

ISSN : 0537 - 9679

RNI : DELENG/2004/12725



# Institute of Town Planners, India Journal

(Listed under UGC-CARE Sciences Journals List, Group - I)

Volume : 21, Number : 4

October - December, 2024

## Special Issue: Urban Challenges

Artificial Intelligence Driven Urban Planning

Neighborhood Bonds

Public Open Spaces

Crime, Sense of Safety and Quality of Life

Cash Holding Puzzle

'Ease of Living' Framework

Stakeholder Participation for Land Pooling Policy

Spatial Manifestations and Implications of Urban Reforms

Urban Informal Sector

Institute of Town Planners, India  
New Delhi



**Institute of Town Planners, India**



**! CALL  
FOR  
PAPERS**

# **Institute of Town Planners, India JOURNAL**

**ISSN: 0537 - 9679**

**Volume: 22, Number: 1**

**RNI : DELENG/2004/12725**

**January - March, 2025**

The ITPI Journal is a Peer Reviewed journal and is listed under UGC-CARE Sciences Journals List, Group-I. The issue of ITPI Journal for 4th Quarter of 2024 is available in ITPI website. The papers on the theme 'Sustainability, Inclusivity, and Resilience' received so far for the 1st Quarter (January-March, 2025) have been sent to the referees for their expert comments and suggestions. The final version of the papers for the issue will be published in the Journal after the plagiarism test and recommendations of the referees. The academicians, professionals and research scholars may contribute their research for the forthcoming issues of ITPI Journal by sending their papers through ITPI Website.

To submit the papers for publication please visit [www.itpi.org.in](http://www.itpi.org.in) and follow papers submission in its menu bar. The authors are requested to follow the guidelines as prescribed on the ITPI Website while writing the paper for publication in the ITPI Journal. For next issue (Volume 22 Number 1) papers should reach ITPI before 31st January 2025.

Kindly use the following link to submit your paper  
<https://journals.itpi.org.in/article-submission>

Softcopy of the Journal will be available on the website in the Institute under the heading publications. Any query for publication of paper may be addressed to Secretary (Publication) ITPI at [publication@itpi.org.in](mailto:publication@itpi.org.in)





## Editorial

Urban centres are manifestations of conscious creations of mankind to reflect its technological, financial, socio-cultural, and economic health. Collectively, it depicts the 'quality of life' and 'ease of living' through the use of available technology, landuses, and availability of municipal facilities and services. Digital applications in spatial planning, innovative financial management, blue-green infrastructure, stakeholders' participation, and planning reforms are much deliberated topics at different platforms to devise policy frameworks, guidelines, and strategies for better quality of life in the cities and communities. The present issue has nine papers highlighting the issues and concerns related to the above mentioned aspects in the urban setup.

The first paper titled 'Artificial Intelligence Driven Urban Planning in India' by Nikhil Ravindra discusses that artificial intelligence (AI) offers a wealth of creative answers to the intricate problems of urban development in Indian cities. It presents a chance to change India's urban scene by applying large-scale data processing, pattern recognition, and predictive skills. The paper delves on understanding the AI applications in urban planning.

The second paper titled 'Neighborhood Bonds: Investigating Key Indicators for Social Cohesiveness' by Banafsha Quadri and Harveen Bhandari delve on investing the social cohesiveness in the neighbourhoods of Dubai by measuring their Social Cohesion Index (SCI). The authors opine that social cohesion initiatives aim to cultivate an inclusive environment where individuals experience a sense of belonging and actively participate in community well-being. Social equality, inclusion, development, capital, and diversity are studied to promote social cohesion.

The third paper titled 'Assessing the Need of Public Open Spaces in Metropolitan Cities: Case of Gurugram' by Rangnath Zanwar, Guneet Kahlon, and Ria Kapoor explores the availability and quality of public open spaces (POS) in the city of Gurugram with the focus on enhancing the aesthetic appeal of cities along with promoting an impression of community and develop a connection with nature, by studying the relevance of landscaping community spaces in earlier civic societies.

The paper by Namrata Talukdar, Bhargav Bharadwaj, and Mainak Ghoshon 'An assessment of Crime, Sense of Safety and Quality of Life of People of Guwahati City, Assam' attempts to map the crime records in the vulnerable areas of Guwahati Municipal Corporation (GMC) for 2018, 2019 and 2020 through the GIS interface. The crime mapping is compared with the map of literacy and workforce participation to understand the connection between crime incidents and socio-economic factors. The quality of life of the people in the crime hotspot areas is assessed to understand the linkage between crime, sense of safety and quality of life.

The cash reserves of an urban local bodies (ULBs) reflect prudent municipal financial management of the agency for the provision and maintenance of municipal services in the city. The paper titled 'Cash Holding Puzzle: A Cross Country Municipal Finance Analysis Based on Selected ULBs' by Sobhith Mathew Jose and Harshit Sosan Lakra analyses 38 ULBs from India and 104 ULBs from Canada to understand why ULBs hold cash and whether excess cash leads to agency problems. The statistical findings reveal that the factors contributing to cash holdings vary across ULBs in different countries, with municipal corporations' growth, population size, state revenue receipts, capital expenditure requirements, and debt-per-capita being significant determinants. Additionally, the study investigates the relationship between excess cash and

administrative overhead, finding no evidence of agency issues but indicating that excess cash is managed prudently.

The sixth paper titled ‘Critical Appraisal of the ‘Ease of Living’ Framework, to Incorporate Parameters of Urban Resilience’ by Hasna. P attempts to appraise critically the pillars and indicators of ‘Ease of Living’ (EoL) framework in terms of qualities of urban resilience and give suggestions to incorporate parameters of urban resilience in the said framework. Selected urban resilience frameworks such as Climate Disaster Resilience Index, Baseline Indicators for Community Resilience, PEOPLES Framework, and City Resilient Index are compared to suggest the relevant resilience indicators and solutions for problems in the EoL Framework.

The seventh paper titled ‘Enhancing Implementation and Stakeholder Participation: A Critical Appraisal of Delhi’s Land Pooling Policy’ by Ish Kumara and Deepak Rana critically examines the current state of Delhi’s Land Pooling Policy, 2013. It examines the impact of the policy on the urban villages and its ability to address the city’s growing population and infrastructure needs. Stakeholders’ responses and factors influencing participation are analysed to propose recommendations for enhancing the policy’s efficacy and attractiveness.

The eighth paper titled ‘Spatial Manifestations and Implications of Urban Reforms in Surat City Post 1991 Economic Reforms’ by Shilpi Aggarwal aims to relate the objectives of urban reforms with the transforming-built environment in various forms ultimately achieving the goal of economic growth and well-being of people with an empirical case of Surat city. National policies like promotion to private investment and 100 percent FDI in infrastructure and real estate in addition to JnNURM (2005-12), AMRUT, Smart City Mission, PMAY, Swachh Bharat Abhiyan, etc. from 2015-2020 are analysed to study the restructuring of urban development creating investor friendly environment, transforming cityscape and lifestyle of citizens.

The ninth paper titled ‘Adoptability as a Strategy in Formulating Responses to Every Changing Market Dynamic with Special Focus on Urban Informal Sector - A Case Study of Hyderabad’ by Vijaya Kumari Manukonda, Pallavi Sharma, and S. V. Ravindra underscores the vital role of street vendors and hawkers in Hyderabad’s liveability, emphasizing their resilience and innovative contributions to the city’s spatial and aesthetic appeal. The authors opine that they not only provide a distinct identity for Hyderabad but also ensure security and public safety.

Ish Kumar, and Chidambara have reviewed the book titled ‘Sustainable Urban Logistics: Concepts, Methods, and Strategies’ edited by Jesús Gonzalez-Feliu, Frédéric Semet, and Jean-Louis Routhier. As per the reviewers, the book offers a comprehensive analysis of urban freight logistics with a focus on sustainable practices. It covers key themes such as urban logistics platforms, sustainable supply chain management, freight demand modeling, and public-private collaboration. While the book excels in providing both theoretical frameworks and practical case studies, it could further benefit from an exploration of emerging technologies and a more global perspective. Despite these limitations, the book remains a valuable resource for academics, policymakers, and logistics professionals seeking to address the challenges of urban freight in the context of growing e-commerce demand and sustainability goals.

Ashwani Luthra, Ph.D.  
Editor & Secretary (Publication)





## ***Content***

<b>1. Artificial Intelligence Driven Urban Planning in India</b>	<b>1</b>
Nikhil Ravindra	
<b>2. Neighborhood Bonds: Investigating Key Indicators for Social Cohesiveness</b>	<b>5</b>
Banafsha Quadri, Harveen Bhandari	
<b>3. Assessing the Need of Public Open Spaces in Metropolitan Cities: Case of Gurugram</b>	<b>13</b>
Rangnath Zanwar, Guneet Kahlon, Ria Kapoor	
<b>4. An Assessment of Crime, Sense of Safety and Quality of Life of People of Guwahati City, Assam</b>	<b>27</b>
Namrata Talukdar, Bhargav Bharadwaj, Mainak Ghosh	
<b>5. Cash Holding Puzzle: A Cross Country Municipal Finance Analysis Based on Selected ULBs</b>	<b>48</b>
Sobhith Mathew Jose, Harshit Sosan Lakra	
<b>6. Critical Appraisal of the 'Ease of Living' Framework, to Incorporate Parameters of Urban Resilience</b>	<b>63</b>
Hasna. P	
<b>7. Enhancing Implementation and Stakeholder Participation: A Critical Appraisal of Delhi's Land Pooling Policy</b>	<b>71</b>
Ish Kumara, Deepak Rana	
<b>8. Spatial Manifestations and Implications of Urban Reforms in Surat City Post 1991 Economic Reforms</b>	<b>87</b>
Shilpi Aggarwal	
<b>9. Adoptability as a Strategy in Formulating Responses to Every Changing Market Dynamic with Special Focus on Urban Informal Sector - A Case Study of Hyderabad</b>	<b>104</b>
Vijaya Kumari Manukonda, Pallavi Sharma, S. V. Ravindra	
<b>Book Review</b>	
<b>Sustainable Urban Logistics: Concepts, Methods, and Strategies</b>	<b>120</b>
Ish Kumara, Chidambarab	

## INSTITUTE OF TOWN PLANNERS, INDIA EDITORIAL BOARD (2023-2024)

### CHAIRMAN

**Shri Anoop Kumar Srivastava**  
Vice President, ITPI

### EDITOR

**Dr. Ashwani Luthra**  
Professor, Guru Nanak Dev University, Amritsar

### MEMBERS

**Dr. Sanjeev Vidyarthi**  
Professor and Department Head, Director, Master of City Design Program,  
College of Urban Planning and Public Affairs, University of Illinois, USA

**Dr. Sandeep Agrawal**  
Professor, Earth and Atmospheric Sciences, and  
Associate Dean, Graduate Studies and Research, University of Alberta, Canada

