

## **The trends and patterns of urbanization in the NCT of Delhi during 1901-2011**

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### **Abstract**

Presently, the NCT of Delhi is in the United Nation's list of top ten world's largest urban agglomeration. According to census 2011, the NCT of Delhi is at the 2<sup>nd</sup> rank among the highly populated metropolitan cities in India. The rapid pace of urbanization is justified by the fact that 97.50 of Delhi's population live in urban area & the remaining 2.5% live in rural areas. Over the years, the number of villages in rural areas have decreased considerably conforming the increase in urban population & the urban areas. Today, the NCT of Delhi has attained inordinately large population size leading to virtual collapse in the urban services and followed by basic problems in the field of housing, slums, water, infrastructure, quality of life etc. urbanization is a product of demographic explosion and poverty induced rural-urban migration. The present papers deals with the process of urbanization in Delhi over a century with emphasis on level, degree of urbanization and pseudo-urbanization using Indian census data during 1901-2011.

**Keywords:**Space,Urbanization, Urban Agglomeration, Natural Increase, Degree of Urbanization

### **Introduction**

“Space” can be defined as more than a medium in which social, economic and political processes operate. When these operating processes keeps on evolving in respect to changing situations than they induce changes in the dimensions of the space viz. size, density, distance, direction, territory and location. When dimensions of space experiences “change” then they result in transformation from older aspects to newer ones. This transformation in the dimensions of space is described as urbanization.

Urbanization is the result of human interactions. It is progressive concentration (Davis, 1965) of population in urban unit. Quantification of urbanization as process (Davis, 1962) of switch from spread out pattern of human settlement to one of concentration in urban centers. It is a finite process- a cycle through which a nation pass as they evolve from agrarian to industrial society (Davis and Golden, 1954). He has mentioned three stages in the process of urbanization. These stages can be summed up as under:

- **Stage-I:** it is the initial stage characterized by rural traditional society with predominance in agriculture and dispersed pattern of settlements.

- **Stage-II:** It refers to acceleration stage where basic restructuring of the economy & investments in social overhead capitals including transportation, communication take place. Proportion of urban population gradually increases from 20% to 40%, 50%, 60%.
- **Stage-III:** It is known as the terminal stage where urban population exceeds 70% or more. At this stage, level of urbanization (Davis, 1965) remains more or less same or constant. Rate of growth of urban population and total population becomes same at this terminal stage.

Urbanization and the industrial revolution are inter-woven aspects and together marked the beginning of the modern and universal process of urbanization. Considering industrial revolution and the other associated economic development together, urbanization can be traced out to have its origin in the United Kingdom. Urbanization process slowly and gradually became an inevitable and universal process. Presently, the developed countries are characterized by high level of urbanization. On the other hand, majority of developing countries, when compared to developed countries, are lagging far behind in the process of urbanization. The major reason behind this low level of urbanization is the late beginning of urbanization process in developing countries i.e. only since the middle of 20<sup>th</sup> century.

The present papers deals with the process of urbanization in Delhi over a century with emphasis on level, degree of urbanization and pseudo-urbanization using Indian census data during 1901-2011.

### **Review of Literature**

The Delhi Economic Survey, 2012-13, presents excellent qualitative and the quantitative study of various aspects of the Delhi. The chapter two of the Delhi Economic Survey, 2012-13, has been devoted to the study of “Demographic Profile” of the NCT of Delhi. The chapter contains the statistical figures and the details regarding the “Demographic Profile” of the NCY of Delhi. The statistical figures and the details help us to understand the current rural-urban scenario in the NCT of Delhi. Further, the chapter helps us to analyze the urbanization level of the NCT of Delhi in the light of statistical figures of other metropolitan cities of India and the world. Moreover, statistical figures regarding the district-wise distribution of rural-urban population provide the micro-level understanding of the NCT of Delhi.

### **Hypothesis**

Urbanization have facilitated the life of people in the NCT of Delhi.

### **Objectives**

The objectives of the present study are as follows:

- To perform study regarding the trends and patterns of urbanization in the NCT of the Delhi.

## **Methodology**

The methodology for the present study can be summed up as under can be summed up as under:

- The first step involves the trend analysis of urbanization for the period 1900 to 2011 have been carried out on the basis of available data in various issues of census of India.
- The second step involves the analysis regarding the degree of urbanization. In the present research study. Here, the degree of urbanization have been expressed in terms of Percent Urban, Percent Rural and the Urban/Rural Ratio.
- The third step involves the scrutiny of district-wise scenario of urbanization in the NCT of Delhi on the basis of Census of India, 2011, Government of India.
- The fourth step involves the analysis of trend in the Natural Increase in population and the migration from neighboring states in the NCT of Delhi. This trend analysis involves the use census data of 2001 and 2011 along with other data.
- The research study ends with the discussion on the pseudo-urbanization in the various districts of the NCT of Delhi.

