



Growth And Distribution of Population In Kolhapur City of Maharashtra State (India)

KEYWORDS

Kolhapur city, Urbanization, Population growth, Population prediction, Population distribution.

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ABSTRACT

The process of urban expansion is a dominant phenomenon in South Maharashtra, which has been accelerated by increasing levels of urbanization facilitated by marked developments in transportation, industrialization and tourism. The other determinant is sprawl that includes high population growth on account of migration and establishment of growing network of public utilities. Kolhapur is largest urban centre of south Maharashtra and experiencing considerable high population growth. The present study based on the secondary sources of data mainly collected from the Census of India, intends to look into the growth and distribution of population in Kolhapur city located in the Southern part of Maharashtra state. For computing the annual population growth Gibbs method is used and for predicting the population of Kolhapur city Mandal's formula is employed. Ward-wise distribution of population has also highlighted. During the last more than a century period (1901-2011) population augmented due to high natural growth rate and migration. The better livelihood opportunities in the city have attributed to the rapid expansion of Kolhapur urban centre. After independence, the growth rate of population of Kolhapur City was high, but during 1941 to 1951 it was found very high (47.08%). The wards like Vicharemal, Daulatnagar, Kholkhandoba, Padmaraje Udyan, Yadvav Nagar and Sukrawargate wherein slums are also found having population density above 600 per hectare.

INTRODUCTION

The process of migration of population from rural areas to urban centres and transformation of villages into town and cities is called urbanisation (Ramotra, 2004). In the present day scenario, cities are becoming hub of all human activities. This has resulted in ever growing size of cities, squeezing open spaces available within city and has started exerting pressure on civic amenities. The very high growth of population has led to various socio-economic problems such as hunger and malnutrition, poverty and lower living standard, lower availability of natural resources, degradation in natural environment, scarcity of comfortable and hygienic houses, unemployment, overcrowding, in schools, hospitals and other social amenities (Shrivastri, 2010).

Generally speaking growth of population is the fundamental factor in ecological system and its relation to natural resources, environment and technology. In India, unprecedented population growth coupled with unplanned development activities has resulted in rapid but skewed urbanization. This has posed serious implications on the resource base, access to infrastructure and development of the region. In course of urban spread, valuable land is being covered for building, industry, transport facilities, etc. The direct implication of such urban sprawl is the change in land use and land cover of the region. The ability to serve and develop land heavily influenced the economic and environmental quality of life in the city. Haphazard and unplanned expansions of urban centre are found in South Maharashtra. An absence of land use planning may lead to land degradation. Un-planned decision may result into misery for large segment of local population and destruction of valuable eco-system.

OBJECTIVES

To analyse the population growth of Kolhapur city from 1871 to 2011 and appraising the problem of expansion of

its geographical area.

To examine ward-wise population distribution in the city from 1971 to 2011 and identification of areas with high density and space for development.

To draw the attention of civic bodies and urban development authorities regarding the growth of population of the city from 2021 to 2041 and in accordance to that how the utilities and essential services to public can well be maintained.

STUDY AREA

Kolhapur is 11th largest city in 'one of the six top districts in the state of Maharashtra with highest per capita income' (TOI, March 8, 2016), which is located between 16° 39' 3" to 16° 45' 50" North latitude and 74° 11' 20" to 74° 16' 10" East longitude. City is situated on the right bank of the river Panchaganga, which is a tributary of the river Krishna. The elevation of Kolhapur city is 650m above sea level. The city has moderate climate with minimum temperature of 15°C and maximum 40°C and receives an average rainfall of 1043 mm., the population of Kolhapur City in 1901 was 54,373 only and in span of more than a century, it reached to 5,49,236 in 2011. The city has unique physiographic setup with gentle slope decreases to north from south. The famous Rankala tank is located to the western side of the city is an attractive spot not only for the local citizens but also for the tourists visiting the Great Mahalakshmi temple. Because of this great and famous Mahalakshmi temple Kolhapur is known as 'Dakshin Kashi'. The Pune-Bengaluru national highway No 4 (NH-4) is on eastern side of the city.

