

DISPARITIES OF URBANIZATION IN RAJASTHAN

¹Dr. Monika Roat, ²Urmila

¹Professor in Geography, S.M.B. College
Nathdwara (Rajasthan)

²(Research Scholar) Mohanlal Sukhadia University, Udaipur

ABSTRACT

Urbanization process refers the shifting of population from rural areas to urban areas. This process leads conversion of a rural society into urban society in which former has primary function as its economy and later is engaged in secondary or tertiary activities. Urbanization can be defined as old process but it is increasing rapidly from some last decades. The whole world is facing a vast increasing rate of urbanization. On the basis of the report of world population division, share of urban population would be one third till 2050. The 90% share will be contributed by Northern America, Western Europe, and Asian countries like India, Bangladesh Japan, Australia and south East Asia. It is estimated that 51 Asian countries in which half were listed 60% urban in 2014. Indian subcontinent is also a major urbanization leading country. Top ten megacities existing in the world include three Indian cities which are Delhi, Mumbai and Kolkata. The total urban population in India was recorded 377105760 during 2011. The total percentage of urban population in 1961 recorded 26.40% which is increased 31.8% in 2011. Rajasthan is seventh most populous state in India having 24.87% level of urbanization. In 1901, the urban population of Rajasthan was 1.48 million. During the period of 2011, it is increased as 17.05 million. Most urbanized districts in Rajasthan are Jaipur, Kota and Ajmer. These three districts in Rajasthan occur under the category of more than 40% urbanization which represents that these three districts have the level of urbanization more than state. Southern district of Rajasthan particularly Banswara, Dungepur and Partapgarh jalor and Barmer recorded very low level of urbanization. The paper represents the disparities of urbanization in Rajasthan on the basis of level of urbanization, Location Quotient and Primacy pattern.

Keywords: - Urbanization, Rajasthan,

INTRODUCTION

Developed as a recent branch of human geography, urban geography deals with the non-

agricultural settlements establishing a relation with geographical features. Urban geography deals with the various aspect of town regarding their origin, nature, growth and development pattern with their surrounding natures. An urban area refers the mostly population engaged in secondary, tertiary and quaternary activities. From ancient time, settlements have been attracted geographers towards their all aspect relating shapes, size and pattern. Greeks and Roman geographers also emphasized the rural and urban settlement from the old time. Even they also examine the whole concept related to urban settlement like town, cities, and colonies differentiating between rural and urban settlement. Roman geographer Strabo described that location is a major element and controlling factors of town. Major difference between rural and urban areas can be considered on the basis of population size, density, occupational structural and functionality of the place. Urban life differs from rural life on the basis of infrastructural facilities which are more common in urban place. On the other hand, rural place has its traditional environment in terms of facilities. Village and hamlet lead rural settlement while town and cities are urban terms. Today the whole world is showing the fast growth of urbanization and India is also not untouched by this phenomenon. On the basis of the report of world population division the share of urban population will included as one third part till 2050. India is also will be leading Asian country. Due to rapid industrialization and migration Indian urban population has increased from 2.58 crores in 1901 to 37.71 crores in 2011. Goa emerged as highest urbanized state having an urban population of 62.1 percent. Rajasthan is the largest state of India having disparities in urbanization. In 1901 the percentage of urban population in Rajasthan was 14.41% which is increased as 24.87% in 2011. The number of towns has also increased. Worldwide pattern of urbanization is not uniform. Similarly Rajasthan also represents the disparities in terms of urbanization level, location quotient and primacy pattern.

CONCEPT OF URBANIZATION

Urbanization concept is related to the preparation of the population increased in urban places compared as rural areas. Urban planner, economist, sociologist and geographers defined urbanization concept in various ways. Smiles (1975), defines this concept as a geographical and sociological views. Lampard (1965), defines those three concepts of urbanization exist there which are demographic, behavioral and structural. According to G.T Trewartha “The shift of population from village to city and the process of transformation of villages into city are called urbanization.”

According to Hauser and Duncan, “Urbanization is a change in the pattern of population distribution. Involving an increase in the size of urban population and growth in number and size of urban places with increasing population of such places.”

