

7. POPULATION



Find out.

Obtain the following information for a particular day.

- How many students are there in your class?
- Out of the total number, how many are boys and how many girls?
- How many are absent?
- What is the total strength of students in your school?
- What is the total number of boys and girls in your school?
- Which class has maximum strength of student?
- Which class has the most absentees?

Geographical explanation

In the above exercise, you obtained information about the strength of students in your school. In a similar manner information can be obtained about the population of a village, taluka, district, state, nation and world. While obtaining this information we have to also consider age and sex ratio, literacy etc.

Several factors are responsible for the development of a region. Out of these, population is an important factor. While studying the population of any region, the following aspects have to be considered.

- Population growth ● Population distribution
- Population density ● Structure of population



Can you tell?

Particulars	Change	A City	B City
Total Population in 2016		1,00,000	1,10,000
Total number of children born	+	2,000	2,750
Total number of deaths	-	1,500	2,200
People who have migrated from outside	+	23,000	15,000
People who have migrated out	-	2,000	5,000
Total Population in 2017		?	

- Which city has greater number of newly

born children?

- Which city records greater number of deaths?
- Looking at the figures of in-migration and out-migration which city has received more migrants?
- Calculate the population of both the cities in 2017.
- After considering all the points, which city has recorded more growth of population in one year?
- The total number of births are given. What would be this figure per thousand population? What is the term for this?
- What would be the number of deaths per thousand population? What is the term used for this?

Geographical explanation

Population Growth :

From the above exercise, it can be seen that there is a constant change in the population of a region. Sometimes there is a decrease in population and at other times there is an increase. This increase or decrease is related to the following factors.

- **Birth rate** : The number of live births per one thousand people in a year shows the birth rate.
- **Death rate** : The number of deaths per one thousand people in a year, shows the death rate.
- **Life Expectancy** : The average lifespan of an individual expected in an area at the time of birth.
- **Migration** : The movement of an individual or a group out of an area or into an area is called migration. When people move into

a region from outside, for residence, it is called in migration and when people move out of a region for residential purpose it is called out-migration.

All the above factors affect the population growth. The difference between the birth rate and the death rate is clearly responsible for the natural changes in population. Similarly the migration of an individual or a group constantly results in the change of population. The unchecked growth of population puts pressure on the resources of a region. On the other hand a controlled growth of population will lead to the availability of resources in the right proportion. A controlled population is an indicator of the development of a region.



Try this.

- ✓ Take about 100 grains of black eyed beans (chawali)
- ✓ First scatter these beans on a square of 30 x 30 cms.
- ✓ Now scatter 100 more beans on a square of 15 x 15 cms.
- ✓ While scattering the grains take care to see that the grains do not touch one another or pile up one on top of the other. See fig. 7.1

Answer the following questions.

- In which of the squares can the grains of chawali be easily scattered?
- In which of the squares do the grains of chawali appear crowded?
- Can there be a correlation between the distribution of chawali grains and the distribution of population in a region?



Figure 7.1

Geographical explanation

Distribution of Population :

When the grains of chawali are scattered over two areas of different sizes, in the larger area, the distribution appears sparse. See fig 7.1

Similarly we can understand the distribution of population in a region. Some regions are mountainous while others are flat plains. Geographical conditions vary. Some regions are well endowed with natural resources, while others have limited resources. These conditions affect the distribution of population.

In areas with abundant resources, naturally the population is more. In these areas there is dense population distribution. In areas with scarce resources, unfavourable climate, undulating terrain etc. the population, distribution is sparse.



Try this.

Draw a square of 2 x 2 m. In this square ask two students to stand. Slowly increase the number of students and ask the following questions.

- In the space provided can you move around easily?

Factors Affecting Population Distribution

Physical Factors	Economic Factors	Political Factors	Social factors
(1) Location	(1) Agriculture	(1) Wars	(1) Race
(2) Relief	(2) Industry	(2) Political Instability	(2) Religion
(3) Climate	(3) Urbanisation	(3) Government Policies	(3) Language
(4) Soil	(4) Transport		(4) Customs and Traditions
(5) Mineral Resources	(5) Markets		

- Can more students be accommodated in the square?



Figure 7.2 : Students carrying out the activity

When the answers to the above questions are negative, then ask all the students to write their observations about the experiment and initiate a discussion on population density in the class.

