

Cultural Beliefs, Mental Health, and Criminal Behaviour Intersections Changes in the Level of Urbanisation and Urban Expansion in Modinagar City, Ghaziabad

1. Vinod Kumar, Research Scholar

IASE (Deemed to be University) SardarShahar Churu, Rajasthan

2. Dr. Dharmendra Singh, Associate Professor

IASE (Deemed to be University) SardarShahar Churu, Rajasthan

Abstract

Urbanisation is one of the most significant socio-spatial processes shaping contemporary Indian cities, particularly medium-sized towns located in the influence zone of metropolitan regions. Modinagar City, situated in Ghaziabad District of Uttar Pradesh, has experienced notable changes in its level of urbanisation and spatial expansion during the last few decades. This paper examines the changing level of urbanisation and the pattern of urban expansion in Modinagar City, focusing on demographic growth, spatial spread and land use transformation. Using secondary data from Census of India, master plan documents and published reports, along with spatial interpretation from maps and satellite imagery, the study analyses trends of urban growth and identifies major factors driving urban expansion. The findings reveal that rapid population growth, industrial development, improved transport connectivity and proximity to the National Capital Region (NCR) have significantly influenced the pace and direction of urban expansion in Modinagar. The study also highlights emerging challenges related to land use change, infrastructure pressure and sustainable urban planning. The paper concludes by emphasizing the need for planned urban development aligned with the proposed urban land use plan to ensure balanced and sustainable growth of Modinagar City.

Keywords: Urbanisation; Urban Expansion; Land Use Change; Modinagar City;

Introduction: Urbanisation is the process through which an increasing share of the population resides in urban areas, accompanied by spatial expansion of settlements and significant socio-economic transformation. In India, urbanisation has accelerated notably since independence, with a sharper pace after economic liberalisation in the 1990s. While metropolitan cities initially dominated urban growth, medium and small towns have gradually emerged as important centres of regional development, absorbing population pressure, industrial activities and service-sector expansion.

Urbanisation is driven by rural–urban migration, natural population increase and economic restructuring. Population dynamics strongly influence urban growth and spatial expansion, while the level of urbanisation is commonly measured by the proportion of people living in urban areas as defined by census criteria. Beyond demographic change, the process also involves transformations in land use, infrastructure and urban governance.

Ghaziabad district, a key component of the National Capital Region (NCR), has experienced rapid urban growth due to its proximity to Delhi. The spill-over of population and economic activities from the national capital has significantly shaped its urbanisation. The urban population of Ghaziabad increased dramatically from 11,275 in 1911 to 2,358,525 by 2011. Administratively, the Ghaziabad Municipal Corporation is organised into five zones with 80 wards.

Within this rapidly urbanising district, Modinagar City represents a typical medium-sized industrial town of northern India. Located along NH-34 (formerly NH-58), connecting Delhi and Meerut, Modinagar developed around its sugar and textile industries. Its strategic location, industrial base and growing influence of the NCR have accelerated urban expansion. The Modinagar Municipality consists of 25 urban wards, while 39 surrounding villages fall under the Modinagar Development Area.

The Ghaziabad Master Plan–2031 promotes planned growth through improved connectivity, infrastructure and sustainable land use. Increasing urbanisation in Modinagar has resulted in outward expansion, conversion of agricultural land and changing land-use patterns, highlighting the need for systematic analysis to support sustainable urban planning and future development.

Objectives of the Study: The study aims to examine the level of urbanisation in Modinagar City by analysing changes in population growth and urban expansion over time. It seeks to identify the spatial pattern and direction of urban growth, assess the key factors driving urbanisation and highlight the implications of urban expansion for urban planning, infrastructure and sustainable development.

Methodology: The study is based on secondary data and spatial analysis. Population data from the Census of India (1981–2011), along with district handbooks, master plans, municipal records and published studies, have been used. Urban expansion is analysed through maps and satellite imagery to assess changes in land use and built-up areas, using descriptive, comparative and simple statistical methods.