Urbanization concept is determined by various statistical methods. Increment in number of towns, increase in the ratio of urban to total population, urban density and growth of urban population are main statistical indicator of urbanization. Major promoting factor of urbanization is high migration of rural to urban, growth of industrialization, economic development infrastructural facilities, and means of transportation, education and employment opportunities. The rate of urbanization depends on the socio-economic development of any region. Referred as intricate phenomenon urbanization denotes the physical growth of urban areas. After industrial revolution urbanization has become an attractive topic for research purpose due to increase in urban population. Due to urbanization the proportion of people residing in rural areas decreases. Urbanization belongs to a change occurring in various aspect of society like economic, social, or cultural. Thus, there is a difference among scholars regarding with various dimension and aspect of cities. Some of them concerns with the morphology of cities, some of them physical or social environment of city. The concept of urbanization refers that city are product of urbanization process

CONCEPT RELATED TO URBAN SETTLEMENT

Town and city

Urban geographer defined the term town in various ways. As general, the small urban settlement is considered as town and large settlement is known as city. Even sometime town is used as a synonym of city. According to Fredrick Ratzel, “A city is a contagious and dense agglomeration of people and dwelling occupying a large area of ground and lying at the focus of great trade routes.”

Urban Agglomeration

The term urban agglomeration refers the inner and outer urban population of towns. It leads the continuous urban spread of city and adjoining area. Urban agglomeration sometime will be applicable for twin's city or physically continuous towns.

OUT GROWTHS

An Outgrowth is a livable unit with well-defined borders as well as a specific place, such as a village, hamlet, or counting unit made up of one of these. University campuses, ports, and railroad communities are often thriving beyond the borders of towns that rely primarily on the main town for their purpose. Despite having every attribute of a city, it is not referred to as a town by itself. An urban community that is adjacent to another urban region, such as a statutory town, census town, or city.

Table 1

Number of Towns

Sr. No	Types of towns	2001	2011	Growth
1.	Statutory towns	3,799	4,041	242
2.	Census towns	1,362	3,894	2532
3.	Urban Agglomeration	384	475	91
4.	Out Growths	962	981	19

Source – Census of India 2011

During this decade the highest number of census town is increased. And whole scenario of all towns is positive in the country.

WORLD SCENERIO OF URBANIZATION

Urbanization depends on various factors like geographical, social, political and economic factor of a country. Urbanization rate has a differentiation worldwide having a long history. Different pull and push factors work behind the process of urbanization. Various urban centers developed during the old civilization period like Nile, Indus, Harappa, Athens, in the world. During medieval period

Rome, London, Paris, were developed. Industrial revolution in 18th and 19th century created a rapid growth in this phenomenon. In 1970, the urban population of the world was 36.6 percent that increased to 46.6 percent in 2000. In 2010, almost 52.6 percent of the world was living in urban areas. Highest urban population is recorded in 2010 in North America 82.5 percent and lowest in Africa as 38.3 percent. On the basis of United Nation Population Division, the share of urban population till 2050 would be one third. This share will include the 90 percent part of Northern and Southern America, Western Europe, Asian countries like India, Bangladesh, Japan, Australia, and South East Asia as world's most urbanized area. On the other hand, hot and cold regions of world which are desert and hilly or grassland will be less urbanized.

TABLE 2**CONTINENTWISE URBAN POPULATION (PERCENTAGE)**

Sr.No	continent	1970	1980	1990	2000	2010	2020*	2050*
1.	world	36.6	39.3	42.9	46.6	51.6	56.2	66.4
2.	Africa	22.6	26.7	31.3	34.5	38.3	42.6	55.9
3.	Asia	23.7	27.1	32.3	37.5	44.8	51.2	64.4
4.	Europe	63.0	67.4	70.0	70.9	72.7	74.7	82.0
5.	South America	57.1	64.4	70.5	75.3	78.4	81.0	86.2
6.	Northern America	73.8	73.9	75.4	79.1	80.8	82.5	87.4
7.	Oceania	71.3	71.3	70.7	70.5	70.7	70.9	73.4

*Projected figures Source: - United Nation Population Division, 2014.

On the basis of UNO Population Fact Report, 2.5 billion new urban dwellers will anticipate by 2050, in which 90 percent population would live in Asia and Africa. African countries like Democratic Republic of the Congo, Ethiopia, united republic of Tanzania and Asian countries Bangladesh, Indonesia, and Pakistan Including North American country United States America

will contribute more than 50 million urban dwellers by 2050. It is expected that 58 countries or area in Africa will fall under at least 60 percent urban population by the middle of twenty first century. In Asia 51 countries in which about half were listed as 60 percent urban population in 2014.

