CHAPTER III

REGIONAL DISPARITIES IN HUMAN DEVELOPMENT OF KARNATAKA
Introduction:

In this chapter, an attempt has been made to analyze the status of human development and regional disparities in Karnataka human development. The Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living.

The concept of human development has been widely accepted and used in all mainstream economic and disparity analysis. Hitherto, UNDP has been annually published human development reports since, 1990. The government of India published the national human development reports during 2002 and 2012. The government of Karnataka also published its state human developed reports during 1999 and 2005. Karnataka also brought four district level human development reports during 2008. Karnataka is preparing human development reports for all the thirty districts and all these reports would be expected to come during 2014. All these reports have given considerable attention to analyze the regional and gender disparities by using human development indicators, like HDI, GDI and GEM. In the present chapter an attempt has been made to capture the disparities in human development and gender development of Karnataka. The major variable used in this chapter are, human development index, under these main indices, the indicators like, health index, education index, income index, are also analysed.

For the analysis, data has taken from Karnataka human development reports 1999 and 2005. The Cohort and dummy variable regression models were used for analysis. The major focus of the study is to identify the high, medium and low achievement districts in terms of each of the variable selected and identify the significant difference among them. An attempt also made to identify the reasons for the low, medium and high-level performances.

This chapter has two sections namely A and B. In the first section, A explains the disparities in human development of Karnataka. The second section B explains the gender disparities in Karnataka.
Section-A

Disparities in Human Development of Karnataka:

As a first step of analysis, an attempt has been made to analyse the disparities in human development of Karnataka. The following table presents the data about the values of human development index for the period 1991. The table also presents the information about the level of human development in terms of high, medium and low performance. To compute and identify the level of performance, the cohort analysis has been used. Methodologically, the high performance district means, average value of the human development index plus one standard deviation and above (High Performance = > Average + Standard Deviation of index value). The low performance district means, average value of the human development index minus one standard deviation and below (Low = < Average - Standard Deviation of index value). Medium is between high and medium values (High value > Medium > Low value).

Table 3.1

Disparities in Human Development of Karnataka during 1991
(In Terms of HDI Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of HDI</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High HDI</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium HDI</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Mandya, Mysore, Shimoga, Tumkur, Uttara Kannada</td>
<td>20</td>
<td>0.741</td>
</tr>
<tr>
<td>3</td>
<td>Low HDI</td>
<td>Gulbarga, Koppal, Raichur.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The above table presents the status of Human Development Index (HDI) in Karnataka. The average human development index value during 1991 was 0.535 and the standard deviation was 0.057. The Cohort designed that the districts having the
HDI value of 0.592 and above were considered as high human development districts and the districts having the HDI value of 0.479 and below were considered as low human development districts and the districts having the HDI value between 0.592 and 0.479 were considered as medium human development districts. Accordingly, Bangalore Urban, Dakshina Kannada, Kodagu and Udupi were considered as high human development districts. Gulbarga, Koppal and Raichur were considered as low human development districts. The remaining districts were considered as medium human development districts. The following graph shows the human development of Karnataka during 1991.

**Figure 3(a)**

Disparities in Human Development of Karnataka during 1991

![Graph showing HDI values for different districts of Karnataka during 1991](image)


2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low human development districts.

$$\text{HDI}_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e$$

Where,

\( \alpha \): the constant which represents the benchmark, in the present analysis high human development districts have been treated as benchmark.

\( \beta_1 \): Difference between benchmark and medium human development districts.

\( B_2 \): Difference between benchmark and low human development districts.

\( D_1 \): 1 (one) if medium human development districts: 0 (zero) otherwise.

\( D_2 \): 1 (one) if low human development districts: 0 (zero) otherwise.

\[
\text{HDI}_{1991} = 0.642 - 0.114D_1 - 0.194D_2 \quad \text{------ (1)}
\]

\( \text{t:} \) \hspace{1cm} (53.679) \hspace{1cm} (-8.716) \hspace{1cm} (-10.636) \\
\( \text{Sig:} \) \hspace{1cm} 0.000 \hspace{1cm} 0.000 \hspace{1cm} 0.000

The signs of the coefficient explain the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average human development index value of high human development districts (benchmark) was 0.642. The coefficient values of d1 and d2 were -0.114 and -0.194 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the human development in medium and low human development districts were significantly lower than the high human development districts during 1991. Hence, human development of Gulbarga, Koppal and Raichur was significantly low during 1991.

**Disparities in Status of Health in Karnataka during 1991(Component of HDI):**

The following table presents the data about the values of health index for the period 1991. The table also presents the information about the level of health index in terms of high, medium and low. To compute and identify the level of performance the cohort analysis has used.
Table 3.2
Disparities in Status of Health in Karnataka during 1991 (Component of HDI)
(In Terms of Health Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Health index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Health index</td>
<td>Bangalore Urban, Bangalore Rural, Belgaum, Dakshina Kannada, Shimoga, Udupi.</td>
<td>06</td>
<td>0.222</td>
</tr>
<tr>
<td>2</td>
<td>Medium Health index</td>
<td>Bellary, Bidar, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Gadag, Haveri, Kodagu, Koppal, Kolar, Mandya, Mysore, Tumkur, Raichur, Uttara Kannada.</td>
<td>16</td>
<td>0.593</td>
</tr>
<tr>
<td>3</td>
<td>Low Health index</td>
<td>Bagalkot, Bijapur, Dharwad, Gulbarga, Hassan.</td>
<td>05</td>
<td>0.185</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

