Chapter 3

Population Growth and Occupational Structure

The concept of demography is a consequence of the admixture of Greek and French words. While the French word demography, “demo”- which derived its etymological root from the ancient Greek word demos means “the people or population” and – “graphy” from the French word- graphie -graphy means “measurement, description or writing” it means “writing about population” Demography is the scientific study of the human populations. The words of Landry (1945) the term “Demography” was first used in 1855 by French writer Achille Gaillard. The following definitions of demography will further help in the understanding of meaning.

According to Barckely, “the numerical ratios of human population are known as demography”. Dudley Ducan and Hauser “Demography is the study of size, territorial distribution and composition of population, changes therein, and the components of such changes, which may be identified as fertility, mortality, migration and social mobility”. Some scholars maintain that the beginning of demography should be traced from John Grunt’s easy natural and political observation made upon the Bills of mortality, in 1662. Even though, the term “Population Studies” is more popular, the word ‘Demography’ is under wider use these days. It is considered an important subject capable of throwing light on the nature of population education.

The Oxford Dictionary of Economics defines demography as “The study of the characteristics of human populations.” According to the UN Multilingual Demographic Dictionary, “Demography is the scientific study of human populations, primarily with respect to their size, their structure and their development.” He defined technique of demography analysis which is known as analysis approach. In contrast to it Thomas Robert Malthas presented a problem-approach in demography in 1798. In fact, United Nation Origination has said that “Under demography, we study all determinants and consequences of population”. Today demography is being considered as an independent branch of knowledge. In the beginning, demography was concerned only with the enumeration of population. Gradually it began to study population from empirical statistical and mathematics view. Today it studies, the size, the composition and distribution of population. These characteristics of population are
always changing. The population of District may be studied according to communities and religious groups or according to fields of population. From this discussion, it is clear that the demographic characteristics of any city should be looked from the angle of the socio-economic conditions. This chapter is an attempt to study the population growth, density of population, concentration of population, sex ratio, literacy structure as well as occupational structure of Pali District.

3.1 Population Growth of the District

According to G.T. Trewarta man is not only the utilizer of physical earth but also creator of cultural earth population. It is a human resource of the country and development of any area is mainly depend upon the inhabitants. The economic organization of region has been a significant-effect on the spatial distribution and characteristics of human settlement.

Thus the population is the basic fabrics of economic activates in general. Population growth is most fundamental demographic process with which all over demographic attributes is directly and indirectly associated and it is a vital index of a region’s economic development, social awakening, historical, cultural background and political ideology. Population growth determines the density, the distribution of human population in particular area during specific period of time. The growth may be positive and negative.

Population growth also related to factors like transportation and communication, development markets, business, organizations, civil and administrative activities, educational facilities etc. among the most important of these are the varying demographic structure of the population, measured in terms of its age and sex, and the rate at which population totals are changing. Growth of population in the changes in the number of people living in a particular area between two points of time. Growth rate is expressed in percentage. Population growth has two components namely: natural and induced. While the natural growth is analysed by assessing the crude birth and death rates, the induced components are explained by the volume of inward and outward movement of people in any given area. However, in the present chapter, we well only discuss the natural growth of the district population. The decadal and annual growth rate of population in Pali district are both very high and steadily increasing over time.
3.2 Population Trend of Pali District 1901-2011

The population in Pali district has increased by 146.3 percent during the first seventy years of the 1971 as compared to an increase of 150.3 percent for the whole State of Rajasthan and 129.91 percent for the country over the same period.

The district has thus shown a considerable increase in population during this century. The 1961 Census population represented an increase of 21.91 percent over that of 1951 while the 1971 census show an increase of 20.40 percent over that of 1961.
The decade variation for Rajasthan was 27.83 percent and for the whole of India 24.80 percent in 1971. Four districts in Rajasthan reported a lesser percentage increase during the decade than Pali district and the left over 21 districts reported a higher percentage increase. Tracing variations in population in the district since the Census of 1901, it will be seen in the period 1901-11, there was an increase of 15.94 percent. The following decade 1911-21, however, witnessed a decrease of 11.67 percent in the population.

Among the causes contributing to the fall in population during this decade, mention may be made to the epidemics of plague, influenza, cholera and small pox. Since then there has been a continuous rise in population. During the decade 1961-71, the population of the district has increased in the rural area at the rate of 18.19 percent and in urban areas at rate of 41.31 percent. There are four distinct phases of growth identified within this period:

**Phase I (1901-1921):** The period 1901-1921 is referred to as a period of stagnant of stationary phase of growth of the Pali district, state and country. Since in this period growth rate was very low, even recording a negative growth rate during 1911-1921. Both the birth rate and death rate were very high keeping the rate of increase low. Poor health and medical services, illiteracy of people at large and inefficient distribution system of food and other basic necessities were largely responsible for a high birth and death rates during the period.
Phase II (1921-1951): The decades 1921-1951 are referred to as the period of steady population growth. An overall improvement in health and sanitation throughout the country brought down the mortality rate. At the same time better transport and communication system improved distribution system. The crude birth rate remained high in this period leading to higher growth rate than the previous phase. This is impressive at the backdrop of Great Economic Depression, 1920s and World War II.