This simultaneous process of urbanization will lead Asian population highly urbanized till 2050. Three countries Cambodia, Nepal and Shri Lanka are determined as less than 40 percent urban in 2050. In Oceania continent; the level of urbanization is 80 percent following New Zealand. On the other hand, some places like New Guiana and Samoa projected as 20 percent urbanization. In South America and Caribbean, Anguilla was recorded 100 percent urbanization in 2014 including Uruguay. The most little urbanized countries were Trinidad, Tobago. The projected scenario of urbanization shows that more than three quarters of 48 countries will be at least 60 percent urban.

INDIAN SCENERIO OF URBANIZATION

India is the most leading urban country in the developing countries. Urbanization is considered an important factor which affected all major aspect of Indian life. On the basis of United Nation, India secured second position in urban population. For development aspect urbanization is an important factor country like India. Top ten megacities of the world include three Indian cities which are Delhi, Mumbai and Kolkata. India has long journey of urbanization. Harappa and Mohenjo-Daro were ancient cities in India. During Aryan civilization, Mathura, Champa, Nalanda, Patliputra, Nashik, Hastinapur, Varansi were major planned urban center in India. Britishers developed many cities like Kolkata, Bombay, and Chennai. After independence the rate of urbanization in India increased due to industrial and infrastructural development. Positioned as a most populous country, India growth of urbanization is not limited as regional impact. On the other hand, it has become a phenomenon which is influencing the whole world. Continuous increment of population in cities in India is also presenting a problematic scenario.

Since 1901, the growth of urbanization in India was slowly and gradually. After independence, this phenomenon recorded a rapid increment. Thus, the population trend of India has been continuously increasing since 1901. The total proportion of urban population also increased from different growth rate to another decade. On the basis of 1901 population data, the percentage of urban

population was 10.84. But after independence due to rapid increment in urbanization the total percentage of urban population has reached 31.8 percentages. Different phases can be identified on the basis of Indian urbanization trend. 1901 to 1931 phase of urbanization can be considered as low growth of urbanization in India. Due to emergence of many issues like natural disaster including flood, drought, epidemic controlled the population. At the starting phase of urbanization in 1901, the total urban population in India was 25851857. The percentage of urban population was 10.84. During first decade the 0.35 percent decadal growth was recorded. Slow increment was recorded in 1921 which was 8.27 percent. Moderate trend of urbanization recorded during 1931 to 1961. In 1931, the urbanization percentage in India was 11.99 while 17.97 in 1961. Due to Second World War and partition of India, a sudden urban growth was recorded. Establishment of new industrial towns, new capitals for states and new towns for refugees from Pakistan raised the growth of urbanization. The number of towns increased 2066 to 2334 in 1961. Third phase of urbanization having the period of 1961 to 2011 is determined as rapid growth of urbanization in India. Rural urban migration, new employment opportunities, increased the urban growth in India. The urban population was recorded 377105760 during 2011. Urban population was 26.41 percentage in 1961 which was increased 31.8 in 2011.

TABLE 3**Urbanization trend in India from 1901-2011**

year	Total population	Urban population	Decadal variation of urban population	% Of urban population
1901	238396327	25851873	-	10.41
1911	252093390	25941633	0.35	10.29
1921	251321213	28086170	8.27	11.18
1931	278977238	33455989	19.12	11.99
1941	318660580	44153297	31.97	13.86
1951	361088090	62443703	41.42	17.29
1961`	439234771	78936603	26.41	17.97