Health is the most important component of human development and human development measurement. The above table presents the status of Health Index (HI) in Karnataka. The average health index (HI) value during 1991 was 0.615 and the standard deviation was 0.038. The Cohort designed that the districts having the HI value of 0.652 and above, were considered as high health status districts and the districts having the HI value of 0.577 and below, were considered as low health status districts and the districts having the HI value between 0.652 and 0.577 were considered as medium health status districts. Accordingly, Bangalore Rural, Bangalore Urban, Belgaum, Dakshina Kannada, Shimoga and Udupi were considered as high health status districts. Bagalkot, Bijapur, Gulbarga, Koppal and Raichur were considered as low health status districts. The remaining districts were considered as medium health index districts. The following graph shows the health index of Karnataka during 1991.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low health status districts.

$$HI_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e$$

Where,

- $\alpha$: the constant which represents the benchmark, in the present analysis high health index districts were treated as benchmark.
- $\beta_1$: Difference between benchmark and medium health index districts.
- $\beta_2$: Difference between benchmark and low health index districts.
- $D_1$: 1 (one) if medium health index districts; 0 (zero) otherwise.
- $D_2$: 1 (one) if low health index districts; 0 (zero) otherwise.

$$HI_{1991} = 0.671 - 0.064 D_1 - 0.100 D_2 \quad ------ \quad (2)$$

t: \quad (93.086) \quad (-7.539) \quad (-9.340)

Sig: \quad 0.000 \quad 0.000 \quad 0.000


2. Values are computed by researcher.
The average value of health index for benchmark was 0.671. The coefficient values of \(d_1\) and \(d_2\) were -0.064 and -0.100 respectively. The constant and the coefficient values were accepted at one per cent level. Therefore, the health index in medium and low health index districts were significantly lower than high health index districts during 1991. Hence, Bagalkot, Bijapur, Gulbarga, Koppal and Raichur were significantly low health status districts during 1991.

**Disparities in Educational Development of Karnataka during 1991 (Component of HDI):**

The following table presents the data about the value of education index for the period 1991. The table also presents the information about the level of education in terms of high, medium and low. To compute and identify the level of performance Cohort analysis has been used.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Education index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Education index</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium Education index</td>
<td>Bagalkot, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Mandya, Mysore, Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.704</td>
</tr>
<tr>
<td>3</td>
<td>Low Education index</td>
<td>Chamarajanagar, Gulbarga, Koppal, Raichur.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.
Education is another important component of human development. The above table presents the status of education in Karnataka. The average education index (EI) value during 1991 was 0.602 and the standard deviation was 0.110. The Cohort designed that the districts having the EI value of 0.704 and above were considered as high education index districts and the districts having the EI value of 0.484 and below were considered as low education index districts and the districts having the EI value between 0.704 and 0.484 were considered as medium human development districts.

Accordingly, Bangalore Urban, Dakshina Kannada, Kodagu and Udupi were considered as high education index districts. Chamarajanagar, Gulbarga, Koppal and Raichur were considered as low education index districts. The remaining districts were considered as medium education index districts. The following graph shows the education index of Karnataka during 1991.

Figure: 3(c)

Disparities in Educational Development of Karnataka during 1991


2. Values are computed by researcher.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low educational development of districts.

\[ EdI_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( El_{1991} \): Education Index during 1991.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high Education districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium education index districts.
- \( \beta_2 \): Difference between benchmark and low education index districts.
- \( D_1 \): 1 (one) if medium education districts: 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low education districts: 0 (zero) otherwise.

\[ EdI_{1991} = 0.781 - 0.189 D_1 - 0.368 D_2 \quad ------(3) \]

\[
\begin{array}{ccc}
\text{t:} & (36.444) & (-7.997) & (-12.139) \\
\text{Sig:} & 0.000 & 0.000 & 0.000 \\
\end{array}
\]

The average education index value of Benchmark was 0.781. The coefficient values of \( d_1 \) and \( d_2 \) were -0.189 and -0.368 respectively. The constant and the coefficient values were accepted at one per cent level. Therefore, the education in medium and low education districts were significantly lower than the high education status districts during 1991. Hence, education status of Chamarajanagar, Gulbarga, Koppal and Raichur was significantly low during 1991.

**Disparities in Income Status of Karnataka during 1991( Component of HDI):**

Income is the representative of standard of living and one of the components of human development. The following table presents the data about the value of Income index for the period 1991. The table also presents the information about the disparities in level of income in terms of Income Index (II).
Table 3.4

Disparities in Income Status of Karnataka during 1991

(In Terms of Income Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Income index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Income index</td>
<td>Bangalore Urban, Chickmagalur, Dakshina Kannada, Kodagu, Udupi.</td>
<td>05</td>
<td>0.186</td>
</tr>
<tr>
<td>2</td>
<td>Medium Income index</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bijapur, Chamarajanagar, Chitradurga, Davangere, Dharwad, Gadag, Gulbarga, Hassan, Kolar, Mandya, Mysore, Raichur, Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.703</td>
</tr>
<tr>
<td>3</td>
<td>Low Income index</td>
<td>Bidar, Haveri, Koppal.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The above table presents the status of Income in Karnataka. The average income index value during 1991 was 0.397 and the standard deviation was 0.046. The Cohort designed that the districts having the II value of 0.444 and above were considered as high income districts and the districts having the II value of 0.351 and below were considered as low income index districts and the districts having the II value between 0.444 and 0.351 were considered as medium income index districts. Accordingly, Bangalore Urban, Chickmagalur Dakshina Kannada, Kodagu and Udupi were considered as high Income districts. Bidar, Haveri and Koppal, were considered as low Income districts. The remaining districts were considered as medium income districts. The following graph shows the income index of Karnataka during 1991.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low-income districts.