Phase III (1951-1981): The decades 1951-1981 are referred to as the period of population explosion in district, state and country. This was caused by a rapid fall in the mortality rate but a high fertility rate of population in the district, state and country. The average annual growth rate was as high as 2.2 percent in the country. It is in this period, after the Independence, that development activities were introduced through a centralised planning process and economy started showing up ensuring the improvement of living condition of people at large. Consequently, there was a high natural increase and higher growth rate.

Phase IV (1981-2011): In the post 1981 till present, the growth rate of district, state and country's population though remained high, has started slowing down gradually (Fig 3.3). A downward trend of crude birth rate is held responsible for such a population growth. This was, in turn, affected by an increase in the mean age at marriage, improved quality of life particularly education of females in the country.

3.3 Measures of the Population Changes

There are different measures to determine the growth rate of population. The growth of population of the study area during a given period of time may be explained as absolute, percentage growth and rate of growth and so on. The absolute growth of population shows the amount of net increasing in a particular period. The rate of population growth of Pali district has been calculated with help of the formula:-

Decadal growth rate:  \[ g = \frac{P_2 - P_1}{P_2} \times 100 \]

Where \( P_1 \) = Population of the Base Year

\( P_2 \) = Population of the Present Year

Calculating annual percent growth rate:

\[ PR = \frac{(V_{Present} - V_{Past}) \times 100}{V_{Past}/N} \]
It is observed from the figure 3.4 that annual changes in population is considered. It shows increased trend from 1901 to 1911 i.e. 1.59 percent in 1911 and decreased trend in decade 1921 as 1.67 percent. Again increased trend is observed from the decade 1931 to 2011 i.e. 1.72 percent in 1931, 1.74 percent in 1941, 1.89 percent in 1951, 2.19 percent in 1961, 2.04 percent in 1971, 3.14 percent 1981, 1.66 percent in 1991, 2.25 percent in 2001, and 1.19 percent in 2011. The annual change in population is found higher in the decade 1981, which has sharply decreased in the decade 1991. In the decade 1981, the annual growth rate was 3.14 percent, which has sharply decreased up to 1.66 percent in 1991 as well as in the decade 2001 the annual growth rate was 2.25 percent which has sharply decreased up to 1.19 percent in 2011. It observed that the lowest annual change in population is found in the decade 1921 i.e. -1.16 percent and second lowest in 2011 i.e. 1.91 percent. In the study of region the highest growth rate was found in the decade 1981 because of the rapid fall in the mortality rate but the highest fertility rate of population. From the decade 1901 to 2011 there are various ups and downs found in population growth of the study area.

3.4 The District Rank According to the Growth Rate of Population 1901-2011

In the last eleven decades, the position of population of Pali district has changed due to following reasons:
1. Fluctuations in population growth.
2. Inserting part of the other district in the study area.
3. Merge of any part of Pali district into another district.
4. Increase in the number of districts in the Rajasthan state.
5. Migration of the Population.
7. Death rate.

Figure 3.5

The District Rank Order According to the Growth Rate of Population 1901-2011

Source: Various Census Reports

According to the population growth rate in the state of Rajasthan, in 1901 decade the Pali district was at 14th position and population growth rate was 15.94 percent. While in the 1911 decade, it was the 25th position with a population growth rate of 11.67 percent. Ranks improved significantly in the 1921 decade, 7th rank with a population growth rate of 17.29 percent. But in the next decade 1931, the population growth rate was 17.44 percent and 16th position. Pali district has the highest population growth rate of 31.34 percent with 15th rank in the 1981 decade and lowest population growth rate 11.67 percent with 25th rank in the 1921 decade. The lowest rank of Pali district was 33rd in the decade 1991 with population growth rate 16.61 percent. Thus, the position of the Pali district in the current decade 2011 is 31st and the population growth rate is 11.67 percent.
3.5 Decadal Variation of the Population 2001-2011

The district has registered a percentage decadal variation of 11.94 during the decade 2001-2011. The rural areas of the district have attained a lower decadal variation of 10.37 percent as compared to that of urban area at 17.68 percent.

Figure 3.6

At the tehsil level the lowest varies (3.64 percent) in the Marwar Junction tehsil and the maximum varies 21.55 percent in the Rohat tehsil in the study area. There is a little increase in the percentage of urban population to total population from 21.47 in 2001 to 22.58 in 2011 of the district.

3.6 Population Projection

Population projection is the same time neither estimates nor-forecast or foretelling but in between forecast and predictions. Population projection for urban geographer’s, but also to the planners in respect of (future growth of population) infrastructure and social service would be required for the projected population. There are various methods applied for the population projection. Population projection of Pali district has been calculated with the help of following methods.
3.6.1 Arithmetic Increase Method:

\[ P_n = P_o + n \bar{x} \]

Where

- \( P_n \) = is the prediction of future population.
- \( P_o \) = is the population of last decade.
- \( n \) = is the number of decade.
- \( \bar{x} \) = is the average increase per decade.

3.6.2 Geometric Increase Method:

\[ P_n = P_o \left[ 1 + \frac{r}{100} \right]^n \]

Where

- \( P_n \) = is the prediction of future population.
- \( P_o \) = is the population of last decade.
- \( n \) = is the number of decade.
- \( r \) = is the geometric if growth rate.