It is well connected with other towns and cities that facilitates the people to visit this historical city well known all over the country due to the reforms that have taken place by his Highness Shahu Maharaj who made the provision of development of the depressed castes especially

the Scheduled Castes by providing them reservation in 1902. Shahu Maharaj was the first King in India who implemented the reservation policy (provided 50% reservation in his state to backward classes) on 26 July 1902 (Kanbarkar, 2010). It was a vital historical event that made possible to deliver social justice to them for their upliftment, which has also played an important role in fascinating the people of all castes and creeds attributed to city's growth and development. Shahu Maharaj applied his mind to promote education among the backward classes as the knowledge is the source of power and prosperity to have high level of administration. It was Jotirao Phoolley's Satyashodak Samaj's movement to spread education among backward and suppressed classes in rural areas of the state of Maharashtra. Phoolley started his work in 1848 and England under the Act of 1870 provided schools and in 1880 made primary education compulsory up to the age of ten as Shahu Maharaj wanted to give a larger share to the backward classes in the administration of local affairs and a voice in the public bodies. Realising the educational acquisition of education at the time of accession on 2nd April 1894 of Shahu Maharaj to the throne of Kolhapur, the percentage of educated Brahmins was 79.1, Marathas 8.6, Kunbis 1.5, Muslims 7.5, Jains and Lingayats 10.6 (Keer, 1976).

The major problem of Kolhapur city is that its population has been augmenting due to natural and migration as well, but city is facing the problem as the expansion of geographical area, has not taken place since long and development can only take place when its immediate surrounding villages have already been taking benefits, are being merged to the city. It can provide space for its further development. But the people from these proposed villages opposing bitterly for maintenance of their own old status, the basis on which they get electricity, phone and other services at cheaper rate. The Kolhapur Municipal Corporation has drafted the proposal of merging the 17 fringe villages viz. Shirol, Nagaon, Valivde-Gandhinagar, Sarnobatwadi, Gokul Shrigaon, Panchgaon, Morewadi, Ujlaiwadi, New Balinge, Kalamba, Unchgaon, Vadiper, Ambewadi, Vadange, Shiye, Shingnapur and Nagdevwadi into civic limits. The name of the Mudshingi village was added at the last minute to the proposal finalised in May end 2015. However, the villages and industrial units have been opposing the plan (TOI, March 11 & Feb. 17, 2016). Kolhapur city became Municipal Corporation on 15th Dec. 1972 and its area at that time was 66.82 sq km, which has not changed since then. Its population in 1941 was below one lakh (93,032) as per census of India and it rose to over one lakh i.e. (136,835) in 1951 which is essential for declaring any urban centre as a city and Municipal Corporation status. In fact this status to the city was allotted in 1972. In 1971 city's population was 2,59,050 and since it has grown more than two times to 5,49,236 as per 2011 census.

This issue of merging the surrounding villages to Kolhapur city numbering about 42 commenced in 1989, on July 11, 2001, 25 villages were excluded from 42 and in August 2014 chief minister of the state stayed the merger of 17 villages, thereafter the urban development rejected the proposal and KMC passed the resolution proposing the merger of 18 villages and two industrial areas (TOI, Jan. 23, 2016). Once these villages become the part of the KMC it will enhance its population and accordingly the funding to the civic body will be increased for its development.

Historical background of the city

Kolhapur is largest and oldest city of Western India. Brah-

mapuri is the oldest nucleus of the city, situated on the bank of river Panchaganga over two thousand years ago. Kolhapur is as old as that of its origin is attributed to the creator Brahma Himself in the Mythology (Karaveer Mahatmya, Adhyaya 9:1 Shloka). In Puranas it is known as 'Karaveera', after the legend that the Goddess Mahalaxmi used her mace (Kar) to lift and save her favourite retreat from the water of the Great Deluge. According to another legend the name 'Kolhapur' and 'Karaveer' have been derived after two demons, Kolhasura and Karaveera, who lived in these parts and killed on a hill in the vicinity of the city by the Goddess Mahalaxmi. Yet another analogy is that the name 'Kolhapur' has been taken from the city's one time King, the Srigala (Sanskrit for 'fox', converted to 'Kolha' in Prakrit). According to Rajawade, 'Kolla' was the Goddess of the 'Kols' or 'Kohas', the aboriginal residents of the settlement and her shrine was named as 'Kolhapur', the name eventually degenerated into its Marathi form 'Kolhapur' (Malshe, 1974).

