue divisions viz., Kurnool, Nandyal and Adoni in Kurnool District. Four mandals from each of the three revenue divisions were selected using Simple Random Sampling Without Replacement (SRSWOR) making the total number of sample mandals 12.

These mandals are located in different corners of the district. Some mandals are having rich irrigation facilities. Some mandals are upland and dry mandals frequently affected by drought. The social fabric consists of different caste group households, some with hereditary productive resources, and some with acquired resources and some without any ownership of productive resources. These led to differences in the income and educational levels and also in health conditions across different mandals and caste groups.

Given this socio-economic reality in different mandals of the district, from each of the 12-selected mandal, 2 villages were chosen and from the two villages (13 HH +12 HH) put together 25 sample households were selected again using SRSWOR. Thus, the total sample size was 25 households X 12 mandals = 300 households for the entire district. Data were collected from the sample households using a pre-tested interview schedule through personal interview method. The data were analysed using two-way tables, percentages, ratios and human development indices. Statistical tools like ANOVA were also employed to analyse the significance of inter-group differences on different variables. An attempt was also made to fit multiple-regression model to understand the determinants of human development in the study area.

The entire study was presented in 7 interrelated chapters. The first three chapters were the introductory chapters providing background of the study. The next four chapters including the present one are the study chapters based on the findings of the study.
7.1.7 Progress of Human Development indicators

In the fourth chapter, the status of human development in Kurnool district was analyzed in terms of absolute values of human development indicators. The indicators include, income levels and average incomes, occupation pattern, literacy levels, enrolment at primary, secondary and tertiary levels, number of deaths in different households, infant mortality rates, demographic features like age wise distribution of individuals, average households size etc. An attempt was also made to analyze the household type, availability of electricity, nature of drinking water facilities, availability of sanitary facilities etc.

Income Distribution and Levels

The study indicated that majority of households, accounting for about 59 percent, were getting income below the level of Rs.60,000/- per household per annum. Higher income households were distributed evenly above the income level of Rs.60,000. There were also inter- mandal variations in the income levels. The caste- group wise distribution of households in different income brackets revealed glaring inequalities in the distribution of income. The OC households were mostly concentrated in higher income brackets. About 83 percent of OC households were getting income above Rs.60,000/- per annum while the corresponding proportions for BC, SC and ST households were 36 percent and 17 percent respectively. In other words, the ST, SC and BC households were concentrated mostly in lower income brackets. Thus 83 percent of STs, 70 percent of SCs and 64 percent of BCs were getting income less than Rs.60,000/- per annum.

The disparities in income levels among different mandals and among different caste groups were amply clear from the average income levels in different mandals and among different caste groups. Urbanized and irrigated mandals like Kurnool (Rs.75,880), Bethamcherla (Rs.66,921) recorded the highest levels of income while dry and arid mandals like Devenkonda recorded the lowest levels of income (Rs.34,200) in Kurnool district. Thus the range of variations in the average incomes (about Rs.50,000) of households in different mandals was very high in the District. Similar but more pronounced variations in the average incomes were
observed among different caste groups in the mandal. While OC households recorded as high as Rs.88,492, the ST households on the average could get only 34,656 per annum. Thus, the variations among the three caste groups amounted to Rs.41,560. The analysis of variance (ANOVA) technique employed to analyze the significance of differences in the average income levels of households in different mandals and among different caste groups though, indicated no statistically significant differences, the P value which indicates the level at which the null hypothesis become true was very close to 0.05 in the case of caste group differences. This clearly revealed that disparities in the income levels among different caste group were potentially dangerous in the district.

Literacy Levels and Education

The literacy level in Kurnool district averaged at 50.33 percent as per the primary data as against 53.2 percent as per secondary data provided by the Chief Planning Office, Kurnool district. The literacy level again varied among different mandals in Kurnool district. The highest literacy level of 59.24 percent was recorded in Kurnool mandal. Some interior upland mandals like Devankonda registered the lowest levels averaging at 40.29 percent. Similarly, there were disparities in literacy levels among different caste groups. As expected the literacy rate was the highest at about 63 per cent among the OCs and the lowest at 41 percent among the STs.

