REGIONAL REFLECTIONS OF URBANISATION IN ANDHRA PRADESH

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Abstract

Urbanisation is a historical transformation of rural society to urban society. The study of urbanization involves study of several demographic characteristics like growth rate, density, sex ratio, literacy rate, migration etc. Urbanisation in developed countries is unplanned due to sudden bloom in industrialisation. Industrialisation leads to formation of urban agglomeration. Formation of urban agglomerations increase the well-being by increasing variety and quality of consumption. Location advantage of industries as they experience technical advancement. This paper attempts to study the patterns of urbanisation at regional and district level in Andhra Pradesh from 1961 to 2011. The demographic changes that took place due to emergence of cities and urban outgrowths and reasons for the emergence are studied.

Keywords: urbanisation, urban agglomeration, outgrowth, urban growth factors

Introduction

Urbanization is a progressive concentration of population in urban unit (K Davis, 1965). 20th century witnessed an increase in urban population all over the world. A merely 13 percent of global population lived in urban areas in 1900, which increased to 29 percent in 1950 and about 50 percent by close of 20th century and it is expected to increase by 72 percent by 2050, from 3.6 billion in 2011 to 6.3 billion in 2050 (UNPD, 2005&2011). Both industrialization and urbanization are inseparable, just as agriculture fosters villages, industry encourages growth of towns (Maheshwari, 2006). It involves changing economic structures, greater dependence on wage, labour for sustainable livelihood (Gould, 2008). India has 37.71 crore people living in urban areas. Urban agglomerations increased from 384 in 2001 census to 475 in 2011 census. Industrialization, economic reforms gave a boost to urbanization. (PRB, 2014). In the present globalised world the growth of towns is seen as a major engine of development into future (Gould, 2008). From the demographic point of view, the level of urbanization is measured in terms of percentage of population living in urban areas(Kingsley Davis, 1962). There exists a positive relationship between per capita income and urbanization rates. The more urbanization, higher the income of people of that urban region. The factors contributed to urbanization such as health facilities, education, employment, infrastructure, socio-economic levels (Masron et al., 2012).

Bhagat (2011), in his study, the trends of urbanization in relation with economy of India, found that migration is the major cause for Urbanization. Kundu, (2011) analysed the demographic trends and processes of urbanization in India, compared Indian scenario with Asian and world context and examines the influence of occupational structure, poverty on Urbanisation. Tripathi, (2019) through his study 'the impact of economic reforms on Urbanization in India' observes that there is an increase in average annual economic growth, urban population, number of towns and cities in India after Liberalisation-Privatisation- Globalisation. He also concludes that growth of secondary towns does more to reduce rural poverty than big city growth. Datta & Road (2006), who worked on Urbanization in India with emphasis on tempo of urbanization and urban morphology, noticed an increase in urban agglomerations over a period of time. Neelmani & Sudeshna, (2014) conducted descriptive research on 'Urbanization in India: An Impact Assessment'. The authors argue that urbanization is not merely due to rural-urban migration but due to the natural growth of population. Kumar & Rai, (2014) studies 'Urbanization process, trend, pattern and its consequences in India' calculated degree of urbanization statistically and represented it in graphical manner. Turok, (2012) worked on Urbanization and development in South Africa: Economic imperatives, spatial distortions and strategic responses. He explained about history of South Africa- how it transformed to an urbanized state and social factors such as apartheid, white urbanization and black urbanization.

Ashok, L. (2014) calculated the average decadal growth rate of urban population of India and Andhra Pradesh and concludes that Andhra Pradesh (erstwhile) growth rate is little higher than that of India and also observed that there is an overall increase in Scheduled caste urban population in Rayalaseema, Coastal Andhra in 2001 and 2011. Sujathamma, (2018) concludes that last two decades i.e., 1991-2001 and 2001-2011 have significant increase in urban population in Rayalaseema.
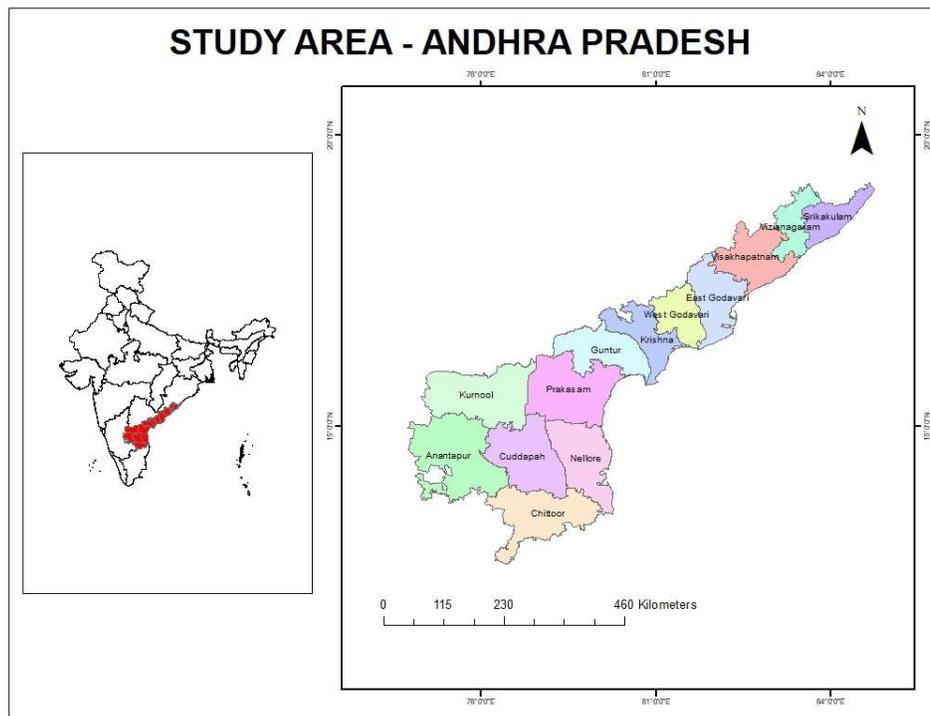
Study Area

Fig.1: Map of the Study Area- Andhra Pradesh

Andhra Pradesh is situated in Tropical region between the latitudes of 12°.41' and 19°.07'N; longitude of 77° and 84°.40'E. The state is bordered by the states of Telangana, Chhattisgarh, Orissa in North, Tamil Nadu in South, Karnataka in West and Bay of Bengal in the East. Several 'anicuts' are constructed across the two major rivers, the Godavari and the Krishna which increased the net irrigated aera and making coastal districts as 'granaries' of both state and the country. The climate of Andhra Pradesh in general is tropical-monsoonal and the classifications include tropical savannah, hot semi-arid, humid sub-tropical. The average annual temperature ranges from 28°-30°C. Summer temperatures range from 25°-40°C with a day high of 45°C. The average annual rainfall in coastal Andhra is 1094kms and for Rayalaseema is 680mm; fluctuations are considerable. Rayalaseema witness failure of monsoon resulting in frequent famines. Agriculture and livelihood of state mostly depends on monsoons rainfall for its economy to flourish. The state's soils consist of less fertile coastal sands to highly fertile alluvium from Krishna, Godavari and in tributaries.

Objectives, Methods and Materials

The main aim and objective of the study is to analyse the urban population growth trends and patterns in Andhra Pradesh during the period of 1961-2011. The study also evaluates various factors that contributed for urban growth in the study area. The study is based on secondary data collected from various sources and employs multiple methods/techniques of

the GIS and Statistical applications. The entire work has been conducted as shown in the following flow diagram (fig. No.2).
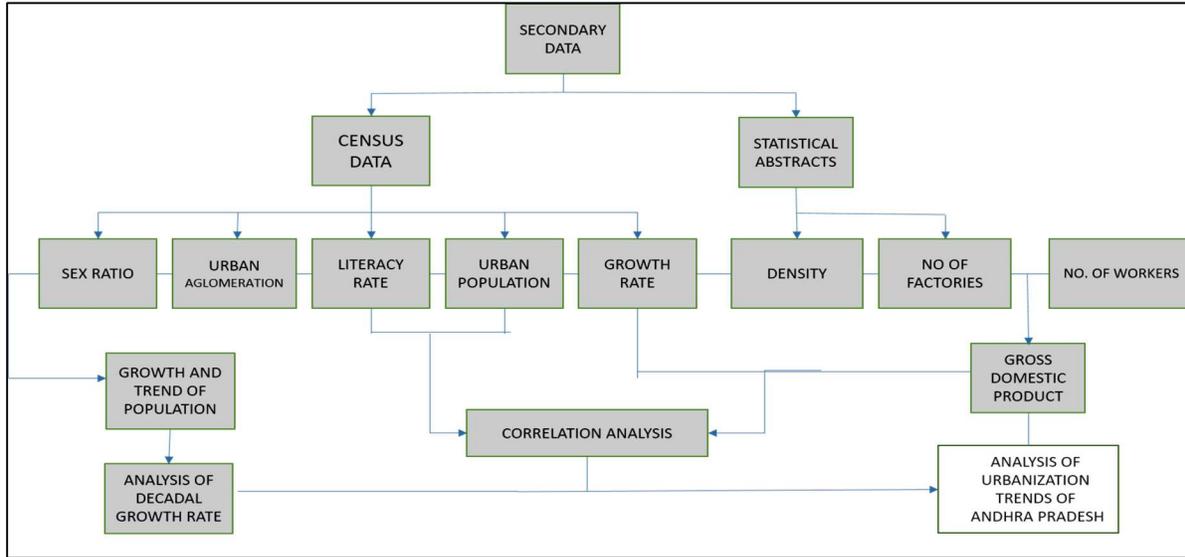

Fig. No. 2: Methodology Map

Population data gathered from various census reports. Data related to various demographic factors was taken from various statistical abstracts of Andhra Pradesh. District-level data is obtained from District Census handbooks by Census of India. Economy related data is taken from Directorate of Economics and Statistics, Andhra Pradesh. Various books on urban geography, urban population prospects, studies of National Family and Household survey, journals and government reports were also considered.