\[ II_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( II_{1991} \): Income Index during 1991.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high income districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium income districts.
- \( \beta_2 \): Difference between benchmark and low income districts.
- \( D_1 \): 1 (one) if medium income districts: 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low income districts: 0 (zero) otherwise.

\[ II_{1991} = 0.479 - 0.095 D_1 - 0.139 D_2 \]  

\[ \begin{align*} 
  t: & \quad (52.178) \quad (-9.154) \quad (-9.247) \\
  \text{Sig:} & \quad 0.000 \quad 0.000 \quad 0.000 
\end{align*} \]
The average index value of high-income districts was 0.479. The coefficient values of d1 and d2 were -0.095 and -0.139 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the income index in medium and low income index districts were significantly lower than the high income index districts during in 1991. Hence, the level of income of Bidar, Haveri and Koppal was significantly low.

Disparities in Human Development of Karnataka during 2001:

Disparities in terms of human development were also computed for the year 2001. The following table presents the data about the value of human development index for the period 2001. The table also presents the information about the high, medium and low human development of districts.

Table 3.5

Disparities in Human Development of Karnataka during 2001
(In Terms of HDI Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of HDI</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High HDI</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium HDI</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag Hassan, Haveri, Kolar, Mandya, Mysore Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.704</td>
</tr>
<tr>
<td>3</td>
<td>Low HDI</td>
<td>Chamarajanagar, Gulbarga, Koppal, Raichur.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.
The above table presents the status of Human Development Index (HDI) of Karnataka during 2001. The average human development index value during 2001 was 0.633 and the standard deviation was 0.048. The Cohort designed that the districts having the HDI value of 0.682 and above were considered as high human development districts and the districts having the HDI value of 0.585 and below are considered as low human development districts and the districts having the HDI value between 0.682 and 0.585 were considered as medium human development districts. Accordingly, Bangalore Urban, Dakshina Kannada, Kodagu and Udupi were considered as high human development districts. Chamarajanagar, Gulbarga, Koppal and Raichur were considered as low human development districts. The remaining districts were considered as medium human development districts. The following graph shows the human development index of Karnataka during 2001.

Figure: 3(e)

Disparities in Human Development of Karnataka during 2001

<table>
<thead>
<tr>
<th>District</th>
<th>HDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangalore Urban</td>
<td>0.75</td>
</tr>
<tr>
<td>Dakshina Kannada</td>
<td>0.70</td>
</tr>
<tr>
<td>Koppal</td>
<td>0.65</td>
</tr>
<tr>
<td>Raichur</td>
<td>0.60</td>
</tr>
<tr>
<td>Shimmoga</td>
<td>0.55</td>
</tr>
<tr>
<td>Tumkur</td>
<td>0.50</td>
</tr>
<tr>
<td>Udupi</td>
<td>0.45</td>
</tr>
<tr>
<td>Uttara Kannada</td>
<td>0.40</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low human development districts.
\[ \text{HDI}_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

\( \text{HDI}_{2001} \): Human Development Index during 2001.

\( \alpha \): the constant which represents the benchmark, in the present analysis high human development districts are treated as benchmark.

\( \beta_1 \): Difference between benchmark and medium human development districts.

\( \beta_2 \): Difference between benchmark and low human development districts.

\( D_1 \): 1 (one) if medium human development districts: 0 (zero) otherwise.

\( D_2 \): 1 (one) if low human development districts: 0 (zero) otherwise.

\[ \text{HDI}_{2001} = 0.721 - 0.093D_1 - 0.154D_2 \]

\[ t: \quad (65.484) \quad (-7.657) \quad (-9.899) \]

\[ \text{Sig:} \quad 0.000 \quad 0.000 \quad 0.000 \]

The average index value of high human development districts (benchmark) was 0.721. The coefficient values of \( d_1 \) and \( d_2 \) were -0.093 and -0.154 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the human development in medium and low human development districts were significantly lower than the high human development districts during 2001. Hence, the human development of Chamarajanagar, Gulbarga, Koppal and Raichur was significantly low.

**Disparities in Health Status of Karnataka during 2001( Component of HDI):**

The following table presents the data about the value of health index for the period 2001. The table also presents the information about disparities in health status.
### Table 3.6

**Disparities in Health Status of Karnataka during 2001**

(In Terms of Health Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Health Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Health Index</td>
<td>Bangalore Rural, Bangalore Urban, Belgaum, Dakshina Kannada, Shimoga, Udupi.</td>
<td>06</td>
<td>0.222</td>
</tr>
<tr>
<td>2</td>
<td>Medium Health Index</td>
<td>Bellary, Bidar, Bijapur, Chamarajanagar, Chikkmagalore, Chitradurga, Davangere, Gadag, Gulbarga, Hassan, Kodagu, Kolar, Koppal, Mandya, Mysore, Raichur, Tumkur, Uttara Kannada.</td>
<td>18</td>
<td>0.667</td>
</tr>
<tr>
<td>3</td>
<td>Low Health Index</td>
<td>Bagalkot, Dharwad, Haveri.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.

