

## Urbanization and its challenges: A case of the Gurugram city, India

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### ABSTRACT

India is the most populated country in the world today. India's future growth and urbanization are often focused and discussed in context of megacities such as Delhi, Mumbai, and Kolkata conventionally. However, smaller city such as Gurugram (earlier known as Gurgaon) which has witnessed explosive population and economic growth during the last twenty years is unable to get its due attention. Although it is easy to witness that urban centers such as Gurugram become hubs of innovation, attract businesses, and foster entrepreneurship yet, it is equally important to recognize that the economic development and urbanization is not without challenges. Rapid and unplanned urbanization can lead to issues such as overcrowding, inadequate housing, environmental degradation, and social inequality. It is imperative that urbanization should be in harmony with the natural infrastructure or ecosystem of the region. The facet of urban growth where the focus is on megacities while the smaller growing cities get neglected intensifies the challenge of economic growth and sustainability. This paper examines the pace, trend, and degree of urbanization process in Gurugram. Urban indicators are also identified for Gurugram to understand the degree of urbanization of Gurugram and the associated development problems of urbanization on Gurugram are highlighted.

Keywords: Urbanization, Sustainable Development, Gurugram, Urban indicators

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## INTRODUCTION

Economic development and urbanization have long been acknowledged as interdependent processes in both developed and developing nations. The intricate relationship between these two phenomena is such that they not only influence each other but also serve as both the cause and effect of one another. Economic growth often leads to urbanization as people are drawn to cities in search of better employment opportunities and improved living conditions. This influx of individuals into urban areas increases the demand for goods and services, thereby stimulating economic activity. Under the current globalization era, technological development, economic growth, and industrialization are taking place at an increasingly variable rate. These phenomena are often concentrated in and around cities. Cities are the focal point of growth, employment, and innovations.

Urbanization symbolizes the movement of people from rural to urban areas and includes an increase in the number and extent of cities. Urbanization can describe a specific condition at a set time, i.e., the proportion of total population or area in cities or towns, or the term can describe the increase of this proportion over time. So, the term urbanization can represent the level of urban relative to overall population, or it can represent the rate at which the urban proportion is increasing.

Haryana is the most urbanized state among the states surrounding the National Capital Territory (NCT) Delhi, having 28.9% average population living in urban area. In the state the maximum urban population is concentrated more within the National capital region (NCR) of Haryana. The average percentage of people living in the urban areas in the Haryana sub-region (NCR) is 34% which is higher than the states average. The more urbanized districts within the sub-region are Gurugram, Faridabad and Panipat. Gurugram, the nearest urban center to Delhi has been experiencing fast changes in population growth and land use during the recent decades. The urban population of Gurugram has grown from 57 thousand in 1971 to 1.74 lakh in 2001 to 1,042,253 in 2011. The growth rate has also indicated an increasing trend. In addition, the pressure of continuously growing metropolitan city is also changing the structure of the town and its surrounding neighborhood. Its vicinity to international airport and good infrastructure and proximity to Delhi, a well-known market for raw material, finished goods and a nerve center of various commercial activities has attracted several multinational companies of Europe, UK, USA, and Canada to set up their industrial units in the Udyog Vihar-industrial area of the city. Unplanned and uncontrolled growth of cities presents major infrastructural, economic, social, and ecological problems and risks. Megacities such as Gurugram run highest risks of both natural as well as man-made disasters due to large number of inhabitants. To analyze the serious risks and potential benefits of urbanization, it is important to establish a system of urban indicators.