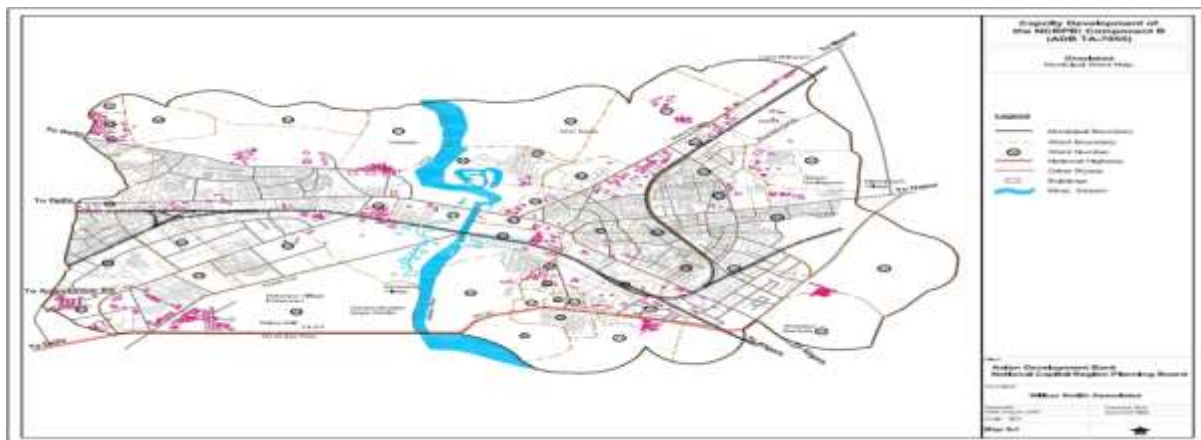
Changes in the Level of Urbanisation: The process of urbanisation in Ghaziabad district, situated within the National Capital Region (NCR) of India, has undergone significant transformation over the last century. Urbanisation in this region is primarily influenced by demographic dynamics, economic restructuring, infrastructural development and the city's strategic locational advantage due to its proximity to the national capital, Delhi. Census data spanning from 1901 to 2011 clearly indicate a continuous and accelerated rise in the level of urbanisation, reflected in the increasing number of towns as well as a substantial growth in the urban population.

In the pre-independence period, Ghaziabad functioned largely as a modest market town (*anaj* and *sabji mandi*), catering to the agrarian hinterland and the city of Delhi. Population growth during this phase was gradual, with the town's population increasing from 5,112 in 1847 to 11,275 in 1901. Even by 1941, Ghaziabad remained a small urban centre with a population of 23,534, largely dependent on trade and small-scale commercial activities. The pace of urbanisation during this period was constrained by limited industrial development and low levels of infrastructural investment.

A decisive shift in the level of urbanisation occurred in the post-independence period, particularly after the Partition of India in 1947, which triggered significant demographic changes. Migration flows, combined with the expansion of industrial activities and improvements in transport connectivity, accelerated urban growth far beyond earlier projections. The establishment of Ghaziabad as a railway junction and its location along the Grand Trunk Road strengthened its functional linkages with Delhi, thereby enhancing its urban character.

The most pronounced increase in urbanisation was observed during the post-liberalisation period of the 1990s. Economic reforms and policy shifts facilitated rapid industrialisation, real estate development and employment generation, leading to the reclassification of several rural settlements as urban areas. The Uttar Pradesh sub-region of the NCR, including Ghaziabad district, recorded the highest growth in the number of towns during this phase. Many towns transitioned into fully urbanised centres, indicating a qualitative transformation in settlement structure. Between 1991 and 2011, the population of Ghaziabad city increased from approximately 0.5 million to over 1.0 million, underscoring the intensity of urbanisation.

