
A Study of Smart City Vizag Urbanization Population Growth By Using Geo Spatial Approach

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Abstract

Urbanization has been frequently used to mean the level of populace fixation in a urban area. Urban development is only urban population growth. Urbanisation can happen just when the rate of development of a urban populace is more noteworthy than the rate of development of the non-urban populace in the country. Currently, over half of the total populace lives in urban areas. Rapid urban populace development debilitating the urban districts. At the point when a urban zone developing or losing populace, organization confront challenges regarding lodging problem, drinking water problem, transport and infrastructural etc, facilities. Holding the above viewpoints under thought an attempt is made in this paper tries to draw consideration on the expanding urban populace drifts in Visakhapatnam city. Further, it examine Vishakhapatnam city urban populace development as per Zones and Wards. This examination additionally discovers high, medium and low grouping of urban populace of Visakhapatnam city.

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1. Introduction

Urbanization is a procedure which uncovers itself through spatial, transient and auxiliary changes in the statistic, social, temperate, mechanical and ecological parts of life in a given society. The statistic changes happens through common development of urban populace of an area and furthermore through relocation from country to urban areas etc., due to different reasons.

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S.No	Name of Districts	Percentage of Urban Population
01.	Visakhapatnam	47.5
02.	Krishna	40.8
03.	Kadapa	34.0
04.	Guntur	33.8
05.	Chittoor	29.5
06.	Nellore	28.9
07.	Kurnool	28.4
08.	Anantapur	28.1
09.	East Godavari	25.5
10.	Vizianagaram	20.9
11.	West Godavari	20.5
12.	Prakasam	19.6
13.	Srikakulam	16.2

Table 1: Urban population percentage of districts in Andhra Pradesh state as per 2011 Census

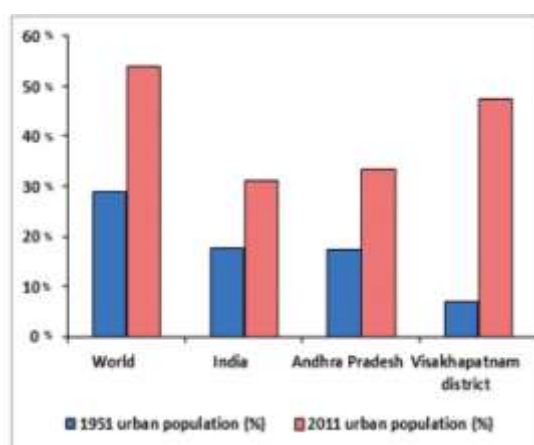


Figure 1: Graph of Comparison population with World Growth Rate

It can be seen from the Table No.1 that, Visakhapatnam locale is having most noteworthy level of urban populace among all the thirteen (13) regions of Andhra Pradesh. Of the aggregate urban populace of Andhra Pradesh around 14 percent urban populace are available in Visakhapatnam region which is demonstrating most astounding rate in the state. It is additionally seen that 85 percent of Visakhapatnam area urban populace are living in Visakhapatnam city as it were. In this setting the Visakhapatnam city(GVMC)is taken for contemplate in this paper.

2. Study area

Visakhapatnam city lies between 17° 58' 21" N to 17° 24' 45" N latitudes and 82° 51' 0" E. to 83° 27' 0" E. longitudes. The Visakhapatnam city (GVMC) administratively divided into six (6) Zones and these six (6) Zones are again divided into 72 Municipal Corporation Wards.