Trends and Patterns of Urban Growth in AP

Urbanisation is an important aspect for social and economic development. It involves rapid growth of urban population which may be due to natural increase or migration due to pull factors such as better employment opportunities, educational opportunities, more connectivity, high standard of living etc. urbanization is worldwide phenomena. Also, studies at regional level gained much importance as regional, local level consequences lead global sequential increase. Andhra Pradesh also experienced significant increase in urban population similar to whole India. In order to accomplish the first objective of the study, various demographic factors of urban population along with comparisons among the regions of Andhra Pradesh; Coastal Andhra (9 districts) and Rayalaseema (4 districts) were analysed in terms of urban trends and patterns.

Table. 1: Trends in Urbanisation in Andhra Pradesh 1961-2011

Census year	Total number of UAs/towns	Total Urban Population	Percent Urban Population
1961	86	32,84,001	15.72
1971	95	45,36,676	17.79
1981	101	65,10,188	21.42
1991	105	87,19,420	24.07
2001	116	1,03,65,330	23.36
2011	195	1,46,10,410	28.77

Source: Compiled from various census reports 1961-2011

The above table.1 gives the details of total urban population, number of towns and urban agglomerations and percentage of urban population to total population from the years of 1961 to 2011 of whole state. It is observed that the percentage of urban population to total population is increasing for each decade. After the declassification of towns by census organisation in 1961, the urban population percentage recorded in Andhra Pradesh is 15.72. In the year of 1981, the percentage of urban population was 21.42 against 17.79 in 1971. This is due to rapid migration to urban areas. The urban centres of Vishakhapatnam, Rajahmundry, Vijayawada experienced in-migration. In 2011, the percent of urban population to total population was 28.77 against 23.36 in 2001. This steep increase is due to the expansion of urban agglomerations and outgrowth especially in the districts of Vishakhapatnam, East Godavari and Krishna. It is also identified that there was gradual increase in the number of towns and urban agglomerations from 1961 to 2001 and a sudden increase in towns/UAs in the year 2011 as the number rose from 116 to 195 during the same period.
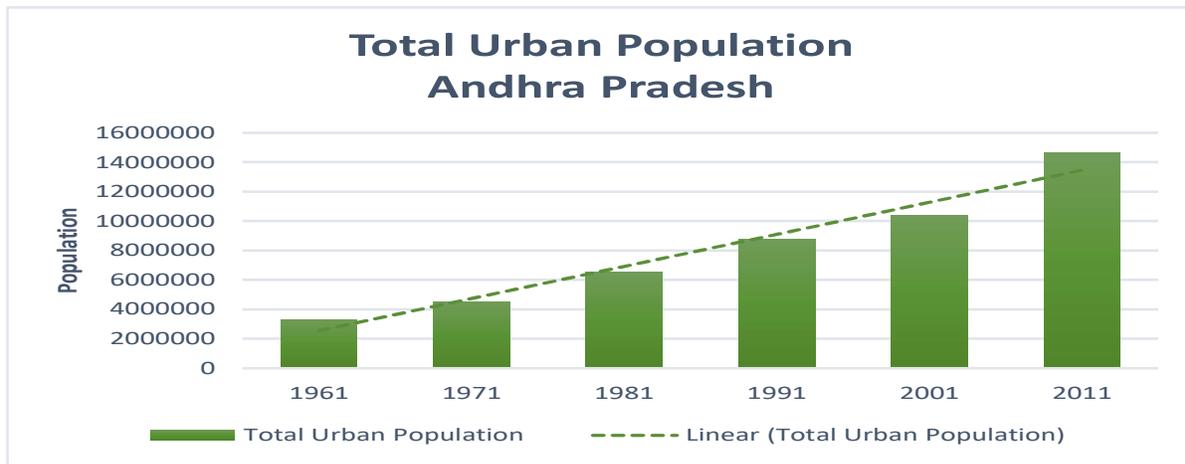

Figure.3: Total Urban Population of Andhra Pradesh 1961-2011

It is evident, from fig.3, that urban population in Andhra Pradesh has continued to increase during the period between 1961 and 2011. The decade of 2001-11 recorded highest increase in urban population. Number of towns/urban agglomerations in state has also increased to 195 by 2011. The towns include statuary towns as notified by government and census towns identified by census organisation on basis of defined criteria. When towns grow in area and population, the areas adjoining the core towns also acquire urban characteristics. Such outgrowths of cities and towns are also treated as urban. In 1961, the urban population was 32,84,001 which increased to 1,46,10,410 by 2011 which indicates a momentum in urbanisation in the state especially the during the last decade between the years 2001 and 2011.

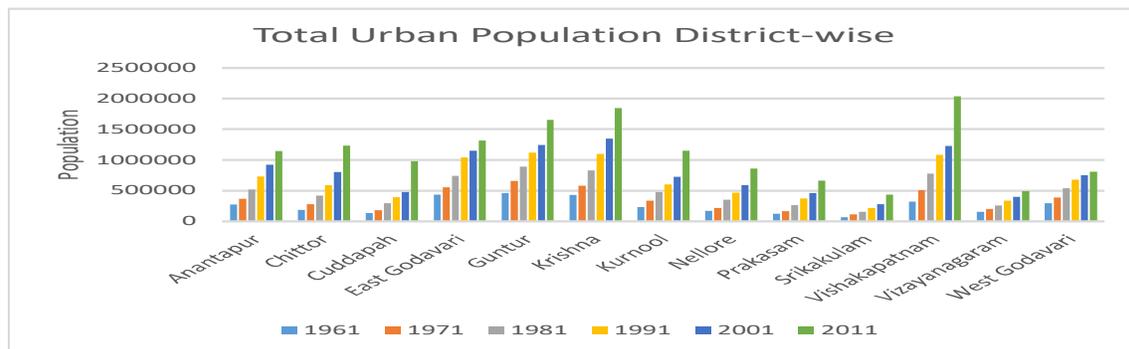**District-Wise Scenario of Urbanisation**

Fig.4: District-wise Total Urban Population

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District-wise interpretation in Fig.4 reveals that, as said above, the districts of Vishakhapatnam, Krishna, East Godavari, Guntur has rapid increase in urban population. The districts of Vizianagaram, Srikakulam has gradual increase from 1961 to 2011. Chittoor, Kurnool and Kadapa districts have steep increase in urban population in 2011, whereas Anantapur district has gradual increase. Nellore and Prakasam districts also have a sudden increase in urban population during the year of 2011, whereas West Godavari has gradual increase.

Trends in Urban Population Growth of Andhra Pradesh

Analysis of basic characteristics of population is important for study of population and settlements. When a settlement is formed, over a time period it attracts population; many places grow as nodal centres, urban markets. As population and settlements are inter-related, in a sequence of time they grow in size and area. At regional levels, socio-economic conditions are very much influenced by the different characteristics of population like growth, district and density pattern, sex composition, strength of literacy, ratio of working and non-working labour, occupational structure etc.

Percentage Growth of Urban Population Region-Wise

Table.2:Rregion-wise growth of urban population (%) in A.P. (1961-2011)

Census year	Andhra Pradesh	Coastal Andhra	Rayalaseema
1961	17.44	17.40	14.70
1971	19.31	19.12	16.40
1981	23.32	22.90	20.30
1991	26.89	25.43	23.16
2001	27.31	23.45	23.14
2011	33.50	28.24	29.98

Source: Various District Census Hand books from 1961 to 2011

Region-wise percentage of urban population is compared with whole state's urban population percent in the above table.2. Here whole state also consists of Telangana region i.e. Andhra Pradesh (united). The percent urban population of coastal Andhra is on par with whole state in all census years except in 2001 and 2011. This is due to emergence of Hyderabad as an industrial hub. Although, Vishakhapatnam emerged as important port city, it couldn't compete with Hyderabad. The city of Hyderabad experienced vast in-migration more than that of Vishakhapatnam. The migration is mostly from coastal districts, thus resulted in low percent of urban population in 2001in coastal Andhra region. Rayalaseema experienced more percent of urban population in 2011. Till 1980's Rayalaseema has more rural population, it lives in villages. The emergence of towns and urban centres occurred in mid-1970's. In 1981, Rayalaseema witnessed increase in urban population. By 2011, rapid urbanization took place, rural-urban gap increased in Rayalaseema. Emergence of few towns and cities contributed to increase in percent urban population. It should be noted the whole region didn't experienced urbanization. Only few towns in 4 districts contributed to the increase in urban population with the development of some small and medium scale industries and some developmental projects by government.