Institutional and administrative changes further reinforced this process. The upgradation of Ghaziabad from a Municipal Board to a Municipal Corporation in 1994, in accordance with the 74th Constitutional Amendment Act, enhanced the capacity of urban local governance. By 2011, the Municipal Corporation administered over 336,000 households and provided essential civic amenities such as water supply, sewerage and road infrastructure. Despite these developments, the rapid rise in urbanisation has exposed structural constraints, including inadequate coordination among planning agencies and uneven service delivery. Consequently, while Ghaziabad has experienced a substantial increase in the level of urbanisation, the pace of growth has often outstripped planning mechanisms, resulting in emerging socio-economic and environmental challenges



Urban Expansion and Spatial Growth Pattern: Urban expansion in Ghaziabad is intrinsically linked to its urbanisation process and exhibits a distinct spatial growth pattern characterised by peripheral expansion and spatial dispersion. As a city located on the eastern fringe of Delhi, Ghaziabad has absorbed significant spillover growth from the national capital, leading to rapid outward expansion rather than compact, planned development. This pattern has resulted in extensive urban sprawl, particularly along major transport corridors and municipal boundaries.

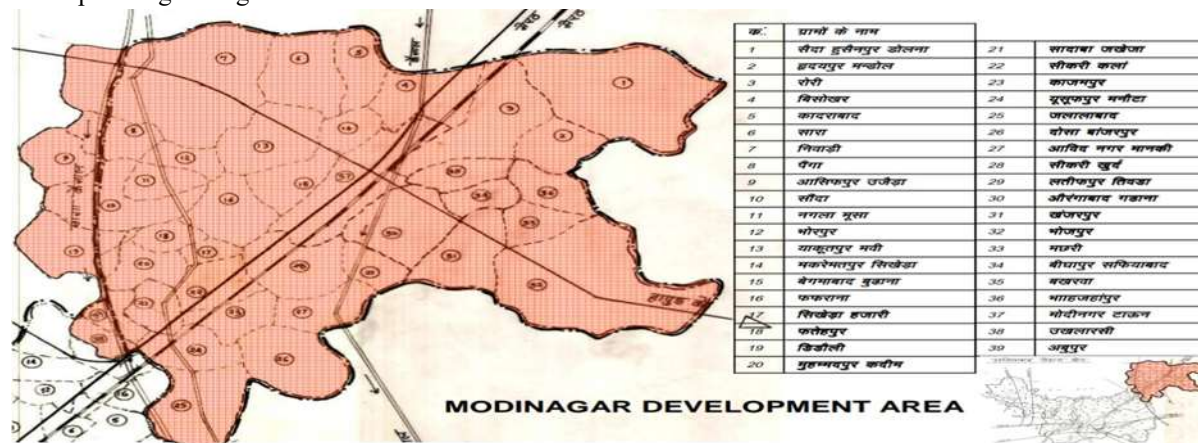
During the last two decades, population growth and urban development have been increasingly concentrated on the periphery of the Ghaziabad Municipal Corporation. Areas such as Indirapuram, Kaushambi, Vasundhara and Mohan Nagar have emerged as prominent growth nodes, reflecting a shift from the traditional urban core to newly developed peripheral zones. This spatial trend has been driven by rising land values in Delhi, improved road connectivity and increasing demand for housing in the NCR. Consequently, Ghaziabad has evolved into a polycentric urban structure with dispersed residential, commercial and industrial pockets.

The adoption of Public–Private Partnership (PPP) models has played a crucial role in reshaping the city’s spatial form. Prior to the mid-1990s, residential development undertaken by the Ghaziabad Development Authority (GDA) was often criticised for its poor quality and lack of aesthetic appeal, especially when compared to planned cities such as Noida, Greater Noida and Gurgaon. However, the involvement of private real estate developers significantly altered the urban landscape. Large-scale housing projects, high-rise apartments and integrated townships developed by private firms contributed to both vertical and horizontal expansion of the city.

Major infrastructure-led developments also influenced spatial growth. Preparations for the Commonwealth Games 2010 in East Delhi acted as a catalyst for infrastructure improvement in adjacent areas of Ghaziabad. Enhanced transportation networks, commercial complexes and service-sector expansion stimulated rapid urban development, particularly in the eastern parts of the city. These developments further intensified population inflows and land-use transformation.