3.6.3 Incremental Increase Method:

\[ P_n = P_o + n \bar{x} + \frac{n(n + 1)}{2} \bar{y} \]

Where

- \( P_n \) = is the prediction of future population.
- \( P_o \) = is the population of last decade.
- \( n \) = is the number of decade.
- \( \bar{x} \) = is the average increase per decade.
- \( \bar{y} \) = is the average per decade.

3.6.4 Decreasing Rate of Growth Method:

\[ P_n = P_o + \frac{(L_i - Ad)}{100} P_o \]

Where

- \( P_n \) = is the prediction of future population.
- \( P_o \) = is the last decade population.
- \( L_i \) = is the last percentage increase in population.
- \( Ad \) = is the average per decade decrease in percentage increase.
Figure 3.7

Source: Observation of Author

Figure 3.7 shows the population projection by different methods. It is observed that the result of different methods of the population projection is not the same.


Figure 3.8

Source: Various Census Reports

This figure shows the population projection increment of 11 decades from the 1901-2011. The maximum increment was in the 2001, with 3, 33, 819 person and minimum increment in the 1921, with 53,309 person.
3.8 Distribution of the Population

The study of any population is concerned not only with its size and characteristics but also with how it distributed in various spatial divisions and the changes that occur in the patterns of population distribution over the years.

3.8.1 Tehsil-Wise Distribution of Population - 2001

According to 2001 census, it is observed that the more concentration of population is found in the Pali tehsil, which is 16.89 percent. The sparse population is observed in the Rohat and Raipur Tehsils. Higher concentration of population is observed in the Pali tehsil because it is commercial area and have all urban facilities, while Rohat and Raipur tehsils have sparse population because of less availability of urban facilities. The tehsil-wise distribution of population is also uneven. According to 2001 census the Pali district has 50.48 percent males and 49.52 percent females. A comparative analysis of the tehsil-wise distribution of population indicates that the percent of male population is the highest i.e. 51.82 percent in Pali tehsil and the lowest i.e. 49.13 percent in Desuri tehsil. Jaitaran, Rohat, Sumerpur and Raipur tehsils have higher percent of male’s population than the average i.e. 50.48 percent of the district. The percent of females population is the highest i.e. 50.87 percent in Desuri tehsil and the lowest i.e. 48.18 percent in Pali tehsil. Marwar Junction, Bali, Rohat, Sumerpur and Raipur tehsils have higher percentage of female’s population than the average i.e. 47.94 percent of the district.

3.8.2 Tehsil- Wise Distribution of Population – 2011

According to 2011 census, it is observed that, more than 40 percent of the total population of Pali district belongs to Pali, Jaitaran and Desuri tehsils. While remaining six tehsils having 60 percent of the population. The highest concentration of population i.e. 18.08 percent is in Pali tehsil. The Bali, Desuri, Jaitaran and Sojat tehsils ranked second, third, fourth and fifth with 12.95, 11.5, 11.13 and 10.84 percent’s respectively, of the total population. The Pali district as a whole has 50.33 percent males and 49.67 females in 2011. The tehsil-wise percentiles figure had varied from 51.45 percent to 49.38 percent in case of males and 50.62 percent to 49.68 percent in case of females. The highest percentage of males were in Pali tehsil i.e. 51.45 percent and the lowest in the Marwar Junction and Desuri tehsils i.e. 49.38 percent.
The maximum ratio of the females is in the Marwar Junction and Desuri tehsils (50.62 percent) and the lowest in Pali tehsil (48.55 percent). The Rohat and Pali tehsils have higher ratio of the male population than the average i.e. 50.33 percent male population of the Pali district. The Desuri and Marwar Junction tehsils have higher percentage of female population than the average i.e. 49.67 percent of the female population in the Pali district. According to the census 2011, the state of Rajasthan has a population of 6,85,48,437 in which the males are 3,55,50,997 (51.86 percent) and the females 3,29,97,440 (48.14 percent). In Pali district, there is a total of 2.97 percent of the population of Rajasthan state, in which the males are 2.88 percent and the females are 3.06 percent population. The district of Pali has a population of 20,37,573 person (10, 25,422 males and 10, 12,151 females) and ranks 14th in state. The highest population of the Pali district is in Pali tehsil (18.08 per cent), and then Bali tehsil (12.95 percent), Jaitaran tehsil (11.13 percent), middle level population in Desuri tehsil (11.5 percent), Sojat tehsil (10.84 percent), Raipur tehsil (10.07 percent), and the lowest population is in Marwar Junction tehsil (9.77 percent), Sumerpur tehsil (9.72 percent), and Rohat tehsil (5.94 percent).

### 3.9 Urban-Rural Population 2011

According to the census 2011, the urban population of Rajasthan state is 1,70,48,085 (24.87 percent) and the rural population is 5,15,00,352 (75.13 percent). In Pali district, the urban and rural population of the Rajasthan state is 2.69 percent and 3.06 percent respectively.
Only 22.58 percent population resides in urban regions of the district. In total 4,600,066 people lives in urban areas of which males are 237,863 and females are 222,143. As per 2011 census, 77.42 percent population of the Pali District lives in rural areas of villages. The total Pali district population living in rural areas is 1,577,567 of which males and females are 787,559 and 790,008 respectively.