## RESEARCH METHODOLOGY

This study is based on secondary data for Gurugram district of state Haryana, India. The data is obtained from Registrar General of India, Census office, New Delhi. Census data is the most reliable and publicly available population data. 2021 census data was not collected/available due to COVID and thus in this regard 2011 census data is the latest data that is available for the study. Along with this census data, statistical information and data is collected from published and unpublished sources such as State statistical abstract of Haryana,

Administrative Atlas and State government website, books, journals, and studies. To study urbanization process of Gurugram, rate of Growth of urban population (rgup) is compared to rate of growth of total population (rgtp) and rate of growth of rural population (rgpr). To find out urbanization trend in Gurugram, percentage growth rate is calculated and to measure degree of urbanization below formulas are used.

$$\text{Percentage Urban} = (U \div P) \times 100$$

$$\text{Percentage Rural} = (R \div P) \times 100$$

$$\text{Urban-Rural Ratio} = (U \div R) \times 100$$

## **URBANIZATION AND GURUGRAM**

### **Urban Indicators**

It is important to establish a system of urban indicators to analyze the potential risks and benefits of urbanization. Such indicators help in monitoring and steering the development of the megacities. Theo Kotter and Frank Friesecke in their study 'Developing urban indicators for managing megacities' highlighted the important indicators which are based on the main characteristics of the megacities. In the following section some of the selected indicators/characteristics to understand the urbanization phenomenon in Gurugram are studied. Social, economic, and ecological indicators are listed in Table 1 in Appendix.

### **Density of inhabitants**

Population density is one of the important indicators of urbanization and it denotes the average concentration of human population within a specified area. It is obvious to understand that urbanized areas have high density of inhabitants. The population density in Gurugram district has increased from 414 people per square kilometer in 1991 to 717 people per square kilometer in 2001. Further, the data from Census 2011 showcase that the population density has further increased up to 1241 people per square kilometer. The population density of Gurugram city, which has an area of 28.91 square kilometers, is 7915 persons per square kilometer (Census, 2001), which is higher than the density of the district itself.

### **Population growth in Gurugram**

Gurugram is a small but important urban center in the suburbs of Delhi. The results in Table 2(Appendix) indicate that the city population was 4765 in 1901 and it grew at the rate of 14.61% during 1901-1911. The overall population has declined (-6.48%) during 1911-1921 (a period when epidemics took a heavy toll on India's population) in line with the rest of India. Further, during the 1920s and 30s the rate of growth in Gurugram has had been higher than the national average. In 1947, the heavy migration of people from the newly formed Pakistan has resulted in a sharp increase in population that is reflected in the population estimates of 1951 census and 1961 census. The population growth rate has been 87.35% during 1941-51 and

103.45% during 1951-61. The location of Gurugram in proximity of Delhi has always been a positive factor in inviting people and industrial activities. This has been one of the reasons in the past for the continuous population growth (due to migration) at levels higher than the national average. During 1981-91 the population growth rate has had been comparatively lower than the previous few decades and it appeared as if Gurugram had reached a period of stability in population growth. However, the economic liberalization policies in the 1990's that started globalization have led to the influx of multinational companies, increase in residential, commercial, and industrial space, and further increase in population. The total estimated population of Gurugram has been 173542 according to the 2001 census estimates and the overall population growth rate has been 42.85% between 1991 and 2001. As per 2011 census, total urban population of Gurugram has increased tremendously to 1,042,253 which is around 500% increase.

### **Land use analysis of Gurugram**

The 2011 developmental plan envisages that 9881 hectares of land, including the existing areas, is urbanizable area. This urbanizable area has been divided into 57 sectors under various land uses. With respect to the residential areas, a minimum of 45% sector area is kept for parks, open spaces, roads, and community buildings. In order to meet the commercial needs of the town, a city center has been planned for Sector 29. In addition, three other district centers in sector 23A, 56 and 47 have been constructed that will serve adjoining sectors along with the local convenient shopping centers in each residential sector. Similarly, three other sectors, Sector 18, Sector 32 and Sector 44, have been exclusively planned for institutional land usage. The city of Gurugram and its surrounding areas are experiencing a high level of industrial development mainly because of its proximity to Delhi. According to Gupta and Nangia, there have been considerable changes in the land usage pattern in Gurugram during the last few decades. The conversion of land from rural usage to urban usage is so fast that the shortage of land has led to speculation and increased land valuation. In addition, the ever-growing difference between the demand and supply of residential land has increased the cost of land in the city, which has ultimately led to pressure on the fringe areas and resulted in the proliferation of unauthorized development of land usage: residential, industrial, and other land uses. In their study focused on Gurugram, Gupta and Nangia reported that in 1971 out of 126 sq. km of area in and around Gurugram, 81% was under agricultural usage. This agricultural land subsequently reduced to 51% in 1993 and 26.5% in 2003. On the other hand, the area under built up land category increased substantially from 11.36 sq. km in 1971 to 84.2 sq. km in 2002. These figures indicate that Gurugram has witnessed an unprecedented rate of urbanization during the last three decades. The results in Table 5 show the proposed land usage in Gurugram during 2011 and it shows that the residential land usage accounts for 63.18% of the total area followed by industrial land usage (13.65%).

