



## Urban Nagpur: Spatial Dimensions

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### Abstract

Urbanisation is a process which makes structural changes in an area from economic activity to lifestyle of the population. The region transforms from primary activity to secondary and tertiary activity and concentration of population nearer to centre or Head quarter. In simple way it is a proportion increases in population living towns and cities. At global level India is also emerging as a urban country. In India, Maharashtra is one of the developed industrial and commercial states and Mumbai being a commercial capital of India accelerate the growth of the state. After Mumbai which is 100 per cent urbanized, Nagpur being a second capital having much scope for rapid development and urbanisation, hence selected for present paper. The major objective of present paper is to examine and analyse the urban scenario and degree of urbanization in Nagpur district mainly with urban population. Census of India' data for various time period was utilized to fulfill the objectives. Findings show that trend in decadal growth rate after 1951 increase in population was there with moderate to high rate. Negative growth was observed in decade 1911-21 due to plague epidemic and influenza pandemic. Not much variation was seen in per cent urban decadal growth rate. Literacy is one of the parameters which play a crucial role in development. The two variables (urban population growth and literacy) are highly positively related. It indicates with increase in urban population there is an increase in literacy as well. Kahi and Bhiwapur tahsils are entirely having rural population. Most of the tahsils had experiences increase in urban population. Literacy rate also shows the development but sex ratio had declining trend. No strong relationship emerged between literacy and sex ratio, though sex ratio should increase with increase in literacy. Overall it may be concluded that whole scenario of Nagpur district is having an increasing trend in various aspects of population.

Key words-Urbanisation, Decadal growth, Urban growth, Maharashtra, Nagpur

### Introduction

Urbanization is not new to India. The ancient urban centres such as Mohanjodaro, Harrappa, or Indus valley civilization, Nalanda indicates a rich history of urban centres education system and defensive techniques for urban areas. At present also after 1951 urbanisation process accelerates with industrialization and modernization started the era of technology. Mumbai, Kolkatta, Delhi, Chennai were examples of urban centres and at present many centres are emerging as urban centres in India. Industrial revolution is the game changer for society from traditional to urbanization. Urbanisation or urban growth is one of the parameters for development of a region it is a general co-relation that with increase urbanisation, there is an increase in amenities or facilities in that region. As per United Nation, 55 per cent world's population lives in urban area and in future by 2050 urban population will increase to 68 per cent. North America, Latin America and the Caribbean, Europe and Oceania are the most urbanized regions in the world (11).

Urbanization is a process in which a area becomes an "urban area" and over a period of time population adopts a urban way of life i.e. urbanism. In this process change in lifestyle of population takes place and growth of industrialization and commercial activities. Urbanization brings changes in many factors like demographic (birth and death rate, sex ratio), social (literacy), economic (job, income) and environmental factors of urban area or society. People are more involved in secondary and tertiary activities. The urban

growth or urbanization is affected by a definition issues. In India till 1951 census definition of “Urban” was more or less similar but thereafter few modifications were made.

The decade 1911-1921 witnessed a negative growth of population in India. The epidemic of plague, post world war the worldwide pandemic of influenza was certain reasons for loss of millions of lives. Thereafter increase in population was there. Maharashtra was the most urbanized major state in India till 1991, stood behind Tamil Nadu in 2001 and third after it in 2011, with Kerala being second (12). Though India and states have increasing trend in population as well as in urbanization, on the other side it rises the issues like slums, poor sanitation, unemployment, health issues, environmental pollution and much more. We have to go for urbanization but it should be with holistic approach so that fewer problems will be there.

### Objectives

In the light of above discussion, the present paper aims to study the following objectives-

- 1 to analyse trend of urbanization in Maharashtra and Nagpur
- 2 to examine spatial distribution and degree of urbanization in Nagpur as per 2011 census.