The largest urban population in Pali district resides in Pali tahsil (62.45 percent). While the urban population resides in Sumerpur tahsil (27.16 percent), Sojat tahsil (25.12 percent), Desuri tahsil (17.61 percent), Bali tahsil (16.94 percent), and Jaitaran tehsil (9.97 percent). The zero percent of urban population in Raipur tehsil and Rohat tehsil. While there is rural population in Marwar Junction tahsil (93.97 percent), Jaitaran tahsil (90.03 percent), Bali tehsil (83.06 percent), Desuri tehsil (82.39 percent), Sojat tehsil (74.88 percent), Sumerpur tahsil (72.84 percent) and Pali tehsil (37.55 percent).
3.10 Density of Population 2011

The concept of population density relating number of people to the space occupied by term is one of the most intriguing and most hazardous correlations employed by geographers. In other words density of population indicates the man-land ratio. The distribution of population in terms of number, degree of concentration size and spacing of settlement are the most fundamental aspects of the settlement geographer.

It includes the analysis of relative concentration of man who acts as a pivotal force in making of geographical personality of an area and expresses the synthesis of all geographic phenomena operating in an area. It also provides a base for the analysis of other attributes of population. Besides the temporal variation, the intra-urban pattern of density distribution is a great geographical significance for the reconstruction and planning of towns. The analysis of population distribution and density holds the key to the analysis of entire demographic characters of an area. There is distinction between distribution and density of population. The whole (total area) of Rajasthan State is 3, 42, 239 sq. k.m. as per census 2011. The density of the state was 200 person sq. k.m. as per 2011 census. It is comparatively lower than national average, which 382 person sq. k.m. Then density of state was 165 person sq. k.m. as per census 2001.
The average density of population in the study area is 164 person sq. k.m. according to census 2011. In 2001 Pali district density was at 147 person sq. k.m. The highest density of population is in Pali tehsil (238 per sq. km) whereas the lowest density of population is Rohat tehsil (89 per sq. km). The density of population in Pali tehsil (238 per sq. km), Sumerpur tehsil (199 per sq. km), Raipur tehsil (190 per sq. km), Bali tahsil (183 per sq. km) and Desuri tehsil (173 per sq. km) and Jaitaran tehsil (165 per sq. km) are higher than average density of population of Pali district. While the density of population in Sojat tehsil (189 per sq. km), Marwar Junction tehsil (142 per sq. km) and Rohat tehsil (89 per sq. km) are lower than average density of population of the district.

Source: Primary Census Abstract 2011

Map 3.1
Calculate by Author
3.11 Sex Ratio

The sex ratio needs special mention as it is one of the related aspects of the socio-economic characteristics of the region. It plays the pivotal in assessing the reproductive performances, mortality, occupation structure and the migratory character of the population. The sex is the most frequently used as demographic variable for studying the sex composition of a given population. As urbanization proceeds, there is tendency for the sex ratio for rural and urban areas to become more discrepant. There is tendency for males in the productive age-group to migrate to urban areas resulting in low sex ratio. Sex-ratio assumed importance in demographic analysis because the nature of sex ratio effects on the different aspect of population, like marriage, birth rate, death rate and population growth.

**Figure 3.12**

![Graph showing sex ratio trend from 1901 to 2011](image)

Source: District Census Handbook Pali

The district has witnessed a fluctuating trend in sex ratio since 1901. From 946 in 1901 and 938 in 1911 it declined to 934 in 1921. It again increased to 954 in 1931 and so forth. During the last decade i.e. 2001-2011 has increased from 981 to 987 in 2011.
According to the 2011 Census, the district has 987 females per thousand males. This is in consonance with the general deficiency of females throughout the Rajasthan state which has 928 females per thousand males.

Source: Primary Census Abstract 2011

In Pali district, Marwar Junction tehsil (1025) and Desuri tehsil (1025) have highest sex ratio. The lowest sex ratio is in Pali tahsil (943). The sex ratio of the Sojat tehsil (995), Sumerpur tehsil (995), Raipur tehsil (992), Jaitaran tehsil (989), Bali tehsil (982) and Rohat tehsil (947).
3.11.1 Urban-Rural Sex Ratio 2011

The urban sex ratio of the Rajasthan state is 914 per thousand males and the rural sex ratio 933. The ratio in the rural areas is 1003 per thousand males as against 934 in urban areas of Pali district.

Figure 3.15

![Urban-Rural Sex Ratio 2011](image)

Source: Primary Census Abstract 2011.

In Pali district, the maximum urban sex ratio is in Desuri tehsil (975) and then in Jaitaran tehsil (959), Bali tehsil (953), Marwar Junction tehsil (944), Sojat tehsil (937), Sumerpur tehsil (936) and Pali tehsil (943). Similarly, the maximum rural sex ratio is in Desuri tehsil (1035) and the lowest one is in Rohat tehsil (947). Rural sex ratio in Other tehsils are- Marwar Junction (1030), Sumerpur (1018), Sojat (1015), Bali (994), Jaitaran and Raipur (992).