**Shri K. Ravi Kumar Reddy**  
Chief Scientist, Lifencrypt, Hyderabad

**Dr. Ritabrata Ghosh**  
Faculty Amity University, Noida

**Dr. Ritu Raj Kaur**  
Faculty, Guru Nanak Dev University, Amritsar

**Shri V. P. Kulshrestha**  
Secretary General, ITPI

**Pradeep Kapoor**  
Coordinator (Techno- Admin)

## University Grants Commission Consortium for Academic and Research Ethics (UGC-CARE)

### UGC-CARE Sciences Journals List

Sr. No.	Journal Title	Publisher	ISSN	E- ISSN	UGC-CARE Coverage Year	Details
Continued from 1 to 160						
161	Institute of Town Planners, India Journal	Institute of Town Planners	0537-9679	NA	from January - 2023 to Present	View
Continued up to Sr. No. 462						

<https://ugccare.unipune.ac.in/Apps1/User/LR/Login?ReturnUrl=%2FApps1%2FUser%2FWebA%2FCAREList>  
Website: [www.itpi.org.in](http://www.itpi.org.in)





# Artificial Intelligence Driven Urban Planning in India

**Nikhil Ravindra**

## Abstract

*The creation of smarter, more sustainable, and efficient cities is greatly facilitated by the use of Artificial Intelligence (AI) in Urban Planning. AI offers a wealth of creative answers to the intricate problems that urban development in Indian cities presents. It presents a chance to change India's urban scene by applying large-scale data processing, pattern recognition, and predictive skills. By 2030, Indian cities are expected to sustain 40 percent of the nation's population and produce over 70 percent of its GDP. The study approach offers guidance for understanding but does not offer answers. The tools and techniques used for the article are desktop research, literature review, and library work. The primary research question is "What do recent developments in the field of Almean for urban planning, especially in India? This is done through analysis of data collected from various sources including newspaper clippings, magazines, journal articles, and official websites.*

## 1. INTRODUCTION

India's urban planning is only one of the numerous sectors being impacted by artificial intelligence (AI) on a global scale. AI offers a wealth of creative answers to the intricate problems that urban development in Indian cities presents. It presents a chance to change India's urban scene by applying large-scale data processing, pattern recognition, and predictive skills. It is interesting to explore the exciting field of artificial intelligence and its role in transforming Indian urban planning. Data is becoming a vital tool for determining how cities will develop in the future. AI makes use of this data's capacity to improve India's urban development methods. By helping planners move from a reactive to a proactive strategy, predictive models let them assess housing demands, transportation patterns, and population expansion more thoroughly (Koner, 2023). Cities are complex socioeconomic systems that serve as hubs for trade, commerce, and information as well as important institutions of governance.

It is anticipated that by 2030, Indian cities will support 40 percent of the country's population and generate more than 70 percent of its GDP. Our cities must possess the requisite social and physical infrastructure to provide economic opportunities and a fair and sustainable high level of life to the urban populace. Cities nowadays are sitting on a data goldmine due to the everyday generation of massive volumes of data from a network of video cameras, sensors, traffic control systems, smart meters, automobiles, Internet of Things (IoT) devices, and mobile phones. They have already gathered historical data throughout time, which can be found in both automatic and manual formats. This is on top of that. Using this data, artificial intelligence (AI) and other cutting-edge technologies can fundamentally change how cities address the issues caused by exponential urban expansion. Massive volumes of data can be interpreted by AI, and with this information, it can be used to improve city performance, optimize operational costs and resources, and encourage proactive citizen engagement, all of which will make cities more effective and livable.

<sup>1</sup> Nikhil Ravindra, Assistant Professor, Dayananda Sagar College of Architecture (DSCA), Bengaluru, Email-nr.dsarch@gmail.com

## 2. LITERATURE REVIEW

### 2.1 Understanding AI

The ability of robots to perform cognitive functions, such as perception, learning, reasoning, and decision-making, is known as artificial intelligence (AI). Thanks to a convergence of technology, robots may already be able to emulate human intellect and behave more intelligently. Artificial intelligence (AI) software may automatically learn from patterns and characteristics in the data thanks to a combination of large data volumes, fast, frequent processing, and intelligent algorithms, or sets of instructions. AI gives robots the ability to learn from their mistakes, adjust to new inputs, and do tasks that are similar to those performed by people.

### 3. WORKING OF AI IN CITY PLANNING

The creation of smarter, more sustainable, and efficient cities is greatly facilitated by the use of artificial intelligence (AI) in urban planning. Modern technologies that may enhance resource allocation, engage individuals, predict trends and support decision-making must be integrated to accomplish this fusion. Based on their qualities and applications, AI-based technologies for urban planning may be categorized into four groups:

- Artificial life such as swarm intelligence, agent-based models, and cellular automata;
- Intelligent stochastic simulation models, among which simulated annealing and genetic algorithms are the most significant;
- Evolutionary computing is artificial neural networks (convolutional and recurrent)
- Whereas knowledge-based intelligent systems include fuzzy logic, expert systems, heuristics, and reasoning systems.

### 4. DATABASE AND METHODOLOGY

The basis of any research project is a database. Accurate data produces accurate results. The

research database offers a range of methods, tools, and resources for studying urban sprawl. The review article was created using secondary data sources that enhanced the current study's qualitative analysis. Research methodology is the methodical, theoretical investigation of the methods employed in a field of study or the theoretical analysis of a group of methods and guiding principles associated with a field of knowledge. Theoretical models, paradigms, and both quantitative and qualitative methodologies are typically included. (S.I. Irny and A.S. Rose, 2005).

The study approach offers guidance for understanding but does not offer answers. The tools and techniques used for the article are desktop research, literature review, and library work. The primary research question is "What do recent developments in the field of AI mean for urban planning, especially in India? This is done through analysis of data collected from various sources including newspaper clippings, magazines, journal articles, and official websites.

The availability of urban big data has enabled the growth of numerous aspects of urban living. The fact that this data is easily accessible shows how it can aid in making decisions that maximize resource utilization. Furthermore, the implementation of contemporary technologies such as artificial intelligence, machine learning, and the Internet of Things could potentially facilitate this process by allowing scholars and planners to conduct more detailed and accurate urban assessments.

Given that urban space is a dynamic system made up of human and commercial activity, fluxes of energy and matter, and their interconnections, it can no longer be studied as a static area composed of buildings and roads. In recent years, there has been a growing number of big data mining applications in the



fields of planning and urban studies. Urban comprehensive data mining leverages real-time data to create new kinds of information by acquiring new insights from existing data sources and extrapolating trends, therefore optimizing system performance. Still, these new insights might be useful for evaluations of urban planning.

## 5. RESULTS AND DISCUSSION

According to the most recent National Institution for Transforming India (NITI Aayog) research, AI would boost India's Gross Domestic Product (GDP) by US\$957 billion by 2035.

Some of the Indian cities or states which have utilized AI technology for their planning challenges:

- **Crowd Management:** The Kumbh Mela, an occasion attended by over 20 crore Hindus, employed AI and analytics to forecast crowd dynamics and the potential for a stampede. Information on various movements around the 3,200-acre region was obtained through the analysis of feeds from over 1,000 CCTV cameras and monitors (Dixit, 2023).
- **Attendance System Based on Facial Recognition:** A Face Recognition-Based Attendance System (FRAS) based on artificial intelligence and analytics has been introduced by the Tamil Nadu e-Governance Agency (TNeGA). There are now two Chennai locations using this technique. Since August 2019, corporate schools have been recording daily attendance. FRAS has an accuracy of more than 99.5 percent and is a reliable method. It is intended to reduce the 45 minutes a day on average that is spent taking attendance (TNeGA, 2024).
- **The AI Seeding Software to Enhance Crop Yield:** Microsoft, in partnership with the Andhra Pradesh government

and the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), developed an AI-based sowing tool for Indian farmers. The program predicts the ideal times for sowing and other farming phases using artificial intelligence (AI), historical weather data, soil conditions, and other indications. Then, to help farmers attain the best harvests possible, it SMSes them this information (ICRISAT, 2024).

Some of the other Indian cities or states that have planned to explore AI are:

- **Public Service Delivery:** Telangana's Department of Electronics, Technology, and Communications is creating chatbots using robotic process automation (RPA) and artificial intelligence (AI). This will facilitate the extraction of information on sub-registrar office locations, marriage license fees, property registrations, and society registrations.
- **Enhancing the Education Sector:** The Uttar Pradesh government intends to employ AI-bots to modernize the state's educational system and make it less careless and corrupt, considering the teacher shortage and the use of unfair exam-taking techniques. AI may be taught using pictures and video clips of students indulging in misconduct, monitoring their actions and demeanor to look for any deviations from the norm that the inspector might then approve or disapprove.

India's urban planning policies might be completely rethought because of AI; to become more knowledgeable, effective, and future-proof. The advantages go beyond data processing and include improving the residents' quality of life and general well-being (Koner, 2023).

To put it briefly, urban planning deals with the problems that modern civilization faces.

In today's culture, the growing population adds to the worries. The problems that society faces range from straightforward tasks like keeping the environment clean to more intricate ones like managing the infrastructure. Social scientists, engineers, and people who wish to employ technology in their daily lives are all very interested in smart city concepts. IoT and AI are swiftly becoming essentials for daily life. AI and IoT are quickly becoming necessities in day-to-day living. Data is now everywhere thanks to these smart devices with internet connections (Raja, 2024).

## 6. CONCLUSION

There cannot be a "one size fits all" rule for AI. The difficulties may become even more complicated if general regulations were to be implemented in any country, especially in the dynamic and diverse Indian context. The legislation in the country should instead take the environment and the sector of intervention into account carefully. Because each intervention aims to solve a particular problem, policymakers of India should explore the qualities of each sector using some degree of domain expertise. Government officials in the country must prepare for a future in which AI not only assists businesses and economic growth but also alters the nature of human labor, opening up new employment prospects and disrupting established employment arrangements. Is India prepared for this future, though? If so, there are still a lot of unsolved concerns, such as how to build a team of knowledgeable yet competent workers who can use or understand AI ethically. How can software or hardware efficiency be guaranteed sustainably? How can data privacy issues be resolved? And above all, particularly

in the context of abundantly resource-rich India, who gains and who loses out?

