CHAPTER - IV

INTER-RELATIONSHIPS OF URBAN GROWTH WITH INDICATORS OF ECONOMIC AND INFRASSTRUCTURAL DEVELOPMENT

4.1 INTRODUCTION

4.1.1 In the preceding chapters it has been discussed that the state of Andhra Pradesh is having a low level of economic development but its economy has performed impressively during seventies and experienced a very high rate of urban growth during seventies, a rate higher than the all-India figure. The state is marked with sharp inter-regional and inter-district variations in levels of development. The relatively backward as well as some of the developed districts have experienced a fast rate of urban growth. An attempt has been made, in the present chapter, to investigate the extent to which the socio-economic and infrastructural facilities of urban centres are interrelated with differential urban growth during seventies in the state. An attempt has also been made in this chapter to assess whether the level of industrial base and infrastructural and civic facilities vary with the size of the urban centres.

4.2 SELECTED INDICATORS

4.2.1 Keeping in view the availability of data, 28 indicators have been constructed for 1971 and 1981. Information could be collected for 196 urban centres (out of 207) for 1971 and for 195
J03 (out of 243) in 1981. The indicators are grouped into the following five categories:

(i) Industrial development;
(ii) Civic finance;
(iii) Infrastructural development including the indicators of accessibility to administrative and transport network;
(iv) Civic amenities; and
(v) Others.

Appropriate weightages have been assigned while constructing some of the indicators which are explained along with each indicator within parenthesis. The indicators under different heads are as follows:

(1) Industrial Development (1971)

1. Percentage of male workers engaged as Cultivators.
2. Percentage of male workers engaged as Agricultural labourers.
4. Percentage of male workers in Non-household manufacturing industries.
5. Percentage of male workers in Construction activities.
7. Percentage of male workers in Other Services.
(ii) Civic Finance (1969-70)

8. Per capita receipts through taxes (Rs.).
9. Per capita total receipts (Rs.).
10. Per capita expenditure on general administration (Rs.).
11. Per capita total expenditure (Rs.).

(iii) Infrastructural Development (1971)

A. Level of Facilities

12. Average road length per thousand population (kms.).
13. Average number of electrical connections for domestic use per hundred population.
14. Average number of electrical connections for industrial and commercial use per hundred population.
15. Average number of financial institutions per thousand population. (The index of financial institutions has been constructed through an aggregation of Banks, Agricultural credit societies and Non-agricultural credit societies by assigning appropriate weightages. The weightage is two for Banks and unity for Agricultural and Non-agricultural credit societies).

B. Accessibility to Administrative and Transport Network

16. Distance from the nearest class I city (kms.).
17. Distance from the State headquarters (kms.).
18. Distance from the District headquarters (kms.).
19. Distance from the Sub-divisional/Taluk headquarters (kms.).

20. Distance from the nearest Railway station (kms.).

(IV) Civic Amenities (1971)

21. Average number of sanitation units per hundred population. (The index of sanitation facilities is derived by aggregating the number of water borne, dry and other latrines by assigning them the weights of 3, 2 and 2 respectively).

22. Per capita daily availability of protected water supply (litres).

23. Average number of medical centres per thousand population. (The index of medical facilities is derived through summing up of the number of Hospitals, Primary Health Centres, Dispensaries and Veterinary Hospitals).

24. Average number of educational institutions per thousand population. (This index is constructed by aggregating the number of Primary Schools (1), Junior Secondary/Middle Schools (2), Higher Secondary Schools (3), Polytechnics (4), Arts/Science/Commerce Colleges (5), and Medical/Engineering/Agricultural Colleges (6) with weightages shown against each within the parentheses).