### Methodology

The present study is entirely based on secondary data. Primarily data required for the study was obtained from population census (Census of India), books, internet articles, newspaper and observation of Nagpur city. Mostly urban population was considered. Simple percentage and correlation statistical techniques were used. The organized data was represented by line graph to have a quick idea about trend and variations of the parameter. In the Census of India 2001, the definition of urban area adopted is as follows:

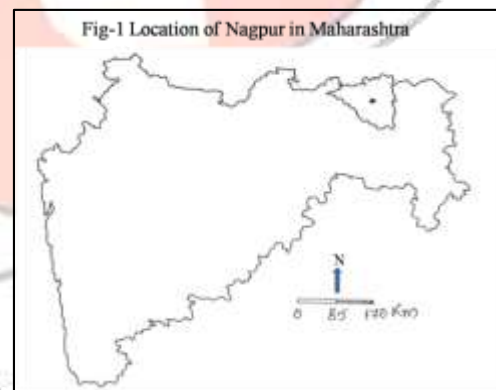
- a) All places with a municipality, corporation, cantonment board or notified town area committee, etc.
- b) A place satisfying the following three criteria simultaneously:
  - i) A minimum population of 5,000.
  - ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and
  - iii) a density of population of at least 400 per sq. km.(1000 per sq.mile)

### Study Area

For smooth administration and holistic development, Nagpur district is divided into 5 sub-divisions and 14 Tahsils. The divisions are Nagpur sub division, Katol sub division, Savner sub division, Ramtek sub division and Umred sub division. Nagpur is one of the urbanized districts in Maharashtra with 2/3 of population living in urban areas. and Bhiwapur tahsils are entirely rural tahsils. Nagpur district lies in the Nagpur plain at the southern base of the Satpuda hills in the north-east of Maharashtra. It is situated between 20' 35' and 21' 44' north latitudes and 78' 15' and 79' 40' east longitudes. The district has an area of 9,892

sq.kms. Nagpur district is one of the well urbanized district having more than two-third of its population lives in urban areas as two-fifth of state

population lives in urban areas (2011 census).Originally, a vantage point for defence, Nagpur grew into an urban centre and now is an important administrative, commercial and industrial centre. As a centre of India, it is well connected by rail, road and air. The relief features of the district are, by and large characterized by the residual hill ranges of the Satpudas. The topography is mostly typical of that of the Deccan Trap region having flat-topped and terraced features. (Census 2001)



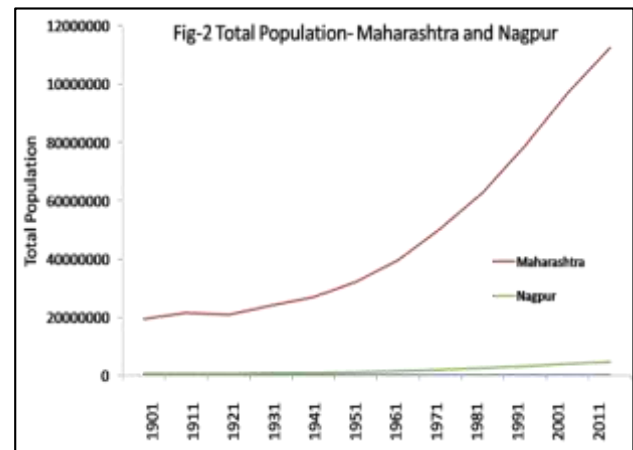
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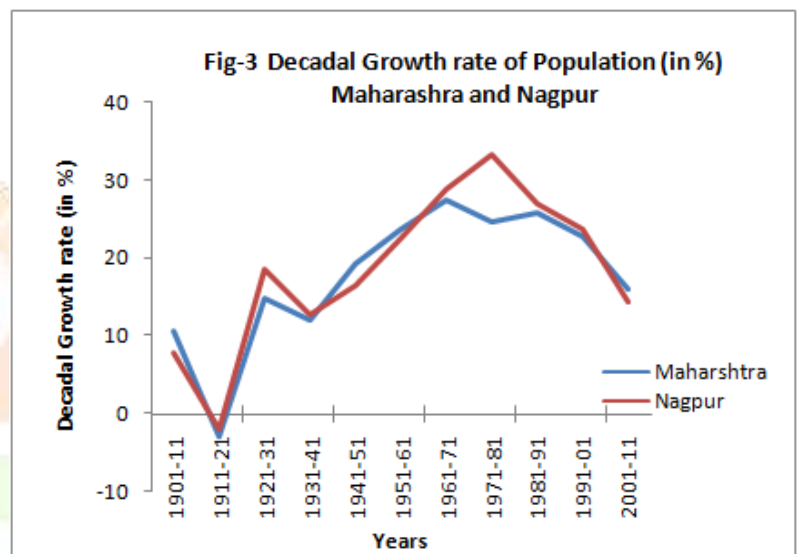
## Findings and Discussion