From the below Fig. 5 it is clear that, growth of urban population in Coastal Andhra is on par with whole state except in 2001 and 2011. Rayalaseema has less urban population compared with Coastal Andhra. There is a steep increase in urban population percent in the decade of 2001-11 in Rayalaseema.
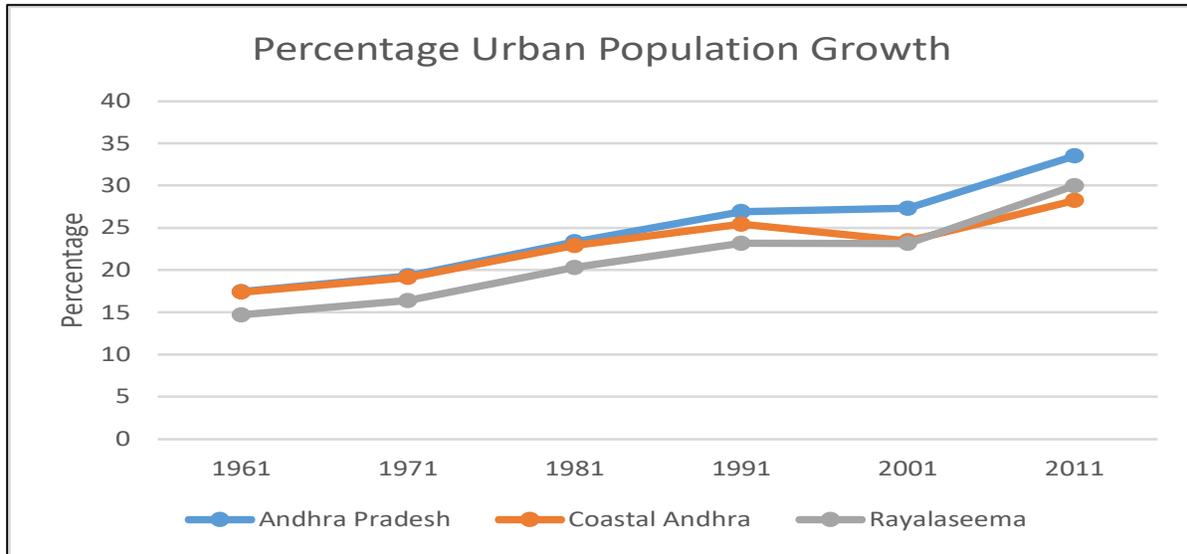
Fig.5: Percentage growth of Urban Population region-wise 1961-2011

District-Wise Percent Urban Population Trends

The table.3 gives percentage of urban population to total population district-wise from 1961-2011. In 1961, Krishna district has highest urban percent population followed by Guntur. Srikakulam has lowest percent urban population of 7.59. In Rayalaseema, Kurnool has highest urban population percent (22.03%). Vishakhapatnam recorded lower than Krishna and Guntur districts may be due to the change in definition of town by census organisation. In 1971, Vishakhapatnam district recorded as highest urban population percent followed by Krishna. In 1981, again Krishna district gained highest urban population percent. Vishakhapatnam couldn't record highest urban percentage because it lost some of its urban places to newly formed Vizianagaram district. In 1991, Vishakhapatnam and Krishna districts emerged as high urban population centres. In 2001, all districts have a very meagre increase in urban population percent due to out-migration in almost all districts.

Table.3: Percentage of urban population district-wise 1961-2011

	1961	1971	1981	1991	2001	2011
Srikakulam	7.59	9.24	10.89	12.50	10.98	16.16
Vizianagaram	-	-	15.93	17.22	18.33	20.93
Vishakhapatnam	22.93	39.27	31.28	39.83	39.95	47.51
East Godavari	18.54	19.23	22.21	23.80	23.50	25.52
West Godavari	15.87	17.71	20.77	20.71	19.74	20.55
Krishna	24.92	27.25	32.54	35.82	32.08	41.01
Guntur	23.69	24.98	27.53	28.89	28.80	33.89
Prakasam	-	11.07	14.99	16.45	15.28	19.52

S.P.S. Nellore	14.51	15.59	20.76	23.79	22.45	29.07
Chittoor	11.95	13.56	16.88	19.80	22.59	34.10
Kadapa	13.63	15.33	19.37	24.03	23.16	28.26
Anantapur	18.08	17.77	20.84	23.49	25.26	28.09
Kurnool	22.03	20.30	24.49	25.83	21.56	29.47

Source: Compiled from various census reports

Spatial Distribution of Classified Towns

The below figures (from fig.6 to 11) represent the maps of Class I to Class VI towns and Urban Agglomerations from 1961-2011. According to AP census, the classification of towns/UAs by population size class are as follows;

a) Class I - Greater than 1,00,000 (Includes UAs and OGs)

b) Class II - 50,000 to 99,999

c) Class III - 20,000 to 49,999

d) Class IV - 10,000 to 19,999

e) Class V - 5,000 to 9,999
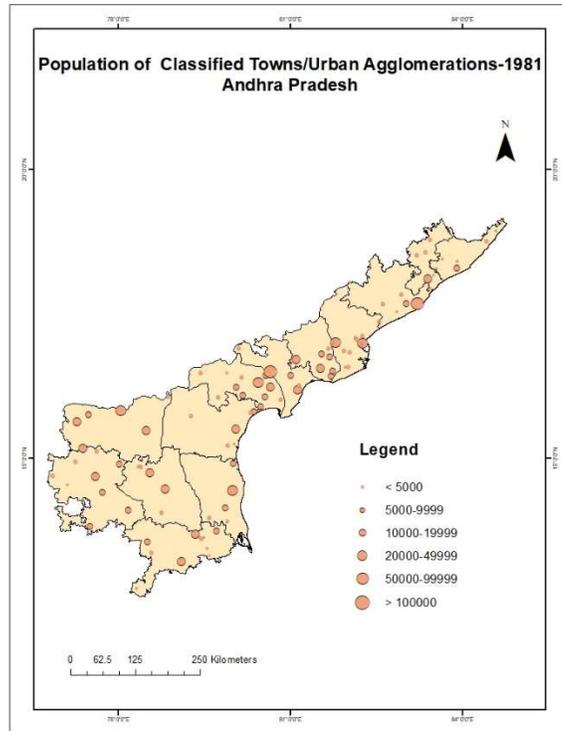
f) Class VI - less than 5,000
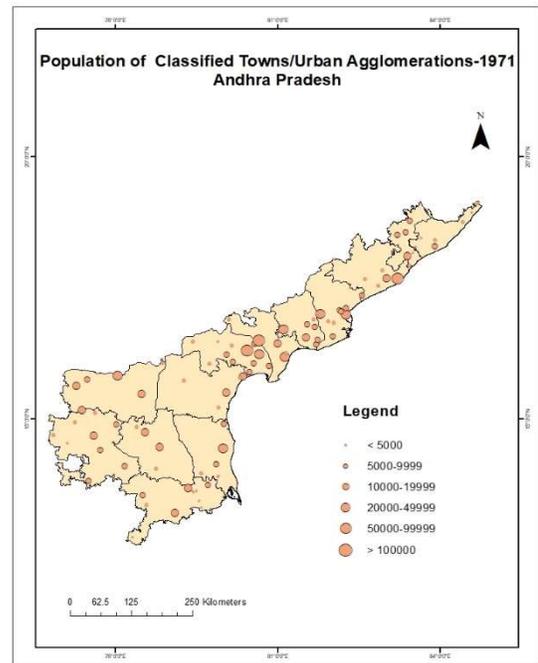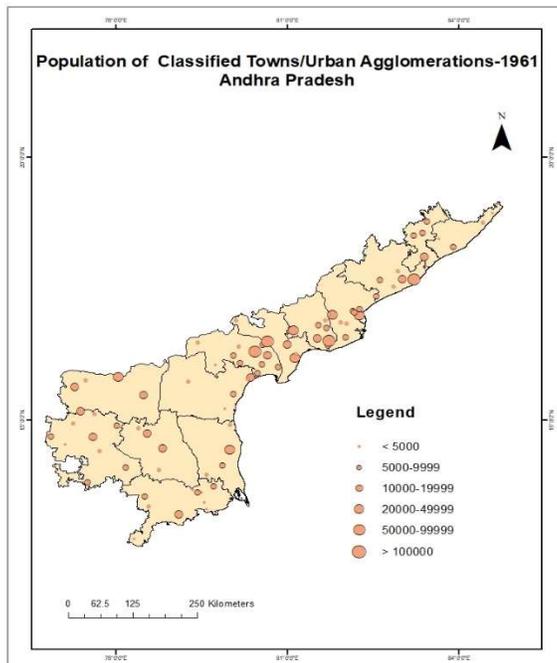
Fig. 6

Fig.7

Fig.8
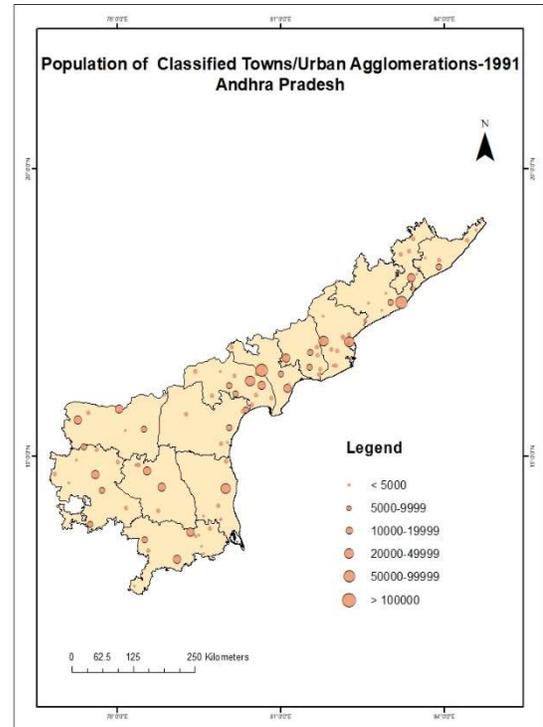

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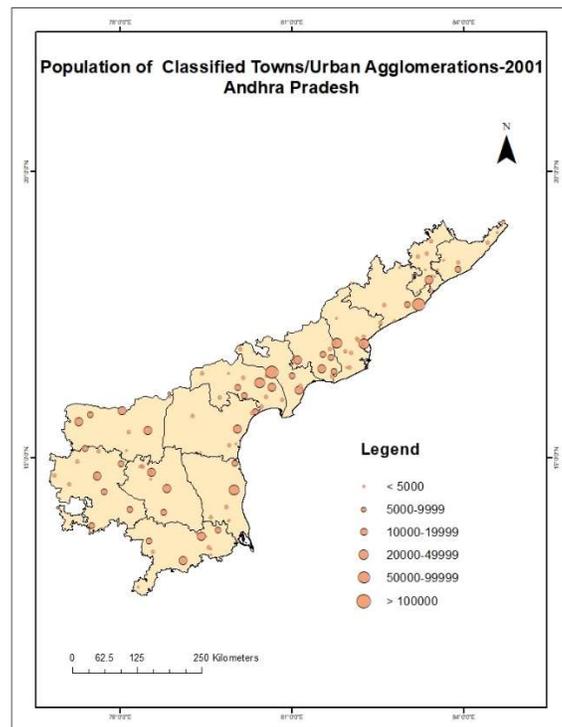