Health is the most important component of human development and human development measurement. The above table presents the status of Health Index (HI) in Karnataka. The average health index value during 2001 was 0.657 and the standard deviation was 0.033. The Cohort designed that the districts having the HI value of 0.690 and above were considered as high health index districts and the districts having the HI value of 0.624 and below were considered as low health index districts and the districts having the HI value between 0.690 and 0.624 were considered as medium health index districts. Accordingly, Bangalore Rural, Bangalore Urban, Belgaum, Dakshina Kannada, Shimoga and Udupi were considered as high health index districts. Bagalkote, Haveri and Dharwad were considered as low health index districts. The remaining districts were considered as medium health index districts. The following graph shows the health index of Karnataka during 2001.
Disparities in Health Status of Karnataka during 2001

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low health index districts.

\[ HI_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

\[ HI_{2001} = \text{Health Index during 2001.} \]
\[ \alpha: \text{the constant which represents the benchmark, in the present analysis high health index districts are treated as benchmark.} \]
\[ \beta_1: \text{Difference between benchmark and medium health districts.} \]
\[ \beta_2: \text{Difference between benchmark and low health index districts.} \]
\[ D_1: 1 \text{ (one) if medium health index districts: 0 (zero) otherwise.} \]
\[ D_2: 1 \text{ (one) if low health index districts: 0 (zero) otherwise.} \]

\[ HI_{2001} = 0.706 - 0.057D_1 - 0.095D_2 \quad \text{------(6)} \]

\[ t: \quad (105.791) \quad (-7.419) \quad (-8.248) \]

\[ \text{Sig:} \quad 0.000 \quad 0.000 \quad 0.000 \]
The average health index value of high health index districts was 0.706. The coefficient values of d1 and d2 were -0.057 and -0.095 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the health index in medium and low health index districts were significantly lower than the high health index districts during 2001. Hence, the health status of Bagalkot, Haveri and Dharwad was significantly found low.

**Disparities in Educational Development of Karnataka during 2001(Component of HDI):**

The following table presents the data about the value of education index for the period 2001. The table also presents the information about disparities in educational development of Karnataka.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Level of Education Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Education Index</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium Education Index</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chikkmagalore, Chitradurga, Davangere, Dharwad, Gadag Hassan, Haveri, Kolar, Mandya, Mysore, Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.704</td>
</tr>
<tr>
<td>3</td>
<td>Low Education Index</td>
<td>Chamarajanagar, Gulbarga, Koppal, Raichur.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.
Education is another important component of human development. The above table presents the status of Education Index (EI) in Karnataka. The average education index value during 2001 was 0.535 and the standard deviation was 0.057. The Cohort designed that the districts having the EI value of 0.592 and above were considered as high education index districts and the districts having the EI value of 0.479 and below were considered as low education index districts and the districts having the EI value between 0.592 and 0.479 were considered as medium education index districts. Accordingly, Bangalore Urban, Dakshina Kannada, Kodagu and Udupi were considered as high education index districts. Gulbarga, Koppal and Raichur were considered as low education index districts. The remaining districts were considered as medium education districts. The following graph shows the education index of Karnataka during 2001.

Figure: 3(g)

**Disparities in Educational Development of Karnataka during 2001**

2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities among districts in educational development.
EI_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e

Where,

- \text{EI}_{2001}: \text{Education Index during 2001.}
- \alpha: \text{the constant which represents the benchmark, in the present analysis high education status districts are treated as benchmark.}
- \beta_1: \text{Difference between benchmark and medium education districts.}
- \beta_2: \text{Difference between benchmark and low education districts.}
- D_1: 1 (one) if medium education districts: 0 (zero) otherwise.
- D_2: 1 (one) if low education districts: 0 (zero) otherwise.

\text{EI}_{2001} = 0.642 - 0.114D_1 - 0.194D_2 \quad ------(7)

t: (41.000) (-6.292) (-9.789)
Sig: 0.000 0.000 0.000

The average value of high education districts was 0.846. The coefficient values of d1 and d2 were -0.143 and -0.286 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the level of education was significantly low in the low and medium group of districts. Hence, the level of education was significantly low in Gulbarga, Koppal and Raichur districts during 2001.

**Disparities in the Level of Income in Karnataka during 2001(Component of HDI):**

Income is the representative of standard of living and one of the components of human development. The following table presents the data about the value of income index for the period 2001. The table also presents the information about the disparities in the level of income.
Table 3.8
Disparities in the Level of Income in Karnataka during 2001
(In Terms of Income Index Value)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Level of Income Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Income Index</td>
<td>Bangalore Rural, Bangalore Urban, Dakshina Kannada, Kodagu.</td>
<td>04</td>
<td>0.149</td>
</tr>
<tr>
<td>2</td>
<td>Medium Income Index</td>
<td>Bagalkote, Belgaum, Bellary, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Koppal, Mandya, Mysore, Shimoga, Tumkur, Udupi, Uttara Kannada.</td>
<td>20</td>
<td>0.740</td>
</tr>
<tr>
<td>3</td>
<td>Low Income Index</td>
<td>Bidar, Gulbarga, Raichur.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The above table presents the status of Income Index (II) in Karnataka. The average income index value during 2001 was 0.540 and the standard deviation was 0.049. The Cohort designed that the districts having the II value of 0.588 and above were considered as high income index districts and the districts having the II value of 0.491 and below were considered as low income index districts and the districts having the II value between 0.588 of 0.491 were considered as medium income index districts. Accordingly, Bangalore Urban, Bangaiore Rural, Dakshina Kannda and Kodagu were considered as high income districts. Bidar, Gulbarga and Raichur were considered as low human development districts. The remaining districts were considered as medium income districts. The following graph shows the income index of Karnataka during 2001.
Disparities in the Level of Income in Karnataka during 2001

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low-income districts.

\[ II_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( II_{2001} \): Income Index during 2001.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high income districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium income districts.
- \( \beta_2 \): Difference between benchmark and low income districts.
- \( D_1 \): 1 (one) if medium income district, 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low income district, 0 (zero) otherwise.

\[ II_{2001} = 0.632 - 0.101 D_1 - 0.156 D_2 \]

\( t \): (52.737) (-7.705) (-8.504)

\( \text{Sig} \): 0.000 0.000 0.000

2. Values are computed by researcher
The average income index value of high income districts was 0.632. The coefficient values of d1 and d2 were -0.101 and -0.156 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the income in medium and low income districts was significantly lower than the high income index during 2001. Hence, level of income was significantly low in Bidar, Gulbarga, and Raichur districts.