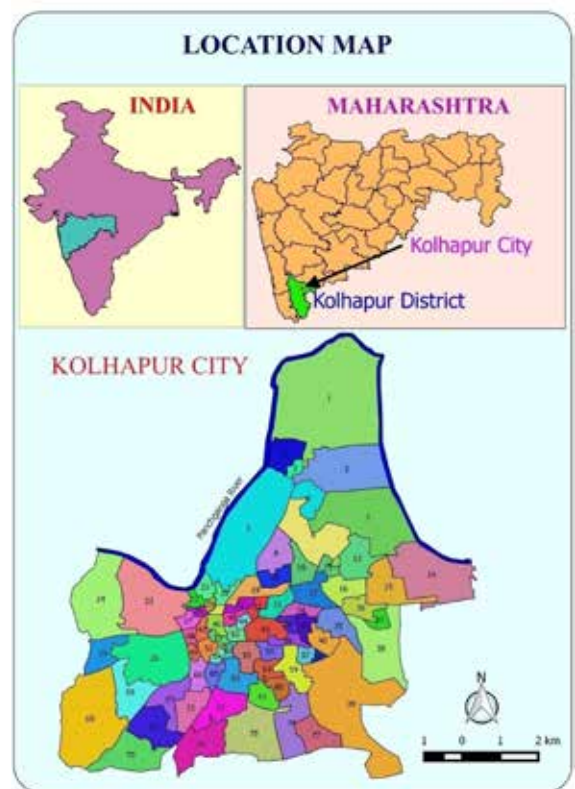


Fig. 1. Note-Numbers in the map showing ward numbers, refer table 4.

A section of the Markandeyapurana, called Murtirahasya of Devimahatmya refers to the Goddess Mahalaxmi. This purana is not older than A.D. 800. The Devimahatmya, the latest part of the Markandeyapurana, was certainly completed in 9th century and might be in 6th or 7th A. D. century proves that city was originated before 6th century. The place is described as the 'Kashi' of the South in the Karaveerapurana. Not only this, but its importance is said more than Kashi (Karveer Mahatmya, Adhyaya 3:41 Shloka). The environment of city contains the names like Dwarka, Prayag, Rudragaya, which increased the importance of the city.

There is a reference of Kolhapur for other names also. 'Padmavati', 'Karaveerapura' these names also connected with Kolhapur (Sankalia, 1952). It is known that old Kol-

hapur had number of tanks with lotuses. One of the tanks bears the name of Padmala. Therefore, it is possible that the name Padmavati stood for Kolhapur. Another possibility is that the city might be known as Padmavati because of 'Padma', the Goddess of Jain Tirthankar Parswanath (Gazetteer of Bombar Presidency, 1886).

The word Kolhapur is found in 'Dvyasraya Kavya' of Hemchandra (A.D. 1130), the famous Jain writer. He refers to gifts sent by the Lord of Kolhapur, who was blessed by the Goddess Laxmi, for Prince of Chamuda, the son of Mularaja (Sankalia and Dikshit, 1952). Other explanation about origin of city is related to topography. The words 'Kolla' and 'Kholla' have been derived from an original Kanada word meaning 'low ground'. 'Kholla' also means a river valley and therefore, 'Kolhapur' means a town situated in the valley of river. While the word 'Koll' means a 'low lying trough between mountain ranges'. A town situated in such a place being named 'Kolhapur', later it was transformed into Marathi as 'Kolhapur' (Khare, 1949). Therefore, at least topographically, the name Kolhapur has been justified as the town really does lie in a sort of bowl formed by the end portion of five river valleys namely the Kasari, the Kumbi, the Tulshi, the Bhogawati and the Saraswati (known as underground River). All these rivers flowing into the Panchaganga before it reach the outskirts of Kolhapur town.

DATA BASE AND METHODOLOGY

The present study is based on the secondary sources. The secondary data has been collected from District Census Handbooks of Kolhapur District from 1961 to 2011, District Gazetteer of Kolhapur, the reports of Kolhapur Municipal Corporation, journal, etc. The rate of population growth has been measured in percentage.

For that following formula has been used.

$$GR = \frac{P_2 - P_1}{P_1} \times 100$$

Where, GR = Growth Rate of Population,
 P_1 = Population of previous year
 P_2 = Population of current year

The Rate of the population annual growth has been calculated with the help of Gibbs (1966) formula:

$$R = \frac{P_2 - P_1 / t}{P_2 + P_1 / 2} \times 100$$

Where, R = Annual growth rate.
 P_1 = Population of initial period of time.
 P_2 = Population of latter period.
 t = the time interval of P_1 and P_2

Kolhapur city population estimated from 2021 to 2041 year on the basis of arithmetic and geometric progression. Arithmetic progression is based on the basis of natural growth of population per year, whereas the geometric progression is calculated by employing Mandal's (2000) following formula:

$$Y = ar^{n-1}$$

POPULATION GROWTH OF THE CITY

The first official census of Kolhapur was held in 1852, but no authentic information regarding city's population is available for the preceding years. However, in the seventh century historical documents referred Kolhapur as 'Kasbe Kolhapur' (Census of India 1961). The word 'Kasbah' (Arabic) means a settlement bigger than a village and smaller than a city. So it was a town at that time (Malshe, 1974). In 1881, the population of city was 39,910. It is noted that the population of city was declined by 1123 because of

severe famine of 1876-77. The decline in population is also attributed to the unhygienic living condition, insanitation and frequent epidemics in the city.