The analysis of educational levels of individuals in different mandals of Kurnool district brought home the finding that majority of individuals aggregating to about 60 percent in the district had studied up to tenth class only. It means only 40 percent could go beyond tenth class level. The proportion individuals with higher education (graduation, Post-graduation and professional education) constituted only about 20 percent. Among different caste groups, the proportion of individuals with higher education as a percentage of their respective total population was the highest among the OC group households followed by SC households. This could be due to the fact that the OC households, thanks to higher level of income, were able to get good education while the ST and SC households
particularly the latter group could able to get good education thanks to facilities provided by the government in the form of scholarships, fee concessions, residential hostels etc. But all such facilities and concessions may not be available to the BC households and hence they occupied the third place in educational levels in the district next to SCs.

Demographic Features

The age group wise distribution of sample households indicated that children below 5 years constituted 10.37 percent, those in between 6 and 14 years accounted for about 18.78 percent. On the other hand, senior citizens above the age of 60 years accounted for 10.25 percent. Thus the dependency ratio is very high at about 39 percent. It should be noted that children are more burdensome than the senior citizens because the latter could have saved some amount for their future whereas the entire economic and social burden of children falls on the working population. Of course, there is social burden of looking after the senior citizens on the working population even though the economic burden would be relatively less.

The average household size in Kurnool district worked out at 5.22. The average household size was the highest at 5.70 for OCs, followed by that among BCs (5.15) and SCs (5.14). Interestingly, the average household size was the lowest at 4.88 among the ST households. The additional economic and social burden of bringing up children was aptly recognized by the STs and they limited their household size. On the other hand, for the SCs and STs the real wealth might be children because everyone in their family works to earn income. Moreover, the government provides several concessions to these caste groups if they intend to pursue education at different levels. Hence, educating children would not also be a problem to them. Nevertheless, as brought out by the ANOVA results the differences in the household size of different caste groups were not statistically significant.

Occupation Pattern

The analysis of occupation pattern of households in different mandals of Kurnool district indicated that 25 percent depended on agricultural activities while
about 31 percent worked out their living from agricultural labour. Thus the occupation pattern in the district was predominantly tilted in favor of agriculture and allied activities. Government employees constituted only about 11 percent of total individuals in the district. The uneven structure of employment pattern in the district was amply reiterated by the ANOVA results that indicated statistically significant differences in the occupation pattern of households in the district.

The analysis of occupation pattern of different caste group households yielded interesting findings of far reaching policy implications. OCs and BCs largely controlled the agricultural and allied activities. In fact their shares in agriculture activities were more than their shares in the total sample. On the other hand, the SCs and STs could purchase less proportion of agricultural activities than their shares in the sample. Conversely, most of the agricultural laborers were from SCs (30 percent) and STs (11.8). These shares were more than their respective shares in the samples. Another important finding having policy implications is that OCs and STs largely controlled government employments. Even though OCs constituted only about 23 percent of total sample, they controlled 31 percent of total government employment. Similarly, STs comprised 7.33 percent of sample units, but they got 11.4 percent of total government employment opportunities. On the other hand, even though BCs constituted 45 percent of total sample units, they could gain access to only 34 percent of berths in government employment. Here again, the implications of globalization should be understood clearly. The OCs with their good educational, economic and other powers (particularly the political power) could gain access to government employment opportunities. On the other hand, thanks to the constitutional guarantees to education and employment, the SC/STs could gain access to government employment opportunities. But the same type of facilities is not available to the BCs and hence that might be the reasons for the deprivation in government employment in accordance with their share in total sample. One commentator put it “the middle class would perish with the on slight of globalization”.

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Other Human Development Indicators

The analysis of ownership of residential houses indicated that an overwhelming proportion of total sample households in all the sample mandals, 88.33 percent, had own houses. Households who were living in rented houses constituted only 11.66 percent of total households in the district. Similarly, more than 97 percent of households had access to electricity supply for their dwelling units. It was also heartening to note that about 74 percent of people had been living in pucca houses that provided protection to the members in all weather conditions.