### **Degree of urbanization in Gurugram**

The three most important measures of degree of urbanization are percentage urban, percentage rural, and urban-rural ratio. Urban-rural ratio, which measures the number of urbanites for each rural person in a specified area, has increased continuously in Gurugram during the last three decades. The urban-rural ratio for Gurugram, summarized in Table 3

(Appendix), shows an increasing trend. The sudden increase in the urban-rural ratio during 2001-2011 is mainly due to the creation of a separate Mewat district out of Gurugram district in 2005. Further, it can be observed that there is a continuous increase in the percentage urban and a continuous decrease in percentage rural. Thus, it can be concluded from Table 2 that Gurugram is in the process of urbanization.

### **Pace of urbanization in Gurugram**

During the process of urbanization, the growth rate of urban population is greater than the growth rate of total population which in turn is greater than the growth rate of rural population. The result in Table 4(Appendix) compares the growth rate of rural, urban and total population in the context of this theory of urbanization. With reference to Gurugram, it can be clearly observed that the rate of growth of urban population is higher than rate of growth of total population which in turn is higher than the rate of growth of rural population. This clearly indicates that Gurugram is experiencing the process of urbanization starting from 1971.

### **MAIN OBSERVATIONS**

From above analysis it can be summarized that:

1. The decadal growth rate of urban population has increased from 44.64% during 1991-2001 to 500.57% during 2001-2011 for Gurugram, which is an alarming rate.
2. The population density in Gurugram district has increased from 414 people per Sq. km in 1991 to 717 people per Sq. km in 2001 and to 1241 people per Sq. km in 2011 which shows that density has tripled in the last three decades.
3. The urban-rural ratio in Gurugram has been 25 in 1991, 28 in 2001 and around 220 in 2011. These urbanization indicators clearly showcase the rapid urbanization of Gurugram district.

### **DEVELOPMENTAL PROBLEMS OF URBANIZATION OF GRURUGRAM**

Gurugram, like any typical satellite town, faces numerous problems, which come in the way of its development. Growing in the shadow of giant metropolis, the city has dichotomous development wherein ultra-modern residential and industrial development characterize the cityscape on the one hand while on the other the city is plagued with the problems especially the core areas which have not been integrated with the overall development of the city. Some of the problems are lack of basic facilities like proper drainage, sewerage and solid waste disposal, absence of intracity public transport, traffic problems and traffic congestion. Gurugram in the recent past has witnessed large-scale residential development in the private sector. It is often mentioned as the extension of south Delhi, hence commands very high price for both plotted houses and group housing flats among all the Delhi Metropolitan Area (DMA) cities/towns. The city offers an attractive real estate market and people also indulge in buying property for speculation thereby leading to artificial hike in property rates. The majority of new developments in the city have to rely upon ground water resources. The city has surface water sources especially through canals, which helps in reducing the level of brackishness of water. But at the

same time, due to overexploitation the water table has gone down and the quality of water in some parts has turned brackish.