3.12 Occupational Structure of the District

Occupation Structure refers to the aggregate distribution of occupations in society, classified according to skill level, economic function, or social status. The occupation structure is shaped by various factors: the structure of the economy (the relative weight of different industries); technology and bureaucracy (the distribution of technological skills and administrative responsibility); the labour-market (which determines the pay and conditions attached to occupations); and by status and prestige (influence by occupational closure, life-style, and social values). It is difficult to
attach causal primacy to any one of these factors; moreover, their role in shaping the occupational structure changes over time, as society changes. The occupational structure is described and analysed by means of various classificatory schemes, which group similar occupations together according to specific criteria such as skill, employment status, or function.

Such classifications are also used as a basis for the empirical analysis of economic and social class. (A Dictionary of Sociology) Occupation implies trade or profession. It reveals the nature of economic progress of a country. It is related to agriculture, industry and services. Occupation depend up on the degree of economic development and sophistication of country. Occupational structure influences many aspects of population in a region. The occupational characteristics of population are reflected in the working force, dependency load, employment and unemployment. In spite of that, occupational structure is a key component and manifestation of population composition. It gives a proper illustration of ratio of the working and non-working population in an area or a country.

Occupational structure also influence the socio-economic development of an area. The spatial distribution of working and non-working population has been studied on the basis of data provided by the Census of Rajasthan. This relevant data have its own utility and role in policy-decisions. The proportion of workers engaged in various occupations highlights economic and cultural surfaces of the society. In India, especially the cultural mooring have strong bearing on man’s livelihood. Further, economic power of a country depends, largely, on the proportion in which the productive workers are prudently engaged in various economic activities. From times, immemorial man has been pursuing economic activities in one form or the other, because certain requirements of human life are so universal and so uniform that they must be fully met and admit no incomplete or intermittent satisfaction (Brunhes, 1952). Initially, occupational development very much correlated with economic development. There is a close relationship between of an economy and the occupational structure. Economic progress is generally associated with certain distinct, necessary and predictable changes in occupational structure (Clark, 1940). Any changes, therefore, in the occupational structure may be an indication of economic growth.
In other words, the growth and prosperity of regions are largely dependent on the size of working population. Besides economic development, occupational structure and composition also throws enough light on the social inequality of the country or an area. In the social respect, prestige or status attached to an individual due to his occupation in the society has changed from one period to another with varying degree. Even in the modern society the process of allocating high prestige value to certain occupations, which of course may be of little social utility, reflects the influence of the traditional force of the past (Maurya, 1989). Whereas, the occupation itself forms an important constituent of the social history, and its present shape must have emerged out of more less a definite but ill-defined evolutionary process.

Up till now, one can know that the occupational structure of a society is the product of a number of intimately related factors, such as agricultural development, industrialisation and civilisation. When the primary resources are utilised on commercial scale, it generates diversification of occupational structure, according to that, if the agriculture remained at subsistence level, there is not much diversification because industrialisation generates a variety job. Advancement in science and technology introduce an element of specialisation in the occupational composition by creating highly specialised type of jobs. All these developments together breed a new urban culture, which is more service oriented. It modifies the occupational structure considerably (Chandna, 1986).

The significance of occupational distribution of population of a region lies in the fact that, it clearly reveals the social-economic characteristics of the people living that particular region. It is, hence, one of the important measures of socio-economic development of the country. In this chapter, the further study will be dealing with the dimensions of occupational structure relating to the population composition of the study area. “The variety of employment opportunities offered and wide range of possible earning are characteristics of the urban environment”. Human occupation defined by census 1971 as “Occupation is the name of the function which a person performs by engaging himself in some gainful activity.”

3.13 The Concept of Work and Classification of Workers

The term “occupation” itself is indefinite as to both meaning and scope. It has a varying intellectual content and emotional association. In all modern languages, it has
a number of synonyms and the range of their meanings indicates as to how much the specific content of this term has shifted through historical epochs. (Encyclopaedia of Social Science, 1965). In recent Indian censuses, work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and / or mental in nature. Work involves not only the physical work but also includes supervision and direction given to other workers. However, the concept of “Economically productive” has considerable value loaded connotations, and influenced by the social desirability of what constitutes economically productive activity (Lauterbach, 1977).

Work is taken as basis to identify workers. The Concept of work in Indian census was introduced since 1961 census, but the reference period was changed and the concept of main activity was introduced in 1791. The 1971 census did record the marginal category of workforce. Thus the figures of 1961 and 1971 census were not comparable. On the other hand, we find that since 1981 the census definition of work remains unchanged, but more efforts have been made to enumerate female workforce characteristics of the work. A question was to divide the population who have worked any time and not worked at all during the last year. Those who have worked any time in the last one-year were categorised as workers, and those who did not work at all were classified as non-workers. This type of classification of population into workers and non-workers category was followed in latter censuses as well. Workers were categorised into main and marginal workers since 1981 census. Thus, the meaning of occupation has undergone continuous changes from the time immemorial. So, its contents can be fixed definitely only for short period of time. Generally, an occupation of an individual refers to his trade, profession, type of work. In the census, the term “work” is used in a special sense and therefore stress should be applied to understand it correctly. “Work” may be defined as participation in any economically productive activity. Such participation may be physical or mental in nature. Work involves not only actual work but also effective supervision and direction of work. It also includes unpaid work on farm or in family enterprise according to census of India, 1991. The concept of “worker” was introduced for the first time in India in 1961. According to that, any person whose main activity is participation in any economically productive work either by his physical or by his mental activity was classified as worker as per census of India, 1971. Thus, work involved not only actual work but also effective supervision and direction.
The definition of worker in India has been changing from census to census. In 1961, any person who had worked at least one hour a day on an average during the reference period of one week prior to the date of enumeration, he was considered as a working characteristic of population as possible, without losing the possibility of comparison with 1961 and 1971 census result. There has been no conceptual change in defining the workers between 1981 and 1991 census.

