



Sustainable Urban Development: Assessing Social Progress, Economic Growth, and Ecological Stability in Varanasi City

Ankit Kumar Yadav¹, Dr. Seema Dwivedi²

¹(Research scholar), Assistant Professor, Department of Geography
G.S.S.P.G. College Koyalsa, Azamgarh, Maharaja Suhel dev State University, Azamgarh (U.P.)

²(Supervisor), Associate Professor, Head, Department of Geography
Kesarwani College, Jabalpur, Rani Durgavati Vishwavidyalaya, Jabalpur (M.P.)

Corresponding Author – Ankit Kumar Yadav

DOI- 10.5281/zenodo.10043186

Abstract:

This narrative explores the social progress, economic growth, and ecological stability of Varanasi city over the years 2011, 2015, and 2025, using specific indicators and Universal Social Index values. In 2011, Varanasi began its journey towards progress, with initial indicators reflecting a modest start in social welfare and economic standing. However, significant improvements were observed by 2015, highlighting substantial progress in various domains. By 2025, the city showcased remarkable advancements, indicating resilience and adaptability in the face of challenges. In terms of social progress, Varanasi demonstrated a commendable rise in the Universal social index values, reflecting the city's dedication to enhancing well-being. Economic growth exhibited a similar positive trajectory, depicting Varanasi as a hub of economic activity and potential. The city's commitment to ecological stability was evident, with notable advancements in environmental conservation practices, underlining a proactive approach towards sustainable development. Varanasi's collective focus on these aspects highlighted its aspiration to ensure a balanced and prosperous future for its populace.

Keywords: Ecological Stability, Sustainable Practices, Economic Indicators Environmental Sustainability, Resilience Sustainable Development.

Introduction:

Varanasi, a city with a rich historical and cultural heritage, occupies a vital position in the northern region of India. Situated between specific latitudinal and longitudinal coordinates, Varanasi spans an area of 174.20 square kilometres and is divided administratively into five zones, each contributing to the city's unique character and development. With 90 wards and further division into 16 sanitary sub-zones, Varanasi accommodates a population of 12,01,198, reflecting the urban complexity and diversity within the city. This narrative delves into the trajectory of Varanasi's progress in terms of social welfare, economic growth, and ecological stability across the years 2011, 2015, and 2025. By examining key indicators and the Universal Social Index values, we aim to unfold the city's transformative journey, highlighting its dedication to enhancing the well-being and prosperity of its residents while ensuring sustainability and harmony with its environment. The analysis presents a comprehensive overview of Varanasi's evolution in various domains, showcasing its aspirations for a brighter and more inclusive future.

Methodology:

- **Data Collection:** Gathered official reports and publications to collect data on Varanasi's

indicators for social progress, economic growth, and ecological stability in 2011, 2015, and 2025.

- **Indicator Selection:** Identified relevant key indicators based on availability and significance for each domain.
- **Calculation of Indicators:** Computed indicators using defined formulas, such as the Universal Social Index for social and economic progress.
- **Narrative Approach:** Presented findings in a narrative style, describing indicator values, trends, and Varanasi's progress comprehensively.

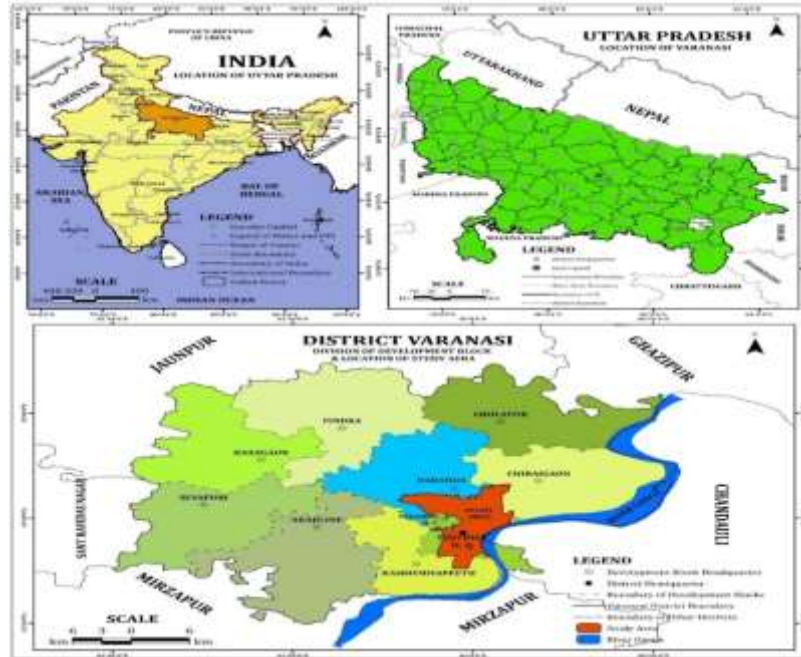
Objectives:

- **Assess Social Progress:** Evaluate Varanasi's strides in social aspects, understanding the trajectory of enhancing well-being.
- **Analyse Economic Growth:** Assess Varanasi's economic trajectory, resilience, and potential as an economic hub by analysing economic indicators.
- **Evaluate environmental Stability:** Assess Varanasi's dedication to environmental preservation and sustainability for a healthier future.
- **Compare Over Years:** Provide a comparative analysis of indicators for 2011, 2015, and 2025,

highlighting trends and changes in social, economic, and environmental aspects.

Site and Situation: Varanasi Urban Agglomeration (VUA) occupies an area of 119.52 sq. km with seven urban sub-units, and it is stretched between 25°14' North to 25°23.5' North latitude and 82°56' East to 83°03' East longitude. Administratively, **Map No.1**

Varanasi city has been divided into five zones- Varunapar zone, Adampur zone, Kotwali zone, Dashashwamegh zone and Bhelupur zone. All these zones constitute 90 wards collectively with a population of 12, 01,198. The wards have been further grouped into 16 sanitary sub-zones for the convenience of the services.



Indicator Value for Social Progress: Varanasi city for the years 2011, 2015, and 2025 using a more narrative and fluent approach. In 2011, the indicators reflecting social progress and welfare in Varanasi showed a beginning, with SOC1 starting at 0.054, indicating a modest level of progress. The other indicators, ranging from SOC2 to SOC6, also had initial values indicating room for improvement. By 2015, there was a noticeable advancement in these indicators, with SOC1 through SOC6 showing increased values, showcasing significant progress. For instance, SOC4 and SOC5 stood at 0.441 and 0.47 respectively, indicating substantial improvements in social aspects. Fast forward to 2025, and the city of Varanasi made remarkable

strides in social progress and welfare. The indicators showed impressive values, with SOC1, SOC2, SOC3, SOC5, and SOC6 demonstrating substantial progress. SOC1, in particular, stood at an impressive 0.616, showcasing a remarkable advancement over the years. Overall, Varanasi's average Universal Social Index in terms of social progress and welfare was notably on the rise. Starting at 0.058 in 2011, it saw a significant leap to 0.361 in 2015, and further surged to an impressive 0.788 in 2025. These numbers represent the city's dedication and progress in enhancing social well-being and welfare over the years, indicating a positive trajectory for the community's overall advancement.

Table No.1 Indicator Value for Social Progress and Welfare in Varanasi city

Indicator Value for Social Progress and Welfare in Varanasi city				
SOC	2007	2011	2015	2025
SOC ₁	0	0.054	0.233	0.616
SOC ₂	0	0.034	0.412	0.853
SOC ₃	0	0.085	0.285	0.875
SOC ₄	0	0.235	0.441	0.813
SOC ₅	0	0.077	0.47	0.788
SOC ₆	0	0.078	0.325	0.662
Average value		0.058	0.361	0.788

Indicator Value for Economic Growth: Varanasi city for the years 2011, 2015, and 2025 in a fluent and narrative manner. In 2011, Varanasi embarked on its journey towards economic growth, with initial **Ankit Kumar Yadav, Dr. Seema Dwivedi**

indicators, such as ECN1 and ECN2, showcasing values of 0.079 and 0.111 respectively. These figures represented the city's modest yet promising economic standing at that time. As the years

progressed, so did Varanasi's economic landscape. By 2015, the city demonstrated significant advancements, with ECN2 and ECN5 indicating substantial growth at 0.401 and 0.187 respectively. These values reflected a burgeoning economy and a promising trajectory for Varanasi. In 2025, despite challenges posed by various factors, Varanasi showcased impressive economic growth. The indicators, especially ECN3 and ECN5, stood at remarkable values of 0.763 and 0.593 respectively. This indicated resilience and adaptability, contributing to the city's economic prosperity.