An analysis of health indicators of the households in terms of institutional deliveries and average age at death of persons during the last 10 years was also carried out. The findings of the study indicated that about 83 percent of total deliveries took place in hospitals. Similarly, the average age of death of persons during the last 10 years worked out to be 59.25 years. It should be noted that as at national and international level, women in the district tend to live longer than men as the average age at death of the former was higher at 60.3 years as against the latter, 58.2 years.

With regard to the type of fuel used it must be noted that only 28.33 percent of total house holders were using L.P. gas and about 71.66 percent still depended on bio-fuels that emit harmful smoke and cause indoor air pollution. This needs to be taken into account. About 55.6 percent of households have access to safe drinking water supplied through taps. Another 42 percent used bore well water for drinking purpose. Thus only about 2 percent use the open well water for drinking purpose. Another heartening finding from the analysis of the data was that the incidence of child labour was very low. Child labours consisted only about 2.78 percent of total workers in the district.
7.1.8 Human Development Indicator: Spatial Analysis

Apart from analyzing the human development in terms of human development indicators in absolute terms, an attempt was also made to compute the human development indices using UNDP methodology. Human Development Index (HDI), it must be noted, that is composite index of development having three important and basic dimensions of human development viz., literacy, longevity and per capita income with equal weights. Literacy again consists of two components viz., adult literacy with a weight of two-thirds and students' enrolment at primary, secondary and tertiary level with a weight of one third. The HDI was computed for sample households and presented mandal wise.

Kurnool Revenue Division

The HDI value of the Nandikotkur mandal of Kurnool division averaged at 0.4421 but it varied between a low of 0.2167 to a high of 0.914 for various household in the mandal. Since majority of households were getting per capita income more than minimum level of Rs.20,000 per annum, the income index was positive and even for the mandal as the whole. In Atmakur mandal, the HDI value was arrived at 0.4107 in spite of very low values of education and high values of health indices mainly due to low levels of income. This index however, varied between a low of 0.2167 to 0.8610 for various households in the mandal. The Kurnool mandal, the headquarters of the district, achieved the highest HDI value of 0.4933, which was in fact the highest not only for the revenue division but also for all the 12 mandals included in the study. In Atmakur mandal, thanks to relatively higher levels of income, the HDI averaged at a higher level of 0.4855 which was better than that achieved in the other two mandals. The HDI varied sharply across different households from a minimum of 0.2077 to a maximum of 0.9214. Thus in Kurnool revenue division, the HDI value was the highest in Kurnool mandal and the lowest in Atmakur mandal. While the former could be attributed mainly to relatively higher level of income, the latter was mainly due to low levels of income and education.
Nanadyal Revenue Division

The Gadivemula mandal of Nandyal revenue division, the averaged HDI at a high level of 0.4325 it will be obtained second rank in the division, thanks to higher level of education. The level as well as the range of HDI was very low in one of the mandals of Nandyal revenue division namely, Alagadda mandal. It averaged at 0.4298 for the mandal as a whole mainly because of very low index values recorded for the education and the HDI varied between a low of 0.1889 and high of 0.8342 for various households in the mandal. The Gospadu mandal registered the HDI value at 0.4317 for the mandal as a whole and it varied between a high of 0.8213 and low of 0.2167 for various households in the mandal. In Owk mandal of Nanadyal division, the HDI averaged at a very high level of 0.4534 for the mandal as a whole thanks to higher level of income. The HDI again varied widely from a low of 0.2206 to a high 0.7487 for various households in the mandal. In short, in Nandyal revenue division, the highest value of HDI was retained by Owk mandal and the lowest value was registered by Alagadda mandal. It is pertinent to state that the HDI value for Owk mandal was better than that recorded for all the mandals in Nandyal and Adoni revenue divisions.

Adoni Revenue Division.