In 1891, the Kolhapur City population was 47,372. That means the population was increased by 19 per cent. This increase of population was direct result of the measures taken by the government to reduce the congestion in old city and improve sanitation. The supply of drinking water was augmented. Better roads and drains were constructed. The old fort wall was demolished and moat was filled in and people were encouraged to build houses outside the old fort. The city exhibited signs of rejuvenation during this decade.

In 1901, the population of city was 54,373. That means during 1891-1901, the actual growth of population was 7001 and the decade growth was 14.77 per cent. The opening of the railway from Miraj-Kolhapur in the year 1891 and trading companies were encouraged to settle in Kolhapur, because of which the population of city was increased.

In 1911, the population of city was 42,018. This shows that the population of city was decreased by 12,355 during 1901-11. In this decade the population of city had decreased by 22.72 per cent, due to plague epidemics. However, the population of Shahupuri, a suburb of city, was increased from 1233 to 2671, due to the starting of Shahu Mill and other industries (Malshe, 1974).

In the year 1921, the population of city was 52,299 and it was increased by 10,281 during 1911-21. It shows that the growth rate of population during this decade was 24.47 per cent. According to 1931, the population of Kolhapur was 66,728. The actual population growth was 14,429 persons and percentage growth was 27.59 per cent during 1921-31. The opening of Wilson Bridge and spreading of education institution were the positive factors for the population growth during this decade.

In 1941, the population of Kolhapur was 93,032. This indicates that 26,304 people were increased in the total population of Kolhapur city marking 39.42 per cent growth. Improvement of the sanitation, eradication of plague epidemics and trade are the reasons for the growth of population.

After independence of the country, i.e. after 1951, the growth of population of Kolhapur City increased continuously. In 1951 its growth was highest (47.08%). Since 1951 to 2011, it was noticed that growth of population in Kolhapur city has been decreased and it has reached to 13.21% in 2011. In 1951, the population of Kolhapur city was 1,36,835. This is the first census carried out after independence of the country. During 1941-51, 43,803 persons were increased in the population of Kolhapur.

Table1

Kolhapur City: Population Growth and Area Expansion, 1871-2011

Year	Population	Actual decade variation	Decadal growth %	Annual growth %	Area in sq.km	Growth of area %
1871	41,033	0000	00	00	00	---
1881	39,910	-1123	-2.74	-0.27	NA	---
1891	47,372	7462	18.70	1.70	NA	----

1901	54,373	7001	14.78	1.37	8.96	--
1911	42,018	-12355	-22.72	-2.56	8.96	00.00
1921	52,299	10281	24.47	2.18	8.96	00.00
1931	66,728	14429	27.59	2.42	11.52	28.57
1941	93,032	26304	39.42	3.29	17.15	48.47
1951	1,36,835	43803	47.08	3.81	64.15	274.05
1961	1,87,442	50607	36.98	3.08	64.15	00.00
1971	2,59,050	71608	38.2	3.21	66.82	4.16
1981	3,40,625	81585	31.49	2.72	66.82	0.00
1991	4,06,370	64493	19.30	1.76	66.82	0.00
2001	4,93,167	86797	21.35	1.92	66.82	0.00
2011	5,49,236	56069	11.36	1.07	66.82	0.00

Source: Census of India, District Census Handbook, Kolhapur, Village and Town Directory, 1961, 1971, 1981, 1991, 2001, 2011

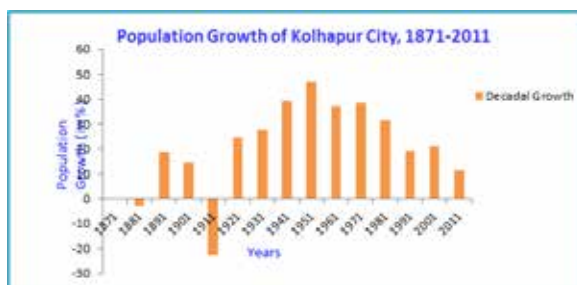


Fig. 2

In 1961, population of Kolhapur city was reached at 1,87,442 and growth rate was observed 36.98 per cent. Nearly 50,607 people were increased during 1951-61. In the year 1971, the population of Kolhapur city was 2,59,050 and the growth rate of population was 38.20 per cent. It was found that 71,608 persons were added during 1961-71. In 1981, the population of city was 3,40,625 and decade growth was 31.49 per cent. The net increase in the population was 81,575 persons during 1971-81. In 1991 the population of Kolhapur was 4,06,370, with 19.30 per cent growth rate during 1981-91. In 2001 and 2011, the population of city was 4, 93,167 and 5,49,236 with the growth rate of 21.35 and 11.36 per cent respectively.