## REFERENCES

- "Department of Information Technology, Electronics & Communications - Government of Telangana." Department of Information Technology, Electronics & Communications, 30 June 2021, [it.telangana.gov.in/](http://it.telangana.gov.in/).
- Dixit, Kapil. "AI to Play Key Role in Crowd Mgmt in 2025 Maha Kumbh." *The Times of India*, 26 Sept. 2023, [timesofindia.indiatimes.com/city/allahabad/ai-to-play-key-role-in-crowd-mgmt-in-2025-maha-kumbh/articleshow/103947267.cms](https://timesofindia.indiatimes.com/city/allahabad/ai-to-play-key-role-in-crowd-mgmt-in-2025-maha-kumbh/articleshow/103947267.cms). Accessed 22 Feb. 2024.
- Ghisleni, Camilla. "Artificial Intelligence and Urban Planning: Technology as a Tool for City Design." *ArchDaily*, 8 Feb. 2024, [www.archdaily.com/1012951/artificial-intelligence-and-urban-planning-technology-as-a-tool-for-city-design#:~:text=AI percent2Dpowered percent20tools percent20can percent20facilitate](https://www.archdaily.com/1012951/artificial-intelligence-and-urban-planning-technology-as-a-tool-for-city-design#:~:text=AI percent2Dpowered percent20tools percent20can percent20facilitate). Accessed 18 Feb. 2024.
- (NIUA, 2020). *Artificial Intelligence: An Opportunity for Smart Cities*.
- "Harnessing the Power of Artificial Intelligence in Urban Planning in India." *Www.linkedin.com*, [www.linkedin.com/pulse/harnessing-power-artificial-intelligence-urban-planning-koner/](https://www.linkedin.com/pulse/harnessing-power-artificial-intelligence-urban-planning-koner/). Accessed 9 Feb. 2024.
- "ICRISAT - Science of Discovery to Science of Delivery." *Www.icrisat.org*, [www.icrisat.org/](http://www.icrisat.org/).
- Raja, Anjali. "Can AI Help Plan Indian Cities?" *INDIAai*, [indiaai.gov.in/article/can-ai-help-plan-indian-cities](https://indiaai.gov.in/article/can-ai-help-plan-indian-cities). Accessed 18 Feb. 2024.
- Simhan, T. E. Raja. "UP to Build India's First AI City in Lucknow." *BusinessLine*, 25 Dec. 2023, [www.thehindubusinessline.com/info-tech/up-to-build-indias-first-ai-city-in-lucknow/article67673746.ece](https://www.thehindubusinessline.com/info-tech/up-to-build-indias-first-ai-city-in-lucknow/article67673746.ece). Accessed 18 Feb. 2024.
- "Tamil Nadu E-Governance Agency." *Tn.gov.in*, 2024, [tnega.tn.gov.in/](https://tnega.tn.gov.in/). Accessed 22 Feb. 2024.
- "Welcome to the Official Web Site of Government of Uttar Pradesh." *Up.gov.in*, [up.gov.in/en](http://up.gov.in/en).





# Neighborhood Bonds: Investigating Key Indicators for Social Cohesiveness

**Banafsha Quadri, Harveen Bhandari**

## Abstract

*Efforts to enhance global social cohesion, as measured by the Social Cohesion Index (SCI), remain crucial across diverse societies. These initiatives aim to cultivate an inclusive environment where individuals experience a sense of belonging and actively participate in community well-being. To effectively promote social cohesion, various domains must be addressed, including social equality, inclusion, development, capital, and diversity. The SCI serves as a quantitative tool for gauging the degree of social cohesion on a national scale, considering factors like trust, social inclusion, equality, and civic engagement. While social cohesion is commonly observed at the national level, this paper shifts the focus to the criteria essential for creating an SCI tailored to the neighborhood level. A pilot study conducted in three Dubai neighborhoods through a questionnaire survey revealed insights indicating a lack of significant social cohesiveness within migrant communities in Dubai.*

## 1. INTRODUCTION

The formulation of every definition with social cohesiveness is inherently shaped by the historical evolution of political theory, which is widely acknowledged as the source of the concept's inception. Consequently, this phenomenon has an impact on the methodologies employed by researchers in their examination of the subject matter, as well as on the strategies employed by policymakers in their endeavors to effectuate change. Fundamentally, the factors thought to facilitate social cohesion are greatly shaped by the significance attributed to it. Hence, similar to the impact of definitions employed by policy organizations on their efforts to enhance social cohesiveness, the definitions utilized by academics also shape the manner in which the study of social cohesion is approached. This encompasses

the specific disciplines involved, the methodologies employed, the institutions doing the research, and the activities undertaken. The term "social cohesiveness" is commonly used in academic settings, as well as in political or policy discourse, with a normative connotation. The concept of social desirability encompasses a range of favorable attributes, including but not limited to shared principles, a feeling to be belonged, tolerance, communal identification, respect, interpersonal and trust, civic collaboration, public participation and obedient behaviour. Another set of challenges arises from the tendency to define social cohesion primarily in relation to its causes or effects. This limited perspective restricts the scope of occurrence that can be examined as potential instances of social cohesion, and further hinders the evaluation and investigation that are inherent in the definition itself. Finally, the concept of "social cohesion" encompasses various levels of examination, spanning from the supranational level (as employed by entities such as the European Commission) to the local level. To elucidate the challenges associated with

<sup>1</sup> Banafsha Quadri, Research Scholar, Chitkara School of Planning & Architecture, Chitkara University, Punjab, Email-ar.banafsha@gmail.com

<sup>2</sup> Harveen Bhandari, Dean-Research & Scholastic Development Chitkara School of Planning & Architecture, Chitkara University, Punjab, Email-harveen.bhadari@chitkara.edu.in

conceptualizing social cohesion, presented below are five scholarly and policy-based delineations of this construct.

## 2. LITERATURE REVIEW

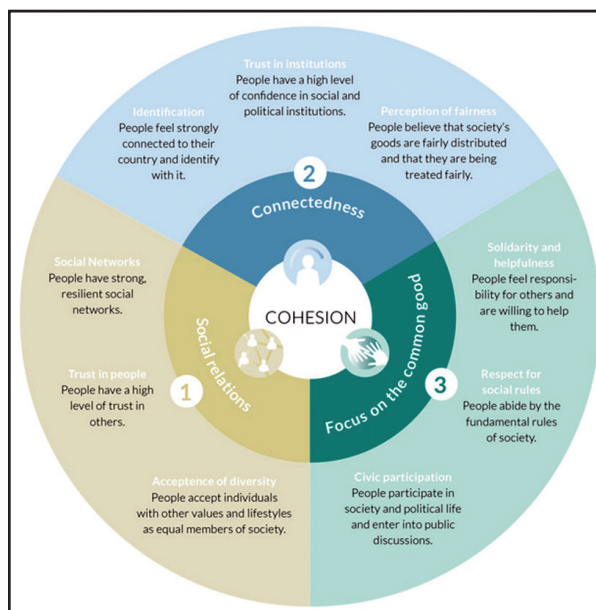
Social cohesion can be defined as the condition in which individuals within a society engage in both vertical and horizontal interactions. This condition is characterized by a collection of attitudes and rules, such as trust, belongingness, willingness to participate and provide assistance, and the observable behaviors that reflect these attitudes and norms. According to the study conducted by Chan, To, & Chan (2006), 'social cohesion is a concept that pertains to the characteristics of entire societies and their individual members being united by the influence of specific attitudes, behaviors, laws, and institutions that are based on consensus rather than mere coercion'. According to Green & Janmaat (2011), 'social cohesiveness is the fundamental attribute that prevents the disintegration of societies.'

Social cohesion encompasses the establishment of collective values and territories of interpretation, the mitigation of capital and wage disparities, and the facilitation of a collective sense of participation in a shared endeavor, confronting common obstacles, and belonging to a unified community (Hernani-Limarino & Villegas, 2010).

Social cohesiveness refers to the capacity of a society to make sure the sustained well-being of its participants (figure 1), encompassing fair and equal access to resources, the recognition of human dignity while acknowledging variety, individual and collective autonomy, and responsible engagement (Europe, n.d.).

The benefits of interculturalism have been emphasized by several academics. The concept of interculturalism was conceived as an epistemology; it is a third place that

**Figure 1: Infographics on Scope and Extent of Social Cohesion: Connectedness, Social Relations and Emphasis on the Common Ground, (Stiftung, 2018)**



Source: Bertelmann Stiftung 2018

<https://www.bertelmann-stiftung.de/en/media-center/media/mid/areas-and-dimensions-of-social-cohesion>

transcends conflicting identities. Both dialogic and critical perspectives should be used in intercultural communication research to examine how specific dialogues develop and how people take on various identities depending on the situation. The European Intercultural Council of Cities, which Zapata-Barrero narrated to be the “epicenter of this explosion in interest in Europe,” is the most well-known policy initiative that has used intercultural communications to be an instrument to improve socially bounded relations, especially in various divergent scenarios. However, interculturalism has faced harsh criticism from both academics and policymakers. The former because it is unclear and ambiguous, Eurocentric, and because it is a part of multiculturalism rather than a separate theoretical framework. Similar criticisms have been levelled at European intercultural policies and initiatives

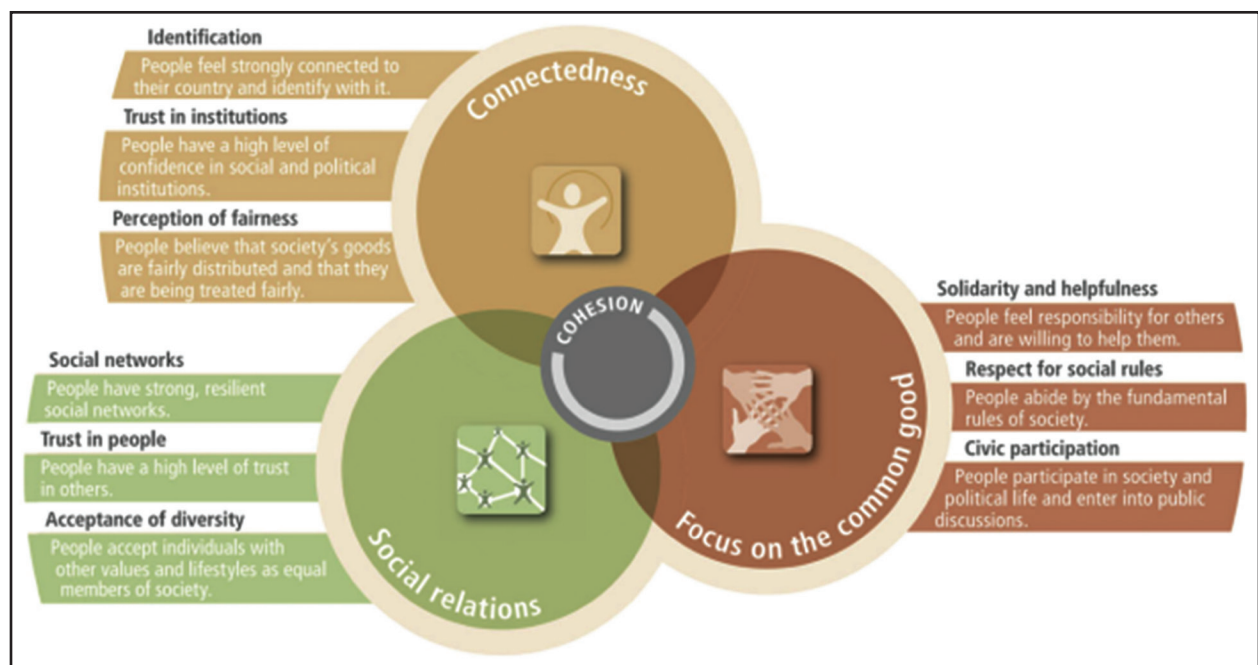
for being vague and ambiguous, for deflecting attention from structural injustices and sources of disagreement, for inculcating an exclusive existence in Europe and securitizing inter-cultural conversations in order to foster a need of imperativeness while jeopardizing the chances of engaging in constructive communication [(Ariely, 2013), (Ratcliffe, 2011), (Boucher & Samad, 2014), (Chan, To, & Chan, 2006)].

