## Theme 3-A: Smart City

### INNOVATION, SUSTAINABILITY AND CITIZEN CENTRICITY THROUGH SMART CITIES: LESSONS FOR INDIA

Bhawna Gupta and Tanya Ahuja*
*Research Scholar

**Abstract:** Smart Cities have emerged as instruments for facilitating innovative and citizen-centric urban transformation. Sustainable digital approaches are being embodied in city planning, infrastructure and service design. Besides effective use of city resources and data, cities like Dubai, Barcelona and New York are emphasizing on clean technology, people's participation, happiness, equity, etc. A Smart City is understood to be one which uses Information and Communication Technology to improve on six key components: economy, people, governance, mobility, environment, and living. In India, Smart Cities Mission was launched by the Government in 2015 with an aim to improve quality of life by employing 'smart solutions' in 100 selected cities by strengthening their social, economic, physical and institutional pillars. It emphasized on creation of 'replicable models' of sustainable and inclusive development to act as 'lighthouses' for other aspiring cities. This paper aims to compile some of the best practices from around the globe that might guide India to metamorphose its urban spaces into innovative, citizen-centric Smart Cities. The data for the study has been collected from secondary sources. Through a descriptive analysis, the authors bring out the conceptual evolution of Smart Cities, the challenges of urbanization, and how cities around the globe are tackling them using clean and collaborative technology. The major findings reveal that there is a wide scope for India to learn from Smart City initiatives of other countries by adopting a bottom-up approach in policy and planning. This must be facilitated through collaborative technology and efficient governance measures, in which citizens act as the true 'agents of change.' This shall also usher in a way for the Smart Cities Mission to become wider in expanse and more effective in impact.

**Keywords:** *Best Practices, Citizen Centricity, Innovation, Smart Cities, Sustainability*

# BUILDING GREEN SMART CITY: A CASE OF NEW DELHI MUNICIPAL COUNCIL, DELHI

Pawan Kumar Yadav and Priyanka Jha
Research Scholar

**Abstract:** A sustainable smart city with ecological, social, economic, and cultural dimensions must be established to enhance innovative socio-technical, socio-economic, and socio-cultural aspects of growth and to integrate the newest technology with governance to improve quality of life and lessen the environmental impact of urbanism. A future urban center that is safe, secure, sustainable, and environmentally friendly is what is meant by smart cities. The idea manifests all such environmentally conscious responses to urban issues. While the smart city concept is at the center of contemporary urbanism debates, there are differing opinions on the tools that may be most useful in making it a reality.

Similarly, despite being part of the Smart City Mission in India, New Delhi Municipal Council (NDMC) confronts numerous challenges. Even with tremendous resources, which have considerable potential to influence and facilitate change, Delhi faces various obstacles. Yet, NDMC, has implemented this model to deliver environmentally friendly public services. It monitors the actions of a whole government agency and interacts with the public. In the above framework, the paper discusses how Delhi, especially NDMC, approaches the notion of an inventive, sustainable city from an environmental standpoint, focusing on urban green infrastructure. Urban Green Infrastructure (UGI) seeks to deliberately construct networks of green and blue space that contribute to human health and well-being, urban sustainability, and climate resilience. These spaces are seen as good for the health and well-being of urban dwellers. However, various studies suggest that advantages are not dispersed relatively, and not all residents get the same benefits from UGS. The study, too, tries to envisage how these aspects have impacted the daily lives of its residents.

*Key words: Smart City Mission, Green Building, Urbanism, Sustainability and Municipal Council*