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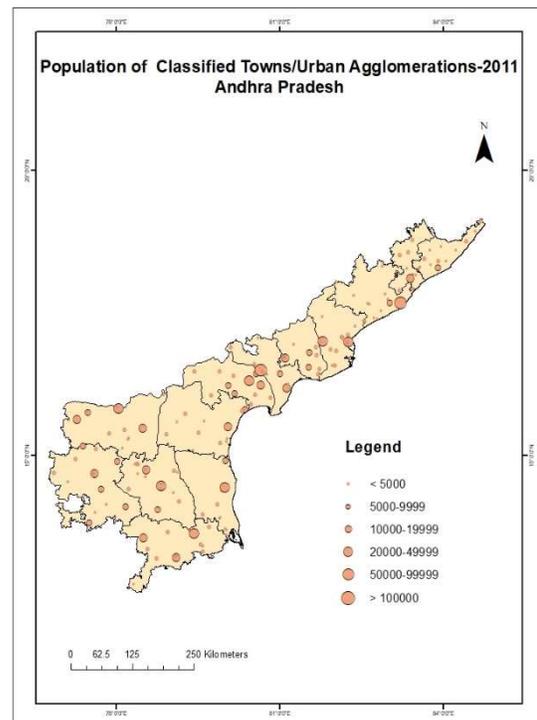

Fig.11

In 1961, Census of India applied a new definition to towns which declassified many towns in Andhra Pradesh especially in coastal districts of East and West Godavari. In Krishna district five new towns were identified. Rayalaseema got two towns declassified. The declassified towns mostly are of Class IV, Class V and Class VI. In 1971, 7 towns were declassified in Coastal Andhra. New towns of Class III emerged mostly in Srikakulam and Vizianagaram districts. In Rayalaseema towns are declassified. In Vishakhapatnam 15 new towns emerged. The emergence of new towns in the borders of Vishakhapatnam-Srikakulam districts is due to massive industrial progress.

 In 1981, six new towns emerged in Rayalaseema of which five belong Kadapa district. Ten new towns emerged in Coastal Andhra, of which 4 belong to East Godavari district. After 1971, there is a declining rate of declassification of towns and emergence of new towns. Rapid growth of existing urban centres and emergence of new towns led urbanisation in mid-eighties. In 1991, there is a decrease in population of existing urban centres. Although, new towns contributed to urban growth in eighties, it didn't bring any growth in consecutive decade. The population of Class I, Class II, Class III decreased mostly in coastal districts of East Godavari, West Godavari, Krishna, Guntur. This had impact even on the very next decade. In 1991, the UAs notified by census are 10 i.e. Vizianagaram, Vishakhapatnam, Rajahmundry, Kakinada, Vijayawada, Ongole, Chirala, Kurnool, Kadapa, Tirupati.

 In 1991, the state has 24.07% of urban population which decreased to 23.36% by 2001. In 2001, the UAs identified by census are 21 in number. They are Srikakulam, Vizianagaram, Vishakhapatnam, Bheemunipatnam, Kakinada, Rajahmundry, Eluru, Tanuku, Bheemavaram, Palakollu, Vijayawada, Narsaraopet, Ongole, Chirala, Nellore, Kavali, Gudur, Tirupati, Madanapalle, Kadapa, Anantapur, Kurnool, Adoni, Nandyal. In 2011, rapid urbanisation took place. The number of UAs increased to 32. Newly added UAs are Tadepalligudem, Gudivada, Chilakaluripet, Chittor, Proddatur, Anantpur, Hindupur, Guntakal, Dharmavaram. This decade had an increase of 1.37 percent of annual exponential growth rate. In 2011, the percentage of urban population is 26.77, with Vishakhapatnam contributing highest urban percentage to state.

Region-Wise Share of Urban Population in cities of A.P. (1961-2011)

Table.4: Percentage share of urban population in cities (region-wise 1961-2011)

Census year	Coastal Andhra	Rayalaseema
1961	48.1	24.2
1971	58.4	53.3
1981	66.3	71.01
1991	76.5	76.0
2001	80.6	79.0
2011	84.2	81.3

Source: Registrar General and Census commissioner, computed from Census of India, 1981, 1991, 2001, 2011.

Here, in this study population over 50,000 are considered as cities and analysed comparatively for the regions of Coastal Andhra and Rayalaseema in Andhra Pradesh. City is the focal point of growth. It increases economic activities, generates growth and further results in Urbanization. From the table 5.4 it is noticed that percentage share of urban population in Coastal Andhra is increased gradually whereas in Rayalaseema there is a sudden increase in 1981, later increased

gradually. According to 2011 census, nearly half of urban population in Coastal Andhra inhibits in 24 cities, whereas in Rayalaseema in 16 cities.

Share of Urban Population in Medium Towns (Region-Wise 1961-2011)

The population range of 20,000-50,000 is considered as medium town and analysed comparatively for the regions of Coastal Andhra and Rayalaseema. The share of urban population in medium towns in Coastal Andhra has decreased gradually from 1961 to 2001. It was as high as 29.8 in 1961, recorded as low as 11.2 by 2011. This may be due to increase in people living in cities and also some conversion of some medium towns to cities over a period of time. Same scenario can be seen even in Rayalaseema.

The population range of 5,000-20,000 is considered as small towns and analysed comparatively for the regions of Coastal Andhra and Rayalaseema. From the table, it is clear that the share of urban population in small towns has declined rapidly. Generally, small towns surround rural areas with commutations. The importance of small towns is decreasing due to migration of population to cities and change of status of small towns to medium towns. The share of urban population in small towns in Coastal Andhra is less when compared to Rayalaseema in all census years i.e. from 1961 to 2011.
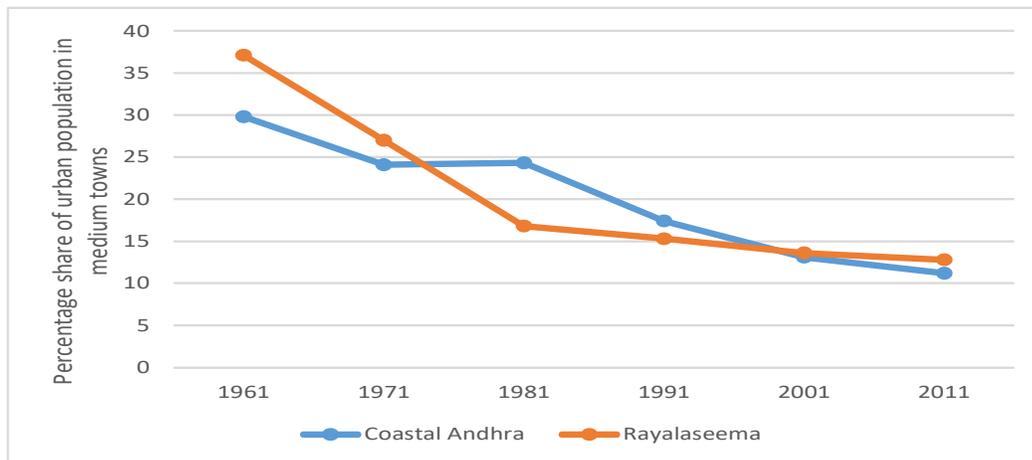

Fig.12: Percentage share of urban population in medium towns (region-wise 1961-2011)

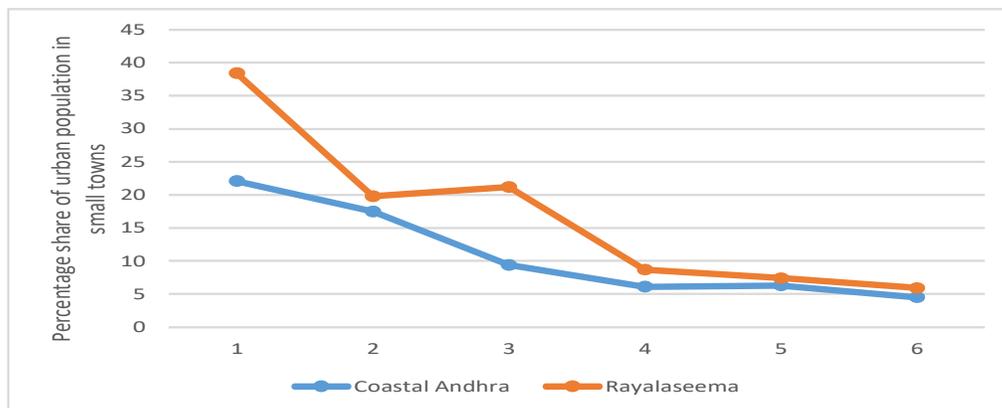**Share of Urban Population in Small Towns (Region-Wise 1961-2011)**