## **Sources of data**

The secondary data for the present research study is drawn from the following agencies:

- The secondary data related to the Census of India, 1991, 2001, 2011 and various other issues is drawn from The Office of the Registrar General, New Delhi, India.
- Data related to the mid-year population (2001-2011) is drawn from the Office of the Chief Registrar, Births and Death, Government of NCT of Delhi.
- Maps and other related things are downloaded from the website: [www.mapsofindia.com](http://www.mapsofindia.com)
- Various issues of Delhi Economic Survey and other magazines have been referred for information related to the various aspects of the study area.

### Tools of analysis

The following tools have been used in the different analysis performed in this research study:

- The various aspects of the “Degree of Urbanization” have been calculated by using the following mathematical formulas:

$$\text{Urban (\%)} = (U/P) * 100$$

Where U = Urban Population of the respective Census Year

P = Total population of the respective Census Year

$$\text{Rural (\%)} = (R/P) * 100$$

Where R = Rural Population of the respective Census Year

P = Total Population of the Respective Census Year

$$\text{Urban-Rural Ratio} = (U/R) * 100$$

Where R = Rural Population of the respective Census Year

U = Urban Population of the respective Census Year

- The trend analysis regarding the natural increase in population and the migration have been done by using the following formula:

$$NI = TB - TD \quad \text{Where NI = Natural Increase in Population}$$

TB = Total Births

TD = Total Deaths

$$MP = IP - NI \quad \text{Where MP = Migratory Population}$$

IP = Increased Population

NI = Natural Increase

### Study area:

Delhi is highly urbanized city with a population of about 1,67,87,941 (Census 2011). Delhi (Figure.1) is comprised of nine districts namely North West district, North district, North East district, East district, New Delhi, Central District, West district, South West district, South district. Out of these nine districts, New Delhi and Central district of Delhi do not have rural population (Census 2001 & Census 2011). The average level of income in Delhi is higher than in the rest of the country. Consequently, the poverty levels in Delhi are estimated as being below all-India number.

Apart from the information given above, the Delhi have the following salient features which are as follows:

- Apart from Kolkata, Delhi is the next in the United Nation's list of top ten world's largest urban agglomeration.
- In India, Delhi secures 2<sup>nd</sup> rank among the highly populated metropolitan cities in India (Census, 2011).
- In the Delhi, North West District secures 1<sup>st</sup> rank with maximum population while New Delhi is at the bottom of the list with minimum share of population (Census 2011).
- In the Delhi, in terms of population density North East District is at the top of the list while South West District is at the bottom of the list.
- Near about 97.50% of the total population in the Delhi is urban.
- Migrants in the Delhi are mainly from Uttar Pradesh, Bihar, Haryana, Rajasthan, Punjab, West Bengal, Madhya Pradesh.

### **Census definition of an urban areas**

In Census of India, 2001 two types of town were identified (R.G, 2001):

a) Statutory Towns: All places with a municipality, corporation, Cantonment board or notified town area committee, etc. so declared by state law.

b) Census Towns: Places which satisfy following criteria:-

- i) A minimum population of 5000;
- ii) At least 75% of male working population engaged in non-agricultural pursuits; and
- iii) A density of population of at least 400 persons per sq. km.

### **Trends of urbanization in the NCT of Delhi**

Before discussing the trends of urbanization in the NCT of Delhi, let's have a look on the "Area Profile" (Figure.2) of the NCT of Delhi. The total area of the NCT of Delhi is about 1483 sq.km, on this piece of land rural settlements exists and urban settlements exists side by side. Table presents the area under rural settlements and urban settlements during the census years of 1991, 2001 and 2011. The statistical figure in the table clearly shows that area under rural settlements is decreasing sharply while area under urban settlements is increasing sharply. Thus we can say that urban land is encroaching the rural land at a very fast rate. Adding to this, the number of villages in the NCT of Delhi have declined from 300 (1961) to 112 (2011).