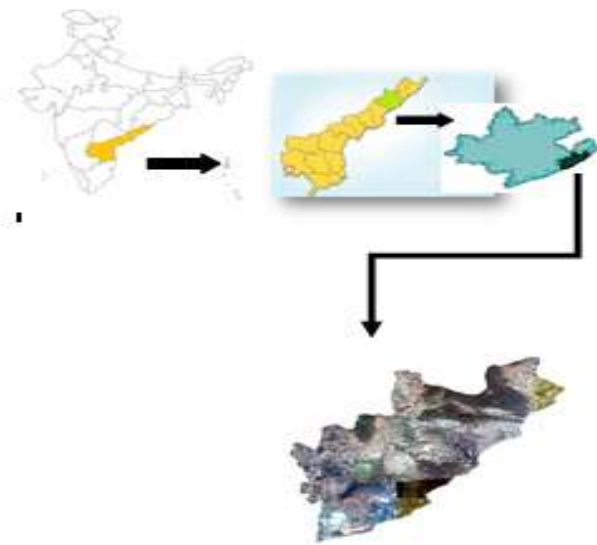
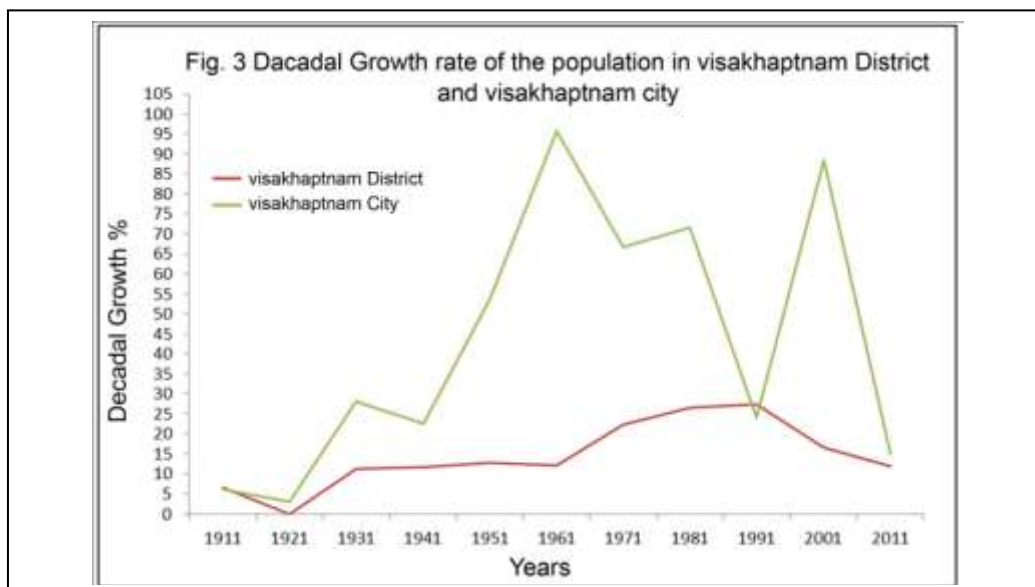


Figure 2: Study area map

3. Methodology:

The major data used in this paper are from 1901-11 census data pertaining to Visakhapatnam city (Greater Visakhapatnam Municipal Corporation –GVMC). Regarding Municipal Corporation Zones and Wards, data collected from Visakhapatnam Municipal Corporation zonal offices. Results and Discussions:

Changes in Urban Populace Development in Visakhapatnam City:



Prior, the monetary advancement, in and around the city has been exceptionally fast, particularly in the Industrial and Service sectors. Due to huge scale industrialization, individuals moved from country zones to Visakhapatnam city. Further, it is seen that expansive scale

relocations have occurred from all districts of north coastal Andhra Pradesh to Visakhapatnam city. This prompted physical extension of city and more foundation offices were produced in and around Visakhapatnam city. These conditions changed Visakhapatnam city into a major urban territory/locale inside the Visakhapatnam area and furthermore involved number one position in having most astounding urban populace in the whole Andhra Pradesh state.

S.No.	Census Year	Decadal Growth rate of urban population in Visakhapatnam district (%)	Decadal Growth rate of urban population in Visakhapatnam City (%)
01	1911	06.64	06.1
02	1921	00.05	03.0
03	1931	11.23	28.2
04	1941	11.77	22.6
05	1951	12.88	53.8
06	1961	12.24	95.7
07	1971	22.26	66.7
08	1981	26.56	71.5
09	1991	27.50	24.2
10	2001	16.66	88.5
11	2011	11.96	15.1

Table 2 : Growth rate of Population in Visakhapatnam district and vizag city.