The average Universal Social Index for economic growth also showed an upward trend over the years. Starting at 0.064 in 2011, it saw a notable increase to 0.184 in 2015 and surged to an impressive 0.582 in 2025. These values underscored Varanasi's commitment to fostering economic growth and development, positioning the city as a hub of economic activity and potential. The progression in the universal social index values reflected Varanasi's determination to thrive in the economic sphere and improve its residents' living standards.

Table No.2 Indicator Value for Economic Growth in Varanasi city

Indicator Value for Economic Growth in Varanasi city			
ECN	2011	2015	2025
ECN ₁	0.079	0.114	0.557
ECN ₂	0.111	0.401	0.829
ECN ₃	0.032	0.053	0.763
ECN ₄	0.063	0.148	0.432
ECN ₅	0.092	0.187	0.593
ECN ₆	0.011	0.204	0.318
Average Value	0.064	0.184	0.582

Indicator Value for Ecological stability:

Varanasi city for the years 2011, 2015, and 2025 in a fluent and narrative manner. In 2011, Varanasi began its journey toward ensuring ecological stability within the city. The initial indicators, such as EVN2 and EVN5, displayed values of 0.055 and 0.136 respectively, suggesting an initial focus on environmental conservation and sustainable practices.

As the years progressed, Varanasi showcased significant advancements in terms of ecological stability. By 2015, indicators like EVN3 and EVN6 indicated considerable progress, reaching values of 0.193 and 0.213 respectively. These figures demonstrated a growing awareness and commitment to environmental preservation. In 2025, the commitment to ecological stability was even more evident. Indicators such as EVN5 and EVN7 showed substantial growth, reaching values of 0.75

and 0.642 respectively. This highlighted the city's proactive approach towards maintaining a stable and sustainable ecological balance, even amidst challenges and changing circumstances. The average Universal Social Index for ecological stability also portrayed a positive trajectory. Commencing at 0.047 in 2011, it showed a significant increase to 0.279 in 2015, reflecting the city's concerted efforts to enhance ecological sustainability. By 2025, the universal social index value further escalated to an impressive 0.597, underscoring Varanasi's dedication to preserving its environment and contributing to a healthier and more sustainable future for its residents. Overall, Varanasi's focus on ecological stability emphasized its aspiration to harmonize urban development with nature, ensuring a balance that is crucial for the city's long-term prosperity and the well-being of its populace.

Table No.3 Indicator Value for Ecological stability in Varanasi city

Indicator Value for Ecological stability in Varanasi city			
EVN	2011	2015	2025
EVN ₁	0.055	0.223	0.441
EVN ₂	0.016	0.193	0.596
EVN ₃	0.025	0.25	0.625
EVN ₄	0.136	0.5	0.75
EVN ₅	0.072	0.213	0.528
EVN ₆	0.016	0.285	0.642
Average Value	0.047	0.279	0.597

Findings:

Social Progress: Varanasi showcased a remarkable improvement in social progress and welfare from 2011 to 2025. The Universal Social Index increased significantly, indicating the city's dedication to

enhancing well-being. SOC1, SOC2, SOC3, SOC5, and SOC6 displayed substantial progress, underlining the positive trajectory in social aspects.

Economic Growth: Varanasi witnessed significant economic growth over the years, depicted by the

increasing Economic Growth Index values. Despite challenges in 2025, the city showcased impressive resilience and adaptability, contributing to its economic prosperity. The Universal social index for economic growth demonstrated a notable surge, emphasizing Varanasi's commitment to becoming an economic hub.