### Urban Scenario - Maharashtra State and Nagpur District

Total population of Maharashtra and Nagpur from 1901 to 2011 was shown in **Fig-2**. It shows growth of population in Maharashtra was more as a state. The population trend in growth of Nagpur seems to be a moderate. Though individually, Nagpur's growth of population was moderate to steep. Maharashtra as a state had rapid growth of population after 1951 i.e. after independence. The rapid growth rate was attributed to increase in better medical facilities, low death rate and high birth rate, awareness etc. Decrease in population was observed in 1921 due to influenza epidemic of 1918-19 and crop failure in nearby years which toll heavy life due to starvation. Thereafter increasing trend was observed in Maharashtra and Nagpur.

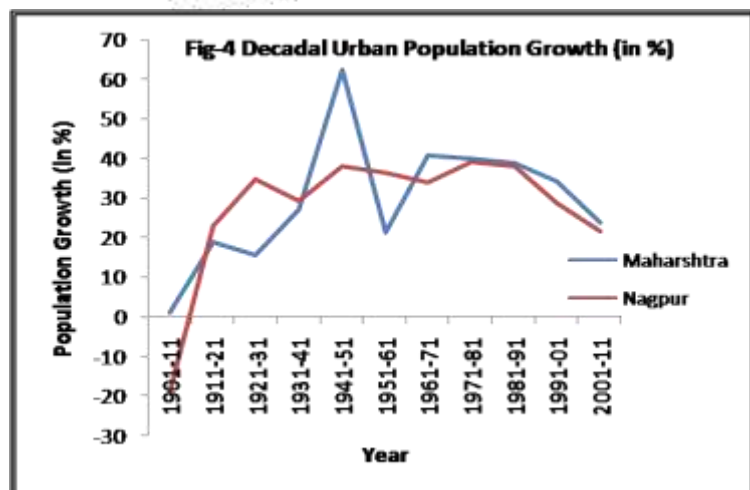


**Fig-3 (Table-2)** shows the decadal growth of population in Maharashtra and Nagpur district. Maharashtra and Nagpur district both are having increasing trend but at moderate rate. The observed distinct feature in decadal growth was negative growth of population in decade 1911-1921, both in Maharashtra and Nagpur district. It may be due to epidemic and influenza during that particular year. Another feature was decline in decadal growth rate in after 1981-91 from 25.73 per cent to 22.73 per cent in 1991-2001 thereafter a sharp decline to 15.99 per cent in 2001-2011 for Maharashtra. Nagpur's population was having increasing trend from 1951-61, but starts declining after 1981-91 and reached to 14.40 per cent decadal growth rate in 2001-2011. This declining trend is a healthy and good sign for state and district with regard to population control. This declining trend may be contributed to efforts taken for awareness programs, population policies of government regarding family planning, incentives benefits of small family etc. another reason may be was increase in the literacy level of population which ultimately helped in reaching this goal of population control.



**Table-3 (Fig-4)** depicts growth of urban population in Maharashtra and Nagpur. It shows the overall increasing trend in decadal urban population. A striking feature of Nagpur was it had negative growth (-18.9 %) in the decade 1901-1911. Thereafter increasing trend was there.

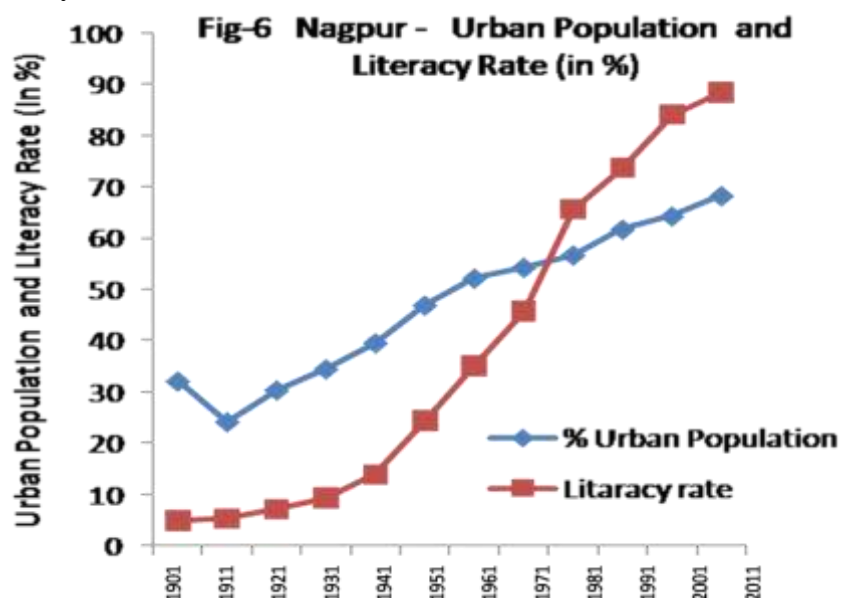
Maharashtra had 62.42 per cent decadal urban growth rate. More or less increasing trend was same for Maharashtra and Nagpur with moderate variation in urban rate. It may be due to Nagpur is one of the developed district and second capital of Maharashtra. Urban decadal growth rate was showing declining trend from 1981 onwards for both the regions.