Fig.13: Percentage share of urban population in small towns (region-wise 1961-2011)
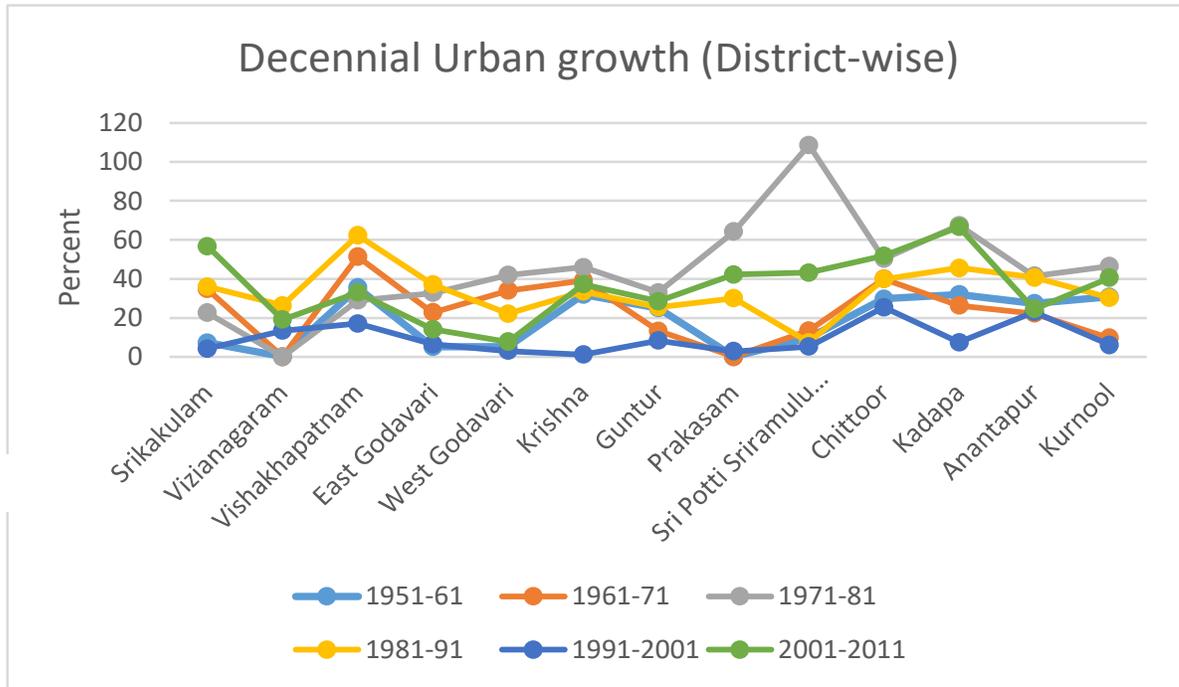
Decennial Growth Rate District-Wise (1961-2011)

Decennial growth rate of urban population is high in decade of 1971-81. During this decade, the urban population in all districts grew when compared to previous two decades; whereas it declines during 1981-91. The urban population growth rate of Vishakhapatnam district increased from 28.85 in 1971-81 to 62.36 in 1981-91. East Godavari district has also had significant increase in urban population compared to other districts in 1981-91 decade. The decrease in urban population in all districts other than Vishakhapatnam is due to vast migration to Hyderabad because of industrial development induced employment. The decade 1971-81 is important for Andhra Pradesh due to emergence of industries in Vishakhapatnam, East Godavari districts and Hyderabad (united AP) which created vast employment opportunities. There is consequent shift of population from rural to urban. Net out-migration is the common feature in all districts except Vishakhapatnam (experienced in-migration). District-wiseanalysis reveals that rural-urban gap is more in Vishakhapatnam district than other districts.

Table.5: Decennial growth rate of urban population district-wise (1961-2011)

	1951-61	1961-71	1971-81	1981-91	1991-2001	2001-11
Srikakulam	7.26	34.73	22.60	36.00	4.12	56.72
Vizianagaram	-	-	-	26.44	13.38	19.04
Vishakhapatnam	35.48	51.44	28.85	62.36	16.99	32.99
East Godavari	5.07	22.78	32.72	37.19	6.52	14.07
West Godavari	5.22	33.89	41.98	22.07	3.03	7.71
Krishna	31.92	39.19	45.98	33.56	1.16	37.23
Guntur	24.91	13.35	33.08	25.48	8.37	28.54
Prakasam	-	-	64.18	30.02	2.86	42.20
SPS Nellore	9.84	13.47	108.59	7.49	5.22	43.17
Chittoor	29.69	40.01	50.31	39.75	25.45	51.83
Kadapa	31.95	26.27	67.46	45.52	7.45	66.59
Anantapur	27.49	22.16	41.55	40.63	22.99	24.59
Kurnool	30.73	9.67	46.50	30.27	6.12	40.59

Source: Census of India

Fig. 14: Decennial growth rate of urban population (District-wise)

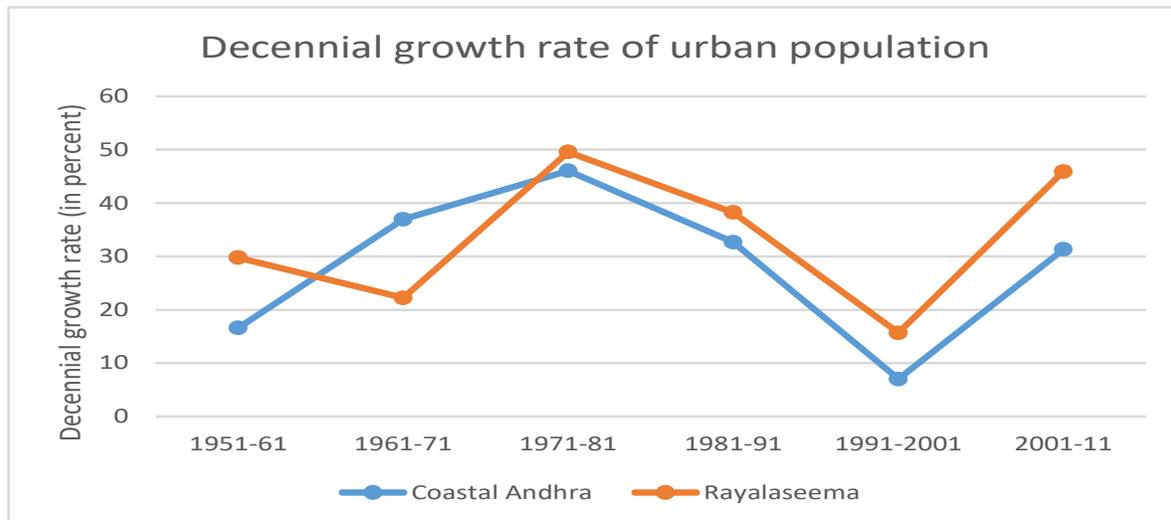**Decennial Growth Rate, Region Wise (1961-2011)**

Fig.15: Decennial growth rate of urban population (region-wise)

Decennial growth rate increased in the decade 1971-81 in Coastal Andhra, and in 1991-2001 urban growth rate is recorded very low. This is due to the unbalanced regional development. In Rayalaseema, there is a sudden increase in the

year 197-81, this is due to the emergence of new towns. Both the regions experienced low growth rate in 1991-2001 due to vast out-migrations. In 2001-2011 again the growth rate is stabilised (fig. 15)
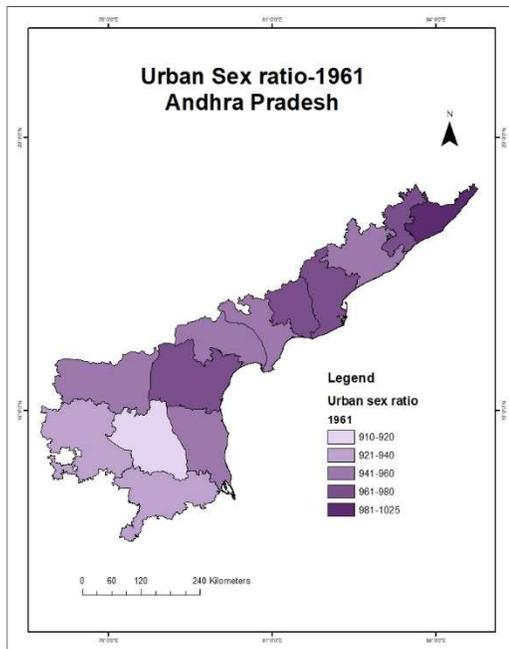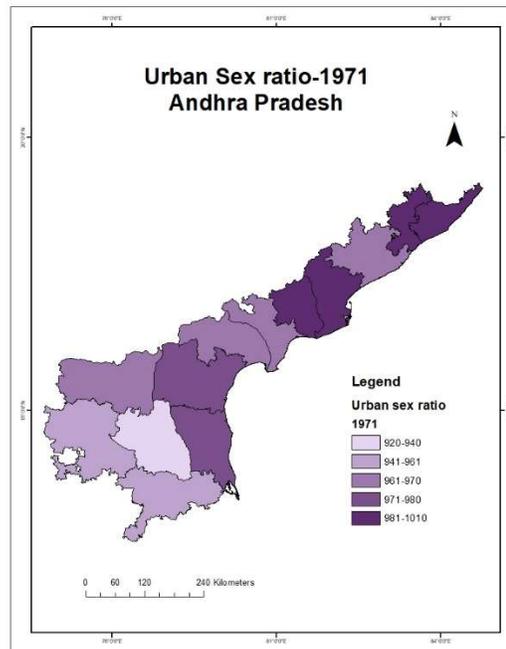
Demographic Factors of Urban Growth
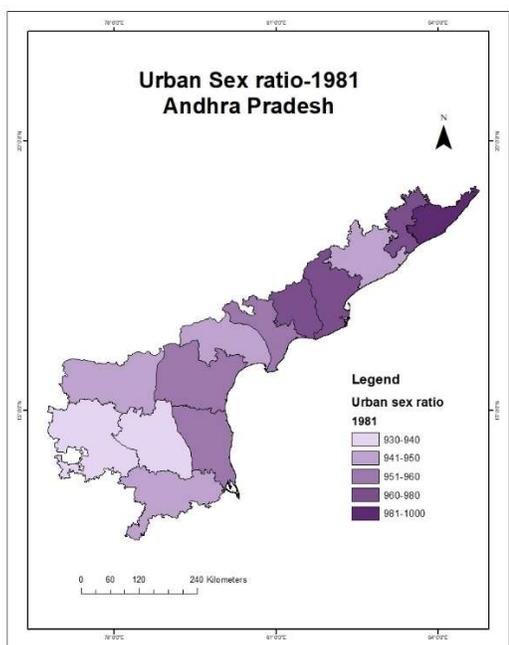**Urban Sex Ratio**