As far as annual growth of population is concerned, during 1901-11, population growth rate of city was negative (-2.56%). The high annual growth rate has been found in 1941-1951 (3.81%). Annual growth rate of population has been decreased to 1.07 per cent during the decade 2001-11, which is lowest since 1921 (Table 1).

If we consider the area of the Kolhapur city, it is found that from 1901 to 1921, the area of the city was 8.96 sq km. It was increased by 11.52 sq km and 17.15 sq km in 1931 and 1941 respectively (Table 1). In 1971, the city area was 66.82 sq. km and there is no change till today. It shows that the population of Kolhapur city is increased from 2,59,050 to 5,49,236 from 1971 to 2011 but the city area has not increased. Therefore, limited city area is one of the most important barriers for the development of the city.

PROJECTED POPULATION

Any attempt to make population projection is fraught with uncertainties as there is no fixed law of population increment and various techniques of projection are apt to give a generalized result. Being a number of techniques of population projection, it has been decided here to use simple arithmetic and geometric projection methods.

Kolhapur city population estimated from 2021 to 2041 year on the basis of arithmetic and geometric progression.

Arithmetic progression is based on the basis of natural growth of population per annum, whereas the geometric progression is calculated with the help of following formula (Mandal, 2000):

$$Y = ar^{n-1}$$

Arithmetic Progression

$$\begin{aligned}
 P. 2011 &= 5,49,236 \\
 P. 2001 &= 4,93,167 \\
 \text{Difference (r)} &= \frac{56069}{10 \text{ years}} = 5606.9 \\
 \text{Therefore, } P. 2021 &= P. 2001 + (r \times 20) \\
 &= P. 4,93,167 + (5606.9 \times 20) \\
 &= 4,93,167 + 1,12,138 \\
 &= 6,05,305 \text{ population}
 \end{aligned}$$

Geometric Progression

The Kolhapur city population predicted by applying the geometric progression as follows;

$$Y = ar^{n-1}$$

Where, Y is the selected year for progression,
a is the first year,
r is rate of population growth,
n is the interval of years,
-1 is the constant.

For instance in Kolhapur

$$r = P. 2011 = 5,49,236$$

$$P. 2001 = 4,93,167$$

$$(10^{\text{th}} \text{ year from } 2001)$$

$$\text{Thus, } 5,49,236 = 4,93,167 r^{11-1}$$

$$\text{Or, } r = 1/10 (\log 549236 - \log 493167)$$

$$= 1/10 (5.7397 - 5.6929)$$

$$= 1/10 (0.0468)$$

$$= 0.00468 \text{ (rate of population growth)}$$

$$\text{Therefore, } P. 2021 = \log P. 2001 + r \times 21 - 1$$

$$= \log 4,93,167 + 0.00468 \times 20$$

$$= 5.6920 + 0.936$$

$$= 5.7865 \text{ (see antilog)}$$

$$= 6,11,600 \text{ population of Kolhapur in } 2021.$$

Table 2

Projected Population of Kolhapur City (2021-2041)

Year	Arithmetic Population	Geometric population
2021	6,05,305	6,11,600
2031	6,61,374	6,81,300
2041	7,17,443	7,58,800

Source – Based on Census of India, 2001

If we consider the projected population of the Kolhapur city, as per geometric calculation it is found that the population of the city will be 611600 in 2021 and it will reach to 758800 in 2041. This indicates that total population (209564) will be increased in 2041 as against 2011 (Table 2).

POPULATION DISTRIBUTION OF THE CITY

The first striking feature is the disproportionate areal distribution of the municipal wards of the city. These wards were formed long back and no revision has been made until 2001. Out of five old wards of the city the biggest and the most spacious is the E ward that shares about 60% of the city's total area. The smallest and most congested ward is C, which has as little as 2% of the total

area. If this extreme disparity in area is lost sight of, the actual census returns per ward are bound to create wrong impression on anybody's mind.