25. Average number of recreational centres per thousand population. (The index of this indicator is arrived at by aggregating the number of Public Libraries, Drama
(V) Others (1971)

26. Percentage of male literates in total male population.
27. Number of (census) households per hundred houses.

4.2.3 For the year 1981, the indicators are accidentally the same in number but there are differences in the indicators. The indicators of population size, civic expenditure on public health and male workforce participation rate are included in 1981. Due to the non-availability of break-up of workforce data for secondary and tertiary sectors in 1981, the concerned indicator (no.4) is a combined one. The same weightages assigned in constructing some of the indicators for 1971 are applied for 1981 also. The list of indicators for 1981 is as follows:

(i) Industrial Development (1981)

1. Percentage of male workers engaged in Cultivation.
2. Percentage of male workers engaged as Agricultural labourers.
4. Percentage of male Other Workers (This includes all those engaged in all other activities except those mentioned in the above three indicators).
5. Male participation rate i.e., per cent of male workers to total male population.
(ii) Civic Finance (1979-80)

6. Per capita receipts through taxes (Rs.).
7. Per capita total receipts (Rs.).
8. Per capita expenditure on general administration (Rs.).
9. Per capita expenditure on public health (Rs.).
10. Per capita total expenditure (Rs.).

(iii) Infrastructural Development (1981)

A. Level of Facilities

11. Average road length per thousand population (kms.).
12. Average number of electrical connections for domestic use per hundred population.
13. Average number of electrical connections for industrial and commercial use per hundred population.
14. Average number of financing institutions per thousand population.

B. Accessibility to Administrative and Transport Network (Kms)

15. Distance from the nearest class I city.
16. Distance from the State headquarters.
17. Distance from the District headquarters.
18. Distance from the Sub-divisional/taluk headquarters.
19. Distance from the nearest Railway station.
(iv) Civic Amenities (1981)

20. Average number of sanitation units per thousand population.

21. Per capita daily availability of protected water supply (litres).

22. Average number of medical centres per thousand population.

23. Average number of educational institutions per thousand population.

24. Average number of recreational centres per thousand population.

(v) Others (1981)

25. Percentage of male literates to total male population.

26. Number of (census) households per hundred houses.


4.3 ANALYSIS OF CORRELATIONS

4.3.1 Along with an analysis of the inter-relationships of different indicators with urban growth and population size, an attempt has also been made to interpret the mean values of some of the indicators. The correlation analysis shows that the urban growth rate at the aggregate level bears a negative relationship with the percentage of workers engaged in agriculture (i.e. cultivators and agricultural labourers) and in household manufacturing industry (Table 4.1). The population size is also nega-
TABLE 4.1