At the 1981 census, there has been mainly a three-fold classification of population namely main workers, marginal workers and no-workers, which was adopted for 1991 also. In addition to this, the main workers of 1991 distribution in nine industrial categories of economic activities, but in the earlier census of 1981, this presentation was up to four industrial categories only. In 2001, there has been no further classification made in the main and marginal workers. It means, the 2001, census of India, divided the population into as aforesaid three-fold classification. As per the occupation of the total population, census authorities has been adopted three-fold classification of population, viz. main workers, marginal workers and non-workers. According to the census of India, persons engaged in household duties, students, dependents, retired persons, renters, beggars are some of the categories grouped into non-workers.
Figure 3.16

Classification of Workers

Total Population

Non-Working Population

Working Population

Main Workers

Marginal Workers

Economic Activities:

a) Cultivators.
b) Agricultural Labourers.
c) Livestock, Hunting, Forestry, Fishing, Plantations, Orchards and Allied Activities.
d) Mining and Quarrying.
e) Manufacturing Processing, Servicing and Repairs:-i) Household Industry, ii) Other than Household Industry.
f) Constructions
g) Trade and Commerce.
h) Transport, Storage and Communication.
i) Other Services.

Source: Census Reports
In 1971 census, authorities have classification of the working population into nine categories of the Indian economy. The rationale of classification of workers followed by 1971 census was entirely changed by census authorities in 1981 census and it classified only four industrial categories viz. 1) cultivators, 2) agricultural labours, 3) household industry (manufacturing, processing, service and repairs) and 4) other workers. In 1991, census authorities have classified workers again into nine categories as 1971 census.

After that, the occupational classification of 2001 census has made drastic changes in the classification system and classification has stopped on main, marginal and non-workers. There has been no further classification was made by census authorities in 2001.

3.13.1 Main Workers

All those workers who had worked for the major part of the year preceding the date of enumeration i.e. those who were engaged in any economically productive activity for 183 days (6 Months) and more during the last year are termed as main workers.

3.13.2 Marginal Workers

All those workers who had worked any time in the year preceding enumeration but did not work for major part the year i.e. those who worked less than 183 days or less than six months were termed as marginal workers. Keeping in view the criticism of census having failed to capture the women workforce fully, it is worthwhile to mention that the 2001 census made a special effort to capture women workforce particularly engaged as unpaid family work by improving the instruction manual of enumerators.

The manual included serval sketches of unpaid work for sensitizing the enumerators. Apart from various activities in agriculture, mulching or milk production was included in work. The enumerators employed in backward and low literacy districts have been specially trained through census advisors to enumerate the women workforce. (Sikri 2005).
3.13.3 Industrial Categories

In 1981 and 1991, workers were categorized into 9 industrial categories:-

a) Cultivators

b) Agricultural Labours

c) Livestock, Forestry, Fishing, Hunting, Plantation, Orchards and Allied Activities

d) Mining and Quarrying

e) Manufacturing and repairs- i) Household Industries, ii) Other than Household Industries

f) Construction

g) Trade and Commerce

h) Transport, Storage and Communication,

i) Services. The census 2001, provided information on four categories of workers only i.e. Cultivators, Agricultural labours, Household Industries and Other Workers.

1. Cultivators

According to census definition, cultivators included persons engaged in cultivation of land owned or held from government or private persons or institutions for payment in money, kind or share. It includes effective supervisions or direction in cultivation. A person who has given out his/her land to another person or institution for cultivation, for money, kind or share of crop and also does not even supervise or direct cultivation of land will not be treated as cultivators.

2. Agricultural Labourers

The agricultural labourers are defined as a person who works on another person’s land for wages in money or kind or share is regarded as agricultural labours. He has no risk in the cultivation but merely works on another person’s land on wages. The agricultural labourers are usually more economically and socially vulnerable group in our society.
3. Household Industry

A household industry is defined as an industry conducted by one or more numbers of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas. The larger proportion of workers in the household industry should consist of household members. The industry should not be run on the scale of a registered factory, which would qualify to be registered under the Indian Factory Act.

4. Other Workers

All those who had worked any field of economic activity other than cultivation, agricultural labourers or workers in the household industry are classified as other workers.


The study of occupational structure dealing with working (main and marginal) and non-working population has been carried out in this chapter. The size of working force, its division into different economic activities are fair indicators of the social status of regional population are compared to general population.