Ward-wise Density of Population

The total area of the wards, population and density indicated in Table 3, which shows that E ward area is 41.4 sq. km bigger than other wards therefore the density of E ward is less than other wards. The density of population of E ward was 2354 persons per sq. km in 1971, 3546 persons per sq. km in 1981, 4470 persons per sq. km in 1991 and it was 5433 persons per sq. km in 2001. On the other hand the area of C ward is 2.4 sq. km which is smaller than other wards; therefore the density of C ward is comparatively higher. In the year 1971, the density of C ward was 15,940 persons per sq. km and it was 16,554 persons per sq. km in 1981, 14,850 persons per sq. km in 1991 and 18,146 persons per sq. km in 2001. The B ward population density was 4109 persons per sq. km in 1971 and it reached to 7637 persons per sq. km in 2001. The A ward population density in 1971 was 4927 persons per sq. km in 1971 and it was 10,186 persons per sq. km in 2001. The D ward density of population was 11,528 persons per sq. km in 1971 and it was 15,837 persons per sq. km in 2001. The C ward is densely populated area and it is surrounded by other four wards. Bindu Chowk, Shivaji Putala, Laxmipuri and CPR Hospital these are the blocks where the density of population is high in C ward. Generally, the density of population has decreased from busy area to Jiti stream. However, the area lying between the Rajaram road and Shivaji road is an exception to it. Both these roads provide an easy access from Shahupuri to Rajarampuri area. Therefore, Laxmipuri area is densely populated. Surrounding area of Ambabai temple, the density of population is very high.

E ward is with lowest density of population as compared

to other wards. The E ward extends to the Panchaganga river to North, Jiti stream to the West. Jadhavwadi, Bho-salewadi and Bavada are the low lying areas where the river flood occurs; therefore the density of population is low in these areas. The Poona Bangaluru High way passes through the Eastern side of this ward. Rajarampuri, Shahupuri, Tarabai Park, Ruikar Colony, Tararani Chowk and Nagala Park are the areas of E ward where the population density is relatively higher.

Ward A is situated to the South West corner of the city. The ward is having huge open land to the South and on Western side is Rankala Lake. Sanegurji Society, Aptenagar, Nale Colony and Sambhajinagar are the areas of A ward where the density of population is high. On the other hand, Phulewadi and Shalini palace are the areas where low density is found.

The B ward is extended from the Ambabai temple and old palace in the north to the municipal limit to the south. The Jiti and Gomati nallahs are to the east and Mahadwar road is to the west. The land is uneven and stony in this ward, which leads to low density of population. Mahalaxmi temple, Bhavani Mandap, Shivaji Stadium, Khasbag are the areas of this ward where the high density of population is found. On the other hand, Belbagh, Padmala, Yal-lama temple areas of this ward are such where the density of population is low.

In D ward, relief plays major role in density of population. The general slope of the land is from Gangavesh towards the Panchganga River. Therefore, the density decreased from Gangaves towards river. Gangavesh, Brahmapuri and Uttereswar are the areas of this ward where high density of population is found. Kolkhandoba area of this ward has observed low density of population.

Table 3

Ward-wise Density of Population of Kolhapur City (1971-91)

Old Wards	Area (Sq. Km)	1971		1981		1991		2001	
		Popula-tion	Density	Popula-tion	Density	Popula-tion	Density	Popula-tion	Density
A	9.9	48784	4927	64982	6563	83623	8446	100850	10186
B	10.2	41099	4109	50979	4997	64416	6315	77902	7637
C	2.4	38258	15940	39970	16554	35642	14850	43551	18146
D	2.9	33432	11528	37871	13058	37628	12975	45928	15837
E	41.4	97477	2354	146823	3546	185061	4470	224936	5433
CITY	66.82	259050	3876	340625	5097	406370	6081	493167	7425

Source – Census of India, District Census Handbook, Kolhapur District, 1971 to 2001.

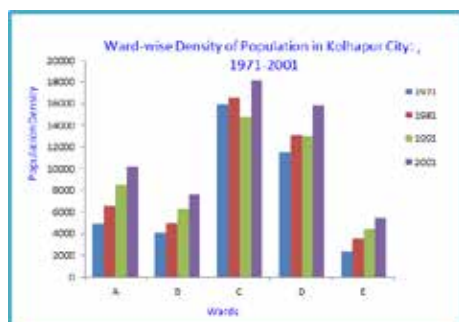


Fig. 3

In 2001, ward structure of Kolhapur city has been changed. From till 2001, there were five wards namely A, B, C, D and E. In 2001, all these five wards converted in 01 to 72 new wards. In 2011, there were 77 wards in Kolhapur City. That means five wards were increased in 2011. For calculating the density of all 77 wards, the area of wards is considered in hectare (ha). Due to small area, if we convert these wards area in hectare from sq. km, we found that the density of population figure is larger than actual population of that ward. Therefore, for the calculation of the density of population, ward area in hectare has been considered.