The per cent urban population to total population in Maharashtra and Nagpur was shown in **Fig-5 (Table-4)**. Both the region shows the increasing trend but development of urban population in Nagpur was more as compared with Maharashtra. It was having gradual increase in urban population. In 1911 urban population was 15.13 per cent which increases to 28.8 per cent in 1951 and 45.22 per cent in 2011. Maharashtra is having further scope for urbanization process. In 1951 urban population was 46.94 per cent of total population in Nagpur which increases to 68.31 per cent in 2011, showing that Nagpur heading towards stagnation stage. As per Kingsley Davis urbanization is a switch of spread out population to have concentrated in urban centre i.e. from agrarian society to industrial societies. As per Davis there are three stages of urbanization. Nagpur's urban population graph (Fig-5), somewhat shows the Davis stages. Nagpur had initial stage of urbanization upto 1931 with 34.50 per cent urban population. This means that still agrarian and traditional society was there with scattered or dispersed population.

In 1951 46.94 per cent urban population was there in Nagpur. This point may be referred as an acceleration stage of urbanization. In this stage start of concentration of population and economic activities was there. Increase in tertiary activities was there such as trades and services, manufacturing industries etc was there and decline in primary activities starts. As per Kingsley Davis when per cent of urban population increases to 60 or 70 per cent, a terminal stage is there i.e. more or less level of urbanization will be constant as not much further scope is there, but still urban population growth will be there. The terminal stage or stagnation simply means that with high level of urbanization, the total population growth rate and urban population growth rate will remain more or less same. The terminal or stagnation process may be evident in future census and it has initiated from 2001 census year, where urban population was 64.36 per cent. Maharashtra is still in acceleration stage, though some of the districts have reached termination stage.

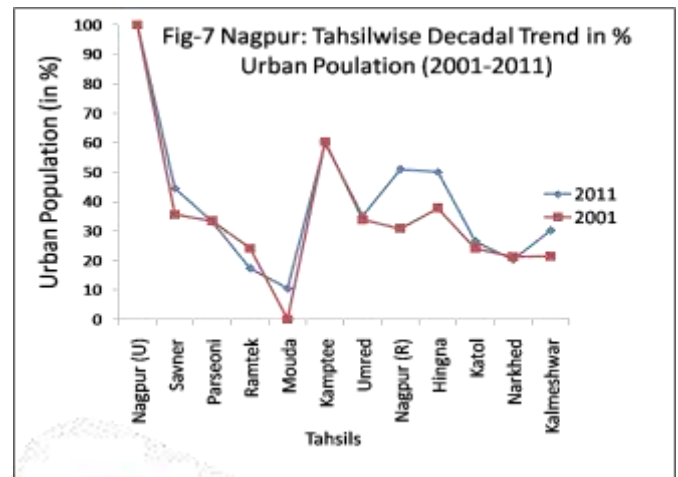
Temporal literacy rate and Percentage of urban population to total population was shown in **Table-5 (Fig-9)**. Literacy rate indicates the total literacy of Nagpur district (rural and urban) as urban population and population in age group 0-6 was not available for all years. Fig-6 depicts that as per cent of urban population was increasing, the literacy rate of district was also increasing. 1951 was a turning point in increase in per cent urban population and literacy rate. In 1901 only 4.92 per cent population was literate which increases to 24.23 per cent in 1951. Thereafter a rapid growth in literacy rate was observed. From 24.43 per cent in 1951, literacy rate has gone up to 88.39 per cent in 2011. The introduction of compulsory primary education scheme post independence might be one of the factors for rise in literacy rate. In near future will achieve 100 per cent. Urban population was also having a rapid growth since 1951 to 2011 from 46.94 per cent to 68.31 per cent respectively.