Urban expansion has had a profound impact on the rural–urban fringe, especially in Modinagar tehsil, where urban growth is progressively encroaching upon surrounding villages. Out of 131 revenue villages in the tehsil, a significant number have come under the influence of urban expansion. Agricultural land has been converted into residential and industrial uses, leading to ecological stress and changes in traditional livelihoods. The blurring of rural and urban boundaries has created peri-urban zones characterised by inadequate infrastructure and governance challenges.

Overall, the spatial growth pattern of Ghaziabad reflects a largely unplanned and market-driven expansion. While this growth has contributed to economic development and improved housing availability, it has also generated challenges related to infrastructure provision, environmental sustainability and social equity. The absence of an integrated planning framework has resulted in fragmented urban development, highlighting the need for more coordinated and sustainable urban planning strategies.



Factors Influencing Urban Expansion in Modinagar City: The urban expansion of Modinagar City is influenced by several interrelated socio-economic and spatial factors. Industrial development has been a major driver, as the growth of industries generated employment opportunities, attracted migrants and increased demand for residential, commercial and

service-related land uses. Transport connectivity, supported by major road and railway networks, has enhanced regional accessibility and encouraged linear urban growth along transport corridors, particularly in peripheral areas.

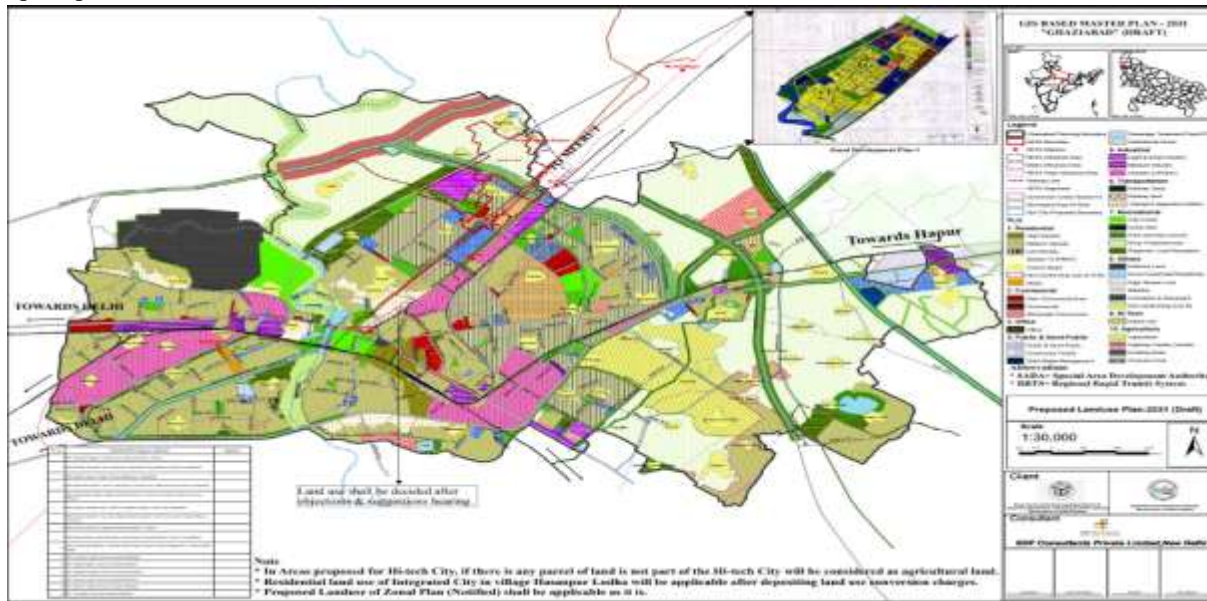
Proximity to the National Capital Region, especially Delhi and Ghaziabad, has further accelerated expansion through spillover effects, rising land values and real estate development. Rapid population growth due to natural increase and migration has placed pressure on housing and urban infrastructure. Additionally, administrative and institutional development, such as educational institutions and service centres, has strengthened the urban character of Modinagar and promoted outward spatial expansion.