Fig.16

Fig.17

Fig.18

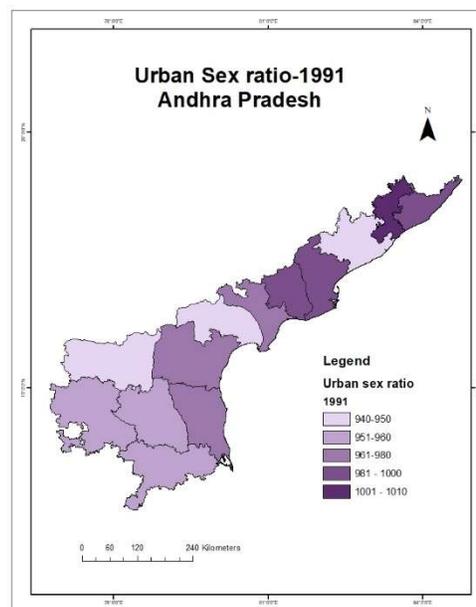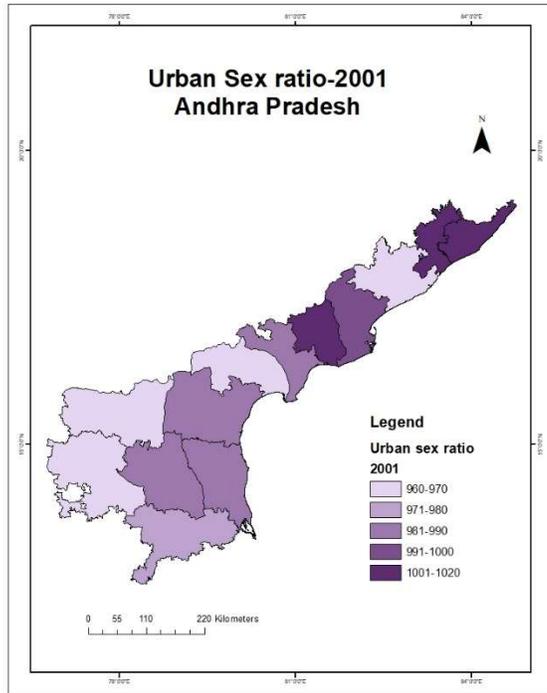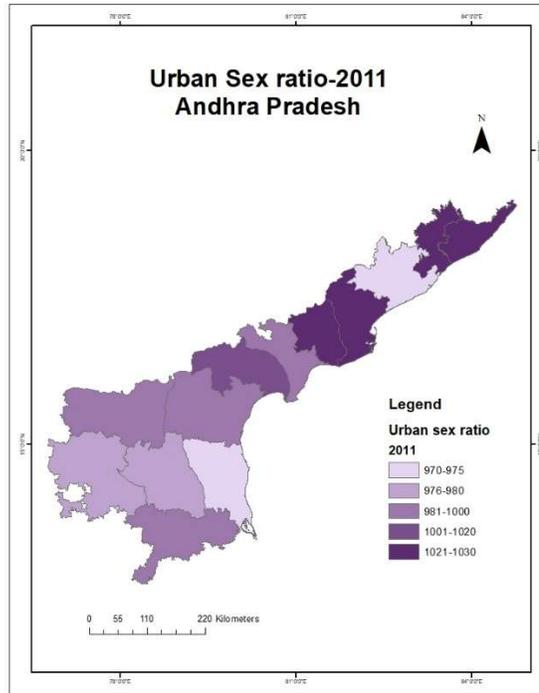
Fig.19

Fig.20   Fig.21

The study of sex ratio, as shown in fig.16 to 21 reveals the relationship between change in sex ratio on one hand, and the trends in socio-economic life of a region, on other. It also reveals the changes in birth and mortality pattern of two sexes and their migration behaviour (Chandna & Sindhu, 1980). Urban sex ratio is more masculine in nature. Rural areas have more sex ratio than urban areas.

In 1961, Srikakulam district has highest sex ratio with 1000 and Kadapa with lowest of 911. As Rayalaseema in 1960s and 1970s live in villages, the urban sex ratio is low. And also, female infanticides are more during this period all over India. In 1971, Srikakulam district topped in urban sex ratio of 1005, Kadapa district recorded lowest of 923. In 1981, Vizianagaram district has highest urban sex ratio of 990 followed by Srikakulam, East and West Godavari districts. In 1991, Vizianagaram recorded highest urban sex ratio of 1001 followed by Srikakulam and West Godavari districts. Lowest recorded districts are Anantapur, Kadapa. In 2001, West Godavari has highest sex ratio of 1017. In 2001, Vizianagaram district has highest sex ratio of 1037. It can be noted that, Vizianagaram and Srikakulam districts have highest urban sex ratio in almost all census years from 1961, but urban population in these districts is low when compared to other districts. The districts of Vishakhapatnam, Krishna, Nellore has low urban sex ratio because these districts have industrial outlets which attract more male workers. Due to high cost of living in urban areas, migrant workers couldn't bring their families along with them. As a result, low urban sex ratio is recorded in the districts of high urbanization. Moreover, the growth in urban sex ratio is also very low in these districts when compared to Srikakulam and Vizianagaram districts.

Literacy Rate
The trends in literacy are considered as an index of the pace at which the socio-economic transformation of a society is taking place. Literacy is an important tool for communication, learning and information. Thus, literacy is a virtual pre-condition for individual and national development. Such an important aspect of human development cannot be neglected. Hence efforts have been taking place in recent years to attain the objective of education to all (Chandna & Sindhu, 1980). Literacy rate increases with urban population. With the availability of more educational facilities, more people become

educated. Most of the urbanised societies have high literacy rates. Social factors, type of economy, technological advancement, public policies, government schemes have influence on literacy rates.

There was a consistent positive correlation between literacy rate and percentage of urban population at district level in Andhra Pradesh. In 1991, the correlation coefficient of urban population percentage with literacy rate is 0.032; whereas in 2001 it was 0.1331. In 2011, the correlation coefficient is 0.156.

District-wise analysis of literacy levels, as shown in fig.22&23, are vital developmental indicators. They shed light on quality of life, awareness level, level of skilled population. In 1961, West Godavari district has highest literacy rate of 46.6%; Chittoor district has lowest of 31.5%. In 1971, Krishna district has highest of 51.9% and lowest is Srikakulam district. In 1981, Krishna district topped with 57.7%; Kurnool district recorded lowest of 45.2%. In 1991, Vishakhapatnam district has 59.5%. In 2001, West Godavari district has 71.4%. In 2011, East Godavari topped with 72.9%. It is noticed that, although Vishakhapatnam district is more urbanised, it couldn't gain high literacy rate. This is due to migration of illiterate population. The migrants will be mostly male and choose to work as daily labourers or workers in factories. Although the number of total literates increases, the in-migration of illiterate migrant workers are responsible for low literacy rates. In coastal Andhra, low urban literacy rates are seen in Srikakulam district. In Rayalaseema, low urban literacy rates are seen in Kurnool district.
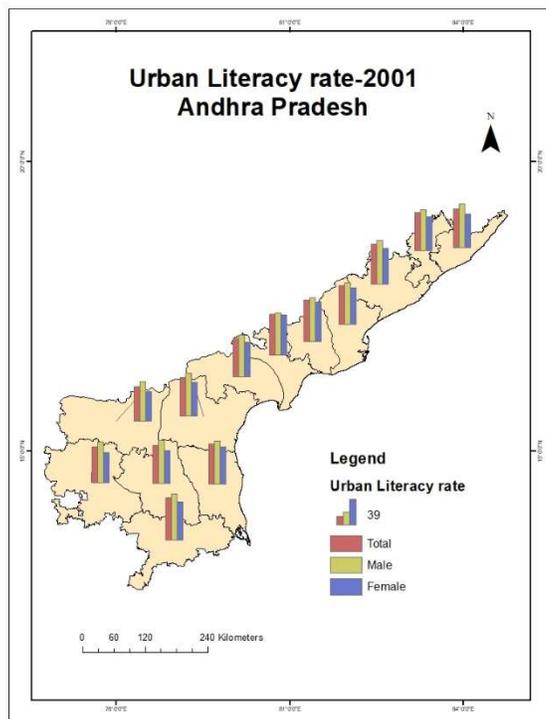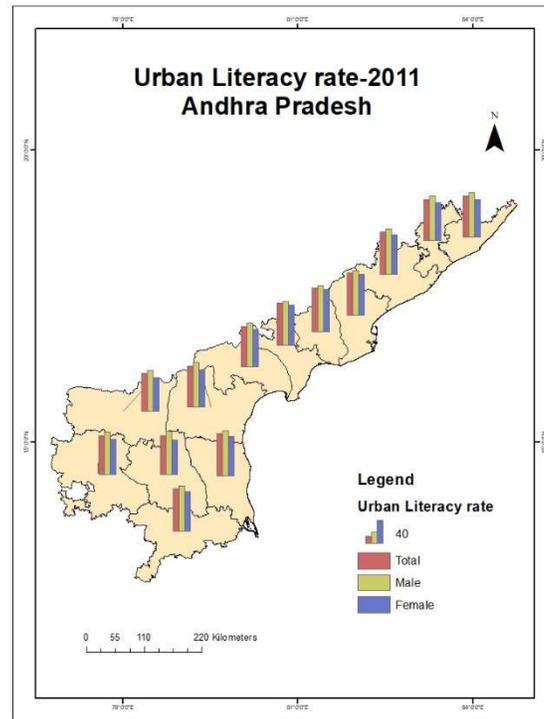