Geographical explanation

Density of Population : The ratio of the population of a country to its area is population density. While discussing population distribution density of population is also considered. The density is calculated as per the formula given below.

$$\text{Density of population} = \frac{\text{Population of a region}}{\text{Area of a region}}$$

Complete the table

(Census - 2011)

Sr No.	State	Population (2011)	Area (Sq. km)	Density
1.	Uttar Pradesh	19,98,12,341	2,40,926	
2.	Maha-rashtra	11,23,74,333	3,07,713	
3.	Tamil Nadu	7,26,26,809	1,30,058	
4.	Rajas-than	68,54,837	3,42,239	
5.	Mani-pur	27,21,756	22,327	
6.	Goa	14,58,545	3,702	

From the area of a region and its population one can calculate how many people live in a square km. Density of population is not the same everywhere. In some regions, the area is small but the population is large, For example,



Think about it.

Even though areawise Rajasthan is a large state the population is less. Which geographical factors may be responsible for this?

Kerala. In other regions the area is large but the population is small. Therefore, the density of population is low. For example Rajasthan.



Try this.

Think of 20 people in your neighbourhood and divide them into the following categories. young, adult, old, educated, uneducated, females, males, students, labourers, merchants, industrialists, unemployed, housewives etc

- From the above classifications, what are the salient features of your neighbourhood?
- Can such a classification be done for the country as a whole?
- Correlate these categories with the qualities of the population.
- Discuss the problems which you faced while doing this classification.

Geographical explanation

Structure of Population : Population can be subdivided into various categories. By studying the correlation between the subdivisions, an understanding of the structure and quality of the population is possible.



Can you tell ?

Groups :

- Male • Adolescent • Illiterate • Children
- Unemployed • Infants • Literate • Rural
- Working population • Urban • Female • Old
- Young • Dependant population • Adult

Classify the above groups into the categories below Sex, Age, Rural, Urban, Literacy, Productive Population. Population can be subdivided as per the groups given above. These sub groups and their relationship with one another is studied in the structure of the population.

Geographical explanation

Sex ratio :

As per the gender, population can be divided into males and females. This is a natural division which can be easily understood. In a population, when both the genders are around the same number it indicates a balanced population. In population studies the ratio of men and women is considered important.

This ratio is calculated as follows :

$$\text{Sex Ratio} = \frac{\text{Total number of females}}{\text{Total number of males}} \times 1000$$

When for every one thousand males the number of females is less, the sex ratio is said to be low and when for every one thousand males the number of females is more, the sex ratio is said to be high.

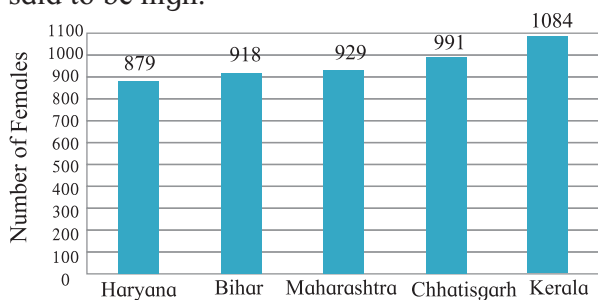


Figure 7.3 : Sex ratio 2011

Study the graph given above and answer the following questions.

- Which state has the highest sex ratio?
- Which state has the lowest sex ratio?
- What changes should take place in Maharashtra, to bring about a balanced sex ratio and how much change is necessary?

Geographical explanation

In regions where the proportion of females is more than males, predominantly the out-migration of men is high. The out-migration is very often for employment purposes, for example, Kerala. But where the proportion of females is less than males, in most cases, the birth rate of females is less.



Give it a try.

- How do imbalanced sex ratios affect the society?
- What measures can be taken to strike a balance in the sex ratio?



Can you tell ?

Have a class discussion based on the following questions.

- How many people in your house are studying? What is their age?
- How many people in your house are working for a living? How old are they?
- Do your grandparents still work? What is their age?

Geographical explanation

Age Structure :

In a region, when the population is subdivided as per the age groups this is called the age structure of the population. Age structure is useful for the projection of population and for understanding the dynamics of the age structure arrangement. Similarly, it also helps in understanding the proportion of active and dependant population.

In India, the **productive population** is the population between the ages 15 and 59. This group of people is active in service and business. They directly participate in the economic activities of a region. In regions where the proportion of this population is more, especially youth, development is rapid.

The dependant population fall into two sub groups. The people below 15 years of age are totally dependant on the productive population. People above 60 years also fall in the dependant category but their knowledge and experience make them a valuable asset to the whole society.