The Bertelsmann Stiftung carried out one of the well-known quantitative studies on social cohesion, first in Europe and

afterwards more extensively in Asia. Their conceptual framework was based on the notion that the attitudes and behaviors of people living in a country might be used to understand the aspect of social cohesion (Dragolov, Ignácz, Lorenz, Delhey, & Boehnke, 2022).

Three domains and nine dimensions make up this Bertelsmann Stiftung framework which are social connections, connectedness, and a highlight on the common area. The three domains with nine dimensions of social cohesion are represented in figure 2.

Figure 2 : Bertelsmann Stiftung's Social Cohesion Framework



Source: Delhey, Jan & Boehnke, Klaus & Dragolov, Georgi & Ignácz, Zsófia & Larsen, Mandi & Lorenz, Jan & Koch, Michael. (2018).

<https://www.researchgate.net/profile/Jan-Delhey/publication/325888053/figure/fig1/AS:639870066237448@1529568320306/Domains-and-dimensions-of-social-cohesion-bertelsmann-stiftung.png>

The social cohesion index (SCI) is a composite measure that captures the degree to which a society is integrated and connected. The exact measurement and methodology for calculating the social cohesion index may vary depending on the source and the context as shown in figure 2 (Kuhnt, Rischke, David, & Lechtenfeld,

2017). However, in general, it can be based on various indicators, such as:

- Social trust:
- Political participation
- Interpersonal relationships
- Inequality
- Integration of immigrants

Dubai is the populous and second huge city in the United Arab Emirates (UAE), is a melting pot of cultures and nationalities, with a population of over 3 million people. The city's rapid growth and transformation over the past few decades has brought with it significant social and cultural challenges, including the need to foster social cohesion among its diverse population.

Social cohesion refers to the sense of unity and belonging that individuals feel towards their communities and society. It is characterized by mutual respect, trust, and shared values and goals, and is critical for the stability and prosperity of a society.

Dubai has made significant efforts to promote social cohesion in recent years and has achieved remarkable success in this regard. Some of the key factors that contribute to social cohesion in Dubai include:

- Tolerance and Respect for Diversity
- Economic Development
- Strong Sense of Community
- Supportive Infrastructure
- Government Initiatives

Dubai has made significant strides in fostering social cohesion among its diverse population. While there are still challenges to be addressed, such as ensuring equal access to services and opportunities for all, the city's continued efforts to promote social cohesion are an example for other cities around the world.

Researchers measured social cohesiveness markers at the neighbourhood level in a 2018 study using data from the Dubai CDA survey. The study employed a composite score that incorporated answers to inquiries about involvement, identity, trust, and social relationships. According

to the study, social cohesion was better in areas where there were more Emirati residents, more educated people, and more evenly distributed money. Indicators of social cohesion at the neighbourhood level were measured in a different study that was released in 2020 using data from the Happiness and Safety Survey conducted by the Dubai Police General Headquarters. The results of the study's questions about social relationships, trust, participation, and sense of belonging were combined to create a composite score. According to the study, social cohesion was better in areas where there was more community involvement, social support, and trust in the government. Researchers used information from a survey of locals in Dubai's Al Barsha neighbourhood to calculate social cohesiveness indices for a study that was released in 2021. The results of the study's questions about social relationships, trust, participation, and sense of belonging were combined to create a composite score. The research discovered that social cohesion was negatively correlated with experiences of discrimination and marginalization and favorably correlated with social support, neighbourhood attachment, and intergroup contact. These studies demonstrate the importance of measuring social cohesion indicators at the neighborhood level, as it can provide valuable information about the local dynamics of social cohesion and how it is associated with various aspects of well-being and development. However, further research is needed to explore the applicability and generalizability of these findings to other neighborhoods and contexts across the world (Dubai future foundation, 2017).

### 3. STUDY AREA

Dubai is regarded for being one of the world's most family-friendly cities (figure 3), with a



Figure 3: Dubai City



Source: (Welt-Atlas.de, 2024)

variety of safe and secure housing alternatives for families to select from. Approximately 15 percent of Dubai's population comprises natives, while the remaining 85 percent consists of expatriates. Among the expatriate population, about 71 percent are Asian, predominantly from India, totaling about 51 percent, followed by Pakistan (17 percent), Bangladesh (9 percent), and the Philippines (9 percent). Additionally, Dubai is home to a notable Somali population, with British expatriates forming the major chunk of expats from western world. The gender ratio in Dubai is skewed, with males making up approximately 75 percent of the population. The city is anticipated to experience rapid growth, with a projected population of 2.8 million by 2020 and up to 3.4 million by 2030. This growth is expected to be facilitated by Dubai's political stability, robust economy, and diverse population. The study focuses on three neighborhoods: Al Warqaa 1, Dubai Silicon Oasis shown in figure 4, and Dubai Academic City. Dubai Silicon Oasis is a technology park and free zone situated near Academic City. Al Warqaa is located southeast of Dubai Creek, while Dubai Academic City was built in 2007 by TECOM Group as a academic town and community dedicated to academics related

Figure 4: Showing Layout of Dubai Silicon Oasis



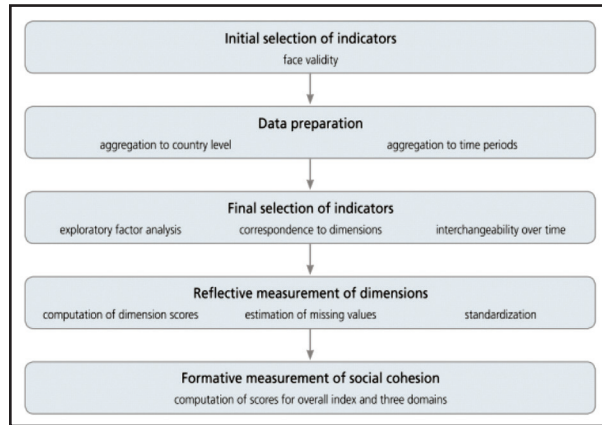
development like universities, dormitories, food courts etc.

#### 4. DATA COLLECTION AND METHODOLOGY

To understand the neighborhood characteristics of above mentioned three neighborhood, a pilot study was conducted through questionnaire survey. The quantitative data for this study was gathered through a random sampling of 30 residents from each of the three neighborhoods, with a sample size of 10 for each. All respondents' confidentiality and dignity were respected, and all questionnaire information was collected using a Google form. Quantitative methods are concerned with numbers, Microsoft Excel and reliability analysis for data analysis. Quantitative data analysis with the use of statistical tools and Survey responses were coded on a Likert scale ranging from 1 (lowest) to 5 (highest). The questionnaire consisting of 13 topics such as demographics, years of residency, available amenities, transportation, neighbourhood selection, housing unit, social interactions, Sense of community, physical criterias, non-physical criteria, socio-cultural elements was distributed throughout the three neighbourhoods, yielding approximately

19 responses: 5 from Alwarqa-1, 6 from Silicon Oasis, and 8 from Academic City. The general method for calculating the Sci is shown in figure 5.

**Figure 5: General Methodology to Calculate SCI**

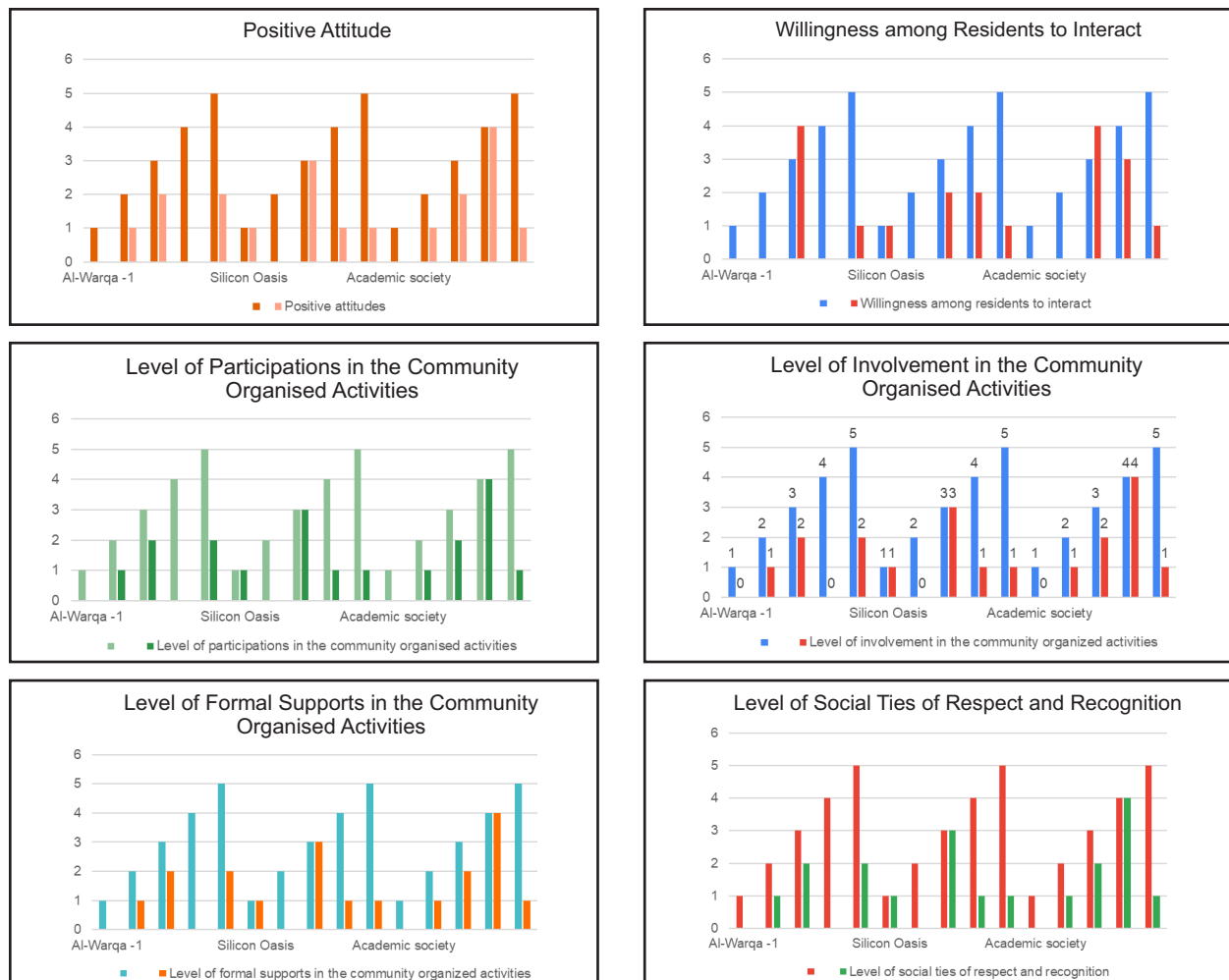


## 5. RESULTS AND DISCUSSION

All the responses were from the immigrant population, which included Indians, Afghanis, Pakistanis, and Turks. The key factors that contribute to social inclusion, as determined by the responses, are socio-cultural factors such as access to social interacting spaces, the number and frequency of activities in the community, participation, involvement, and engagement in community-organized activities, and residents' willingness to interact as shown in the figure 6.