As per 2011 census, it is observed that there were six wards in the city where the density of population was above 600 persons per ha. These Wards are Vicharemal,

Daulat Nagar, Kholkhandoba, Padmaraje Udyan, Yadav Nagar and Sukrawar Gate.

There were four wards where the density of population was 450-600 person per ha. These wards are Natha Gole Talim, Bazar Gate, Commerce College and Chandreshwar.

There were twelve wards, where the density of population was 300-450 persons per ha. These wards are Shahu Bank, Khari Corner, Tatakadil Talim, Kasaba Bawada, Panchganga Talim, Panjarpol, Sadar Bazar, Shahu Maidan, Rajaramपुर, Phirangai, Dudhali Pavelean and Bindu Chowk.

Sixteen wards of the city has been observed the density of population in-between 150-300 persons per ha. These wards are Ganji Mal, Tararani Vidyapeeth, Treasury Office, Mahalaxmi Mandir, Pratibhanagar, Shahupuri Kumbhar Vasahat, Toraskar Chowk, Vikram Nagar, Subhash Nagar, Sambhaji Nagar Bus Stand, Syke's Extension, Shidarth Nagar, Kanan Nagar, Mangeshkar Nagar, Neharu Nagar and Line Bazar.

Remaining thirty-nine wards of the city was having the density of population below 150 persons per ha (Table 4).

Table 4
Ward-wise Population Density of Kolhapur City (2011)

Ward No.	Name of the Ward	Area (ha)	Population	Density per ha.
1	Sugar Mill	777.89	7140	9
2	Kasaba Bawada, Ra. Shahu Mar. School	256.26	7742	30
3	Kasaba Bawada	16.67	6287	377
4	Kasaba Bawada Hanuman Talav	75.81	7201	95
5	Raman Mala	404.05	6809	17
6	Line Bazar	58.10	8779	151
7	Bhosalewadi, Kadamwadi	134.96	9229	68
8	Police Line	161.36	9082	56
9	Nagala Park	78.46	6120	78
10	Tarabai Park	49.53	6919	140
11	Sadar Bazar	20.45	6613	323
12	Vichare Mal	5.46	6069	1117
13	PatoleWadi	90.16	8062	89
14	Sant Gora Kumbhar Vasahat	229.01	6822	30
15	Shahu Market Yard	112.08	6894	62
16	Ruikar Colony	66.80	6619	109
17	Shivaji Park	65.08	6410	98
18	Kanan Nagar	37.54	7152	191
19	Shahupuri North	61.20	6529	107
20	Shidharth Nagar	25.47	5240	206
21	Toraskar Chowk	26.91	6291	234
22	Panchaganga Talim	18.81	6812	362
23	Mira Bagh	235.61	7657	32
24	Laxathirth Vasahat	243.04	9890	40
25	Phulewadi	61.13	5815	95
26	Rankala Talav	2112.07	6465	3
27	Dudhali Pavelean	22.08	6743	305
28	Sukrawar Gate	9.09	5754	633
29	Kholkhandoba	7.59	5890	776
30	Bazar Gate	9.52	5018	527
31	Treasury Office	20.24	5321	263
32	Shahupuri Kumbhar Vasahat	22.28	5411	243
33	Shahpuri Talim	42.34	5973	141
34	Syke's Extension	30.32	6279	207
35	Takala- Mali Colony	73.17	6315	86
36	Tembalai Mandir	46.83	6760	144
37	Vikram Nagar	27.32	6000	220
38	Tembalaiwadi	202.72	7718	38
39	Shivaji Vidyapeeth	468.33	7073	15
40	Rajaramपुर Extension	45.44	6826	150