**Gender Development Index (GDI):**

Gender development index measures the human development by penalising the disparities in all the dimensions of human development between male and female. In this section, an attempt has been made to analyse the regional disparities in gender development, among the districts of Karnataka.

**Disparities in Gender Development Index of Karnataka during 1991:**

The following table presents the data about the value of gender development index for the period 1991 in Karnataka. The table also presents the information about disparities in the level of gender development among the districts.

**Table 3.9**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Level of GDI</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High GDI</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>2</td>
<td>Medium GDI</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Mandya, Mysore, Shimoga, Tumkur, Udupi, Uttara Kannada.</td>
<td>21</td>
<td>0.778</td>
</tr>
<tr>
<td>3</td>
<td>Low GDI</td>
<td>Gulbarga, Koppal, Raichur.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.
The above table presents the status of Gender Development Index (GDI) in Karnataka. The average gender development index value during 1991 was 0.535 and the standard deviation was 0.057. The Cohort designed that the districts having the GDI value of 0.592 and above were considered as high gender development districts and the districts having the GDI value of 0.479 and below were considered as low gender development districts and the districts having the GDI value between 0.592 of 0.479 were considered as medium gender development districts. Accordingly, Bangalore Urban, Dakshina Kannda, and Kodagu were considered as high gender development districts. Gulbarga, Koppal and Raichur were considered as low gender development districts. The remaining districts were considered as medium gender development districts. The following graph shows the gender development index of Karnataka during 1991.

Figure: 3(i)

Disparities in Gender Development Index of Karnataka during 1991


2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities in GDI among the districts.
$$GDI_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e$$

Where,

$GDI_{1991}$: Gender Development Index during 1991.

$\alpha$: the constant which represents the benchmark, in the present analysis high gender development districts were treated as benchmark.

$\beta_1$: Difference between benchmark and medium gender development districts.

$\beta_2$: Difference between benchmark and low gender development districts.

$D_1$: 1 (one) if medium gender development districts: 0 (zero) otherwise.

$D_2$: 1 (one) if low gender development districts: 0 (zero) otherwise.

$$GDI_{1991} = 0.618 - 0.105D_1 - 0.191D_2 \quad ------(9)$$

$$t: \quad (29.842) \quad (-4.762) \quad (-6.510)$$

$$\text{Sig:} \quad 0.000 \quad 0.000 \quad 0.000$$

The average index value of high gender development districts was 0.618. The coefficient values of $d_1$ and $d_2$ were -0.105 and -0.191 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the gender development in medium and low gender development districts were significantly lower than the high gender development districts during 1991. Hence, gender development was significantly low in Gulbarga, Koppal and Raichur districts.

**Disparities in Health Index of Karnataka during 1991 (Component of GDI):**

The following table presents the data about the value of health index for the period 1991. The table also presents the information about the level of health in terms of high, medium and low.
Table 3.10

Disparities in Health Index of Karnataka during 1991

(In Terms of Health Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Health index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Health index</td>
<td>Bangalore Rural, Bangalore Urban, Belgaum, Dakshina Kannada, Shimoga, Udupi.</td>
<td>06</td>
<td>0.222</td>
</tr>
<tr>
<td>2</td>
<td>Medium Health index</td>
<td>Bellary, Bidar, Chamarajanagar, Chickmagalur, Chitradurga, Gadag, Haveri, Kodagu, Kolar, Koppal, Mandya, Mysore, Raichur, Tumkur, Uttara Kannada.</td>
<td>16</td>
<td>0.593</td>
</tr>
<tr>
<td>3</td>
<td>Low Health index</td>
<td>Bagalkote, Bijapur, Dharwad, Gulbarga, Hassan.</td>
<td>05</td>
<td>0.185</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.

Health is the most important component of gender development and gender development measurement. The above table presents the status of Health Index (HI) in Karnataka. The average health index value during 1991 was 0.614 and the standard deviation was 0.038. The Cohort designed that the districts having the HI value of 0.652 and above were considered as high health index districts and the districts having the HI value of 0.576 and below were considered as low health index districts and the districts having the HI value between 0.652 of 0.576 were considered as medium health index districts. Accordingly, Bangalore Urban, Dakshina Kannda, Kodagu and Udupi were considered as high health index districts. Gulbarga, Koppal and Raichur were considered as low health index districts. The remaining districts were considered as medium health index districts. The following graph shows the health index of Karnataka during 1991.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low health index districts.

\[ HI_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( HI_{1991} \): Health Index during 1991.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high health districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium health districts.
- \( \beta_2 \): Difference between benchmark and low health districts.
- \( D_1 \): 1 (one) if medium health districts: 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low health districts: 0 (zero) otherwise.

\[ HI_{1991} = 0.671 - 0.064D_1 - 0.101D_2 \]

\( t \): (92.530) (-7.564) (-9.364)

\( \text{Sig} \): 0.000 0.000 0.000


2. Values are computed by researcher.

Figure: 3(J)

Disparities in Health Index of Karnataka during 1991
The signs of the coefficient explain the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average health index value of high health districts was 0.671. The coefficient values of d1 and d2 were -0.064 and -0.101 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the health index in medium and low health index districts were significantly lower than the high health index districts during 1991.