Table.1 presents the statistical figures regarding the trends of urbanization in the NCT of Delhi. The statistical figure shows that total population of the NCT of Delhi increased from 4.05 lakhs (1901) to 1.63 crores (2011). The trend of urbanization in the NCT of Delhi shows sharp increase in the urban population with 52.76% (1901) to 97.50% (2011) except for the year 1991. During the year 1991, the percentage of urban population slid down (89.93%) as

compared to other years which are marked by rising trend. During the year 1991, though there was remarkable increase in the urban population but the percentage of urban population came down due to an increase in the total population and this increase in the total population can be attributed to the high degree of migration from the surrounding states. Likewise, Decadal growth rate increased from 11.13% (1911) to 26.26% (2011). The Annual Exponential Growth Rate (AEGR) shows varying trend during the period 1901-2011. It was about 1.1% (1911) and attained maximum value of 7.3% (1951) and again came down to 1.92% (2011).

### **Degree of urbanization in the NCT of Delhi**

The trend (Table.2 & Figure.3) of urbanization in the NCT of Delhi shows sharp increase in the urban population with 52.76% (1901) to 97.50% (2011) except for the year 1991. During the year 1991, the %age of urban population slid down (89.93%) as compared to other years which are marked by rising trend. During the year 1991, though there was remarkable increase in the urban population but the %age of urban population came down due to an increase in the total population can be attributed to the high degree of migration from the surrounding states. Contrary to this, the %age of rural population shows declining trend from 47.24% (1901) to 2.50% (2011) except for the year 1991. The year 1991 shows increase in %age of rural population, the reason behind this is the inflow of rural population from the neighboring states.

The urban-rural ratio shows tremendous increase from 111.69% (1901) to 3895.34% (2011). This means that in the year 2011, for every 100 ruralites there are 3895.34 urbanites. These aspects shows that the NCT of Delhi is in the third stage of urbanization that is terminal stage of urbanization.

### **District-wise scenario of urbanization in the NCT of Delhi**

The district-wise study of urbanization shows that New Delhi and the Central District have zero rural population and are marked by 100% of urbanization. These are followed by the East District 99.79% (2011), West District 99.75% (2011), South West District 99.71% (2011), South District 99.56% (2011) and North East district 99.04% (2011). On the other hand, North District 97.99% (2011) and North West District stands at the second last and the last position respectively. On the basis of above discussion, the key findings regarding the district-wise urbanization in the NCT of Delhi can be summed up as under:

- New Delhi and the Central Districts have highest urbanization in the NCT of Delhi.
- North West District have lowest urbanization in the NCT of Delhi.
- East District, West District, South West District, South District, North East District of NCT of Delhi have more or less same level of urbanization.

### **Components of urban growth in the NCT of Delhi**

Urban growth (Bhagat, 1992) can be attributed to mainly three components viz.

- Natural increase in population.

- Net migration of people.
- Areal reclassification.

Urban growth in the case of NCT of Delhi can be attributed to the Natural Increase in Population and the Migration of people from the neighboring states. During the period, 2001-2011, the natural increase (Table.3 & Figure.4) in population remains around the statistical figure of 2.26 on an average. On the other hand, migration of people (Figure.5) from the neighboring states during the period 2001-2011, shows gradual increase in migratory population. The statistical figures during the period, 2001-2011, proves that migration have contributed majorly in the process of urbanization. The reasons behind such a huge migratory population in the NCT of Delhi are better education facilities, job opportunities, living standard, quality life, medical facilities etc.

### **Pseudo-urbanization in the NCT of Delhi**

The population explosion in the NCT of Delhi have resulted in the failure of civic infrastructure in providing the facilities to the people in the region. The following facts justifies the failure of civic infrastructure:

- Though the percentage of “Housing shortage” have decreased sharply from 13.62% (1991) to 4.59% (2011) but still civic infrastructure fails to provide housing facility to all people in the NCT of Delhi.
- District-wise record, in context to access to basic services, of Delhi Human Development Report-2013 shows the following:
  1. North West district and the South West district were found lagging far behind the other districts in accessing many of the basic services.
  2. North district, North West district, North East district & South district are marked by the poor water availability.
  3. Sanitation conditions are very poor in the North West, South West district and the South district.
  4. West district and the South West district have erratic power supply.
  5. South west district, west district and north district are facing inflated bill problem.
- Changes in the environmental aspects have also taken place due to rapid rate of urbanization. These changes can be seen in micro-climate in the form of Urban Heat Island Effect and during summer season “Heatwave Effectivity” is of major concern in the NCT of Delhi.
- The most serious problem is of “Slum Dwellers” and people living in “Unauthorized Colonies”. The number of slum households and slum population has increased substantially in Delhi over the decades, with the exception of the last decade. While in 2001, there were 0.42 million slum households (comprising a population of 2.15 million). In 2011, the number dropped to 0.384 million households (comprising a population of just over 1.9 million), thereby registering a decline.