Similarly, the trend in working force and occupational structure of regional population are associated with the overall physio-socio-economic set up of the state. (Karve, 1979). The working population during 2001-2011 showed increasing trend, while the percentage of non-workers dropped down with the passing of time. It is very noteworthy that, during the entire span of the study, percentage of the non-workers always remained above 50 percent mark; this situation was applicable for all the tehsils in Pali district and Rajasthan state. It means up to 2011 the working population has not crossed 50 percent, but eventually it went upward and it gave some kind of satisfaction. Some ups and down were seen in the main and marginal population during the study. The following figure shows the changes in the working and non-working population in the Pali district and Rajasthan State during 2001-2011.
We observe from above that total working population of Pali district was only 39.82 percent in 2001, out of which 28.47 percent was classified as main workers, whereas only 11.35 percent falls into the category of marginal workers. It means that there have been 60.18 percent non-workers.

The total working population of the Rajasthan state was only 42.06 percent in 2001. Out of which 30.86 percent was classified as main workers and only 11.20 percent falls into the category of marginal workers. It means that there have been 57.94 percent non-workers.
In the 2011, it is observed that there has been just above one and half percent of population shifted into the working population from the non-working population in the district and reached 41.34 percent. As compared to that of the last decade 1.24 percent population was added to main workers, while 0.27 percent population as marginal workers, which respectively rested at 29.71 percent and 11.63 percent during this particular decade.

Source: Primary Census Abstract 2011.

In the 2011, it is observed that, there has been just above one and half percent of population shifted into the working population from the non-working population in Rajasthan state and reached 43.6 percent. As compared to that of the last decade 0.14 percent population was minus to the main workers, while 1.68 percent population
added to marginal workers, which respectively rested at 30.72 percent and 12.88 during this particular decades. Above discussion, reveals the whole story about overall trends in the occupational classification of Pali district and Rajasthan state.

3.15 Tehsil- Wise Occupational Structure 2001

During 2001, Rohat tehsil recorded the highest working population i.e. 45.12 percent. Among them 31.02 percent population was classified as main workers, while only 14.10 percent population was marginal workers. Followed by: Jaitaran tehsil, which recorded 44.54 percent of population as total working population (32.62 percent main workers and 11.92 percent marginal workers). Sojat tehsil (41.68 percent) and Marwar Junction (41.65 percent) stood at third and fourth position with marginal difference regarding the total working population.

The Jaitaran tehsil has 32.62 percent population in the main workers category but due to the proportion of marginal workers 11.92 percent, it recorded the working population 44.54 percent in the region. On other hand, Bali tehsil recorded the lowest population in the main workers 23.38 percent category even though because of highest number of marginal workers 16.37 percent, it improved its rank in the study region considering total working population.

During this particular decade, all the tehsils in Pali district recorded above 55 percent non-working population mostly because of sluggish industrial development and traditional agricultural practices.
According to census 2011, Rohat tehsil remained at the first position with 47.48 percent of working population. As compared to the last decade 2.36 percent population shifted from the non-working population. Jaitaran tehsil was at number second position with 45.27 percent working population as compared to that of pervious decades, 0.73 percent population shifted to the working population from the non-working category. After that, Raipur tehsil with the highest number of population shifting from the non-working to workers population (4.52 percent) went up by two step ahead as compared to the earlier decade. As compared to the previous decades more changes in percentage of main worker were found in Rohat tehsil (4.3 percent),
followed by Desuri tehsil showing some changes in the working population 3.73 percent. Bali tehsil 2.98 percent followed by, Pali tehsil 2.07 percent in the number of population shifting from the non-workers to main workers. The Raipur tehsil and Bali tehsil, recorded maximum and minimum number of changes in the marginal workers i.e. 3.27 percent and -3.06 percent respectively, and Jaitaran tehsil followed it with 2.79 percent. Whereas, Rohat tehsil, which recorded the highest percentage of changes in the main workers 4.3 percent, had only 1.95 percent changes in marginal workers. On the whole, in the Pali district, six tehsils viz. Jaitaran, Raipur, Rohat, Sojat, Marwar Junction and Desuri recorded non-working population less than 60 percent. While non-working population in the other tehsils such as Pali tehsil, Sumerpur tehsil, and Bali remained above 60 percent.

Source : Primary Census Abstract 2011
Map 3.3
Calculate by Author
3.17 Spatio-Temporal Changes in the Occupational Structure 2001-2011

The spatial - temporal changes in the occupational Structure of the region from 2001-2011 are illustrated in the following table:

<table>
<thead>
<tr>
<th>Name</th>
<th>Main Worker</th>
<th>Marginal Worker</th>
<th>Total Worker</th>
<th>Non-Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jaitaran</td>
<td>32.62</td>
<td>30.56</td>
<td>11.92</td>
<td>14.71</td>
</tr>
<tr>
<td>Raipur</td>
<td>28.88</td>
<td>30.13</td>
<td>11.68</td>
<td>14.95</td>
</tr>
<tr>
<td>Sojat</td>
<td>31.53</td>
<td>31.41</td>
<td>10.15</td>
<td>11.53</td>
</tr>
<tr>
<td>Rohat</td>
<td>31.02</td>
<td>35.32</td>
<td>14.11</td>
<td>12.16</td>
</tr>
<tr>
<td>Pali</td>
<td>27.45</td>
<td>29.52</td>
<td>7.32</td>
<td>6.55</td>
</tr>
<tr>
<td>Marwar Junction</td>
<td>28.86</td>
<td>30.18</td>
<td>12.79</td>
<td>12.86</td>
</tr>
<tr>
<td>Desuri</td>
<td>27.05</td>
<td>30.45</td>
<td>11.22</td>
<td>11.55</td>
</tr>
<tr>
<td>Sumerpur</td>
<td>27.65</td>
<td>26.42</td>
<td>9.56</td>
<td>10.53</td>
</tr>
<tr>
<td>Bali</td>
<td>23.38</td>
<td>26.36</td>
<td>16.37</td>
<td>13.31</td>
</tr>
<tr>
<td>Pali *</td>
<td>28.47</td>
<td>29.71</td>
<td>11.36</td>
<td>11.63</td>
</tr>
<tr>
<td>Rajasthan **</td>
<td>30.86</td>
<td>30.72</td>
<td>11.2</td>
<td>12.88</td>
</tr>
</tbody>
</table>