The analysis from the pilot study supports that there is no substantial relationship in social cohesiveness in-migrant communities

**Figure 6: Graphs of Responses on Socio Cultural Factors - Pilot Study**



of Dubai. In comparison to the other two neighbourhoods, Academic society demonstrates higher socio-cultural relationship ship, as shown by the graphs in figure 6. The fact that academic societies have a larger student population, and that the Younger generation is more open to sociocultural contacts could be the reason.

**Table 1: Results of Reliability Analysis**  
**A: Frequentist Scale Reliability Statistics**

Estimate	Cronbach's $\alpha$
Point estimate	0.713
95 percent CI lower bound	0.546
95 percent CI upper bound	0.830

**B: Frequentist Individual Item Reliability Statistics**

Item	If Item Dropped
	Cronbach's $\alpha$
SB1	0.703
SB2	0.683
SB3	0.688
SB4	0.719
SB5	0.715

Source: Author

## 6. CONCLUSION

According to the findings of the qualitative research, several significant barriers impede the promotion of social cohesion among individuals. Among these obstacles is the limited consideration given by key stakeholders, including developers and real estate managers, to social cohesiveness as a fundamental aspect during neighborhood construction. Moreover, communal spaces for social interaction are often sacrificed in favor of commercial interests. The pilot study also contributed

From the reliability analysis of the pilot study (table 1), it can be observed that the Cronbach's  $\alpha$  value is above 0.7 and hence, the questions are inter-reliable. Based on this reliability analysis, it may be concluded that the same questions can be provided for a larger sample to conduct the main research.

**C: Frequentist Scale Reliability Statistics**

Item	Cronbach's $\alpha$
SS1	0.718
SS2	0.697
SS3	0.684
SS4	0.663
SS5	0.708
SS6	0.762
SE1	0.705
SE2	0.698
SE3	0.700
SE4	0.691
IP1	0.733
IP2	0.700
IP3	0.725
IP4	0.693
SC1	0.706
SC2	0.702
SC3	0.691
SC4	0.687

to understanding social cohesion indicators such as social interactions, community sense, and robust social relationships. However, the graphs presented for the three Dubai areas suggest that there is no notable correlation in social cohesiveness across migrant populations in Dubai. To comprehensively grasp the entire neighborhood's master plan, it is imperative to plan a geographical information system study, as the physical elements of the areas were solely examined through observational ways in this study.

## REFERENCES

- Ariely, G. (2013). Does Diversity Erode Social Cohesion? Conceptual and Methodological Issues. *Political Studies*, 63(3), 573-595. doi: <http://doi.org/10.1111/1467-9248.12068>.
- Boucher, G., & Samad, Y. (2014). Introduction: Social cohesion and social change in Europe. *Patterns of Prejudice*, 47(3), 197-214.
- Chan, J., To, H.-P., & Chan, E. (2006). Reconsidering Social Cohesion: Developing a definition and analytical framework for empirical research. *Social Indicators Research*, 75, 273-302. doi:10.1007/s11205-005-2118-1
- Dragolov, G., Ignácz, Z. a., Lorenz, J., Delhey, J., & Boehnke, K. (2022). *Social Cohesion Radar :Measuring Common Groun*. Germany: Bertelsmann Stiftung.
- Dubai future foundation. (2017). *Social Cohesion and Inclusiveness in Dubai*. Dubai.
- Dubai Statistics centre. (2019). *Determinants of Social Cohesion in Dubai: An Empirical Study*. Dubai.
- Europe, C. o. (n.d.). *Social Cohesion*. Retrieved from <https://www.coe.int/t/dg3/>
- Green, A., & Janmaat, J. G. (2011). *Regimes of Social Cohesion*. Palgrave Macmillan. doi:10.1057/9780230308633
- Green, A., & Janmaat, J. G. (2016). *Regimes of Social Cohesion*. London: Palgrave Macmillan London. doi:doi.org/10.1057/9780230308633
- Hernani-Limarino, W. L., & Villegas, M. A. (2010). understanding changes in Social Cohesion in Bolivia. *International Conference of Social Cohesion and development* (pp. 1-15). Economic Co-operation and Development.
- Kuhnt, J., Rischke, R., David, A., & Lechtenfeld, T. (2017). *Social cohesion in times of forced displacement - the case of young people in Jordan*. Germany: Georg-August-Universität Göttingen.
- Ratcliffe. (2011).. *From community to social cohesion: Interrogating a policy paradigm*. In *Promoting Social* (Ed.). Bristol: Policy Press.
- Stiftung, B. (2018). *Areas and dimensions of social cohesion*. Retrieved 03 23, 2024, from <https://www.bertelsmann-stiftung.de/en/media-center/media/mid/areas-and-dimensions-of-social-cohesion>
- Welt-Atlas.de. (2024). *Welt Atlas*. (Welt-Atlas.de) Retrieved 03 21, 2024, from [https://www.welt-atlas.de/map\\_of\\_dubai\\_4-735](https://www.welt-atlas.de/map_of_dubai_4-735)





# Assessing the Need of Public Open Spaces in Metropolitan Cities: Case of Gurugram

**Rangnath Zanwar, Guneet Kahlon, Ria Kapoor**

## Abstract

*The public spaces play a crucial part in providing quality life to its inhabitants. They provide a venue for social interaction and community building allowing people to gather, engage in recreational activities, and interact with one another. This helps to foster a sense of community and social cohesion which otherwise is missing nowadays in modern society. Busy lives and hectic job schedules have caused a decline in community gathering. This lies true especially for the case of metropolitan cities like Gurugram. This paper explores the availability and quality of public open spaces (POS) in the city of Gurugram. The paper is a focussed approach to enhance the aesthetic appeal of cities along with promoting an impression of community and develop a connection with nature, by studying the relevance of landscaping community spaces in earlier civic societies. The research is conducted through thorough study of definitions of public spaces, history of such spaces in Indian context, best case studies and examples of gathering spaces. The study concludes with highlighting the need of creating such safe gathering public spaces in Gurugram hitherto neglected or overlooked.*

## 1. INTRODUCTION

POS refers to areas that are freely accessible to the public and are intended for use by people for social, recreational, cultural, and civic purposes. These spaces may include parks, plazas, public squares, streets, and other areas where people can gather and engage in various activities.

POS play an important role in promoting community interaction, providing opportunities for leisure and recreation, enhancing public health, and promoting environmental sustainability (Carr, 1992). They also serve as important venues for cultural events and civic activities such as protests, celebrations, and political rallies. In urban planning, the design and management of public spaces are crucial to creating liveable and vibrant cities. Public

spaces that are well-designed and accessible can provide for a better quality of life for urban inhabitants, foster social cohesion, plus enhance the economic vitality of the surrounding area.

However, the availability and accessibility of such places are not evenly distributed across all communities (Ward Thompson et al., 2012). Certain marginalized populations, such as low-income and minority groups, often have limited access to public spaces. Thus, promoting equitable access to POS is a key outlook of urban planning.

The advantages of POS have been examined in several studies. For example, a study by the Trust for Public Land (2016) found that people who live within a ten-minute walk of a park or open space are more likely to be physically active. Access to POS can lower stress and enhance mental health, (Francis, M., Giles-Corti, B., Wood, L., & Knuiman (2010). However, POS also face challenges, such as maintaining safety and cleanliness, addressing concerns of nearby residents, and

<sup>1</sup> Rangnath Zanwar, PG Scholar, Sushant University, Email-ranganathzanwar2001@gmail.com

<sup>2</sup> Guneet Kahlon, PG Scholar, Sushant University, Email-kahlonguneet.7@gmail.com

<sup>3</sup> Ria Kapoor, Assistant Professor, Sushant University, Email-kapoorria25@gmail.com

ensuring equitable access for all members of the community.

## 2. STATUS OF PUBLIC SPACES IN INDIA

POS are essential components of urban areas that provide opportunities for social interaction, recreation, and community building. In India, rapid urbanization has led to the proliferation of cities, resulting in increased demand for POS. According to the National Sample Survey Office (NSSO), only 28 percent of households in urban India have access to POS (NSSO, 2019). Moreover, a study conducted by the Centre for Science and Environment (CSE) found that the per capita availability of POS in Indian cities is less than the recommended international standards of 10-15 sq. m per person (Centre for Science and Environment 2010). This indicates a significant gap in the availability of POS in Indian cities, highlighting the need for increased investment in the development and maintenance of these spaces.

Research has also shown that the availability of POS can have significant benefits for individuals and communities. There are several Indian studies to support this argument. A study conducted in Mumbai, India, demonstrates residents who had access to POS had better mental health outcomes and higher levels of physical activity / (Badar and Bahadure, 2020). A study conducted in Delhi, India, found that the lack of POS in low-income neighbourhoods was associated with higher rates of obesity and chronic health conditions (Ahirrao and Khan, 2021). Another study conducted in Chennai, India, found that access to POS was associated with increased social cohesion and community participation (Gupta and Tanveer Malik, 2018). Furthermore, the lack of POS in Indian cities can contribute to negative health outcomes and social

inequality, besides limiting opportunities for social interaction and cultural exchange in marginalized communities, contributing to social inequality (Rahaman et al., 2021). India has a substantially lower percentage of POS than other countries. Thus, the establishment and maintenance of public spaces in Indian cities require additional investment. The availability of POS can have a significant impact on people's lives and communities, enhancing social cohesiveness, physical and mental health results, and community involvement. Otherwise, the absence of POS can result in poor health and social inequality, emphasising the significance of closing the POS availability gap in Indian cities.

## 3. FORMS OF PUBLIC SPACES

Public spaces can be classified into several types based on their functions and characteristics.

- **Parks and Gardens**

Parks and gardens are primarily used for recreational activities such as walking, jogging, and picnicking. They are designed to provide a green and natural environment for the public to enjoy. Parks and gardens can be small neighbourhood parks or large city parks, such as the Leisure valley park, Tau Devi Lal Park, and Aravalli biodiversity park in Gurugram.

- **Plazas and Squares**

Plazas and squares are POS that are usually located in the heart of a city or town. They are often surrounded by commercial and public buildings, and offer people an environment to gather, connect and engage in cultural events. Additionally, squares and plazas can be the locations of celebrations and public events, such as concerts and festivals. Some of the famous plazas and squares in metropolitan cities

are Connaught Place, New Delhi, Chow Mahalla Palace, Hyderabad, and Lalbagh Botanical Garden, Bengaluru.