When the census, 2011, data on the provisioning of basic services to the slum and non-slum households is compared, it reveals that with the exception of electricity, slums lag behind the average level in terms of access to all the basic facilities, especially, sanitation.

## **Conclusion**

Above study clearly shows that the “Natural Increase” in population and “Migration” from neighboring states are the two major reasons for such a fast increase in population and resulting in the condition of pseudo-urbanization in the NCT of Delhi. The natural increase in population can be controlled by following the family planning norms by the people of the NCT of Delhi. This aspect is completely dependent on the people whether they are going to follow the family planning norms or not and hence, this aspect is not in the hands of the Government of the NCT of Delhi. The second aspect talks about migration from neighboring states to Delhi and this aspect can be redirected by developing the strong economic base for “Magnet Towns” and creating large number of job opportunities in these towns. This will redirect the migration flow towards the “Magnet Towns” and thus, minimizing the flow of migrants towards the NCT of Delhi.

## **Acknowledgment**

I would like to acknowledge **Prof. Manzoor Ahmad**, Honourable Vice-Chancellor, Swami Vivekanand Subharti Medical University, Merrut (Uttar Pradesh, India) and **Prof. HaseenaHashia**, Department of Geography, JamiaMilliaIslamia, (Delhi, India) for their inspiring and motivational guidance in performing this research study.

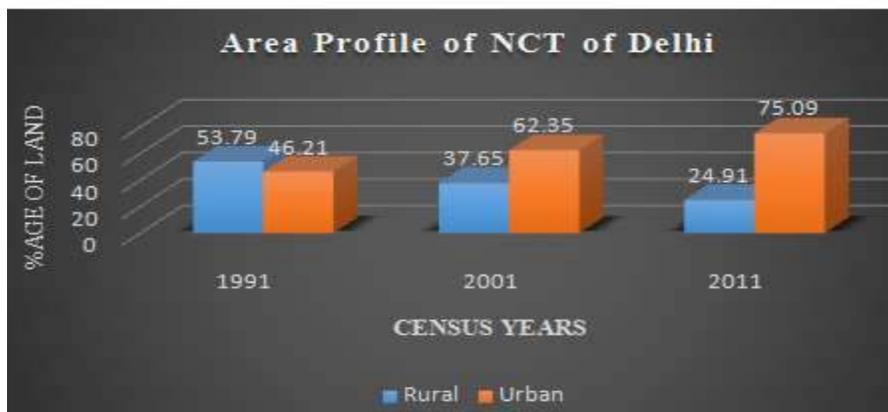
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**Figure 1:** Administrative Division, NCT of Delhi

Source: [www.mapsofindia.com](http://www.mapsofindia.com)



**Figure 2:**Area Profile, NCT of Delhi.

Source: Census of India, Various Issues, Government of India

**Table 1:** Urbanization Trend, NCT of Delhi.

Census Year	Population (number)			Growth (%age)	
	Total	Urban	Rural	Decadal	AEGR
1901	405819	214115	191704	-----	---
1911	413851	237944	175907	11.13	1.1
1921	488452	304420	184032	27.94	2.5
1931	636246	447442	188804	46.98	3.9
1941	917939	695686	222253	55.48	4.4
1951	1744072	1437134	306938	106.58	7.3
1961	2658612	2359408	299204	64.17	5.0
1971	4065698	3647023	418675	54.57	4.4
1981	6220406	5768200	452206	58.16	4.6
1991	9420644	8471625	949019	46.87	3.8
2001	13850507	12905780	944727	52.34	4.2
2011	16753235	16333916	419319	26.26	1.92

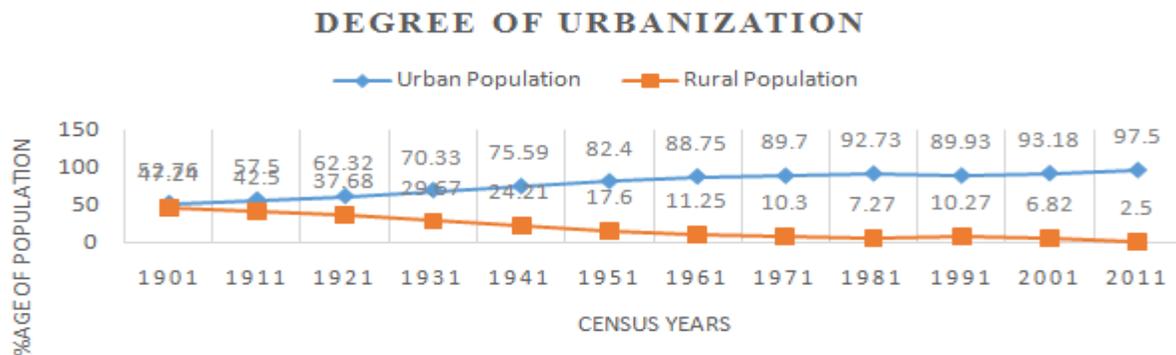
**Source:**Census of India, Various Issues, Government of India