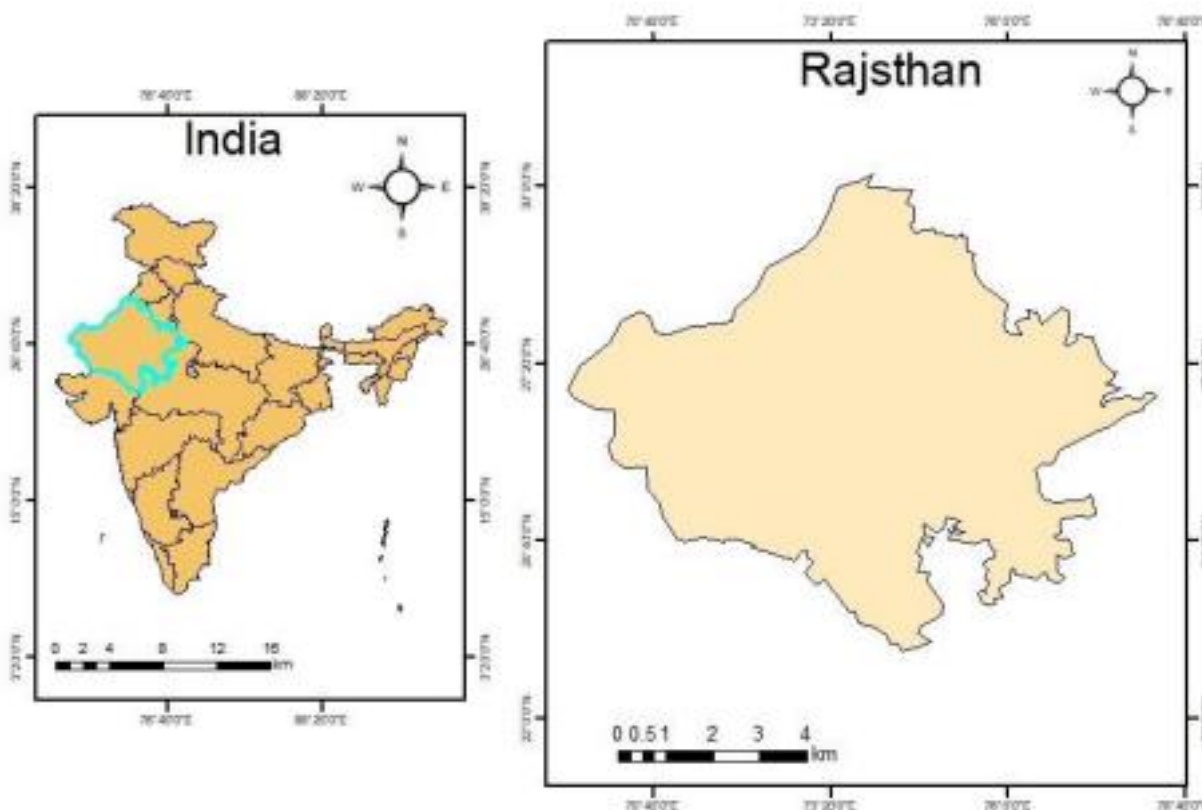
1971	548159652	109113977	38.23	19.91
1981	683329097	159462547	46.14	23.34
1991	846387888	217611012	36.47	25.72
2001	1027015247	285354954	31.13	27.78
2011	1210193422	377105760	31.8	31.16

Source: Census of India 2011

STUDY AREA

Rajasthan state is selected for this research purpose. Having largest place in all Indian state Rajasthan has a lot of physiographic disparities. The state is situated in the north western part of India occurring between 23 3' and 30 12'N latitude and 63 30' E longitude. The state is bounded by Pakistan on the west. On the north by Punjab, Haryana and New Delhi. Eastern side of Rajasthan is bounded by utter Pradesh and Madhya Pradesh. Southern side is covered by Gujarat. Area covered by Rajasthan is 10.41% of the total area of India. On the basis of 2011 census of India, the state has a population of 68,621,012 and area about 3, 42,239 square kilometers and dividing into 33 districts. Rajasthan has 5.67% of total population of India. The state falls in an arid and semi-arid climatic region having a low level of productivity and industrial development.

Study area



SIGNIFICANCE OF STUDY

Rajasthan is seventh most populous state in India. It is considered as one of the moderately urbanized states of Indian union. The rate of urbanization is not equally distributed in the whole state. Most of the highest proportion of urban population happens into well-developed regions of the state. On the other hand, less industrialized, hilly and forest areas of state having lowest urbanization. Southern Rajasthan has very low level of urbanization due to less development. Some district of Rajasthan has very crucial climatic condition which is a major reason for less urbanization. Thus, the present study examines the disparities of urbanization in Rajasthan on the basis of trend and level of urbanization, primacy pattern and location quotient.

METHODOLOGY

Methodological aspect of research is very important. Whole Rajasthan is selected for study on the basis of census data 2001 and 2011. The education is grounded on subordinate data which is taken out through census of both decades. Disparities of urbanization has been calculated into level of urbanization, primacy index and location quotient. Different formulas have used to calculate the primacy and location quotient and tabulated the data. The study has been conducted on the basis of these three aspects and further concluded the results.

REVIEW OF LITERATURE

On the basis based census data from India from 2011, Khanna.D. (2019) attempted to comprehend the inter-district variance in Rajasthan's degree of urbanization and also create a link between poverty and urbanization. Urban population grew from 1.48 million to 7.05 million between 1901 and 2011. It also shows how Rajasthan's total urban population increased by 11 times during the previous 11 decades.

From 1971 to 2011, Singh. And Bhutani.S. (2016) attempted to study Punjab's urbanization patterns. The relative increase of the urban population in relation to town size was examined by the author. They looked at factors influencing towns' population increase during the last ten years. They also looked just at 2011 urbanization trend.