41	Tararani Vidyapeeth	27.90	7601	272
42	Rajaramपुर	18.50	5818	314
43	Shivaji Udyamnagar	61.33	5863	96
44	Commerce College	13.26	6942	524
45	BinduChowk	18.05	5448	302
46	Mahalaxmi Mandir	20.62	5214	253
47	Tatakadil Talim	17.16	6912	403
48	Chandreshwar	11.82	5876	497
49	Padmaraje Udyan	9.39	6813	726
50	Phirangai	20.11	6259	311
51	Khari Corner	15.84	6555	414
52	Shahu Maidan	19.18	6097	318
53	Mangeshkar Nagar	47.53	8279	174
54	Jawahar Nagar	61.32	7232	118
55	Yadav Nagar	9.51	6810	716
56	Panjarpol	19.46	6603	339
57	Pratibhanagar	21.63	5252	243
58	Daulat Nagar	8.44	6559	777
59	Sagar Mal	68.24	8856	130
60	Subhash Nagar	31.43	6887	219
61	Neharu Nagar	49.91	7806	156
62	Sambhaji Nagar	67.19	8138	121
63	Shahu Bank	12.95	5741	443
64	Natha Gole Talim	11.66	6561	563
65	Ganji Mal	21.75	5990	275
66	Sambhaji Nagar Bus Stand	32.42	7066	218
67	Rajlaxmi Nagar	68.44	8961	131
68	Sane Gurujiv Vasahat	93.84	8953	95
69	Vishal Nagar	355.27	14787	42
70	Surve Nagar	134.55	10683	79
71	Salokhe Nagar	108.18	10227	95
72	Tapovan	57.15	8115	142
73	Kalamba Filter House	80.62	9213	114
74	ZilaKaraqruha	121.26	7848	65
75	Baba Jarag Nagar	186.04	8209	44
76	Swatantrya Sainik Vasahat	128.08	7734	60
77	Rajendra Nagar	85.79	9599	112
	Total Kolhapur City	6682	549236	82

Source – Census of India, District Census Handbook, Kolhapur, 2011

CONCLUSION

It is inferred that the population of the Kolhapur city was hardly 39,910 in 1881 and was declined by 2.81 per cent due to severe famine of 1876-77. It was increased by 19 per cent and reached to 47,372 in 1891.

Another jolt it experienced due to unhygienic and precarious conditions as this urban centre's population of 47,372 declined by 12,355 and came down to 42, 018.

Shahu Maharaj's social reforms through reservation in educational and employment opportunities to poor and backward classes also attributed to the growth and development of city in late 19th and early 20th centuries.

During the decade 1921-31, population has grown by 27.59 per cent and Kolhapur urban centre's population reached to 66,728 in 1931.

The highest growth (47.08%) was noticed in the beginning of post-independence era that is in 1951.

Thereafter, the growth of the city during the post-independent period from 1951 to 2011 slowly came down to 13.21 per cent and population reached to nearly 5.5 lakhs in 2011.

The annual growth of population of the city during 1901-11, was negative (-2.56%) and high annual growth rate (3.81%) was found in 1941-1951.

Form 1971, the area of the city has not changed which is 66.82 sq km and it is one of the barriers of the development of the city.

The wards, for instance, Vicharemal, Daulat Nagar, Kholkhandoba, Padmaraje Udyan, Yadav Nagar and Sukrawargate are identified with highest density of population above 600 per hectare.

As many as thirty-nine wards of the city are identified with density of population below 150 persons per hectare and lagging behind in terms of development.

The population of Kolhapur city will be 611,600 in 2021, 681,300 in 2031 and 758,800 in 2041 in the given normal conditions.

If the surrounding 17 villages within a distance of 1km from its civic boundary merged to the city as proposed by the development committee the city's population right now will be above 7.5 lakhs. This will facilitate extension of its geographical area also for its future development planning.

It has good potential to grow and develop considering its foundry, automobiles and engineering business and IT industry with which it can further boost the economy. For this, it needs to strengthen the rail connectivity and establishment of air connectivity with other major cities of the country. For its overall development Kolhapur city should be incorporated in the list of making smart cities as it has that environment and potentiality.

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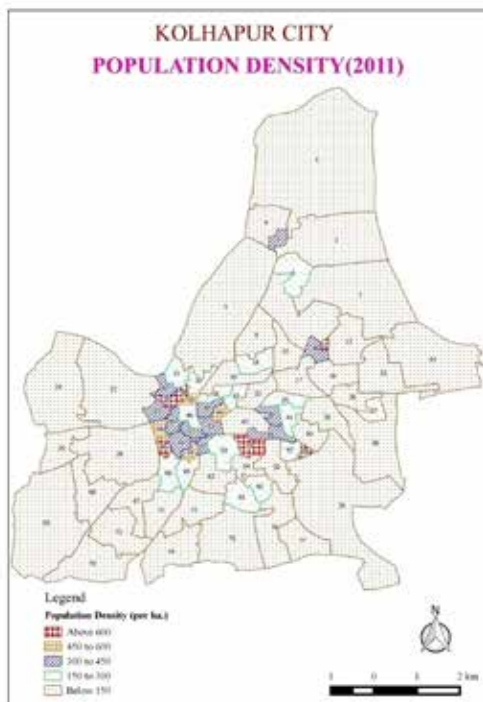


Fig. 4

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