**AEGR:** Annual Exponential Growth Rate

**Table 2.** Degree of Urbanization, NCT of Delhi

Census	Urban (%age)	Rural (%age)	U/R Ratio
1901	52.76	47.24	111.69
1911	57.50	42.50	135.27
1921	62.32	37.68	165.42
1931	70.33	29.67	236.99
1941	75.79	24.21	313.01
1951	82.40	17.60	468.27
1961	88.75	11.25	788.27
1971	89.70	10.30	871.09
1981	92.73	7.27	1275.57
1991	89.93	10.27	892.67
2001	93.18	6.82	1366.08
2011	97.50	2.50	3895.34

**Source:** Self-Calculated from Census of India, Various Issues, Government of India

**Figure 3:** Degree of Urbanization, NCT of Delhi

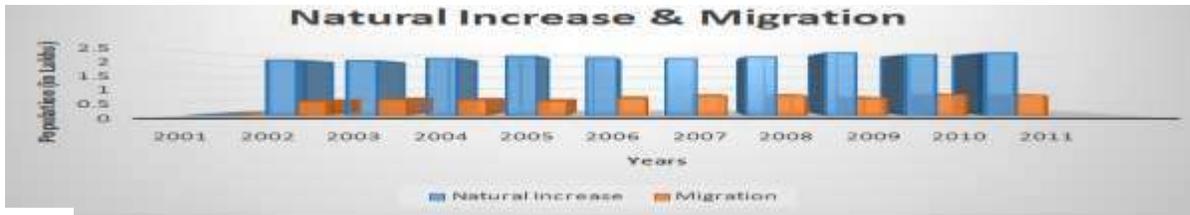
**Source:** Self Calculated from Census of India, Various Issues, The Government of India.

**Table 3:** Trend of Natural Increase in Population and the Migration, 2001-2011, NCT of Delhi

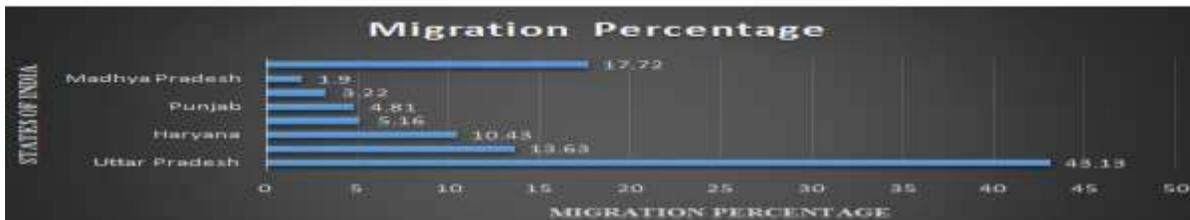
<b>Year</b>	<b>Estimated mid-year population (Lakhs)</b>	<b>Increased population over previous year (Lakhs)</b>	<b>Birth (Lakhs)</b>	<b>Death (Lakhs)</b>	<b>Natural Increase (Lakhs)</b>	<b>Migration (Lakhs)</b>
2001	139.13	--	--	--	--	--
2002	141.83	2.70	3.01	0.86	2.15	0.55
2003	144.58	2.75	3.01	0.88	2.13	0.62
2004	147.39	2.81	3.06	0.85	2.21	0.60
2005	150.25	2.86	3.24	0.94	2.30	0.56
2006	153.16	2.91	3.23	0.99	2.24	0.67
2007	156.13	2.97	3.22	1.01	2.21	0.76
2008	159.16	3.03	3.34	1.08	2.26	0.77
2009	162.25	3.09	3.54	1.12	2.42	0.67
2010	165.40	3.15	3.59	1.24	2.35	0.80
2011	168.60	3.20	3.54	1.12	2.42	0.78

**Source:** Office of the Chief Registrar, Births and Deaths, Government of NCT of Delhi

Census of India, 2001 and Census of India, 2011, Government of India



**Fig:** i: Trend in Natural Increase and Migration, 2001-2011, NCT of Delhi.  
**Source** Office of the Chief Registrar, Births & Deaths, Government of NCT of Delhi  
 Census of India, 2001 and Census of India, 2011, Government of India.



**Figure 5:** State-Wise Migration in The NCT of Delhi

**Source:** Census of India, 2001, The Government of India