Chotia v. Chaudhary (2014) made an effort to assess the differences in infrastructure amenities among Rajasthan's 33 districts. The author created a composite or overall infrastructural development index by combining multiple infrastructure indices and basing it on various social, economic, and physical parameters just at district level within Rajasthan.

Kumar.A.kumar Using census data from 1901 to 2011, Rai.A. (2014) attempted to explain the process of urbanization, trend, and pattern. The research's investigated finding indicated that India's urban population expanded from 2.58 billion in 1901 to 37.71 billion in 2011.

Bhakare, P. Sarang, and S. (2010) detailed the expansion of urbanization in the research region. For compute the statistics, such as density and the population concentration index, they employed

a variety of mathematical formulae.

The author, Islam.M., Khan (2014), tried to comprehend the national urbanization trend and pattern in the study. Based on its pattern, this report discussed various urbanization scenarios across several Indian states. For the years 1971 to 1981, this was reported at 4.2%. Between 2001 and 2011, it was 3.5 percent. As a result, metropolises had an overall gain of 0.7 percent. Baleshwar.Pomeroy.G.Cusack.Thakur.S.(2007) studied major changes on cities in India. Describing urbanization in Rajasthan, the chapter written by them is very useful having name Rajasthan at the dawn of 21st century. On the basis of this chapter, Rajasthan is showing an increased rate of urbanization at district level. In another chapter, they analyze the hierarchy and spatial pattern of urban centers existing in Rajasthan. They also found a different scenario in which 17 district having no urban settlement within a distance of 10 to 25 km.

V.S.Danehsvar (2004) in the Ph.D. thesis entitled as 'Regional Disparities in the Levels of Urbanization in Gulbarga Division: A Drought prone Division' made study regarding origin, growth and size and spacing of different urban centers and also studied about the trends of urbanization and disparities related to levels of urbanization in Gulbarga division of Karnataka.

Mulik.A.d.(1989) studied about the spatial distribution existing in urban centers. They also analyze the evolution of urban centers that emerged in different periods. They also studied about the functional classification of towns and centrality and also about hierarchy of urban centers of southern Maharashtra.

Y.S.Singh (1998), in his Ph.D. thesis entitled as 'urbanization in Manipur' studied about the urban growth, pattern, urbanization level, density and occupational structure.

Stewart (1958) , studied about 72 counties related to different continents .they applied rank size rule to understand the nature of these counties. El-Shakhs (1974) also made a similar attempt like Stewart and studied primacy index of different 75 cities throughout world and found curvilinear relation between regarding primacy and development of cities.

Trends of Urbanization in Rajasthan

In 1901, the urban population of Rajasthan was 1.48 million. This population increased 17.05 million till 2011. On the basis of urbanization level in Rajasthan, it has become a moderate

urbanized state. Urbanization level in Rajasthan recorded as increasing rate which is 14.41 in 1901 and 24.87 in 2011. In 1901, India recorded 10.41% urbanization while Rajasthan 14.41%.

TABLE 4**Level of urbanization in Rajasthan****(1901 – 2011)**

Census year	Level of urbanization (%)	Census year	Level of urbanization (%)
1901	14.41	1961	16.18
1911	12.87	1971	17.4
1921	13.72	1981	20.49
1931	14.15	1991	22.39
1941	14.67	2001	24.52
1951	17.1	2011	24.87

Source: census of India (2011)

On the basis of table data, Rajasthan can be categorized as three phases of urbanization which can be divided as slow urbanization, moderate and rapid urbanization. The time period exists 1901 to 1941 is considered as slow urbanization due to many reasons. Natural disaster, epidemics like cholera, smallpox occurred in this phase and it was a period of agriculture oriented economy. The 2nd phase 1951 to 1971 is considered as moderate phase. Urbanization rate increased due to migrants. Rajasthan provided many colonies for refugees in all major cities. The phase 1981 to 2011 is considered as rapid urbanization in Rajasthan. This phase is rapid urbanization not only for Rajasthan but also India.