- **Streets and Sidewalks**

Streets and sidewalks are an essential part for transportation and mobility in urban areas. They also serve as spaces for social interaction and economic activity, such as street vendors and outdoor cafes (Carr, 1992). Streets and sidewalks can be designed to prioritize pedestrian and cyclist movement, creating more walkable and liveable neighbourhoods. Some of the famous streets and sidewalks in Indian Cities are Marine Drive, Mumbai, Brigade Road, Bengaluru, Park Street, Kolkata, and MG Road, Pune.

- **Community Centres**

Community centres are places that are designed to provide a range of services and activities for the community, such as sports facilities, libraries, and cultural centres. They serve as hubs for social interaction and community building and can be essential for promoting a sense of belonging and identity within a neighbourhood or city. Community centres such as, India Habitat Centre, Delhi, Rangoli Metro Art Centre, Bengaluru, NCPA (National Centre for the Performing Arts), Mumbai, and Nehru Centre, are some of the examples Mumbai.

- **Waterfronts**

Waterfronts are public spaces that are located along the edge of a body of water, such as a river or ocean (Ward Thompson *et al.*, 2012). They provide a unique and scenic environment for recreational activities such as boating, fishing, and walking. Waterfronts can also be designed to provide public amenities such as parks, promenades, and outdoor cafes, creating

vibrant and attractive public spots. Some of the famous waterfronts in India are Sabarmati Riverfront, Ahmedabad, Gomti Riverfront, Lucknow, Kochi Waterfront, Kochi, and Gateway of India, Mumbai amongst others.

#### 4. HISTORICAL PRESENCE OF PUBLIC SPACES

India's public places can be traced back to the Indus Valley Civilization (2600-1900 BCE), which featured a well-organized POS system such as courtyards, streets, and markets. During the Mauryan period (322-185 BCE), POS included the royal court, the marketplace, and public gardens. In the Gupta period (320-550 CE), they were mainly associated with religious institutions such as temples and monasteries. The Mughal period (1526-1858) saw the development of POS such as bazaars, gardens, and monuments. POS have existed since ancient times, serving as places for people to gather, socialize, and engage in various activities. In earlier eras, public spaces were often open areas within cities or towns where people could come together and participate in civic life.

One of the earliest examples of POS was the Agora in ancient Greece (Dikshit and Hazarika, 2012), which served as a central meeting place for citizens to engage in political discussions and commerce. Similarly, the Roman Forum was a public space where citizens could gather to discuss political matters and attend public speeches.

During the medieval period, community gatherings often occurred near religious institutions such as cathedrals and churches. These spaces were used for festivals, markets, and other social gatherings.

In the Renaissance era, these spaces became more elaborate and ornate. Examples include

the Piazza San Marco in Venice, which was used for public celebrations, and the Place des Vosges in Paris, which was designed as a public gathering space for the city's elite (Quaderni di, 1991).

In the 19th and 20th centuries, public spaces were often designed as parks or gardens. Examples are Hyde Park in London, which was established as a public park for leisure activities, and Frederick Law Olmsted's Central Park in New York City. (On the Plaza: The Politics of Public Space and Culture, 2012).

## 5. PUBLIC OPEN SPACES IN URBAN CENTRES

POS in urban areas are essential for the social, cultural, and economic growth of a city. They offer a platform for individuals to come together, indulge in an array of activities, and foster a feeling of community. These spaces are not only important for the physical health of individuals but also for their mental wellbeing.

Public spaces can be broadly classified into two categories: formal and informal. Formal public spaces are those that are created and maintained by the government or private entities, such as parks, plazas, and community centres. Informal public spaces are those that are created and maintained by the people themselves, such as sidewalks, streets, and alleyways (Incremental open spaces: the case of Dharavi, India, 2013).

The importance of POS in urban areas is not limited to their social and cultural functions. Additionally, they are essential for facilitating local economic development by providing a platform for various economic activities such as markets, festivals, and cultural events.

However, the quality of public spaces in urban areas is often compromised due to

factors such as rapid urbanization, lack of planning, and insufficient funding. As a result, many public spaces are underutilized or completely abandoned. To address these challenges, effective planning and management of these spaces are crucial. This includes identifying suitable locations for POS, designing them to meet the needs of the community (Ward Thompson *et al.*, 2012), and ensuring proper maintenance and upkeep. The involvement of the community in the planning and management of community spaces is also important to ensure their sustainability.

## 6. SIGNIFICANCE OF PUBLIC OPEN SPACES

POS are an essential component of city and urban planning. They play a vital role in creating liveable, sustainable, and inclusive cities. All community members, irrespective of their social, economic, or cultural background, have access to POS. They provide a platform for various activities, such as recreation, socializing, and economic exchange (Madanipour, 2019).

- **Enhance Social Interaction:** POS act as gathering spots for people to socialise, participate in conversation, and carry out numerous activities. They generate a sense of belonging, which is crucial for creating thriving and robust communities.
- **Promote Health and Well-being:** POS, such as parks and gardens, provide opportunities for physical activities, such as walking, jogging, and cycling. They also provide a space for relaxation and stress relief, which is crucial for mental health and well-being (Madanipour, 2003).
- **Foster Economic Development:** POS can also serve as a platform for economic exchange, such as street vendors and outdoor cafes. They provide opportunities for local businesses to thrive, creating jobs



and promoting economic development in the community.

- **Improve Environmental Sustainability:** POS, such as green roofs and urban parks, can also contribute to environmental sustainability by providing habitats for wildlife, reducing urban heat island effects, and improving air quality.
- **Community Building:** POS can play a critical role in community building by bringing people together and promoting social interaction. They can help create a sense of identity and belonging within a neighbourhood or city.
- **Civic Engagement:** POS can also serve as a platform for civic engagement and participation, where community members can come together to discuss and address issues affecting their neighbourhood or city.

They play a vital role in creating liveable, sustainable, and inclusive cities, promoting social interaction, supporting economic development, and improving environmental sustainability. Effective planning, design, and management of POS are crucial to ensure their accessibility, functionality, and sustainability.

### 6.1 POS as Recreation Hotspots

POS play a critical role in facilitating community interaction by providing a shared space for individuals from diverse backgrounds and social groups to come together, engage with one another, and participate in various activities. Some of the ways in which POS help in community interaction are discussed below:

- **Social Cohesion:** POS bring people together from diverse backgrounds, promoting social interaction and facilitating a sense of community. This is especially important in urban areas, where people can feel isolated in their daily lives.

- **Community Events:** POS often host community events, such as festivals, concerts, and fairs. These events provide opportunities for people to come together, socialize, and celebrate their shared culture and identity.
- **Recreation:** POS such as parks, playgrounds, and sports fields offer recreational opportunities for individuals and families to engage in physical activity, improving their health and well-being.
- **Cultural Exchange:** POS provide opportunities for people to learn about other cultures through public art installations, performances, and exhibitions. This promotes cultural exchange and understanding.
- **Democracy:** POS are often sites for political rallies, protests, and demonstrations. These events offer individuals the chance to exercise their democratic rights and engage in civic discourse.
- **Promoting Social Cohesion and Community Engagement:** POS provide a platform for individuals to come together and engage in social activities, which promote social cohesion and community engagement. These spaces are essential for promoting a sense of community and belonging, as they bring together people from diverse backgrounds and provide opportunities for interaction and engagement. Studies have shown that people who have access to POS are more likely to engage in social activities and build social networks, which can improve their mental health and well-being.
- **Encouraging Physical Activity and Healthy Living:** POS such as parks and playgrounds provide opportunities for physical activity and exercise, which is essential for healthy living. These spaces encourage people to engage in outdoor activities such as walking, running,

cycling, and playing sports, which can improve their physical health and well-being. Studies have shown that people who live in areas with more POS are more physically active than those who live in areas with fewer POS.

- **Supporting Local Businesses and the Economy:** POS such as plazas and markets provide opportunities for local businesses to display their products and services, which can boost the local economy. These spaces provide a platform for entrepreneurs and small businesses to connect with their customers, establish a loyal customer base, and promote their products and services. Studies have shown that POS that are well-maintained and accessible can attract more visitors, which can lead to increased economic activity.
- **Fostering Creativity and Innovation:** POS such as community gardens and art installations provide opportunities for creativity and innovation. These spaces encourage people to express themselves creatively and share their ideas with others, which can lead to new and innovative solutions to community problems. Studies have shown that POS that are designed to promote creativity and innovation can foster a sense of community ownership and pride.

Thus, POS play a critical role in promoting community interaction, social cohesion, and collective participation. These spaces provide a platform for individuals to engage in social activities, promote physical activity and healthy living, support local businesses and the economy, and foster creativity and innovation. Investing in POS can have significant benefits for individuals and society (Landry and Comedia (Firm), 2000; Kaczynski,

Potwarka and Saelens P, 2008; Cohen *et al.*, 2015; Smaniotto Costa *et al.*, 2020).

## 6.2 The Aesthetic Element of POS

Aesthetic appeal and landscaping play a vital role in the design and use of POS. Numerous studies have demonstrated the positive effects of aesthetics and landscaping on community well-being, social interaction, and overall usage of POS. Some examples of research studies that examine the role of aesthetic appeal and landscaping in POS are as follows:

**Aesthetic Appeal and Social Interaction:** A study conducted by the University of Michigan found that aesthetic appeal has a significant impact on social interaction in POS. The study examined several POS, including parks, plazas, and urban streets, and found that people were more likely to engage in social interaction in spaces that were aesthetically pleasing and well-designed. Another study conducted in San Francisco found that people who live in neighbourhoods with well-maintained POS are more likely to socialize with their neighbours and have stronger community ties (Maas *et al.*, 2009).

**Aesthetic Appeal and Public Space Usage:** The design and aesthetic appeal of POS can also have an impact on their usage. A study conducted by the City of Sydney found that the design of POS, including the presence of trees and greenery, can significantly increase the number of people using the space (of Sydney, 2021). Another study conducted in Barcelona found that the renovation of POS, including the addition of landscaping and street furniture, led to an increase in pedestrian activity and social interaction (Coley, Kuo, and Sullivan, 1998).

**Landscaping and Community Well-Being:** Landscaping can also have a positive impact

on community well-being. A study conducted in the Netherlands found that the presence of greenery in POS, such as parks and gardens, is associated with increased life satisfaction and reduced stress levels among residents (Francis *et al.*, 2012). Another study conducted in New York City found that residents who live near public green spaces have lower rates of obesity and better mental health outcomes.

### 6.3 The Concept of Placemaking

Inclusive placemaking is important in rapidly growing cities in India, to create spaces that are accessible, welcoming, and meet the diverse needs of its residents. The city's population is diverse, including people from various socio-economic backgrounds, cultures, and abilities. Therefore, inclusive placemaking ensures that everyone has equal access to and can benefit from the city's POS and amenities. Inclusive placemaking involves creating spaces that are designed with consideration for the needs of all residents. This can involve incorporating accessible features such as ramps, elevators, and tactile paving for people with disabilities. It can also involve creating spaces that are safe, comfortable, and welcoming for women and other marginalized groups. India has witnessed a massive makeover of the roundabouts, under the bridge areas, side streets to foster a sense of community and belonging, which is important for creating a vibrant and inclusive city.