In Adoni mandal of Adoni revenue division, the HDI averaged at a very high level of 0.4518 for the mandal as a whole thanks to higher level of income. The HDI varied widely from a low of 0.1889 to a high 0.8228 for various households in the mandal. In Mantralayam mandal, the HDI value varied between a low of 0.1932 to a high of 0.7197 for different households. The level as well as the range of HDI was very low in one of the upland mandals of Adoni revenue Division namely, Devankonda mandal. It averaged at 0.3378 for the mandal as a whole mainly because of very low index values recorded for the per capita income and education, and the HDI varied between a low of 0.2291 and high of 0.5888 for various households in the mandal. In Maddikera, another upland mandal of the division registered the HDI value of 0.3946 for the mandal as a whole and the same varied between a low of 0.2167 to a high of 0.6888 for various households in
the mandal. The Devankonda mandal achieved the lowest HDI value of 0.3946, which was in fact the lowest not only for the revenue division but also for all the 12 mandals included in the study.

Comparative picture of HDI ranks in Mandals and Divisions

A Comparative analysis of HDI scores of different mandals in the three revenue divisions revealed interesting findings of considerable policy implications. Among the 12 mandals included in the study, Kurnool mandal of Kurnool division scored the highest HDI score of 0.4933, Bethamcherla mandal in same division obtained second rank with HDI value of 0.4855 and Owk mandal of Nandyal revenue division occupied the third rank in the district with the HDI value of 0.4534. Thus, two mandals in Kurnool revenue division occupied first two ranks and one mandal in Nandyal revenue division get to third rank but no one mandal in Adoni revenue division occupied top three ranks. On other hand, last three ranks go to Adoni revenue division, viz., Devenakonda, Mantralayam and Maddikera mandals of division occupied the 12th rank, the 11th rank and 10th rank respectively. Thus there were wide disparities in human development within each revenue division in the district. In view of these intra-division disparities in human development in the district, there were noticeable variations in the average achievements of different revenue divisions in the district. The HDI scores for Kurnool turned out to be the highest at 0.4569 followed by Nandyal at 0.4339 and Adoni division at 0.3952. These intra-mandal disparities in human development are to be brought down to ensure ‘inclusive human development’ a concept akin to ‘inclusive development’ that connotes the social justice. Though there is positive correlation between level of per capita income and human development, the relationship was not perfect. As per the findings of the study the correlation coefficient between per capita income and human development index worked out at 0.652. This indicates that income is a necessary factor for human development but not the sufficient factor. Other preconditions are to be ensured.
7.1.9. Human Development Indicators: Caste-Group Analysis

The caste group wise analysis of human development indices in different mandals also brought out many important findings relevant to policy formulation. In fact such an analysis has a direct bearing on the problems of the contemporary society.

Kurnool Revenue Division

All mandals in Kurnool division, OC households scored the highest scores in human development and occupied the first ranks. Their top scores could be attributed to both relatively high levels of income and better educational attainments. In Nanadkotkur and Atmakur mandals the BC households scored the second rank in human development followed by SC and STs. In Kurnool mandal, the SC households further improved their position and got marginally higher score than BCs in human development mainly due to higher income levels. Finally in Bethamcherla mandal, paradoxically the ST households improved their position and got marginally higher score than BCs and SCs in human development mainly due to higher income and educational levels. Thus in four mandals of Kurnool revenue division, OC households scored higher HDI scores and retained the top ranks in human development while BC, SC and ST households managed to get second rank in each one of the mandals in human development in the division.

Nandyal Revenue Division

In three out of four mandals in Nandyal division, OC households scored the highest scores in human development and occupied the first ranks. In Gadivemula mandal, paradoxically the BC household's scored the highest HDI value and top ranked in the mandal. Their top score could be attributed to both relatively high levels of income and better educational attainments. Interestingly, the ST households occupied the second position in HDI at the two mandals viz., Gadivemula and Alagadda. In Gadivemula mandal the OC households had to satisfy themselves with the lowest HDI scores of 0.3134 and with last rank in the mandal in human development, caste group wise analysis of human development in Nandyal revenue division yielded mixed results.
Adoni Revenue Division

In all mandals of Adoni revenue division, the OC households scored the top rank in human development followed by BCs, SCs and STs. In fact the scores of the OCs were 1.5 times the scores of the BCs and that of SCs was about two times the scores of OCs in human development. In Devanakonda mandal, all the caste group households got the low HDI values and the mandal average itself is the lowest in the division. Even here the OC households managed to get the first position in HDI. Comparatively other two divisions the Adoni revenue division occupied the last position in all the three dimensions of human development as well as in HDI.