Co-efficient of correlation was calculated to examine whether increase in urban population have any effect on literacy. Correlation method measures and analyses the degree or extent between two or more variables. It shows the interdependence between two variables. Co-efficient of correlation describes magnitude as well as direction of correlation. The analysis shows that both the variables are positively highly correlated with each other. The correlation value is + 0.957. It indicates that with increase in urban population there is an increase in literacy as well. It is a very good indicator that literacy has reached to 88.39 per cent, as literacy is one of the significant factors, and plays an important role in development of a region.

### *Spatial Dimensions*

Tahsil wise decadal change in urban population (%) was represented in **Fig-7** of census years 2001 and 2011. Kuhu and Bhiwapur tahsils are not included in graph as they are not having urban population in both the census. The graph shows that not much change or variation was therein per cent urban population to total population. Most of the tahsils had experiences increase in urban population. Ramtek was seen decreasing trend from 24.1 per cent to 17.27 per cent in 2001 and 2011 respectively. Mouda not having urban population in 2001 but has started process of urbanization in decade with 10.44 per cent urban population in 2011. Nagpur (rural), Hingna and Kamptee have reached up to 50 per cent of urban population. In future years they may go further in process of urbanization i.e. towards more tertiary activities and concentration of population at one place or head quarter. Other tahsils will also step ahead in urbanization process. Overall it may be concluded that tahsil wise growth of urbanization is there in Nagpur District.



Spatial dimensions of few demographic parameters were shown in **Table-6**. Tahsil wise distribution of urban population, literacy rate and sex ration as per 2011 census was depicted. The sex ratio and literacy rate shown here is of urban population. The per cent of urban population was discussed above. Overall 68.30 per cent urban population was there in Nagpur district. Kamptee (59.77 %), Nagpur (rural 50.88 %), and Hingna (50.02 %) tahsil had more than 50 per cent urban population. Savner was having 44.46 per cent and other tahsils had less than 35 per cent urban population except Nagpur (urban) which had 100 per cent urban population.

The literacy rate shown here was crude literacy rate as it includes 0-6 year population also. The literacy rate of urban population was more than 75 per cent in all tahsils, but as compared to it, sex ratio has not reached nearer to 1000 females. Sex ratio shown here is number of females per 1000 males. The overall district's sex ratio was 954 in 2011 of urban population. Nagpur (urban-963), Ramtek (981), Umred (966), Katol and Narkhed (961) are having sex ratio more than district. Others are having less than 954 females behind per 1000 males. As literacy rate approximately has reached up to 80 per cent, the sex ratio must also reach up to 1000 females as government policies are encouraging for girl child and her overall development through incentives and methods or ways for benefit.

Literacy rate and sex ratio (urban population) was shown in **Table-7**. It is a general phenomena that with increase in literacy, the other related parameters also increases. Literacy rate had an increasing trend but sex ratio was showing decreasing trend. In 1901 highest sex ratio (961) was recorded and in 2011 it was 954 females per 1000 males, which is not a good indicator for urban area as education has to play a crucial role in increasing the female population. Substantial fall in sex ratio is there. Here literacy rate and sex ratio shows very low correlation (+0.213), though positive but it indicates there is very low impact of literacy on increasing sex ration in Nagpur.

## Conclusion

Being a second capital of Maharashtra, in recent years Nagpur have emerged as a centre for advanced opportunities in several fields, such as from primary education to ITI, from engineering to medical education, Law College, AIIMS and much more. Hence forth growth of urban population in Nagpur over a period of time may be attributed to natural increase (birth rate and death rate) and migration mainly from rural to urban.

Overall temporal and spatial analysis of shows that-

- Till 1941 slow growth of population was there.
- Negative growth was observed in decade 1911-21 due to plague epidemic and influenza pandemic.
- The census year 1951 may be considered as a population **divide** year.
- Post independence increase in total population and urban population was there. The growth rate was moderate to high.
- High positive correlation was observed between urban population growth and literacy rate. Urban population was considered as independent variable.
- Spatial distribution of urban population depicts that Kuhl and Bhiwapur tahsils entirely have rural population.
- Nagpur (urban) was entirely the urban tahsil with 100 per cent urban population.
- Ramtek had decrease in per cent urban population from 2011 to 2011 (24.1 to 17.27 per cent respectively)
- Kamptee, Nagpur (Rural) and Hingna had more than 50 per cent urban population.
- No strong relationship was observed between literacy rate and sex ratio in Nagpur district over a period of time.
- At district level surprisingly decreasing trend was observed in sex ration. Highest sex ratio was 961 females per 1000 males in 1901, which decreases to 954 in 2011.