Occupational Structure of the population :

The population of a region can be classified into working and nonworking groups. These people who are not in jobs or professions, despite being in the productive age group, come under the nonworking group. This nonworking group is dependant on the working group. If the proportion of working population is higher in a region then the population is termed as industrious. Such a region has rapid development.

Area of Residence :

The population of a region can be divided into two groups as per the area of residence that is rural and urban. People in the rural areas are mainly employed in primary occupations and in urban areas, the proportion of people working in secondary and tertiary occupations is large.

The population in the rural areas is involved in the production of food grains. The urban population is dependant on the rural population for the supply of food grains.



Try this.

Prepare bar graphs on the basis of the table give below. Discuss the issue of literacy in the country and write a note.

Sr No.	Country	% of Literacy
1.	Argentina	98.1
2.	Brazil	92.6
3.	India	72.1
4.	China	96.4
5.	Bangladesh	61.5
6.	Pakistan	56.4
7.	Iran	86.8
8.	Afghanistan	38.1

Statistics 2010



Can you tell ?

- In lesson no.6 (page 41) what do you think are the reasons for the changing land use pattern of Mondha village?
- What kind of changes have taken place?
- Due to this change in land use, do you think there has been a change in population. If yes, what is the change and why?

Literacy : In society, some people are literate and others illiterate. In our country a person who can read and write is termed as literate. This definition can vary from one country to another. The percentage of literacy throws light on the quality of the population.

People above the age of seven can be classified into literates and illiterates. Literacy is an indicator of the social and economic development of a society. If the percentage of

literacy is higher then the country developes socially and economically. Literacy leads to the development of a cultured and progressive society.

Geographical explanation

Migration :

The movement of an individual or a group from one place to another is termed as migration. This could be for a short period, long period or permanently. Marriage, education, business, transfer, tourism, natural calamities, wars etc. are the reasons, why people migrate. There are many kinds of migration. Regions from where people migrate show a fall in population. Such regions experience a shortage of manpower. On the other hand, the areas to which they migrate show an increase in population and a strain on the public amenities and facilities. Due to migration the composition of the population also changes.



Can you tell ?

Answer on basis of the given table.

Statistics 2010

Country	Percentage of immigrant population
Afghanistan	0.14
Brazil	0.34
Kuwait	62.11
Bangladesh	0.73
Germany	12.31
Hongkong	42.59
Israel	37.87
India	0.52
Oman	24.46
Saudi Arabia	25.25
Great Britain	8.98
U S A	12.81

- Which countries have less than 10% migrant population?
- Which are the countries with a migrant population of between 10% to 20%?
- Which are the countries with a migrant population of more than 20%?

- Find the reason behind the migrant population of more than 20%.
- Draw two pie diagrams for any two countries.
- Have a discussion on migration and development.



Use your brain power!

In India 0.52% of the population are migrants. What is the actual number of people who have migrated to India?

Geographical explanation

Migration is an important factor affecting the distribution of population. Due to migration there is a redistribution of the population of a region. The structure of population also undergoes a change.

The above table has given the percentage of migrant population of some selected countries. In the countries where the percentage of migrant population is more, job opportunities, good business prospects, the availability of natural resources and economic development are the main causes. On the other hand, political and social factors, economic backwardness etc are some of the reasons accounting for a low percentage of this population. Even though the percentage of this population is low in India, when compared to the total population, the actual figures are large.



Can you tell?

Have a discussion on the basis of the following questions and answer the following.

- What would you call the people who work in the places mentioned below?
farm, factory, hotel, hospital, shop, school, office

(Note : In case needed, you can add to this list)



Figure 7.4 : Migration

In the earlier exercise on page 42 you noticed that there was an increase in population in towns A/B. That only means, that there was a growth of population. But, can you say anything about the ‘development’ of those towns? If there are no houses for this increasing population, no adequate drinking water then of what use is this growth only? In those towns for how many people has additional drinking water been made available? How many children have started attending school? Or in which city are the people happier? Growth does not mean development! Then how can development be measured?

For many decades only a country’s **gross national product** was used for measuring development. It was assumed that the greater the economic prosperity, the more the development of a country. But this does not mean that the people are happy with the quality of life in that country. In reality, development is related to the quality of life, the opportunities available there and freedom.

In the decade of 1980 to 1990 Mahbub Ul Haq and Amartya Sen put forth the concept of Human Development Index (HDI). United Nations Development Programme. (UNDP) publishes a list of countries based on HDI scores every year.



Try this.