## **FUTURE DIRECTIONS**

It is argued that the process of urbanization in India, as in other developing countries, is being determined by macro-economic factors at national and global levels and is not strongly linked to the developments in rural economy. The strategy of economic reform and globalization has given a boost to growth of industries and business, resulting in inflow of capital from outside the region or country as also investment by local entrepreneurs. Given this perspective, it would be important to consider policies to harness the potential of migration in urban centers, for promoting a balanced settlement structure, ensuring equity and sustainability in the development process. Urbanization has been a defining characteristic of South Asia, and Gurugram has been projected as one of the cities typically produced by the process of peripheral development around metro cities. (Narain, 2009). Significant number of people arriving and settling in Gurugram district and urban centers of Gurugram has increased the population of Gurugram sharply in short span of time which has resulted in severe pressure on urban land and infrastructure of this city. This has been followed by successive increase in urban population both by natural increase as well as migration. Considering the unplanned growth and to cope with the risks and the challenges, thrust should be on the policy initiatives that are in compliance with the sustainable development. Further to handle the current flow of migration and pace of urbanization it is important to improve infrastructure in the district. Policies and programs which focus on the employment generation such as expansion of small-scale labor-intensive industries, choosing appropriate labor-intensive technologies of production and modifying the linkage between employment and education should be initiated. An integrated approach of physical, social and environmental aspects of urban growth on one hand and good governance, urban planning and land management on other hand is needed.

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## APPENDIX

Table 1

S. No.	Social Indicators	Economic Indicators	Ecological Indicators
1.	Population growth rate	Development of the local economy / economic structure	Air pollution from vehicle emission, industry etc.; smog
2.	Population Density	Real GDP growth rate	Groundwater and drinking water pollution
3.	Life expectancy rate	Unemployment rate	Quality of sewage treatment
4.	Migration rate (migration from rural areas and immigration)	Accessibility of public transportation infrastructure	Capacities of waste collection and disposal services
5.	Inequality rate of income distribution	Quality of transportation network	Land sealing rate
6.	Crime rate / Unemployment rate	Infrastructure deficiencies; overtaxed infrastructures	Suburbanization (urban sprawl) rate
7.		Risk of economic loss in case of a disaster	Number and dimension of brown fields
8.			Destruction of vegetation; deforestation; damage of flora, fauna, biodiversity per year

Source: Developing urban indicators for managing megacities, Kotter T., & Friesecke F.

Table 2

## Growth of urban population in Gurugram during 1901 - 2011

Year	Total Urban Population	Percentage decadal growth
1901	4,765	-
1911	5,461	14.61
1921	5,107	-6.48
1931	7,208	41.14
1941	9,935	37.83
1951	18,613	87.35
1961	37,868	103.45
1971	57,151	50.92
1981	89,115	55.93
1991	121,486	36.32
2001	173,542	42.84
2011	1,042,253	500.57

Source: compiled by author using data from Census of India

Table 3

**Degree of urbanization in Gurugram**

Year	Percentage Urban	Percentage Rural	Urban – Rural Ratio
1991	20.30	79.69	25.47
2001	22.22	77.77	28.57
2011	68.82	31.18	220.72

Source: compiled by author using data from Census of India

**Table 4****Growth rate of population of Gurugram in percentage**

Year	Total (rgtp)	Rural (rgrp)	Urban (rgup)	Is rgup > rgrp > rgrp?
1971-1981	27.26	18.85	83.10	Yes
1981-1991	32.87	31.88	36.84	Yes
1991-2001	44.86	41.37	58.57	Yes
2001 – 2011	-8.81	-63.44	182.37	Yes

Source: Compiled from “Social and economic development in India” by R.S. Tripathi; Page 422 Census of India 2001, 2011 State Statistical Abstract Haryana, [www.censusindia.gov.in](http://www.censusindia.gov.in)

**Table 5****Land usage in Gurugram (2011)**

S. No.	Land Use Category	Percentage of Total Area (Total Area = 9881 Hectares)
1	Residential	63.18
2	Industrial	13.65
3	Commercial	2.22
4	Transport and Communication	6.70
5	Public and Semi-Public	3.06
6	Defense Land	6.40
7	Open Spaces	3.67
8	Special Zone	1.07

Source:

[http://www.urbanindia.nic.in/theministry/subordinateoff/tcop/DMA\\_Report/Chapter 3.pdf](http://www.urbanindia.nic.in/theministry/subordinateoff/tcop/DMA_Report/Chapter 3.pdf)