## ROLE OF GEOINFORMATICS TECHNIQUES IN EXPLORING THE IMPACT OF SPATIO TEMPORAL CHANGE ON AIR POLLUTION IN PATNA, BIHAR

Harish Kumar, Nitu Singh, and Shashi Sekhar
Research Scholar

**Abstract:** Urbanization, or population growth, has a significant detrimental influence on air, water, and soil quality. Air pollution is one of the world's most critical issues. In order to assess decreasing air quality levels, regulatory and scientific agencies have constructed air quality monitoring networks in urban areas. The quality of the air varies dramatically throughout time and space. Land cover/Land use change patterns are highly useful for understanding the reality of anthropogenic pressure and population dynamics in a specific location. 11% of the urban population Bihar is India's least urbanized state (Census 2011), and Patna is the state's capital and largest metropolis. The current study seeks to comprehend the spatiotemporal aspects of urban growth and its implications for climatic parameters in the Patna District of Bihar. Examining the amount and kind of land use change that has occurred in a certain area, as well as the PM2.5 trends, to determine their association is the simplest way to uncover a probable link between these two essential characteristics. As a result, in this study, we look at land use near air quality monitors and investigate the links between urban areas and PM2.5 mass concentrations. According to the findings of this article, as urbanisation increases, so will AOD. The findings of this study clearly show the relationship between changes in land use and land cover and the rise of AOD in Bihar's Patna district.

*Keywords: Geoinformatics • Air Pollution • AOD • LULC • ASOS • Particulate Matter*

## SPATIAL-TEMPORAL ANALYSIS OF AMBIENT AIR QUALITY OF THE MEGACITY (2018-2021)

Vedika Gupta
Research Scholar

**Abstract:** The global issue of poor air quality continues to degenerate many lives. More than half of the nations of South Asian countries suffer from the problem of air pollution. Delhi, in India, continues to rank as the world's most polluted capital city for the second consecutive year as per IQAir's World Air Quality Report 2021. This study aims to highlight different spatial and temporal dimensions of the air quality in Delhi. The data for the analysis of the air quality was done using Ambient Air Quality (AAQ) which is a statistical tool for measuring the quality of air periodically. It helps us to

understand the quality of air based on which health problems associated with humans and the environment can be investigated. Based on the spatial and temporal analysis of Delhi's air quality its impact on the environment as well as its population's health was found to be adverse. The data used in the study is from the year 2018 to 2021. Various monitoring stations of AQI were considered in this research. The worldwide changes that were caused due to the pandemic of Covid-19 also made a huge impact. The major findings of this small-scale study of Delhi's air quality include the basic fact that Delhi across the time scale of pre-pandemic and pandemic years was unable to reach 'satisfactory' or 'good' air quality on most of its days. While most of the cities across the globe reported extreme changes in air quality, Delhi struggled. It was sincerely noted that the problem of pollution does not lie in just the non-residential parts of Delhi, but influences the residential areas as well. There are various reasons indicated in this study that will help to understand the sources of pollution in Delhi. We will be able to understand whether the current measures are enough or do we need to rethink the strategies to improve the air quality.

**Keywords***: Ambient air quality, Policy and measures, Covid-19, Delhi, PM 2.5, PM10*

## ROLE OF THE SMART CITY IN THE DISASTER PREPAREDNESS ACTIVITIES: WITH SPECIAL REFERENCE TO VARANASI

Krishna Pratap Singh
Research Scholar

**Abstract:** Recently, smart cities have influenced urbanization approaches. The "smart city," which is based on the "digital and technical infrastructure," is frequently employed in domains such as excellent quality of life, digital inclusion, environmental, social, and economic sustainability, public security, and city services. Due to the rise in various disruptions brought on by frequent man-made and natural disasters like 26 December 2004 Indian Ocean earthquake and tsunami and the 2015 India- Nepal Earthquake, Kerala floods, emergency preparedness, response, recovery, rehabilitation systems and resilience, mitigation are among the most important aspects of smart and future city design. Worldwide, disasters result in significant financial and human losses each year. India's standardized disaster response system must now be improved, along with its preparedness and mitigation phase, in order to ensure that it is effectively prepared to handle both natural and man-made disasters. Existing studies on disaster-management systems and the smart city mission in India have concentrated mainly on conventional and common disasters, such as floods, earthquakes, and storms, etc., and they haven't taken into account previous experiences. There is a lack of literature on disaster preparedness, response and recovery management and smart

cities. The concept of Smart City (SCM) have played a pivot role in planning for disaster risk reduction and resilience management. In this paper, we primarily concentrate to identify, solve and manage Kashi's (Banaras) problems related to disaster and emergency management within the context of Varanasi's Smart City. Varanasi distinguishes itself from the other Indian cities by its nature, culture, unique "Alhad" lifestyle (vernacular style of living), and "Banarasi" structure of society that makes it different from other Indian cities. The study based on pragmatic paradigm and mixed methodology which based on both qualitative and quantitative data. This paper provides a reference to academicians and professional who intend to contribute to smart city and disaster management.