Try to complete the table on the basis of the information provided about a few countries and write a note on the human development index (HDI) of various countries.

HDI rankwise	Country	Value of the HDI	Level of development
1	Norway	0.949	Very High
2	Australia	0.939	"

3	Switzerland	0.939	"
4	Germany	0.926	"
5	Denmark	0.925	"
16	United Kingdom	0.909	"
17	Japan	0.903	High
73	Sri Lanka	0.766	"
90	Brazil	0.754	Statistics 2016
90	China	0.738	"
119	South Africa	0.666	Medium
131	India	0.624	"
132	Bhutan	0.607	"
147	Pakistan	0.550	"
169	Afghanistan	0.479	Low
187	Niger	0.353	"
188	Central African Republic	0.352	"

Human Development Index :

The Human Development index holds an important place in the study of human conditions related to international economic development. Today, it is commonly accepted that only economic prosperity does not mean development. This is not just the expectation of individuals but also of a region or of a country. The human development index is used as a yardstick to measure regional development. While computing this index, three main parameters have been considered.

- Economic parameter (Standard of living)
- Health parameter (Life expectancy)
- Education parameter (Number of years of Schooling)

The values of the Human Development Index range from 0 to 1. Highly developed regions have a value close to 1 and as the level of development goes down, the value of the HDI decreases. In an area with very little development the value of the index is close to zero.



Make friends with maps!