Implications of Urban Expansion: The rapid pace of urban expansion in Modinagar has generated a range of socio-economic, environmental and infrastructural challenges. One of the most significant consequences has been the conversion of agricultural land into urban uses, which has adversely affected the local agrarian economy and disrupted ecological balance. The loss of fertile agricultural land has also raised concerns regarding long-term food security and sustainable land management.

The increasing demand for housing and urban services has placed considerable pressure on existing infrastructure. Problems such as traffic congestion, inadequate water supply, inefficient solid waste management and insufficient sewerage systems have become increasingly evident. These issues are particularly acute in newly developed peripheral areas, where urban growth has often outpaced infrastructure provision.

Unplanned and fragmented development in the urban fringe has resulted in inefficient land use patterns, environmental degradation and the emergence of peri-urban zones lacking basic civic amenities. The expansion of built-up areas has also contributed to rising pollution levels and the degradation of natural resources. These challenges highlight the urgent need for effective urban planning interventions and the systematic implementation of the proposed urban land use plan to guide future growth in a sustainable and balanced manner.

Proposed Urban Land Use Plan – 2031: The primary objective of urban planning is to enhance the quality of life of urban residents. This is addressed through four key dimensions: ensuring convenience and comfort by providing adequate infrastructure and services; improving aesthetic quality through integration of natural elements and conservation of heritage structures; promoting environmental sustainability by reducing adverse impacts of urban activities; and safeguarding public health through appropriate land use planning, pollution control and access to social infrastructure and open spaces.



Ghaziabad Master Plan 2031 and Its Relevance to Modinagar: Ghaziabad has emerged as a major growth corridor within the NCR due to its strategic location and rapid infrastructural development initiatives undertaken by the Government of Uttar Pradesh. Recognising the city’s growth potential, the Ghaziabad Development Authority approved the Ghaziabad Master Plan–2031, which aims to promote compact, green and smart urban development across Ghaziabad, Loni, Modinagar and Muradnagar. Spanning approximately 32,300 hectares, the unified master plan seeks to optimise land use, enhance employment opportunities and improve urban infrastructure.

The Master Plan–2031 is designed to accommodate an estimated population of 4.8 million by 2031 and includes provisions for Transit-Oriented Development (TOD), Special Development Areas (SDA), logistics hubs and green belts. Increased Floor Area Ratio (FAR) in designated zones aims to promote vertical growth and efficient land utilisation, while mandated green buffers along expressways and highways reinforce environmental sustainability.

The proposed Modinagar Master Plan–2031 outlines a balanced distribution of land use across residential, commercial, industrial, recreational, transport and institutional categories. This integrated approach is intended to support sustainable urban expansion while addressing infrastructural needs and environmental concerns.

Conclusion: Urbanisation represents a fundamental stage in socio-spatial transformation, reflecting changes in population concentration, economic structure and land use patterns. The present study demonstrates that Modinagar City has experienced significant changes in the level of urbanisation and urban expansion over recent decades. Industrialisation, improved transport connectivity, population growth and proximity to the NCR have emerged as the principal drivers of this transformation.

While urban expansion has contributed to economic growth and improved access to services, it has simultaneously generated challenges related to land conversion, infrastructure stress, environmental degradation and governance. The increasing pressure exerted by the Delhi–NCR growth dynamics raises critical questions regarding the feasibility of implementing planned land use frameworks without strong regulatory and institutional support.

The proposed Urban Land Use Plan–2031 provides a comprehensive framework for managing future urban growth in Modinagar. However, its success will depend on effective implementation, inter-agency coordination and the integration of environmental sustainability into urban development strategies. A balanced and inclusive planning approach is essential to ensure that Modinagar’s urban growth enhances both economic vitality and quality of life in the long term.

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