*Keywords: Smart City, Digital Infrastructure, Technical Infrastructure, Disaster Preparedness And Management And Banarasi Lifestyle.*

## AI POLICING: A TOOL TO STRENGTHEN URBAN POLICE ADMINISTRATION

Monika Kumari* and Dr. Umesh Kumar
*ICSSR Doctoral Research fellow

**Abstract:** The era where we are living in is wrapped up with gadgets or technologies like smart phones, laptops, Alexa, siri, driver less cars, billboards, chat bots e.t.c. we think we are developing our ideas for our developments but technologies not only drive positive developments but also increases the crime as well as questioning on everyone security. For a long time, artificial intelligence has played a role in **industries** such as transportation, finance, energy, and healthcare. In comparison to those sectors, the police have only recently adopted AI. Many countries have discovered its benefits and potential against crime detection. Though artificial intelligence in policing is still in its early stages, the results are impressive. It has the potential to deal with almost any type of crime, making it a powerful tool. Artificial intelligence in policing is a framework which is evaluated with the help of computers. It can also be utilized to make decisions regarding final rulings. It is the technology that holds great promise for the future in crime detection.

This paper highlights how some artificial intelligence Approaches are far relevant in Contemporary period. Through the AI tools like Robotic process automation, Natural language processing, remote sensing, Drone Access, computer vision e.t.c, we can assess the security of the citizen and control over crime. My paper focuses on:-

➢ How AI ensures better citizen security

➢ How AI Facial Recognition Technology Identifies Criminals

➢ How Investigative Platforms Analyze Fraudulent Activities.

> ➢ How Video Analytics Help In Reducing Crime Rate.

Findings of this paper will help to improve policing mechanism with the help of AI tools that will be able to create a fearless urban citizen centric environment.

**Keywords**: - *Crime Detection, Citizen, Automation, Utilized, Fraudulent, Wrapped Up, Fearless, Control*

## URBAN SUSTAINABLE DEVELOPMENT AND SOLIDARITY TRANSFORMS JAIPUR CITY INTO A SMART CITY

Rashmi Singh* and Dr. Poonam Sharma
*Research Scholar.

**Abstract:** According to UN Habitat, Urban Development policy is vital to provide a direction and course of action to support development. The policy provides an overarching framework to deal with the important and critical issues of urban services such as water, sanitation, mobility, and housing. As per Census 2011, Rajasthan's total population is 68.54 million, while its urban population is 17.04 million that is 24.8 percent of the total population. In Rajasthan state, there is little variation across districts. Out of the 33 districts in the state, only the five major **districts** of Kota, Jaipur, Ajmer, Jhodpur, and Bikaner have a level of urbanization which is higher than the national average. In smart city mission, Cities like Jaipur provides the necessary infrastructure and services to conduct trade and connectivity through roads, ports and rails; opportunities for growth like education; and services like health and sanitation. Jaipur is among the fastest emerging metropolis of the nation. Jaipur Smart City also aspires to leverage its heritage and tourism, and through innovative and inclusive solutions, enhance the quality of life of its citizen. The Prime Minister of India has a vision of developing 100 smart cities including 04 cities in Rajasthan State by 2022. Rajasthan has a population of 68.6 million, and forms 5.66 percent of India in 2011. The concept of smart city is influenced by the idea of developing the urban hubs which would be running on technology to provide better electricity and water supply, improved sanitation and recycling of waste, proper traffic and transport management systems. This paper deals the pressing issues in an urbanizing Jaipur against the background of the concept of smart cities. The main issue underscored in the paper is how Information and Communication Technologies is a key to Smart Cities provided there is adequate preparation and training before such systems are implemented throughout Jaipur.

**Keywords:** *Information and Communication Technologies, Urbanization, Smart Cities, Sustainable development.*