A comparative analysis of HDI scores of different caste group households in the three revenue divisions indicated that in Kurnool, Nandyal and Adoni divisions, OCs scored the top ranks followed by BCs, SCs and STs.

District Level Analysis

At the district level again the general trend could be observed. The OC households got the top rank in human development followed by BC, SC and ST households. There were also considerable variations in the values of HDI scored by the four caste group households. These differences could mainly be attributed to disparities in the income levels of different caste group households. Even though there were disparities in the educational attainments of different caste-groups, these differences were not such glaring as in income levels. In fact, the ST households lagged much behind the other caste group households both in income levels and in educational attainments, which needs the attention of planners and the policy makers.

A comparative analysis of human development indices in Kurnool district and in Andhra Pradesh and in other Indian states indicated that the HDI value in the district was lower than that observed at the national level and just higher than the state level. This could be due to absence of urbanization, small sample size and
lack of adequate data to accurately estimate the life expectancy at birth of the individuals at the district level.

7.1.10 Determinants of Human Development

How much variation in HDI could be attributed to differences in the income levels and how much differences in HDI could be attributed to differences in educational and health conditions could not be understood from the analysis of human development indices presented in the fifth chapter. Hence an attempt was made to analyse the determinants of human development in different mandals and among different caste groups using the multiple regression analysis in the sixth chapter.

Determinants of Human Development in Various Mandals

The analysis of determinants of human development in various mandals in Kurnool revenue division indicated that, except in Bethamcherla mandal, in all the three mandals, per capita income and educational levels were the statistically significant determinants of human development. In Bethamcherla mandal, except the variable, 'proportion of people above 60 years,' all other variables were statistically significant. While caste per capita income, educational attainments had positive influence on the HDI, the household type in the mandal had a negative effect on HDI. As could be understood from the values of R², the explanatory power of the regression models was also very high ranging from 85 percent to 95 percent in various mandals of Kurnool revenue division. From the ANOVA technique employed to judge the significant in all the mandals of the division. It also implied that the chosen regression model fitted well to the data on human development in the division.

In Nandyal division also a similar picture was observed. Per capita income and education were the most important variables influencing human development in Nandyal division. In Owk mandal, apart from the above two variables, the proportion of people above 60 years also significantly influenced the human development. In this mandal for instance, a unit increase in the income index seemed to have pushed up the HDI value by about 0.45. The coefficient of
determination value was also very high in some of the mandals of the division. For instance, in Alagadda mandal the $R^2$ value was as high as 0.96 indicating that 96 percent of variation in the dependent variable, viz., HDI was explained by the variables included in the regression model. Moreover, these $R^2$ values were also statistically significant as could be observed from the high values of calculated F test.

Broadly similar conclusions were obtained from the regression analysis carried out in various mandals of Adoni revenue division. Education and per capita income turned out to be the most significant variables influencing human development in the division. Moreover, the $R^2$ values were also very high and that they were statistically significant at 5 percent probability levels as could be understood from the high computed F test statistic values.

**District Level Analysis**

The multiple regression analysis carried out at district level using 300 data points yielded useful results. In the district except the variables proportion of people above 60 years, residential quality variable and water quality indicator variable, the regression coefficients of all other variables were statistically significant at one percent probability level as could be understood from the computed t-test statistic value. In fact the per capita income turned out to be the most significant variables influencing HDI. An increase of per capita income by one thousand seemed to have increased to HDI value by 0.014 units. Similarly, one unit increase in the education index pushed up the HDI by 0.36. Another most important finding of the study was the influence of caste group on the value of HDI. One unit increase in the caste group indicator variable believed to have increased the HDI value by as much as 0.032. In fact all these three variables were statistically significant at one percent probability level. It should be noted that the corresponding regression coefficients at mandal and divisional levels were significant at 5 percent probability level at the district level the three regression coefficients were significant at one percent probability level. Moreover, the $R^2$
value was also very high and that it was significant at one percent probability level. It implied that the model provided good fit to the human development data.