TABLE 5**District wise level of urbanization in Rajasthan (2011)**

Sr. No.	District	Total population	Urban population	% Of total urban population
1	Bhilwara	2408523	512654	21.3
2	Jaipur	6626178	3471847	52.4
3	Tonk	1421326	317723	22.4
4	Pali	2037573	460006	22.6
5	Jhunjhunu	2137045	489079	22.9
6	Barmer	2603751	181837	7.4
7	Dungarpur	1388552	88743	6.4
8	Ajmer	2583052	1035410	40.1
9	siker	2677333	633906	23.7
10	Ganganagar	1969168	535432	27.2
11	churu	2039547	576532	28.3
12	Bikaner	2363937	800384	33.9
13	jodhpur	3687165	1264614	34.3
14	Banswara	1797485	127621	7.1
15	jalore	1828730	151755	8.3
16	Partapgarh	867848	71807	8.3
17	Dausa	1634409	201793	12.3
18	Jaisalmer	669919	89025	13.3
19	karauli	1458248	218105	15.0
20	Rajsamand	1156597	183820	15.9
21	Jhalawar	1411129	229291	16.2

22	Alwar	3674179	654451	17.8
23	Chittorgarh	1544338	285264	18.5
24	Bharatpur	2548462	495099	19.4
25	Hanumangarh	1774692	350464	19.7
26	Udaipur	3068420	608426	19.8
27	Swai madhopur	1335551	266467	20.0
28	Bundi	1110906	222701	20.0
29	Sirohi	1036346	208654	20.1
30	Dhaulpur	1206516	247450	20.5
31	Baran	1222755	254214	20.8
32	nagaur	3307743	637204	21.3
33	Kota	1951041	1176604	60.4
	Rajasthan	68548437	17048085	24.87

Source: census of India 2011

On the basis of level of urbanization in Rajasthan, lots of spatial variation has been observed. The table shows the very high urbanization in Jaipur, Ajmer, and Kota which is more than 40%.

Ganganagar, Churu, Bikaner and Jodhpur fall under high urbanization securing 24% to 40%.

Udaipur, Jhalawar, Alwar, Chittorgarh, Bharatpur, Swai madhopur, Baran, Bhilwara, siker, Jhunjhunu, Bundi, Sirohi, Nagaur, Hanumangarh, Pali, Tonk fall under moderate category of urbanization. Rajsamand, karauli, Jaisalmer and Dausa have low level of urbanization. Partapgarh, jalore, Banswara, Barmer and Dungarpur have been observed as very low level of urbanization in Rajasthan. It represents that southern Rajasthan has very low level of urbanization. Partapgarh, Banswara and Dungarpur have most of tribal population. Lack of education and other development activities is responsible for low level of urbanization in southern Rajasthan. The largest district of Rajasthan Jaisalmer is less urbanized due to its climatic condition. Similarly, Dausa, Karauli are highly agriculture-oriented districts. Poverty is also a major factor in less urbanization in these districts.

Moderate phase facing urbanization districts have a little advancement in agriculture with some industrial base.

Location Quotient

Location quotient is used for descriptive statistics in spatial analysis. There are many methods to measure the distribution, concentration of urban population. This method is applied for the investigation of urban population in all districts of Rajasthan. For the computation of location quotient, applied formula is

$$L.Q.U. = \frac{UP_x/TP_x}{UP_n/TN}$$

Here,

L.Q.U. = Location quotient

UP_x = Urban population of xth district

TP_x = Total population of xth district

UP_n = Urban population of study area

TP_n = Total population of study area

On the basis of location quotient analysis, if its value is one it shows that urban population concentration in that district is same as that of district. The value of location quotient is more than one indicates the higher concentration of urban population in district than state. The value of location quotient less than one shows the low urban population concentration in particular district than state. On this basis, district wise location quotient has been calculated of Rajasthan from 2001 to 2011. Table 1.6 represents the uneven pattern of location quotient. The whole scenario shows that most of districts of Rajasthan have very low value. Only two districts have location quotient value higher than state.

TABLE 6

DISTRICTWISE LOCATION QUOTIENT

Sr No.	District	2001	2011
1	Kota	2.29	2.42
2	Jaipur	2.11	2.10

3	Ajmer	1.71	1.60
4	Jodhpur	1.45	1.37
5	Bikaner	1.52	1.35
6	Churu	1.19	1.13
7	Shri ganganagar	1.08	1.08
8	Siker	0.88	0.94
9	Jhunjhunu	0.58	0.91
10	Pali	0.91	0.90
11	Tonk	0.89	0.89
12	Bhilwara	0.88	0.86
13	Nagaur	0.60	0.77
14	Bara	0.72	0.83
15	Dhaulpur	0.76	0.82
16	Sirohi	0.75	0.80
17	Bundi	0.79	0.80
18	Swai madhopur	0.81	0.79
19	Udaipur	0.79	0.79
20	Hanumangarh	0.85	0.79
21	Bharatpur	0.68	0.77
22	Chittorgarh	0.68	0.73
23	Alwar	0.62	0.71
24	Jhalawar	0.60	0.65
25	Rajsamand	0.55	0.63
26	Karauli	0.60	0.59