Fig.22

Fig.23

Urban Density

The below fig.24&25 represent the urban density of Andhra Pradesh for 1981 and 2011 respectively. The average urban density of Andhra Pradesh in 1981 is 3041 persons per sqkm which increased to 3648 persons per sqkm by 2011. This

shows increase in urban residents. In 1961, Vishakhapatnam district recorded highest urban density of 2929 persons per sqkm and Anantapur district recorded low urban density of 703 persons per sqkm. In 1971, Kurnool district recorded highest urban density of 4200. In 1981, Guntur district recorded highest urban density of 4566 persons per sqkm. This is due to growth of more food processing units which attracted more people towards employment. This decade had more small and medium scale units established resulted in urban agglomeration. The Guntur urban agglomeration consists of Mangalagiri, Tenali, Tadepalli, South Vijayawada, Guntur town. In the decade of 1991-2001, urban density increased in Rayalaseema. In 1991, Kurnool district had highest urban density of 5312. By 2011, urban density increased in all districts. In 2011, Guntur district has highest urban density with 5246 persons per sqkm. This indicates more urbanisation. But mere increase in urban density doesn't indicate more productivity. Vishakhapatnam district has density 3221. It indicates that spread of urban regions area-wise are large when compared to other districts, Srikakulam district has lowest urban density with 2347 persons per sqkm indicating low level of urbanisation.
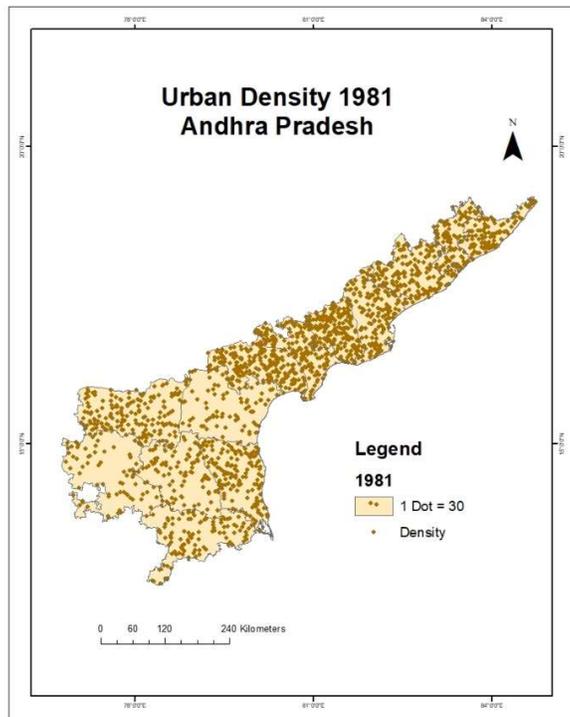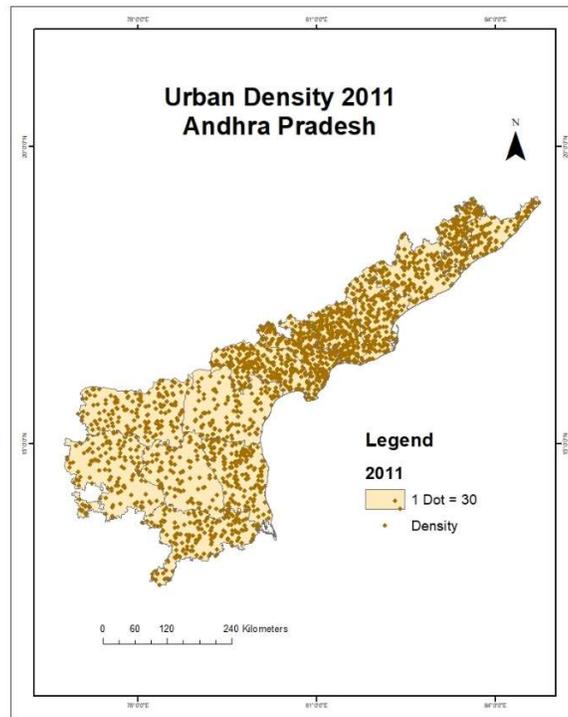

Fig.24

Fig.25

Impact of Industry Sector on Urban Demography

A region may receive higher productivity growth in manufacturing sector because it opens more possibilities to increase the productivity through technological investments. Manufacturing activities lead to agglomeration economies. Economic development cannot be seen everywhere at same period of time. It must develop at one or more urban centres and it is the advantage of those regions to become industrialise and agglomerate. Public policy plays an important role in development of any economy at regional level. These effect the trade relations nationally and internationally having an impact on different sectors of economy which results indirect changes in rural-urban composition.

Industrial Sector in Andhra Pradesh

In Andhra Pradesh mineral-based industries are dominant. These include cement and steel industries. Also, leather, textiles, Information Technology has a significant contribution to the state's economy. Agriculture and allied industries like food processing, cold storage, ware housing is significant. Vishakhapatnam is an important industrial cluster having marine bio-tech park, pharma park, Agri-biotech park. According to a report prepared by Andhra Pradesh Invest and Federation of Indian Chambers of Commerce and Industry (FICCI) in 2007, Vishakhapatnam, Guntur, East Godavari and Chittoor top in the list of the most industrialised districts along the coast.

According to Andhra Pradesh Industrial Parks policy,2018 Government of Andhra Pradesh has made a move to develop integrated industrial parks in the state. It is to be developed under Public Private Partnership through identification and approval by the department of industries, Government of Andhra Pradesh. Industrial parks can be established where infrastructure facilities such as transport and communication are available and those areas over a period of time are treated as industrial areas. Industrial park shall mean an industrial area or estate, which is developed primarily for establishment of manufacturing/service units, which may include developed plots for industrial units, residential/commercial establishments and common internal infrastructure. Industrial Unit is an industrial establishment within industrial park.
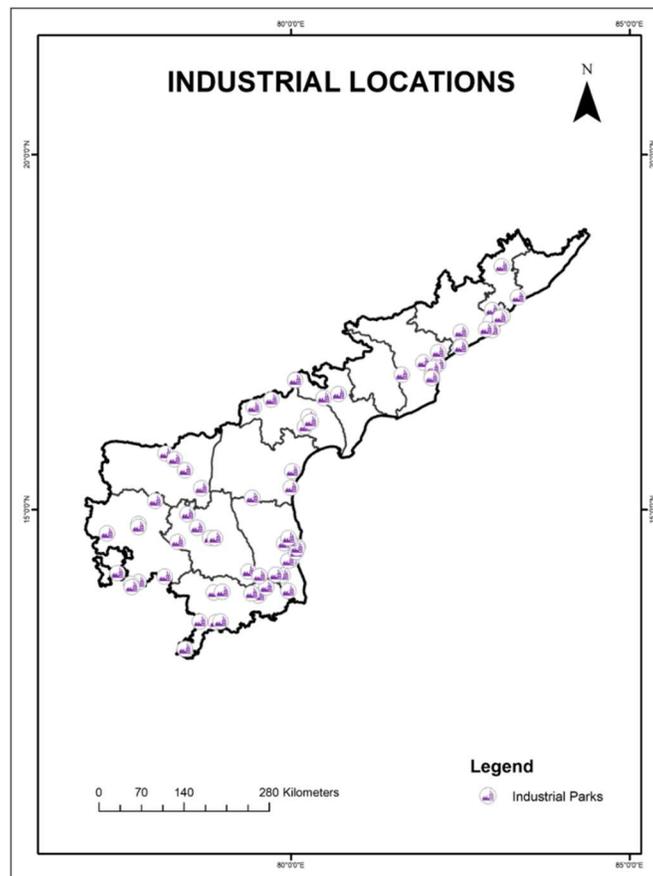

Fig. 26: Location of Industrial Parks in Andhra Pradesh

Growth of Factories in Andhra Pradesh

Most of the workforce is engaged in manufacturing sector in cities. After 1991, Andhra Pradesh along with India opened its economy for foreign investments. Many programmes were also implemented to improve manufacturing sector.

Medium Small and Micro Enterprises is the priority sector of development in state. Emergence of cities and establishment of commercial enterprises are interrelated. The number of factories registered under Factories act had a significant increase decade by decade. The number of workers also increase year by year with increase in factories. This leads to increase in productivity, which leads to increase in share of manufacturing sector in Gross Domestic Product. The correlation between the urban growth rate and Gross Domestic Product is always positive. So, correlation coefficient is calculated with district-wise parameters. The correlation coefficient of urban growth rate with Gross District Domestic Product in 1991 was 0.1195, in 2001 was 0.0441 in 2011 was 0.3796. This shows that there exists a positive and accelerating correlation between urban growth and gross domestic product.

Vishakhapatnam district has diverse industrial base, including pharmaceuticals, sugar, fertilizers, automobiles, chemicals, auto mobiles, engineering, iron and steel, Information Technology, electronic hardware. Guntur district has cement, sugar, textile, food processing industries like tobacco. Chittoor has sugar and food processing units. Nellore district has leather industry. Prakasam district has granite-based manufacturing units. Anantapur district has Argo-based, forest-based, manufacturing chemical industries and significant in dairy sector. It is noticed that an increasing trend took place in the number of factories established over a time period. Although Guntur, Krishna districts have higher number of factories those are not large-scale; lot much urbanisation cannot be seen when compared to Vishakhapatnam.
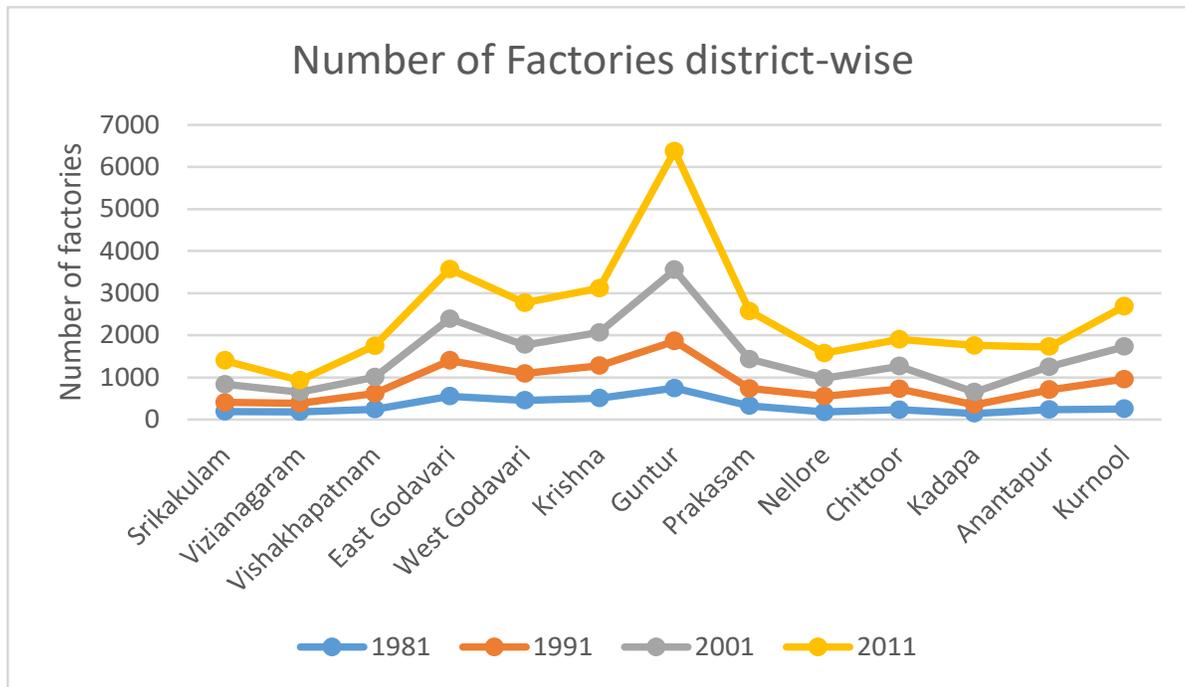