Disparities in Educational Development of Karnataka during 1991 (Component of GDI):

The following table presents the data about the value of Education Index for the period 1991. The table also presents the information about the level of education in terms of high, medium and low.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Education Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Education Index</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium Education Index</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Mandya, Mysore, Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.703</td>
</tr>
<tr>
<td>3</td>
<td>Low Education Index</td>
<td>Chamarajanagar, Gulbarga, Koppal, Raichur.</td>
<td>04</td>
<td>0.149</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.
Education is another important component of gender development. The above table presents the status of Education Index (EI) in Karnataka. The average education index value during 1991 was 0.576 and the standard deviation was 0.117. The Cohort designed that the districts having the EI value of 0.694 and above were considered as high education index districts and the districts having the EI value of 0.459 and below were considered as low education index districts and the districts having the EI value between 0.694 and 0.459 were considered as medium education districts. Accordingly, Bangalore Urban, Dakshina Kannda, Kodagu and Udupi were considered as high education index districts, Chamarajanagar, Gulbarga, Koppal and Raichur were considered as low education index districts. The remaining districts were considered as medium education index districts. The following graph shows the education index of Karnataka during 1991.

Figure: 3(k)

Disparities in Educational Development of Karnataka during 1991

![Education Index Chart]

2. Values are computed by researcher.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low education index districts.

\[ EI_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

\( EI_{1991} \): Education Index during 1991.

\( \alpha \): the constant which represents the benchmark, in the present analysis high education index districts are treated as benchmark.

\( \beta_1 \): Difference between benchmark and medium education index districts.

\( \beta_2 \): Difference between benchmark and low education index districts.

\( D_1 \): 1 (one) if medium education index district 0 (zero) otherwise.

\( D_2 \): 1 (one) if low education index district 0 (zero) otherwise.

\[ EI_{1991} = 0.774 - 0.199D_1 - 0.389D_2 \quad \text{------(11)} \]

\[ t: \quad (32.638) \quad (-7.632) \quad (-11.603) \]

\[ \text{Sig:} \quad 0.000 \quad 0.000 \quad 0.000 \]

The signs of the coefficient explain the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average education index value of high education index districts was 0.774. The coefficient values of \( d_1 \) and \( d_2 \) were -0.199 and -0.389 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the education index in medium and low education index districts were significantly lower than the high education index districts during 1991.

**Disparities in Income Index of Karnataka during 1991 (Component of GDI):**

The following table presents the data about the value of income index for the period 1991. The table also presents the information about the level of income in terms of high, medium and low.
Table 3.12
Disparities in Income Index of Karnataka during 1991
(In Terms of Income Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Income Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Income index</td>
<td>Chickmagalur, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium Income index</td>
<td>Bagalkote, Bangalore Rural, Bangalore Urban Belgaum, Bellary, Bidar, Bijapur, Chamarajanagar, Chitradurga, Davangere, Dharwad, Gadag, Gulbarga, Hassan, Kolar, Koppal, Mandya, Raichur, Shimoga, Tumkur, Uttara Kannada.</td>
<td>21</td>
<td>0.778</td>
</tr>
<tr>
<td>3</td>
<td>Low Income index</td>
<td>Haveri, Mysore.</td>
<td>2</td>
<td>0.074</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The above table presents the status of Income Index (II) in Karnataka. The average income index value during 1991 was 0.366 and the standard deviation was 0.047. The Cohort designed that the districts having the II value of 0.413 and above were considered as high income index districts and the districts having the II value of 0.318 and below were considered as low income index districts and the districts having the II value between 0.413 and 0.318 were considered as medium income index districts. Accordingly, Chamarajanagar, Dakshina Kannda, Kodagu and Udupi were considered as high income index districts. Haveri and Mysore were low-income index districts. The remaining districts were considered as medium income index districts. The following graph shows the income index districts of Karnataka during 1991.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low Income Index districts.

\[ \Pi_{1991} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

\[ \Pi_{1991} \]: Income Index during 1991.

\( \alpha \): the constant which represents the benchmark, in the present analysis high income districts are treated as benchmark.

\( \beta_1 \): Difference between benchmark and medium income districts.

\( \beta_2 \): Difference between benchmark and low income districts.

\( D_1 \): 1 (one) if medium income districts: 0 (zero) otherwise.

\( D_2 \): 1 (one) if low income districts: 0 (zero) otherwise.

\[ \Pi_{1991} = 0.461 - 0.108D_1 - 0.152D_2 \quad (12) \]

t: \( (40.489) \quad (-8.667) \quad (-7.691) \)

Sig: \( 0.000 \quad 0.000 \quad 0.000 \)
The signs of the coefficient explain the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average income index value of high income index districts was 0.461. The coefficient values of d1 and d2 were -0.108 and -0.152 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the income index in medium and low income districts were significantly lower than the high income index districts during 1991.