27	Jaisalmer	0.64	0.53
28	Dausa	0.44	0.49
29	Partapgarh	-	0.32
30	Jalore	0.32	0.32
31	Banswara	0.30	0.28
32	Barmer	0.31	0.27
33	Dungarpur	0.30	0.25

Source = compiled through census 2001, 2011

On the basis of location quotient analysis, two district of Rajasthan namely Kota and Jaipur have recorded the higher concentration of urban population in 2001 to 2011. Both districts are highly urbanized having the highest level of urbanization in whole Rajasthan. According to the value of location quotient, these two districts have urbanization even more than state. Five districts Jodhpur, Bikaner, Churu and shri Ganganagar and Ajmer has recorded location quotient more than one which means that these districts have high urbanization as existing in state. But there is a slight decrement in the value of location quotient during 2011 in these five districts.

Rest 26 districts of Rajasthan representing very low urbanization concentration. Eleven districts of Rajasthan show the increasing trend of location quotient values. Siker, Jhunjunu, Nagaur, Bara, Dhaulpur, Sirohi, Bundi, Bharatpur, Chittorgarh Alwar and Rajsamand show the increasing values of location quotient.

Urban primacy index

Urban primacy means a system which shows the hierarchical pattern of cities. Urban primacy is a major element of geography which indicates the proportion of top largest city population to next largest city. Worldwide pattern of primate city is not uniform everywhere. The main reason is that growth of some urban centers is very fast. On the other hand, growth of some urban centers is very slowly. Primate city refers the first rank or largest city in any country or state. This term was coined by Mark Jefferson in 1939. Various scholars have made an attempt to examine primacy index. Berry (1961) investigated the primacy pattern of under developed countries.

Developed countries of the world are considered more suitable for this terminology. In European

countries and America, it is the most appropriate. In India, there is no primate city at country level. But at state level, the primacy pattern is available. The absence of primate city in India leads major political and economic aspect.

The concept of primate city has applied by Khan in the district of Rajasthan and they examined very high, high, medium, low, and very low primacy index.

Primacy index (P.I.)

P1 = the population of rank no 1 town

P2 = The population of rank no 2 town

Pn = The population of respective no. Of towns

On the basis of this formula, top ten city of Rajasthan state is calculated following the 2001 and 2011.

TABLE 7
Urban primacy index 2001

2001	Population	Primacy Index	Expected Primacy Index	P.I. - E.P.I
Jaipur	2322575		1	1
Jodhpur	860818	2.6	2	0.6
Kota	712000	3.2	3	0.2
Bikaner	529690	4.3	4	0.3
Ajmer	490520	4.7	5	-0.3
Udaipur	389438	5.9	6	-0.1
Bhilwara	280128	8.2	7	1.2
Alwar	266203	8.7	8	0.7
Shri ganganagar	222858	10.4	9	1.4
Bharatpur	205235	11.4	10	1.4

Source = compiled by researcher through census 2001

On the basis of primacy calculation 2001, the actual primacy index and rank of urban centers are not presenting great variation. Primacy index of Bharatpur which is 10th city is 11.4 which is only 1.4 more to the expected index. Less variation has been observed in 2001. Ajmer and Udaipur have shown the negative index.

These two districts have shown very less variation. Shri Ganganagar and Bharatpur represent same value of 1.4. Jodhpur, Kota, Bikaner has shown a little variation. Primacy pattern of Rajasthan on the basis of top ten cities have recorded as less variation in this pattern. Alwar and Bharatpur are fast growing cities in Rajasthan due to NCR Impact.

Various industries and development project is responsible for this fast growth of Alwar city in Rajasthan.

TABLE 8

URBAN PRIMACY INDEX 2011

2011	POPULATION	PRIMACY INDEX	EXPECTED PRIMACY INDEX	P.I. - E.P.I.
Jaipur	3046163		1	1
Jodhpur	1138300	2.6	2	0.6
Kota	1001694	3.0	3	0
Bikaner	293563	4.7	4	0.7
Ajmer	644406	5.5	5	0.5
Udaipur	474531	6.4	6	0.4
Bhilwara	551401	8.4	7	1.4
Alwar	359483	8.9	8	0.9
Bharatpur	341422	10.4	9	1.4
Bhiwadi	252838	12.4	10	2.4