Source: Primary Census Abstract 2001 & 2011

*District **State

Generally, it was found that average working population fluctuated over two decades. It differed from tehsil to tehsil within the Pali district. It has been observed from table that during the investigation period 2001-2011 majorities of the tehsils in the study region recorded less than 50 percent participation rate of working population. Thus, high percentage of non-workers was observed.
In 2001, there was not a single tehsil in the district, which has the working population above 50 percent. That means, there has been more than 50 percent population not participated in any economic activity from any tehsil in the study area during 2001. The tehsil located plain zone such as Rohat tehsil (45.12 percent), Jaitaran tehsil (44.54 percent) and Marwar Junction (41.65 percent) recorded the highest percentages of the working population. Majority of the tehsils i.e. three tehsils prom the study region were having 35 to 40 percent working population during 2001.

It means that overall 35 to 40 percent population participated in the various economic activities during 2001. During the same decades, there were four tehsils, which recorded the lowest work participation rate i.e. below 40 percent. Bali tehsil (39.76 percent), Desuri tehsil (38.27 percent), Sumerpur tehsil (37.21 percent), Pali tehsil (34.78 percent) also had less than 40 percent working population. As per census 2001, the Pali district main working population was 28.47 percent, marginal working population 11.36 percent, the total working population 39.82 percent and non-working population 60.18 percent.
According to the census 2011, most of the main working population is in Rohat tehsil 35.32 percent. While the Pali district and Rajasthan state main workers are 29.71 percent and 30.72 percent respectively. Most marginal working population is in Raipur tehsil 14.45 percent. In the Pali district and Rajasthan state, the ratio is 11.63 percent and 12.88 percent respectively. The highest total workforce is in Rohat tehsil 47.48 percent. While in the Pali district 41.34 percent and the Rajasthan state 43.6 percent.
The highest non-working population in Pali tehsil is 63.92 percent. In the Pali district and Rajasthan state, the ratio is 58.66 percent and 56.41 percent respectively. The lowest working population is 29.36 percent in Bali tehsil. Whereas marginal working population in Pali tehsil is 6.55 percent. While the lowest non-working population in Rohat tehsil is 52.52 percent. As per census 2011, in Pali district main working population is 29.71 percent, marginal working population is 11.63 percent, the total working population is 41.34 percent and non-working population is 58.66 percent.

Source: Primary Census Abstract 2011

Map 3.5
Calculate by Author
3.20 Zone of the Working Population

The Spatio-temporal analysis of working population 2011 helps to demark the Zone of the working population. These are:-

A. Zone of low working population having working population less than 40.0 percent.
B. Zone of moderate percentage of working population having more than 40.01 to 45.0 percent working population.
C. Zone of high percentage of working population having more than 45 percent working population.

3.20.1 The High Working Population Zone

In the zone of highest percentage of working population, there were only three tehsils, viz. Jaitaran tehsil, Raipur tehsil and Rohat tehsil of the district. Jaitaran tehsil and Rohat tehsil are located in north-west plain and Raipur tehsil is located semi plain and hilly part of the study region, where is almost unfavourable physical condition. There is only primary activities mostly substance agricultural production and agriculture fully depends on the monsoon because ground water level is very low in the tehsil. Hence, the maximum percentage is engaged in the other activities for livelihood as compared to the other tehsils in the district.

3.20.2 The Moderate Working Population Zone

There were three tehsils from the Pali district which were included in the zone of moderate percentage of working population viz. Sojat tehsil, Marwar Junction and Desuri tehsil. It means 33.33 percent tehsils of the district recorded the working population between 40.0 to 45.0 percent. Desuri tehsil included in this zone was also dominated by primary activities. Secondary and tertiary occupation were developed in Sojat tehsil, but they could not affect the occupational changes. Moreover these tehsils showed balance in the all kind of economic activities, thus they were sited in this zone of moderate percentage of working population.
3.20.3 The Low Working Population Zone

As per census 2011, and also according to above stated criteria of the zones of working population, three tehsils were included in the zone of low percentage of working population viz. Pali tehsil, Sumerpur tehsil, and Bali tehsil. Basically, it is observed that that in developing county like India most of the population is engaged in the primary kinds of economic activities, hence the participation rate in the secondary and tertiary activities remained low.

Source: Primary Census Abstract 2011
Map 3.6
Calculate by Author
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