## 7. REQUISITE IN TODAY'S MODERN WORLD

As previously said, POS play a significant role in the community development and economic growth of metropolitan areas and are an absolute necessity in modern cities. In the wake of the COVID-19 pandemic, the importance of POS has become even more apparent as they provide essential areas for people to socialize, exercise, and relax safely (Maas *et al.*, 2009).

The impact that pandemic had on the lives of people has highlighted the need for continued investment in these vital spaces. It emphasised the rising value of shared spaces as an asset for locals. These parks have been crucial to sustainable growth, whether it is for exercise or just some fresh air. Secondary reason is increased screen time. Post pandemic the world has shifted to digital spaces instead of the public spaces. The electronic devices have become a requisite especially now if not earlier. The overall behaviour has been affected by that period and people tend to stick to their devices enclosed in four walls. POS have now got to be attractive enough to bring people back to fresh air.

In addition to their social and health benefits, POS can also contribute to economic development. A report by the World Bank found that investing in POS can generate economic benefits such as increased property values, job creation, and tourism revenue (Transforming Cities with Transit, 2016).

## 8. IMPACT OF ABSENCE OF SUCH SPACES

The absence of POS can have significant negative impacts on individuals and communities. Without access to POS, people may experience social isolation, reduced physical activity, and increased stress levels. Moreover, the absence of POS can limit opportunities for community building, cultural exchange, and economic growth.

Research has shown that the absence of POS can contribute to negative health outcomes. A study conducted in Seoul, South Korea, found that the lack of green spaces in urban areas was associated with higher rates of depression and anxiety among residents. Another study conducted in Australia found that the lack of access to public parks and green spaces was associated with higher

rates of obesity and chronic health conditions (Maas *et al.*, 2009b).

The absence of POS can also contribute to social and economic inequality. The World Bank report found that the lack of POS in urban areas can disproportionately affect marginalized communities and limit their opportunities for social and economic advancement (Transforming Cities with Transit, 2016). Moreover, the absence of POS can limit opportunities for cultural exchange and hinder the development of a diverse and inclusive community.

Therefore, the absence of POS can have significant negative impacts on individuals and communities. It can contribute to negative health outcomes, social and economic inequality, and limit opportunities for community building and cultural exchange. Therefore, investment in POS is essential to ensure the health, wellbeing, and social and economic development of urban areas.

## 9. THE CASE OF GURUGRAM

Following independence, Gurugram gradually served as the backdrop for focused industrialization, including the establishment of the Maruti auto plant, which is currently a Suzuki subsidiary based in Japan. But once the DLF started gathering land for real estate development, Gurugram's quick urbanization was guaranteed. In 1946, the DLF was established as a privately held Indian enterprise. The British Planning Authority gave the company permission to buy and split large portions of Delhi's land. After the division, the DLF was driven from the city and its previous land titles were annulled. Eventually, the DLF was granted permission to build on the land that would eventually become the first three phases of the new Gurugram.

Since the early days of the DLF's projects, investors, local builders, and big

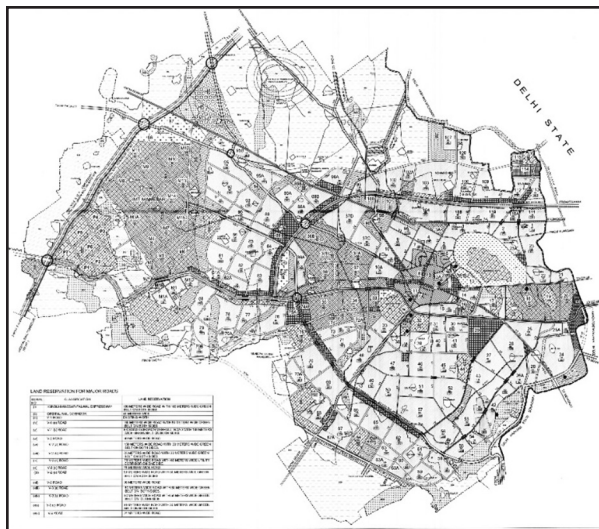
international companies have entered the Gurugram real estate market as tenants as well as landlords of the city's commercial spaces, including the infamous mall mile on MG road. Numerous international corporations have set up headquarters in the city's office parks and commercial skyscrapers, drawing in a mix of low-wage migrant labourers and corporate experts. The latter have taken up manufacturing or service positions in the industrial sectors of Gurugram. Some people view property in Gurugram as a promising investment, given there are vacant units in many gated communities and complexes owned by absentee investors. Water rights were transferred to builders and property owners, whose operations are depleting or contaminating the water table in peri-urban areas, in the absence of environmental control and restricted irrigation. (Rahaman *et al.*, 2021) Scholars have characterised the physical environment as a city of islands and disconnected enclaves, resulting from the disorganised efforts of builders. The governance of these distinct gated communities and urban villages is equally fragmented (Bratman, Hamilton, & Daily, 2012). The necessity for planning research to connect with an understanding of place and its qualities from the viewpoints of inhabitants themselves is highlighted by conflicting narratives of place, space, community, reliance, and isolation (Landry and Comedia (Firm, 2000).

The district's headquarters are in Gurugram city. The district contains just over fifty communities, yet master plans do not zone them. They have elected Municipal Counsellors and are located inside political wards. The city's Municipal Corporation (MCG) was established in 2008 when the population hit the threshold for city status.



The first mayor was elected in 2011. The National Capital Region (NCR), which also contains Delhi and several of its satellite cities in Uttar Pradesh and Haryana, includes Gurugram. As a planning authority, the National Capital Region (NCR) has its own officers, internal organization, and regional plans. Gurugram is a sub-region of the NCR and is under its supervision. The boundaries of Gurugram are continuously shifting. The master plans for 2021 and 2031 call for Gurugram to enlarge into the district. The MCG alone is solely in charge of a region that is centred. The city is divided into sectors that seem to extend from the MCG's domain, and these sectors are surrounded by roads, business corridors, and multiple major highways (figure 1). Every sector is governed by one of the many builders or planning authorities.

**Figure 1: Gurugram City**



Source: *Master Plan, Gurgaon, 2031.*

## 9.1 Old Gurugram

Old Gurgaon, also known as Old Gurugram, is a rapidly growing city in the Indian state of Haryana. It has a rich cultural heritage and a history that dates to the Mahabharata era. POS play a crucial role in shaping the character and identity of a city. Old Gurugram

has several such spaces that have contributed to the social and cultural fabric of the city. One of the most important characteristics of POS in Old Gurugram is their diversity.

These spaces cater to people of different ages, interests, and backgrounds. For instance, Leisure Valley Park is a popular destination for families and children, whereas Tau Devi Lal Stadium is used for sports and recreational activities. Similarly, Sheetla Mata Mandir is a religious site that attracts pilgrims from all over the country. These spaces offer a sense of belonging and community to the people who use them.

The components of POS in Old Gurugram include greenery, seating, lighting, and amenities. These components are designed to provide a comfortable and enjoyable experience for visitors. For instance, the Heritage Transport Museum has a landscaped garden and outdoor seating that allow visitors to relax and enjoy the surroundings. Similarly, the Kingdom of Dreams has well-lit and well-maintained pathways that make it easy for visitors to navigate the space. These components are essential for creating a welcoming and inclusive environment for people from all levels of society.

## 9.2 New Gurugram

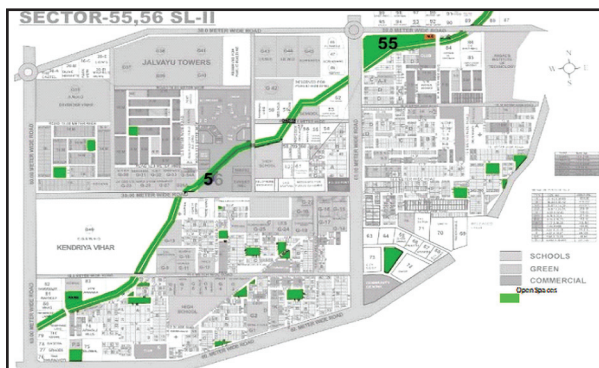
The characteristic of POS in New Gurugram is their accessibility. These spaces are designed to be easily accessible to all residents, regardless of their socio-economic status or physical ability. They are near residential areas and are connected to the city's transportation network, making them easily accessible by foot, bicycle, or public transit. Additionally, these spaces are designed to be safe and secure, with well-lit paths, seating areas, and public restrooms. Another key characteristic of POS in New Gurugram is

their diversity. These spaces come in different forms, including parks, playgrounds, green belts, and urban plazas. They also cater to a variety of recreational and cultural activities, such as sports, concerts, and festivals. This diversity of spaces and activities ensures that residents of all ages and interests can find a place to relax, socialize, and engage in physical activity.

In terms of components, POS in New Gurugram typically feature a range of amenities and infrastructure, such as benches, picnic tables, drinking fountains, lighting, and waste management facilities. They are also designed to be environmentally sustainable, with features such as rainwater harvesting, solar-powered lighting, and native landscaping. These amenities and sustainable features not only enhance the user experience but also contribute to the overall sustainability of the city.

The HUDA market of sector 56 is a great example of inclusive POS catering to wider sections (figure 2). A typical happening street food market with essence of both marketplace and a food court, it has a quite good footfall. The open seating space along in-budget food options attracts people specially youngsters. It acts as a go to post-work hanging spot for people working nearby. But such spaces are scarcely present.

**Figure 2: Sectorial of Gurugram (Sec 55 - 56)**



Source: Author Data Source One Map, 2023.

### 9.3 Gurugram Extension

At present, the private developers are designing housing societies/workspaces and commercial plazas. The new or extended Gurugram has witnessed a significant surge in the construction of housing societies and high-rise buildings. While this development has certainly met the growing housing demands of the city, the town planning in this area has often overlooked the need for POS. As a result, there is a severe lack of POS in the new or extended Gurugram, which has led to a host of issues such as traffic congestion, pollution, and a decline in liveability of the area.

It is essential to recognize the need for POS in this area to ensure the sustainable development of the city. Moreover, POS also help to reduce the heat island effect, improve air quality, and enhance the overall liability of the city. Therefore, it is imperative that town planners and policymakers take note of the lack of POS in the new or extended Gurugram and take necessary action to create them. This will not only ensure the sustainable growth of the city but also promote the health and well-being of its residents. The development of new parks, green belts, and other POS must be prioritized to create a vibrant and healthy living environment for the citizens of Gurugram.

Gurugram, a rapidly developing city in India, is often criticized for serving POS only to the upper-class and upper-middle-class people. The city is experiencing rapid urbanization and industrialization, but it is missing the green element, which is vital for a healthy environment. The development of market spaces has been given more importance, whereas the local market and street vending activities are being pushed aside. The city authorities only support plazas and parcels, which cater to the needs of the affluent class, but fail to serve the common person.