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<tr>
<td>1</td>
<td>Percentage of male workers engaged as cultivators</td>
<td>-0.18</td>
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<tr>
<td>2</td>
<td>Percentage of male workers engaged as agricultural labourers</td>
<td>-0.32</td>
<td>-0.25</td>
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<td>3</td>
<td>Percentage of male workers in household industry</td>
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<td>4</td>
<td>Percentage of male other workers</td>
<td>--</td>
<td>0.34</td>
<td>0.32</td>
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<tr>
<td>5</td>
<td>Percentage of male workers in non-household industry</td>
<td>-0.07</td>
<td>--</td>
<td>--</td>
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<tr>
<td>6</td>
<td>Percentage of male workers in construction</td>
<td>0.14</td>
<td>--</td>
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<tr>
<td>7</td>
<td>Percentage of male workers in trade &amp; commerce</td>
<td>-0.05</td>
<td>--</td>
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<tr>
<td>8</td>
<td>Percentage of male workers in other services</td>
<td>0.09</td>
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</tr>
<tr>
<td>9</td>
<td>Male workforce participation rate</td>
<td>--</td>
<td>-0.32</td>
<td>-0.13</td>
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<tr>
<td>10</td>
<td>Per capita receipts through taxes</td>
<td>0.09</td>
<td>0.04</td>
<td>0.39</td>
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<td>11</td>
<td>Per capita total receipts</td>
<td>0.02</td>
<td>-0.04</td>
<td>0.35</td>
</tr>
<tr>
<td>12</td>
<td>Per capita expenditure on general administration</td>
<td>-0.07</td>
<td>-0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>13</td>
<td>Per capita expenditure on public health</td>
<td>--</td>
<td>-0.10</td>
<td>0.54</td>
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<tr>
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<th>Per capita total expenditure</th>
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<th>4</th>
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<td>Road length per thousand population</td>
<td>0.00</td>
<td>-0.03</td>
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<td>15</td>
<td>Electric connections (domestic) per hundred population</td>
<td>-0.06</td>
<td>-0.06</td>
<td>0.18</td>
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<tr>
<td>16</td>
<td>Electric connections (industrial &amp; commercial) per hundred population</td>
<td>-0.00</td>
<td>-0.01</td>
<td>0.11</td>
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<td>17</td>
<td>Financial institutions per thousand population</td>
<td>-0.08</td>
<td>-0.04</td>
<td>-0.07</td>
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<tr>
<td>18</td>
<td>Distance from the nearest class I city</td>
<td>0.14</td>
<td>0.33</td>
<td>0.13</td>
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<td>19</td>
<td>Distance from the state headquarters</td>
<td>-0.27</td>
<td>-0.27</td>
<td>-0.13</td>
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<td>Distance from district headquarter</td>
<td>-0.06</td>
<td>0.00</td>
<td>-0.21</td>
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<td>21</td>
<td>Distance from sub-divisional/taluk headquarter</td>
<td>-0.06</td>
<td>0.05</td>
<td>-0.08</td>
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<td>22</td>
<td>Distance from the railway station</td>
<td>0.18</td>
<td>0.10</td>
<td>-0.13</td>
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<tr>
<td>23</td>
<td>Sanitation units per hundred population</td>
<td>0.08</td>
<td>0.18</td>
<td>0.13</td>
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<tr>
<td>24</td>
<td>Per capita water supply daily</td>
<td>0.01</td>
<td>0.11</td>
<td>0.05</td>
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<tr>
<td>25</td>
<td>Medical centres per thousand population</td>
<td>0.04</td>
<td>-0.06</td>
<td>-0.07</td>
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</tr>
<tr>
<td>26</td>
<td>Educational institutions per thousand population</td>
<td>-0.05</td>
<td>-0.24</td>
<td>-0.09</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Recreational centres per thousand population</td>
<td>-0.16</td>
<td>-0.17</td>
<td>-0.18</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Male literacy rate</td>
<td>0.37</td>
<td>0.04</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Households per hundred houses</td>
<td>-0.04</td>
<td>-0.07</td>
<td>0.01</td>
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</tr>
</tbody>
</table>
tively correlated with the above three indicators which indicates that the above mentioned categories of workforce are predominantly characteristic of the smaller urban centres. The correlation of urban growth with non-household manufacturing and trade and commerce is negative and insignificant but positive with workers engaged in construction activities and other services. So the urban growth seems to have been partly influenced by construction activities and other services during seventies while non-household manufacturing and trade and commerce haven't played a positive role in it. Thus urban growth in Andhra Pradesh as a whole seems to have not been supported by an expansion of industrial activities during seventies when the analysis is attempted at the level of individual urban centres.

4.3.2 However, the size of population and urban growth rate are positively and significantly correlated with other workers in 1981 which includes workforce in secondary and tertiary sectors. Hence it can be said that the economic activities in secondary and tertiary sectors have been positively influenced by urban growth during seventies in the state. The positive correlation of the population size with workers in secondary and tertiary sectors indicates the tendency of larger urban centres having a larger proportion of workers in these sectors. This situation calls for strengthening the manufacturing base of urban centres in the lower size classes. Then only, the small and medium towns will be able to absorb the inmigrants from rural areas and thereby lessen the pressure on larger cities.
4.3.3. The male workforce participation rate is negatively correlated with the population size as well as urban growth. This suggests that the urban growth has not been accompanied by an expansion in employment opportunities and as the size of an urban centre grows the rate of unemployment is also likely to increase. This is an unhealthy trend which has to be rectified by increasing the employment potential of the urban centres.