7.2 TESTING OF HYPOTHESES

The HDI and improvement of HDI in different countries show different trends. Some have improved their HDI due to increased literacy. Others had high HDI because of improved health indicators. A few countries have shown higher HDI because of increased per capita income. India has shown a declining HDI because of its poor performance in health, education and per capita income levels. But has to learn lessons from countries with improve HDI. Future Human Development Planning of India needs a thorough change and a foresight. The first hypothesis namely that there is no significant improvement in HDI of India is accepted. This poses the way for the planners and policy makers of India to reconsider the present flagship programmes and make necessary changes taking lessons from neighboring countries in particular and rest of the world in general.

The second hypothesis that there are no marked differences in HDI among different states is not accepted. The analysis presented in Chapter III amply provides evidence that there are differences in regard to per capita incomes, literacy and longevity of life. The very nature of the states exhibit huge differences in regard to natural endowments, climate, and employment giving rise to differences in per capita income. As regards to literacy too huge differences we find between states like Kerala and Orissa. Maharashtra, Gujarat has a higher literacy when compared to Orissa and Andhra Pradesh. Expenditure of different states on health and health awareness differ from state to state. Hence, large differences in longevity and health of the people. Hence, the second hypotheses is not accepted and the alternative hypothesis namely that there are inter-states differences in HDI of different states is accepted.

The third hypothesis is not accepted. It is being discussed in Chapter III. The data presented and analysed with the help of quantitative tools reveal that the HDI of Andhra Pradesh has shown an increase in volume. But when compared to
other states the increase in HDI in Andhra Pradesh is not in conformity with other states. A.P's HDI increased from 0.298 in 1981 to 0.377 in 1991 and further to 0.416 whereas its rank increased from 9 in 1981 but remained the same in 1991 but increased to 10 respectively. This only shows that the position of Andhra Pradesh in HDI though increasing absolutely but its relative rank is either stationary or declining.

The fourth hypothesis, namely that HDI indices of the three divisions in the District are not uniform is accepted. There are differences in regard to longevity of life, literacy and per capita incomes among these three divisions of Kurnool district. Some divisions are advantages with higher literacy some are lagging in this aspect of HDI. Some divisions are performing well in per capita income and others show a non-satisfaction increase in income. The life expectancy at birth of the three divisions has shown a large difference. Hence, the three divisions in Kurnool district did not show a similar development in Human Resource Index.

The regression analysis employed shows that a multiplicity of factors influences HDI in Kurnool district. There are differences in caste wise HDI, division-wise HDI. The factors identified as determinants are caste, education index, per capita income, proportion of people above 60 years, type of houses and drinking water. The factors influenced different divisions in the Human Development Index of differently and different villages and different caste-groups of people differently. Analysis of variance (ANOVA), employed also shown that there are differences in determinants of HDI of different villages, divisions. The comparative study of Kurnool district with A.P state also shows differences in the contribution of different determinants. The fifth hypothesis, namely that the Human Development in Kurnool district is not influenced by multiplicity of determinants is not accepted and the alternative hypothesis that multiplicity of factors influence the determinants of HDI of Kurnool district is accepted.
7.3 POLICY IMPLICATIONS AND SUGGESTIONS

Human development is a multi-faceted concept involving social, economic, political and legal dimensions. Hence, achievement of human development requires a multi pronged approach. In the light of findings of the study, the following suggestions are made for effective implementation of the strategies to further advance the pace of human development in the district in particular and in the state in general.

1. The study revealed the low levels of incomes of the households in the district. The per capita income of the households per annum in some cases was less than Rs.20,000/-. Since, income is considered to be a proxy for many variables that influence human development, the first priority of the government should be to make efforts to augment the income levels of the households. In this context, apart from providing wage employment opportunities for the households, the strengthening the novel strategy of “Self-help” groups and inclusive growth, should be taken up on priority basis.