On a whole it may be concluded that with up and downs, Nagpur district is having an increasing trend in many demographic parameters. Development of Nagpur is taking place with high rate. There are so many parameters like composition of population, social factors, amenities available etc at tahsil and village level but cannot incorporate in a paper. These parameters should be analysed in future studies.

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### Appendix-Tables

Year	Maharashtra	Nagpur
1901	1,93,91,643	7,48,489
1911	2,14,74,523	8,06,287
1921	2,08,49,666	7,89,940
1931	2,39,59,300	9,36,987
1941	2,68,32,758	10,56,537
1951	3,20,02,564	12,30,535
1961	3,95,53,718	15,08,455
1971	5,04,12,235	19,42,688
1981	6,27,82,818	25,88,811
1991	7,89,37,187	32,87,139
2001	9,68,78,627	40,67,637
2011	11,23,74,333	46,53,570

Decade	Maharashtra	Nagpur
1901-1911	10.74	7.72
1911-1921	-2.91	-2.03
1921-1931	14.91	18.61
1931-1941	11.99	12.76
1941-1951	19.27	16.47
1951-1961	23.60	22.59
1961-1971	27.45	28.79
1971-1981	24.54	33.26
1981-1991	25.73	26.97
1991-2001	22.73	23.74
2001-2011	15.99	14.40

Year	Maharashtra	Nagpur
1901-1911	0.99	-18.92
1911-1921	18.72	23.13
1921-1931	15.54	34.74
1931-1941	27.11	29.33
1941-1951	62.42	38.13
1951-1961	21.32	36.36
1961-1971	40.75	33.98
1971-1981	39.99	39.22
1981-1991	38.87	38.23
1991-2001	34.31	28.7
2001-2011	23.64	21.61

Year	Maharashtra	Nagpur
1901	16.59	32.11
1911	15.13	24.17
1921	18.50	30.38
1931	18.60	34.50
1941	21.11	39.58
1951	28.8	46.94
1961	28.2	52.21
1971	31.2	54.32
1981	35.03	56.75
1991	38.69	61.78
2001	42.40	64.36
2011	45.22	68.31

Year	% Urban Population	Literacy rate (%)	Co-efficient of Correlation
1901	32.11	4.92	+ 0.957
1911	24.17	5.36	
1921	30.38	7.16	
1931	34.50	9.40	
1941	39.58	13.95	
1951	46.94	24.43	
1961	52.21	35.15	
1971	54.32	45.77	
1981	56.75	65.60	
1991	61.78	73.64	
2001	64.36	84.03	
2011	68.31	88.39	

District / Tahsil	Urban Population (%) 2001	Urban Population (%) 2011	Sex ratio (Female per 1000 Male)	Literacy Rate (%)
Nagpur District	64.3	68.30	954	81.82
Nagpur (Urban)	100.0	100	963	82.48
Savner	35.6	44.46	935	79.29
Parseoni	33.3	33.08	949	75.02
Ramtek	24.1	17.27	981	79.13
Mouda		10.44	931	79.71
Kamptee	60.3	59.77	932	80.08
Kuhi	-	-	-	-
Bhiwapur	-	-	-	-
Umred	33.8	35.00	966	79.08
Nagpur (Rural)	30.7	50.88	925	81.59
Hingna	37.6	50.02	856	78.84
Katol	24.0	26.41	961	81.43
Narkhed	21.1	20.21	961	79.32
Kalmeshwar	21.3	30.16	945	81.44

Table-7 Nagpur- Literacy Rate and Sex Ratio

Year	Literacy rate (%)	Sex ratio	Co-efficient of Correlation
1901	4.92	961	+ 0.213
1911	5.36	926	
1921	7.16	901	
1931	9.40	877	
1941	13.95	909	
1951	24.43	942	
1961	35.15	891	
1971	45.77	899	
1981	65.60	912	
1991	73.64	915	
2001	84.03	930	
2011	88.39	954	