The Table No.2 showing that, the decadal growth rate of population of Visakhapatnam district and Visakhapatnam city during 1911-11 period. It is observed that, the population growth during 1911- 51 was about 149 percent on and also recorded above one lakh population (1,08,042) by 1951 in Visakhapatnam city. But during 1961-11 period, the population growth increased to 718 percent and this indicates that population growth is showing increasing trend. Further, it is observed that, 1961 recorded highest decadal growth rate (95.7%) among all census years. Subsequently the urban growth rate decreased to 66.7% in 1971. Again it increased to 71.5% by 1981. Surprisingly the urban growth rate decreased to 24.2% by 1991 census. Due to administrative reasons again the urban growth rate increased to 88.5% by 2001 census. During 2011 census the city urban growth decreased to 15.1% which is lowest growth rate since last 60 years. From 1961-11 period, the growth trend is showing increasing and decreasing trend alternatively. Further, from 1981- 01, the city has reported a moderate growth rate and this is because the city has witnessed a rapid growth due to industrialization. A number of larger scale industries were established during this period. Due to this reason, the city has attracted population from other districts of the Andhra Pradesh State and also from other States. During the period 1991-01, the city recorded an aggressive growth rate (88.5%), because the jurisdiction of the municipal area has been extended and the Gajuwaka municipality and 32 villages were included in Visakhapatnam City.

The decade 1951-61 could be described as the decade of development of port-based industries and of the transportation sector. More over, in 1955, the port extended its activities which resulted in establishment of the oil refinery industry, railway wagon assembly yard. These developments have led to the establishment of small and medium scale industries and also the establishment of an industrial estate in 1961. Thus, the industrial activity was started from the 1951-61 period, the industrial activity was further intensified during 1961- 71 period, where as large scale industrial expansion was took place in the decade 1971-81 period. During this decade major industries such as, the Ore Handling Plant (1966), Coromandel Fertilizers (1964), Bharat Heavy Plates and Vessels (1971), Hindustan Polymers (1977) and the Dry Dock Project (1977) were established. Further, the construction of the steel plant began in 1980. These developments

have contributed to an increase in the volume of migration into the city and contributed for continuous population growth in the Visakhapatnam city.

Population Density Changes in VIZAG City:

Region	2001	2011	Decadal change (%)
Zone-I	975	1474	51
Zone-II	13,779	16147	17.1
Zone-III	23,161	23,387	1.0
Zone-IV	4,362	5,274	20.9
Zone-V	1356	1592	17.4
Zone-VI	2026	1465	-27.7
Total Visakhapatnam city	45659	49339	79.7

Table No-5: Population density changes according zones in Visakhapatnam city (GVMC)
(Source: Compiled from reports of GVMC)

4. Conclusion

Thus, the above analysis shows that the growing Industrialisation and urbanisation attracted people from rural and other areas to concentrate in Visakhapatnam city by the way of population growth. The aggregate Visakhapatnam region urban populace is around 20.37 lakhs and in which around 47.51% of populace are living in urban regions. Assist 85% of the aggregate locale urban populace are living in Visakhapatnam city only. Regarding decadal development rate of urban populace of Visakhapatnam city, most elevated development rate (95.7%) was recorded amid 1951-61 period, trailed by 1991-01 period with 88.5% development rate. While around 21.3% of decadal development rate of populace recorded amid 2001-11 in Visakhapatnam City. which is a direct development rate. The populace development rate amid 2011 enumeration in Visakhapatnam city, as per organization Zones, most noteworthy development rate is recorded in Zone – I(51.98%), trailed by Zone - VI (38.3%) Zone - V (23.3%) which are fringe and external Zones. The least development rate is recorded in Zone - III (0.97%) which is a focal local location. The populace development rate as per ward's amid 2011 statistics, over 100% development rate recorded in fifth ward though, 51% to 75% populace development rate is recorded in 35th, 45th, 50th, 69th and 70th Wards of particular Zones of the Visakhapatnam City. Concerning thickness, around 3,248 people/sq.km are living in Visakhapatnam City amid 2011 evaluation period. The most astounding populace thickness (23,387 people/sq.km) is recorded in Zone - III, trailed by zone-II (16,147), Zone-IV(5,274) and most noteworthy populace thickness (1474) recorded in Zone - I.

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