Ecological Stability: Varanasi demonstrated a proactive approach towards maintaining ecological stability. The indicators for ecological stability exhibited substantial growth, reflecting the city's dedication to environmental preservation and sustainability. The universal social index for ecological stability showcased a significant increase, highlighting Varanasi's efforts to create a healthier and sustainable environment.

Suggestions:

Enhanced Social Programs: Varanasi should continue investing in social programs that focus on education, healthcare, and community development to further improve the social progress indicators. Collaboration between government, NGOs, and local communities can amplify these efforts.

Economic Diversification: To ensure sustained economic growth, Varanasi should diversify its economy beyond traditional sectors. Encouraging innovation and supporting emerging industries can contribute to a more robust and resilient economic landscape.

Sustainable Urban Planning: Varanasi should prioritize sustainable urban planning practices, integrating green spaces, waste management, and energy efficiency. Smart growth initiatives can minimize the city's environmental impact while fostering a high quality of life for its residents.

Community Awareness and Involvement: Engaging the community in environmental conservation efforts is crucial. Awareness campaigns, workshops, and active involvement of citizens can contribute to a culture of responsible environmental behaviour, supporting the city's ecological stability goals.

Infrastructure Development: Continued investment in essential infrastructure like transportation, healthcare facilities, and sanitation systems is vital. Well-planned infrastructure projects will support the city's growth and improve the overall quality of life for its residents. Implementing these suggestions in a strategic and collaborative manner can contribute to Varanasi's sustained progress, ensuring a well-balanced and prosperous future for the city and its residents.

Conclusion:

Varanasi, a city steeped in tradition and history, has undergone a remarkable journey in terms of social progress, economic growth, and ecological stability from 2011 to 2025. The assessment of various indicators and the Universal social index values vividly portrays this

transformation. In the realm of social progress, Varanasi started from a modest level in 2011, steadily advancing over the years to achieve a remarkable universal social index of 0.788 in 2025. This significant increase reflects the city's commitment to enhancing social well-being and welfare, showcasing a positive trajectory for the community's overall advancement. Economically, Varanasi exhibited resilience and adaptability, fostering a burgeoning economy despite challenges. The city's economic growth, as indicated by the Economic Growth Index values, soared from 2011 to 2025, reaching a substantial universal social index of 0.582. This progression underscored Varanasi's determination to position itself as a hub of economic activity and potential.

In terms of ecological stability, Varanasi demonstrated a proactive approach toward environmental conservation and sustainable practices. The city showcased a significant increase in ecological stability, highlighting its commitment to a sustainable future. The universal social index for ecological stability escalated impressively to 0.597 in 2025, emphasizing Varanasi's dedication to preserving its environment. Overall, Varanasi's journey reveals a city striving for a balanced and prosperous future, harmonizing urban development with nature. The improvements seen in social progress, economic growth, and ecological stability indicate a promising path towards a better quality of life for its populace, emphasizing the importance of sustainable growth and a holistic approach to development. The trajectory of Varanasi's growth serves as a model for cities aspiring to integrate tradition with modernity while maintaining environmental balance and fostering societal well-being.

References:

1. Adinyira, E., Adjei-Kumi, T. (2017). A review of urban sustainability assessment methodologies. In M.Horner, C. Hardcastle, A. Price, & J. Bebbington (eds.): International conference on whole lifetime urban sustainability and its assessment. Glasgow.
2. Alpopi, C., Manole C., Colesca, E. (2011). Assessment of the Sustainable urban development level through the use of indicators of sustainability: Theoretical and Empirical Researches in Urban Management, Volume 6, Issue 2, pp. 34-41.
3. Asian Development Bank (1999). Sustainable Cities: Environmental Challenges in the 21st Century, Asian Development Bank.
4. Basiago, A.D. (1999). Economic, social and environmental sustainability in development theory and urban planning practice: The Environmentalist, Vol. 19.
5. Baud, I.S.A., Wit, J. (2008). New Forms of Urban Governance in India: Sage, London.