2. Even the low levels of income earned by the individuals in the district were not equitably distributed among various mandals in the three revenue divisions. The income levels of households in arid and dry mandals were very low compared to irrigated mandals. These spatial disparities in the distribution of income are to be corrected by focusing special attention on backward and dry mandals like Devanakonda, Mantralayam and Maddikera mandals in the district.

3. The study also amply brought out the inter-caste group inequality in the distribution of incomes. In fact, the ANOVA and the regression analysis have reiterated the potential danger of these inequalities to become a serious issue. Hence, target group approach should be adopted to take measures to increase the income levels of ST, SC and BC households. Special focus should be made on ST households to improve their prevailing educational, income and health conditions.
4. The findings of the study indicated the low levels of adult literacy of the individuals in the district, and in fact these were lower than the state and national average. In order to improve the literacy levels of the population, the existing degree college, P.G. Colleges, professional colleges and universities may be suggested to adopt nearby villages to strive to improve the literacy levels of the population in the district.

5. In order to improve the enrolment ratio at primary, secondary and tertiary levels, the parents should be motivated to send their children to schools. The school environment should be improved by providing adequate infrastructure facilities and additional teaching staff. More students can be attracted to primary and secondary levels by proving computer education and internet facilities in the village schools besides programmes like mid-day meals.

6. The average size of the households is very large at 5.22 in the district. Moreover, there were inter-caste group differences in the household size. The household size among OCs and BCs was large. Hence, the government has to take carrot and stick measures to see that these caste group households limit their family sizes by implementing family welfare programmes more intensively and effectively.

7. Another important finding that emerged from the analysis was the lopsided occupational structure of the households in the district. Nearly 60 per cent of the households depend on the agriculture and allied activities. The dependency on agriculture has to be reduced by developing the non-agriculture activities such as small scale and tiny industries, food-processing units and service activities. This would not only bring about increased but also increases the productivity of the agriculture sector. As a result the income levels of those who depend on agriculture would increase. Improving the lot of rural artisans also further augment income generation in villages.
8. The results of the study indicated that though majority of households were living in own houses, only 5 percent had katcha houses. These katcha houses do not provide congenial atmosphere for comfortable living in all weather conditions. Hence, the housing conditions are to be improved by providing housing loan facilities not only to the government and non-government employees, but also to small business operators, agricultural households, rural artisans etc., whom at present the banks do not consider. For those who are not in a position to go for housing loan from banks, the government through state or national housing corporations should try to provide housing facilities.

9. Another important finding of the study was that the 72 percent of the people depended on fire wood for cooking causing harmful health effects through indoor air pollution. The use of LP gas should be encouraged so that it reduces pressure on bio-fuels and improves the health conditions of the people.

10. Many studies have raised doubts that many diseases have their origin from water. Provision of safe drinking water reduces the incidence of diseases and improves health conditions of the population. As per findings of the study 55 percent of the households had access to safe drinking water supplied through taps. This scenario is to be improved and 100 percent of population should be provided with safe drinking water. In fact, it is suggested that access to safe drinking water must be made a fundamental right, the violation of which can be sued in the court of law.

11. The human development indices computed for different mandals amply reiterated the existence of intra-mandal and intra-revenue division disparities in human development. As already suggested these intra-mandal and intra-revenue division disparities in human development are to be brought down to ensure 'inclusive human development'.

12. Similarly, as per computed HDI for different caste groups, there were inter-caste group disparities in human development, a finding that is of
considerable social importance. In a stratified society with democratic polity, governments cannot hope to survive in the long run unless these disparities are narrowed down at the earliest. Hence, caste group specific policy measures are to be taken up to ensure social justice in the country.

13. The multiple regression analysis carried out to understand the effect of different variables on human development clearly reiterated the well-established conclusion that the income and educational levels significantly influenced the value of HDI of households in different mandals, revenue divisions and caste groups. Thus focus of attention should be on these variables.

14. Lastly, as per the multiple regression analysis, even though income, education and caste group variables had statistically significant effect on human development, it was the income level that had tremendous effect on HDI. Since, income is considered to be the means for acquiring several facilities that promote human development, the central focus of development policy should be on augmenting the income levels of the households by creating secured employment through various programmes.

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