4.3.4. In the case of civic finance, the aggregate per capita values have increased for all the indicators from 1971 to 1981. However, urban growth and the indicators of civic finance except that of per capita receipts through taxes, are negatively correlated during both the time periods. The results thus support the hypothesis that a high urban growth leads to a decline in the financial condition of local bodies. The sanitary conditions seem to be the worst affected by population growth in an urban centre more than any other aspect of civic services. The population size and the indicators of the civic finance are positively correlated which shows that the larger the size of the urban centre higher is its per capita civic income/expenditure. This situation coupled with negative correlation of urban growth with these indicators as explained above adversely affects the quality of civic services in urban centres particularly in the smaller size categories.

4.3.5. The average values for infrastructural facilities suggest that the availability of road length has declined over time probably due to higher population pressure while the other facilities have improved slightly. The road length per thousand popu-
lation has declined from 0.95 kms in 1971 to 0.82 kms in 1981. The correlation analysis shows a negative relationship of urban growth with the indicators of road length, electric connections for domestic, industrial and commercial uses and also with financial institutions during both the points of time. The foregoing analysis thus confirms the increase of pressure on these facilities with the growth of urban population. The population size is positively correlated only with the indicators of power while showing negative correlation with road length and financial institutions. In the vital facility of power, the relatively lower size urban centres seem to be at a disadvantage which adversely affects their economic activities. From the foregoing analysis it becomes clear that the rapidly growing urban centres, particularly small and medium towns, are at a disadvantage in terms of civic amenities.

4.3.6. The average distance values of the urban centres from the nearest class I city, the district headquarter, sub-divisional/taluk headquarter and nearest railway station have declined from 1971 to 1981. This indicates an increase in the proximity of urban centres to administrative and transport facilities. The correlation coefficients of urban growth are positive with the proximity of urban centres to the nearest class I city and railway station and negative with the state headquarter. The distances of urban centres from the district headquarter and sub-divisional/taluk headquarter are showing insignificant correlations with urban growth.
4.3.3.7. The condition of civic amenities has improved in aggregate except in the case of recreational facilities from 1971 to 1981. However, a significant improvement among these has been registered only by per capita water supply followed, to some extent, by the number of sanitation units. The improvement in the vital services like medical and educational facilities is only marginal. The results thus bring out only water supply as the most important civic amenity in the urban centres of Andhra Pradesh.

The relationships are negative between urban growth and the availability of educational and recreational facilities and positive with sanitation units and water supply. The availability of medical facilities which had insignificant but positive relationship with urban growth in 1971 is showing a negative relationship in 1981. Regarding the population size and civic amenities, the correlation coefficients work out to be negative for medical, educational and recreational facilities. The above analysis indicates that a large number of urban centres have serious deficiencies in maintaining the important civic amenities. Thus while high urban growth is the cause, low level of facilities is the effect in the state. Unless serious efforts are made to remove these deficiencies through higher investments and better management, it would be difficult to maintain a healthy urban growth. The foregoing analysis thus indicates that urban growth is an exogenous factor which is exerting serious pressure on the civic infrastructure in the state. Hence the hypothesis that the development of civic infrastructural facili-
ties will positively influence urban growth in the state has not been established.

4.4. CONCLUSION

4.4.1. The urban growth in the state as a whole seems to have not been influenced by an expansion industrial activities while construction and other services have contributed to it. The smaller urban centres have a larger proportion of workers in the primary sector. The rate of unemployment is likely to increase with the size of urban centres.

4.4.2. The high urban growth is adversely affecting the financial condition of urban centres despite an increase in the average per capita values of civic finance. This is indicated by the negative correlation of urban growth with the indicators of civic finance. Sanitary and public health facilities deteriorate seriously as high urban growth takes place. While urban growth is exerting pressure on civic services, small and medium towns seem to be unable to maintain adequate level of civic amenities in the state.

4.4.3. The proximity of the average urban centres with administrative and transport facilities has increased over the years. However, this did not constrain the urban growth during seventies. A significant improvement, in terms of average values, has taken place only in water supply followed by sanitation units. A large number of urban centres have serious deficiencies in maintaining important civic amenities like medical, educational and recreational facilities. The analysis thus brings out that while
urban growth is the cause, low level of facilities is the effect in the state of Andhra Pradesh.