Fig. 27: Number of factories in A.P. (District wise 1981-2011)

Vishakhapatnam is the largest coastal city in Andhra Pradesh in terms of urban population. It is known as financial capital of Andhra Pradesh. It is the commercial hub of state, and contributes to state's economy through various sectors such as heavy industry, industrial minerals, fishing, tourism, pharma, Information Technology. Vishakhapatnam urban agglomeration has large-scale industries like Hindustan Shipyard, Hindustan petroleum corporation, Coromandel fertilizers, Bharat Heavy plates and vessels, LG polymers Ltd, Hindustan zinc plant, Vishakhapatnam steel plant. Vizag steel plant itself has share capital of Rs. 7466 crores with a licenced capacity of 2.8 million tons of stable steel, 3 million tonnes of pig iron and 8.32 lakh tonnes of by product, it employed 33000 persons. Also, Vishakhapatnam has Argo-based industries like sugar factories, jute mills. The district, as per fig. 27, has 1664 factories registered under Factories Act.

Government of Andhra Pradesh established Special Economic Zone in Vishakhapatnam district, Andhra Pradesh Industrial Infrastructure corporation which consists of many industrial corridors.
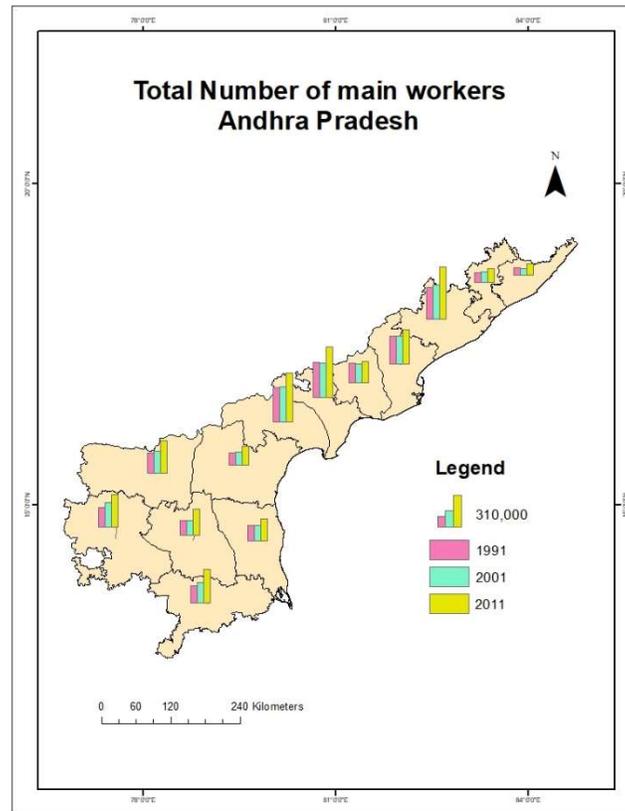

Fig. 28: Total Main workers in A.P. during 1991,2001,2011

From the Fig.28 it is clear that Vishakhapatnam district has a greater number of main workers due to large industrial clusters and large-scale industries, followed by Guntur and Krishna districts where a lot number of food processing units emerged. Very merger number in Srikakulam district indicates the low level of urbanisation. Hereby, we can understand the correlation between industrialisation and urbanisation.

Conclusion

In Andhra Pradesh, Green revolution had a major and first impact on urbanisation. East and West Godavari districts of Andhra Pradesh got fruits of green revolution. This had an impact on rural-urban dynamic demography. In mid 1980s, united Andhra Pradesh (then consisting of Telangana and present Andhra Pradesh) has witnessed a revolutionary change. With the revolution in IT sector in Hyderabad, the then Andhra Pradesh witnessed remarkable urban growth. Service sector led GDP was experienced by state. This had a negative impact on coastal districts. The decade of 1980-90 witnessed massive migration to Hyderabad. This migration was mainly from coastal districts. The urban growth rate decreased in coastal districts due to service sector and manufacture sector bloom in Hyderabad. The urban growth rate, urban population percentage decreased in coastal districts during this decade. Rayalaseema in 1960s resides in villages. In 1980s, these four districts of Rayalaseema experienced urbanisation. The growth of towns Anantapur, Kurnool, Kadapa, Chittoor, Hindupur. Tirupati etc. increased the urban population percentage. This region recorded low growth rate due to geographical, political factors. Even though, the urbanisation in Rayalaseema is low, its contribution to urban prospects cannot be denied.

Overall, this study makes it clear that the four factors i.e. natural increase, migration, boundary change, declassification had an impact on urbanisation in Andhra Pradesh. In addition to that factors such as literacy rate, number of factories/industrial parks in a district are found positively correlated with urban growth in the state. The study also proves that the cities are growing at the expense of surrounding small and medium towns. The cities are growing faster than the small and medium towns. Balanced urban growth can be clearly observed in cities and Class I towns of A.P. out of the total urban population, two-thirds of population resides in cities and Class I towns.

References
1. Andy Pike, Andrés Rodríguez-Pose & John Tomaney (2007) What Kind of Local and Regional Development and for Whom?, Regional Studies, 41:9, 1253-1269, DOI:10.1080/00343400701543355
2. Bhagat, R. B. (2011). Emerging Pattern of Urbanisation in India. Economic and Political Weekly, 46(34), 10–12. http://www.jstor.org/stable/23017782
3. Bhatta, B. (2009). Analysis of urban growth pattern using remote sensing and GIS: A case study of Kolkata, India. International Journal of Remote Sensing, 30(18), 4733–4746. https://doi.org/10.1080/01431160802651967
4. Chadchan, J., & Shankar, R. (2012). An analysis of urban growth trends in the post-reforms period in India. Gulf Organisation for Sustainable Built Environment, 1, 36–49.
5. Chandna R. C. and Sidhu M. S., (1980). An Introduction to Population Geography, Kalyani Publishers.
6. Datta, P., & Road, B. T. (n.d.). Abstract Regional and Sub-Regional Population Dynamic Population Process in Urban Areas European Population Conference 21-24 June, 2006. 16.
7. Davis, K. (1965). The Urbanisation of the human population. Scientific American, 13(3), 41–53.
8. Davis, Kingsley. (1962). Urbanisation in India: Past and Future. University of California Press, 3–26.
9. Emily, S., & Mekamu, K. (2004). Urbanization and Spatial Connectivity in Ethiopia: Urban Growth Analysis using GIS. Ethiopian Development Reasearch Institute.
10. Gould, W. T. S. (2008). Population and Development. Routledge.
11. Kumar, A., & Rai, A. K. (2014). Urbanization Process, Trend, Pattern and its Consequences in India. Neo Geographia (ISSN-2319 – 5118) Vol. III, Issue. IV.
12. Kundu, A. (2011). Trends and Processes of Urbanisation in India. Human Settlements Group, IIED, Population and Development Branch, UNFPA
13. Lonavath, D. A. K. (2014). Historical Trends of Urbanization in Andhra Pradesh State: India. Indian Journal of Applied Research. Volume : 4 | Issue : 7 | July 2014 | ISSN - 2249-555X
14. Maheshwari, S. R. (2006). Local Government in India. ISBN:978-93-87346-62-8
15. Masron, T., Yaakob, U., Ayob, N. M., & Mokhtar, A. S. (2012). Population and spatial distribution of urbanisation in Peninsular Malaysia 1957—2000. 2, 10.
16. Neelmani, J., & Sudeshna, S. (2014). Urbanization in India: An impact Assessment. International Journal of Applied Sociology, 60–65.
17. P. R. B. (2014). World Population Data sheet. United Nations.
18. Sadashivam, D., & Tabassu, D. S. (n.d.). Trends of Urbanization in India: Issues and Challenges in the 21st Century. 11.
19. Sudhira, H. S., Ramachandra, T. V., & Jagdish, K. S. (2004). Urban sprawl: Metrics, dynamics and modelling using GIS.

20. Sujathamma, C. (2018). Urban Growth and Urbanization in Rayalaseema. 8(5), 4.

21. Tripathi, S. (2019). Do economic reforms promote urbanization in India? Asia-Pacific Journal of Regional Science, 3(3), 647–674. https://doi.org/10.1007/s41685-019-00117-8

22. Turok, I. (2012). Urbanisation and development in South Africa: Economic imperatives, spatial distortions and strategic responses. Human Settlements Group, International Institute for Environment and Development.

23. United nations. (2005). Urbanisation in Asia. United Nations.

24. United Nations. (2011). The Milliennium Development Goals Report. United Nations.