Source = compiled by researcher through census 2011

In 2011, Bhiwadi replaced shriganganagar. Due to high industrialization and development activity bhiwadi emerged as a major urban center in Rajasthan. The primacy scenario in all cities is also not showing great variation. Kota has shown 0 values which indicate the high primacy. Jodhpur has represented the same value of 0.6 in 2001 to 2011. Similar pattern has shown by Bharatpur according to both census data. Ajmer and Udaipur recorded as positive value. But overall analysis of primacy pattern in Rajasthan on the basis on top ten cities is representing high primacy. Alwar, Bharatpur, and bhiwadi have an impact of Delhi NCR Region. Jaipur has been observed as primate city in 2001 to 2011. Kota is considered as an education hub of Rajasthan and also included as smart city mission. Thus, Kota is showing high primacy. Ajmer and Udaipur also included in smart city mission. Udaipur is developing fast due to tourism aspect. The whole scenario shows that there is a little variation in the primacy pattern of all 10 selected cities of Rajasthan.

Conclusion

Urbanization in Rajasthan falls under moderate category on the basis of study. But the state shows the increasing rate of urbanization. On the basis of data pattern 2001 and 2011, it is observed that some districts of Rajasthan are facing high urbanization due to developing aspect. But some district occurring in southern Rajasthan which are considered backward in all aspect like education, health, and other facilities show very low level of urbanization. These districts have most of part as tribal population. Urbanization rate is increasing in some district like Bharatpur, Alwar due to NCR impact. Bhiwadi emerged as a new urban center which replaced shriganganagar . The largest district jaisalmer also falls in low urbanized category due to climatic aspect. But primacy pattern in top ten districts showed low variation. High disparities have been observed in level of urbanization in Rajasthan. Location quotient also represented that urbanization in some are higher than state. But most of districts occur in low urbanized category.

REFERENCES

1. Bala.R. (2007) Urbanization in Rajasthan at the Dawn of 21st century .City, Society and Planning, (Baleshwar.T.Pomeroy.G. Cusaok.C.Thakur.S), published by Concept publishing company.
2. Bhakare.P.Sarang.S.(2010) Spatio-Temporal Changes in Population Structure of Pune Division of Maharashtra, Shivaji University,Kolhapur,Maharashtra.
3. Berry, B.j.L. (1961) "City Size Distribution and Economic Development", Economic Development and Cultural Change, Vol.-9, pp, 573-583
4. Census of India (2001) Rural- Urban Distribution of India
5. Census of India (2011) Rural-Urban Distribution of India
6. Chotia.V. Chaudhary (2014). Investigating the Inter-relationship between Regional Infrastructure, Poverty and Economic Growth: A District-Wise Study of Rajasthan. International Journal of social Science& and Interdisciplinary Research 211-233
7. Daneshwar (2004) "Regional Disparities in the Levels of Urbanization in Gulbarga Division: A Drought Prone Division") unpublished Ph.D. thesis, Karnataka University.
8. Islam.M.Ekhalag Khan.M.(2014). A Spatial -Temporal Analysis of Urbanization in India. Excellence International Journal of Education and Research 563-575
9. Khanna.D.,(2019) Research Paper on Trends and Patterns in the level of Urbanization in Rajasthan :1901 to 2011.International Journal of Research and Analytical Review,134-141
10. Kumar.A.Kumar Rai.A.,(2014) Urbanization Process, Trend, Pattern and its consequences in India.
11. Mulik.A.D.(1989): 'Dynamics of Urbanization -A Geographical Perspective' Himalaya Publishing House.
12. Reddy, N.B.K.(1971): "Urban Rank Size Relationship in the Krishna and Godavari Delta" 21st Internationalcongress,National Committee for Geography, Calcutta
13. Singh.J.Bhutani.S.,(2016) Trends of Urbanization and Patterns in Punjab 14. Singh, Y.S. (1998): "Urbanization in Manipur" unpublished Ph.D. thesis Manipur University, Chanchipur, Imphal
14. Stewart, C.T.(1958) " The Size and Spacing of Cities" ,The journal of geographical review,Vol 48,pp.222-245

15. Lampard, E. E. (1967). Historical Aspects of Urbanization. In the Study of Urbanization, Schore, L.F. and Hauser, P.M. (Ed), John Wiley and Sons, New York.
16. Smailes, A.E. (1975): "The Definition and Measurement of Urbanization", in Essays on World Urbanization Ed. Ronald Jones, George Philip and Son Limited, London.
17. United Nation, Department of Economic and Social Affairs, Population Division (2014) Population Trend <http://hdl.handle.net/10603/2015>