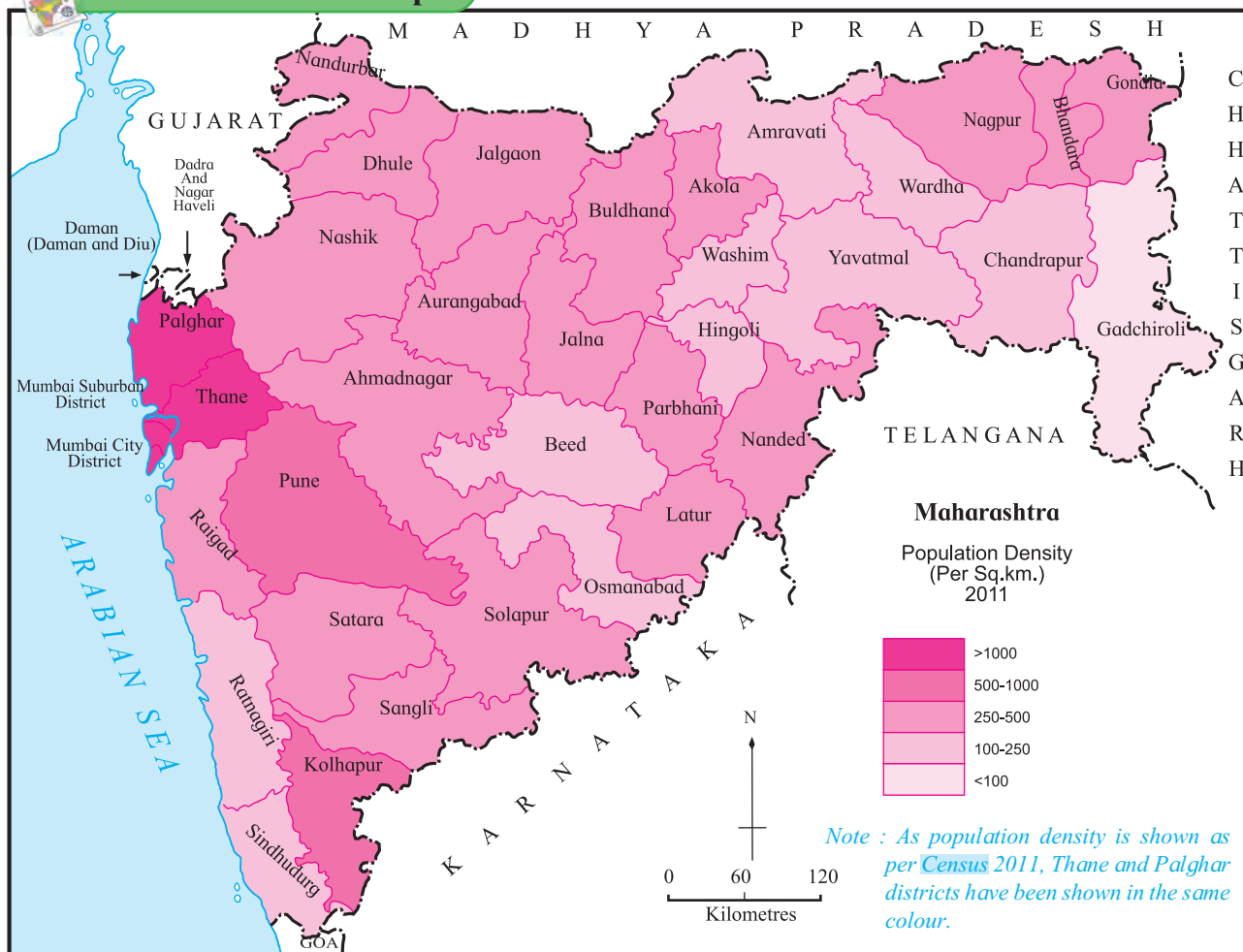


Figure 7.5

Density of population in Maharashtra :



Can you tell?

Study fig 7.5 and answer the following questions.

- Which are the most densely populated districts?
- Name the sparsely populated districts with a density of less than 100 per sq. km.
- Name two districts with moderate population densities.
- What is the density of the dark shaded regions?
- Why is the density of population less in Gadchiroli?
- Have a discussion in the class on the effect of physiography, climate, area under forest, industries etc on the density of population.

Geographical explanation

While considering the districtwise density of population in Maharashtra, the following features stand out. Population density is less in the eastern districts of Maharashtra, while they are more in the western districts. Higher density indicate urbanisation and higher levels of industrialisation. Therefore Mumbai city district and Mumbai suburb district, Thane, Pune and Nagpur districts have higher density. The rainshadow districts as well as the districts in the extreme east which are densely forested show less density.

HDI - Human Development Index
UNDP - United Nations Development Programme



Do you know ?

Information about many parameters related to population is obtained through actual surveys. These surveys are called census. In India these surveys are conducted once in ten years at the start of the decade. The latest census was conducted in 2011. The statistical information obtained through these surveys is classified, presented graphically and used in comparative studies and planning.



Use your brain power !

Discuss and write the advantages and disadvantages of low population or high population with reference to the following factors.

Headings	Low population	High population
Per capita land availability		
Foodgrains		
Resources		
Per capita income		
Basic amenities and facilities		
Percentage of unproductive consumers		
Planning		
Employment		
Urbanisation		
Health		
Higher Education		
Social Environment		



Give it a try.

Since the past two centuries the size of family is decreasing. But inspite of this the population of the country is increasing. Find out why is this happening?

1810



1910



2010





Use your brain power!

- As per the population census of 2011, the population of India is 121 crores. For domestic use the per capita requirement per day is 50 litres of water. Taking this into account, what would be the total amount of water required in India for domestic purpose only?



Give it a try.

Have a discussion on population control with the help of the following points

- Public education • Education
- Public awareness • Health facilities
- Planning • Government policies
- Research



Exercises

Q 1. Complete the following sentences.

- (A) If the birth rate is greater than the death rate then the population.....
- (i) decreases
 - (ii) increases
 - (iii) remains constant
 - (iv) becomes surplus
- (B) People ofage group are included in the productive population.
- (i) 0 to 14
 - (ii) 14 to 60
 - (iii) 15 to 60
 - (iv) 15 to 59
- (C) The spread of modern technology in society is mostly dependant on
- (i) Sex Ratio
 - (ii) Birth Rate
 - (iii) Literacy
 - (iv) Migration

Q 2. Examine the following statements and correct the incorrect ones.

- (a) The population density of a region can be understood from its area.
- (b) The quality of population is determined on the basis of literacy.
- (c) There is an adverse impact on manpower in the regions of out migration.
- (d) Greater economic prosperity indicates the development of a region.
- (e) Developing countries have an HDI of 1.

Q 3. Answer in brief.

- (a) What are the aspects considered in the structure of population?
- (b) Prepare a list of advantageous and disadvantageous factors, affecting population distribution.
- (c) What are the problems in areas of high population densities?
- (d) What are the problems in area of low population densities?

Q 4. Give Geographical Reasons.

- (a) Population is an important resource.
- (b) Productive population is an important group.
- (c) The study of age structures is important.
- (d) Literacy is directly related to development.
- (e) The real progress of a country is understood with the help of the Human Development Index.

Q 5. Write notes.

- (A) Sex ratio
- (B) Age Structure
- (C) Literacy

ACTIVITY :

Survey 5 families in your neighbourhood on the basis of the following points and make a presentation.

- (a) Sex
- (b) Age groups
- (c) Education
- (d) Occupation