Disparities in Gender Development Index of Karnataka during 2001:

The following table presents the data about the value of Gender Development Index for the period 2001. The table also presents the information about the level of gender development in terms of high, medium and low

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of GDI</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High GDI</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Udupi.</td>
<td>04</td>
<td>0.148</td>
</tr>
<tr>
<td>2</td>
<td>Medium GDI</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary, Bidar, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Mandya, Mysore Shimoga, Tumkur, Uttara Kannada.</td>
<td>20</td>
<td>0.741</td>
</tr>
<tr>
<td>3</td>
<td>Low GDI</td>
<td>Gulbarga, Koppal, Raichur.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.
The above table presents the status of Gender Development Index (GDI) in Karnataka. The average gender development index value during 2001 was 0.620 and the standard deviation was 0.050. The Cohort designed that the districts having the GDI value of 0.669 and above were considered as high gender development districts and the districts having the GDI value of 0.570 and below were considered as low gender development districts and the districts having the GDI value between 0.669 and 0.570 were considered as medium gender development districts. Accordingly, Bangalore Urban, Dakshina Kannda, Kodagu and Udupi were considered as high gender development index districts. Gulbarga, Koppal and Raichur were considered as low gender development index districts. The remaining districts were considered as medium gender development districts. The following graph shows the gender development index of Karnataka during 2001.

Figure: 3(m)

Disparities in Gender Development Index of Karnataka during 2001

2. Values are computed by researcher.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low gender development index districts.

\[ \text{GDI}_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( \text{GDI}_{2001} \): Gender Development Index during 2001.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high gender development index districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium gender development index districts.
- \( \beta_2 \): Difference between benchmark and low gender development index districts.
- \( D_1 \): 1 (one) if medium gender development index districts; 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low gender development index districts; 0 (zero) otherwise.

\[ \text{GDI}_{2001} = 0.710 - 0.097 D_1 - 0.165 D_2 \quad (13) \]

\[ t: \quad (58.863) \quad (-7.344) \quad (-8.963) \]

\[ \text{Sig:} \quad 0.000 \quad 0.000 \quad 0.000 \]

The signs of the coefficient explain the positive or negative difference with the benchmark. The \( t \) value reveals acceptance or rejection of constant and coefficients. The average gender development index value of high gender development districts was 0.710. The coefficient values of \( d_1 \) and \( d_2 \) were -0.097 and -0.165 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the gender developments in medium and low gender development districts were significantly lower than the high gender development index during 2001.

**Disparities in Health Index of Karnataka during 2001 (Component of GDI):**

The following table presents the data about the value of health index for the period 2001. The table also presents the information about the level of health in terms of high, medium and low.
Table 3.14

Disparities in Health Index of Karnataka during 2001

(In Terms of Health Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Health Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Health Index</td>
<td>Bangalore Rural, Bangalore Urban, Belgaum, Dakshina Kannada, Shimoga, Udupi.</td>
<td>06</td>
<td>0.222</td>
</tr>
<tr>
<td>2</td>
<td>Medium Health Index</td>
<td>Bellary, Bidar, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Davangere, Gadag, Gulbarga, Hassan, Kodagu, Kolar, Koppal, Mandya, Mysore, Raichur, Tumkur, Uttara Kannada.</td>
<td>18</td>
<td>0.667</td>
</tr>
<tr>
<td>3</td>
<td>Low Health Index</td>
<td>Bagalkote, Dharwad, Haveri.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

Health is the most important component of gender development and gender development measurement. The above table presents the status of Health Index (HI) in Karnataka. The average health index value during 2001 was 0.657 and the standard deviation was 0.033. The Cohort designed that the districts having the HI value of 0.690 and above were considered as high health index districts and the districts having the HI value of 0.623 and below were considered as low health index districts and the districts having the HI value between 0.690 and 0.623 were considered as medium health index districts. Accordingly, Bangalore Urban, Bangalore rural, Belgaum, Dakshina Kannada, Shimoga and Udupi were considered as high health index districts. Bagalkote, Dharwad, and Haveri were considered as low health index districts. The remaining districts were considered as medium health index districts. The following graph shows the health index of Karnataka during 2001.
The following dummy variable regression model has been used to measure the significant disparities among high, medium and low health index districts.

\[ HI_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( HI_{2001} \): Health Index during 2001.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high health districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium health districts.
- \( \beta_2 \): Difference between benchmark and low health districts.
- \( D_1 \): 1 (one) if medium health districts: 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low health districts: 0 (zero) otherwise.

\[ HI_{2001} = 0.705 - 0.057 D_1 - 0.095 D_2 \quad \text{------(14)} \]

t: 104.380 (-7.287) (-8.149)

Sig: 0.000 0.000 0.000
The sign of the coefficient explains the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average health index value of high health index districts was 0.642. The coefficient values of d1 and d2 were -0.114 and -0.194 respectively. The constant and the coefficient values were accepted at one per cent level. Therefore, the health index in medium and low health index districts were significantly lower than the high health index districts during 2001.

**Disparities in Education Index of Karnataka during 2001 (Component of GDI):**

The following table presents the data about the value of education index for the period 2001. The table also presents the information about the level of education in terms of high, medium and low.

Table 3.15

**Disparities in Educational development of Karnataka during 2001**

(In Terms of Education Index Value)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Education Index</th>
<th>Districts</th>
<th>No. of Districts</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Education Index</td>
<td>Bangalore Urban, Dakshina Kannada, Kodagu, Koppal, Udupi.</td>
<td>05</td>
<td>0.185</td>
</tr>
<tr>
<td>2</td>
<td>Medium Education Index</td>
<td>Bagalkote, Bangalore Rural, Belgaum, Bellary Bidar Bijapur, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Hassan, Haveri Kolar, Mandya, Mysore Shimoga, Tumkur, Uttara Kannada.</td>
<td>19</td>
<td>0.704</td>
</tr>
<tr>
<td>3</td>
<td>Low Education Index</td>
<td>Chamarajanagar, Gulbarga, Raichur.</td>
<td>03</td>
<td>0.111</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.000</td>
</tr>
</tbody>
</table>


2. Values are computed by researcher.
Education is another important component of gender development. The above table presents the status of Education Index (EI) in Karnataka. The average education index value during 2001 was 0.694 and the standard deviation was 0.092. The Cohort designed that the districts having the EI value of 0.786 and above were considered as high education index districts and the districts having the EI value of 0.602 and below were considered as low education index districts and the districts having the EI value between 0.786 and 0.602 were considered as medium education index districts. Accordingly, Bangalore Urban, Dakshina Kannda, Kodagu and Udupi were considered as high education index districts. Chamarajanagar, Gulbarga, Koppal and Raichur were considered as low education index districts. The remaining districts were considered as medium education index districts. The following graph shows the education index of Karnataka during 2001.

Figure: 3(o)

Disparities in Educational Development of Karnataka during 2001


2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low education index districts.
\[ EI_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( EI_{2001} \): Education Index during 2001.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high education districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium education districts.
- \( \beta_2 \): Difference between benchmark and low education districts.
- \( D_1 \): 1 (one) if medium education districts; 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low education districts; 0 (zero) otherwise.

\[
EI_{2001} = 0.842 - 0.148 D_1 - 0.297 D_2 \quad (15)
\]

- \( t \): (39.232) (-6.276) (-9.799)
- \( \text{Sig.} \): 0.000 0.000 0.000

The signs of the coefficient explain the positive or negative difference with the benchmark. The \( t \) value reveals acceptance or rejection of constant and coefficients. The average education index value of high education districts and it was 0.842. The coefficient values of d1 and d2 were -0.148 and -0.297 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the education in medium and low education index districts were significantly lower than the high education index districts during 2001.

**Disparities in Income Level of Karnataka during 2001 (Component of GDI):**

Income is the representative of standard of living and one of the components of gender development. The following table presents the data about the value of income index for the period 2001. The table also presents the information about the level of income in terms of high, medium and low.
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Level of Income Index</th>
<th>Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Income Index</td>
<td>Bangalore Rural, Bangalore Urban, Kodagu, Udupi.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of Districts: 4</td>
</tr>
<tr>
<td>2</td>
<td>Medium Income Index</td>
<td>Bagalkote, Belgaum, Bellary, Bijapur, Chamarajanagar, Chickmagalur, Chitradurga, Dakshina Kannada, Davangere, Dharwad, Gadag, Hassan, Haveri, Kolar, Koppal, Mandya, Mysore, Shimoga, Tumkur, Uttara Kannada.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of Districts: 20</td>
</tr>
<tr>
<td>3</td>
<td>Low Income Index</td>
<td>Bidar, Gulbarga, Raichur.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of Districts: 3</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td>No. of Districts: 27</td>
</tr>
</tbody>
</table>

2. Values are computed by researcher.

The above table presents the status of Income Index (II) in Karnataka. The average Income index value during 2001 was 0.506 and the standard deviation was 0.052. The Cohort designed that the districts having the II value of 0.557 and above were considered as high Income index districts and the districts having the II value of 0.454 and below were considered as low Income index districts and the districts having the II value between 0.557 and 0.454 were considered as medium Income index districts. Accordingly, Bangalore Rural, Bangalore Urban, Dakshina Kannda, Kodagu and Udupi were considered as high income index districts. Bidar, Gulbarga, and Raichur were considered as low education districts. The remaining districts were considered as medium Income index districts. The following graph shows the income index of Karnataka during 2001.
Disparities in Income Level of Karnataka during 2001


2. Values are computed by researcher.

The following dummy variable regression model has been used to measure the significant disparities among high, medium and low income districts.

\[ II_{2001} = \alpha + \beta_1 D_1 + \beta_2 D_2 + e \]

Where,

- \( II_{2001} \): Income Index during 2001.
- \( \alpha \): the constant which represents the benchmark, in the present analysis high income districts are treated as benchmark.
- \( \beta_1 \): Difference between benchmark and medium income districts.
- \( B_2 \): Difference between benchmark and low income districts.
- \( D_1 \): 1 (one) if medium income districts: 0 (zero) otherwise.
- \( D_2 \): 1 (one) if low income districts: 0 (zero) otherwise.

\[ II_{2001} = 0.592 - 0.097D_1 - 0.165D_2 \quad \text{------(16)} \]

\( t: \)\ (58.775)  (-8.500)  (-10.014)

\( \text{Sig:} \)\ 0.000  0.000  0.000
The signs of the coefficient explain the positive or negative difference with the benchmark. The t value reveals acceptance or rejection of constant and coefficients. The average Income index value of high income index districts was 0.592. The coefficient values of d1 and d2 were -0.097 and -0.165 respectively. The constant and the coefficient values are accepted at one per cent level. Therefore, the income index in medium and low income index districts were significantly lower than the high income index during 2001.

**Conclusion:**

Human development with its three dimensions have been analysed in this chapter. It has been found from the study that the education index, health index, income index and human development index have found high in Bangalore Urban, Dakshina Kannda, Kodagu, Udupi and Shimoga districts. The value of human development indices were found significantly very low in Gulbarga, Raichur, Koppal and Chamarajanagar districts. Therefore, there has been positive correlation among economic development, development of education and health and human development. Accordingly, economic development is prerequisite for human development. Area specific programmes could have solved the regional disparities in human development, rather than simply introducing general programmes for whole of Karnataka.