The missing landscaping in Gurugram is another issue that further contributes to the limited access to POS. The few POS available in the city lack basic facilities and are not maintained properly, making them uninviting and unsafe. These spaces are often inaccessible to people living in the economically weaker sections of society. Hence, the development of POS in Gurugram should focus on serving the needs of all sections of society, and not just the affluent class. The city authorities need to take a more inclusive approach to create POS that are safe, accessible, and well-maintained. The city should prioritize the development of green spaces, local markets, and street vending activities, which are essential for creating a vibrant and inclusive city. Only then can Gurugram become a city that serves all its residents, regardless of their socio-economic status.

#### 9.4 Privatization of POS

Private spaces have largely taken over cities over some recent years. Though they might have certain benefits, yet they are usually

criticised to depreciate the publicness of POS. Some believe that rather than being viewed as a threat, the recent trends in privatisation represent a new approach to managing and developing public spaces. They frequently contradict the core of POS, which is open-air areas that are accessible to all. However, providing publicly accessible space through private means is equally difficult because of intricate ownership arrangements, significant public and private costs, and general doubts about what exactly qualifies as “public” space, all of which have an impact on the physical layout of cities. The consensus is that management practices in privately owned POS facilities are less transparent, accountable, and less inclusive than those in publicly owned locations. Private provision of publicly accessible space can relinquish control to private parties that may not have the broader public interest in mind. The lack of accountability raises concerns over exactly how public such spaces truly are. Some of the POS are shown in the figures 3-8.

Figure 3: AIPL Joy Street



Source: Parwez K Photography

Figure 4: DLF Cyber Hub



Source: I. Pinimg, 2023

Figure 5: Galleria Market



Source: ABC Building, Webroot, 2020

Figure 6: One Horizon



Source: Sleeplessinmydreams, 2023

Figure 7: 32nd Avenue



Source: Whats Hot, 2023

Figure 8: Worldmark



Source: Parwez K Photography

### 9.5 Status of POS in Gurugram

Gurugram has experienced rapid urbanization in recent years, leading to increased demand for POS for recreation, social interaction, and community building. To understand the status of POS in Gurugram, a brief analysis of availability, accessibility, and utilization of POS has been done.

- Availability

The availability of POS in Gurugram is limited, with only 2 percent of the total land area dedicated to green spaces (Jain, 2019). Moreover, most of the existing green spaces are in the outskirts of the city, making them inaccessible to many residents.

- Accessibility

The accessibility of POS in Gurugram is limited due to a range of factors. A study conducted by the Centre for Science and Environment (2011) found that the per capita availability of POS in Gurugram is less than 1 sq. m per person. Moreover, the lack of proper sidewalks, pedestrian crossings, and bike lanes make it difficult for residents to access the existing POS.

- Utilization

The utilization of POS in Gurugram is also limited due to several factors. The lack of amenities, such as seating, toilets, and drinking water, in the existing POS makes them unappealing to residents (Singh et al., 2019). Moreover, safety concerns, such as the lack of lighting and security, limit the utilization of POS, especially by women and girls.

The availability, accessibility, and utilization of POS in Gurugram are limited, highlighting the need for increased investment in the development and maintenance of POS.

### 10. CONCLUSION

In today's fast-paced world, people are leading hectic lives, and their work schedules often leave little time for leisure activities. Additionally, the increased use of screens and reduced interaction with nature has led to a rise in stress levels and other health issues. In such a scenario, the need for POS is more important than ever. POS provide people with the opportunity to connect with nature, breathe fresh air, and engage in physical activity. They offer a break from the screen-based world and allow people to interact with each other face-to-face, promoting social interactions, community engagement, and overall well-being. Moreover, POS can provide people with a sense of belonging and a feeling of being part of a larger community. They can be a place for people to relax, unwind and enjoy various recreational activities such as sports, games, and picnics.

The study recommends that to aim for sustainable growth of the cities, the city planners and policy makers must focus on the provision of ample inclusive public open spaces. Also, it has been observed in the study that privatization aids the process of maintaining the open spaces. Therefore, the privately owned places are cleaner, well-maintained, and well-lit. However, the signature element of public space is that it is accessible and open to all. It is much needed that the government should allocate funds not only for creation but also maintenance of green spaces of the cities. This step will not only mitigate urban heat island effect and improve the urban micro-climate but also enhance aesthetic value and liveability of the cities. Inclusive POS are crucial for mitigating the urban heat island effect and improving the urban micro-climate, especially in densely populated areas. In addition to their functional benefits, these



spaces can also enhance the aesthetic value of the surrounding areas, making them more inviting for people to spend time in. To achieve this, green elements such as trees, shrubs, and green roofs should be incorporated into the design of POS, as they can help to absorb and reduce heat, and provide shade and cooling. Additionally, the use of water features such as fountains and ponds can help to lower ambient temperatures and improve air quality. By prioritizing green elements in the design of inclusive POS, a more sustainable and liveable urban environment can be created, which will reduce the risk to cities.

## REFERENCES

- Bhagat, R. B., Singh, A., & Pandey, A. K. (2016). Assessment of Open Space in Urban Delhi. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 9 (1), 61-75.
- Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2015). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York Academy of Sciences*, 1249 (1), 118-136.
- Carmona, M., Heath, T., Oc, T., & Tiesdell, S. (2010). *Public places, urban spaces: The dimensions of urban design*. Routledge.
- Carr, S., Francis, M., Rivlin, L. G., & Stone, A. M. (1992). *Public space*.
- Cohen, D. A., Marsh, T., Williamson, S., Golinelli, D., & McKenzie, T. L. (2012). Impact and cost-effectiveness of family fitness zones: a natural experiment in urban public parks. *Health & Place*, 18 (1), 39-45.
- Francis, M., Giles-Corti, B., Wood, L., & Knuiman, M. (2010). Creating sense of community: The role of public space. *Journal of Environmental Psychology*, 30 (4), 4-11.
- Giles-Corti, B., Broomhall, M. H., Knuiman, M., Collins, C., Douglas, K., Ng, K.,... & Donovan, R. J. (2005). Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine*, 28 (2), 169-176.
- Gopalakrishnan, S., Ranganathan, S., & Vaidyanathan, K. (2017). Public open spaces in India: An exploration of the concept, its evolution, and measurement. *Land Use Policy*, 60, 318-330.
- Jacobs, J. (1961). *The death and life of great American cities*. Vintage.
- Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: a review of evidence about parks and recreation. *Leisure Sciences*, 29 (4), 315-354.
- Kayden J, 2005, ``Using and misusing law to design the public realm'', in *Regulating Place: Standards and the Shaping of Urban America* Eds E Ben-Joseph, T Szold (Routledge, New York
- Kim, J. Y., Song, C., & Lim, Y. H. (2018). Association between urban green spaces and mental health in South Korea: a nationwide study. *International Journal of Environmental Research and Public Health*, 15 (6), 1147.
- Kostof, S. (1991). *The city shaped: Urban patterns and meanings through history*. Thames and Hudson.
- Kuo, M., Sullivan, W. C., Coley, R. L., & Brunson, L. (2015). Fertile ground for community: Inner-city neighbourhood common spaces. *American Journal of Community Psychology*, 56 (3-4), 339-353.
- Landry, C. (2008). *The creative city: a toolkit for urban innovators*. Routledge.
- Low, S. (2000). *On the plaza: The politics of public space and culture*. University of Texas Press.
- Maas, J., Verheij, R. A., de Vries, S., Spreeuwenberg, P., Schellevis, F. G., & Groenewegen, P. P. (2006). Morbidity is related to a green living environment. *Journal of Epidemiology and Community Health*, 60 (11), 938-943.
- Marquès, M., Mulà, I., & Ricard, M. (2013). Revitalization of public spaces: The case of Barcelona. *Journal of Urban Design*, 18 (1), 102-116.
- Mhatre, S., Chatterjee, A., & Menon, G. (2019). Exploring the impact of public open spaces on urban well-being in Mumbai, India. *Cities & Health*, 3 (1-2), 81-90
- Moat, C. M., & Sousa, C. (2015). Public spaces and urban attractiveness: a literature review. *Cities*, 42, 112-118.
- Public Space in Urban India: Some Issues and Concerns by A.G. Krishna Menon

Public Spaces in Indian Cities by Ashok Kumar Gupta

Public Spaces in Indian Cities: Historical Development and Current Challenge by Neha Sami and Nidhi Shukla

Schama, S. (1995). *Landscape and memory*. Knopf.

Sennett, R. (1994). *Flesh and stone: The body and the city in Western civilization*. W.W. Norton & Company.

Singh, N., Jha, N., & Nair, A. (2019). Urban Open Spaces in Gurgaon: Problems and Prospects. *International Journal of Engineering and Advanced Technology*, 9 (2), 1622-1627.

Singh, R., Raghunathan, K., & Singh, R. (2019). Neighbourhood public open spaces: A comparative

study of accessibility, utilization, and community participation in two cities of India. *Habitat International*, 89, 101

The Trust for Public Land. (2016). *The Benefits of Parks: Why America Needs More City Parks and Open Space*.

Urban Public Space in India: A Review” by Shubham Jain and Ajay Pandit

Urban Public Spaces in India: A Comparative Analysis by Anjali Mohan and Vishwas Shankar

Ward Thompson, C., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: Evidence from salivary cortisol patterns. *Journal of Environmental Psychology*.



# An assessment of Crime, Sense of Safety and Quality of Life of People of Guwahati City, Assam

Namrata Talukdar, Bhargav Bharadwaj, Dr. Mainak Ghosh

## Abstract

*Guwahati city, in the course of urbanization, has become susceptible to crime because of the decreasing social connections, traditional cultural systems and high levels of immigration. This article discusses the interconnections among crimes, sense of safety and quality of life in the case of Guwahati city. Through the mapping of recorded crimes for three consecutive years i.e. 2018, 2019 and 2020 through the GIS interface, the vulnerable areas of Guwahati Municipal Corporation (GMC) area are identified. The crime mapping is further compared with the map of literacy and workforce participation to understand the connection between crime incidents and socio-economic factors. A questionnaire survey was conducted in the crime hotspot areas to understand the “sense of safety” of the people living in those areas. Through the survey, the quality of life of people in the crime hotspot areas was assessed to understand the linkage between crime, sense of safety and quality of life.*

## 1. INTRODUCTION

Crime is viewed as a collection of occurrences that are classified as offences, illegal, culpable, and socially detrimental to a greater or lesser extent, also, a penalised human act (Błachut, J. et al., 2001 as cited by Socha, R., 2021). Witnessing or experiencing crime or hearing about crime incidences impacts physical health as well as mental health negatively. The response to crime sparks different emotional expressions of insecurity such as anger and shock (Christmann et al. 2004). Therefore, the fear of victimization restricts people the more to step into the urban areas than the actual crime. Even while to choose a place to reside, one of the most common criteria of selection of neighbourhood is the physical safety of the members of the family. Both the ‘physical safety’ and ‘psychological

safety’ are quite complex but integral to bring resilience to the inner-self and as a whole the community wellbeing (Australian Unity, Banking Financial Advice, Retirement Living and Private Health Insurance (n.d.)

Today, the urban character has changed dramatically with high-rise apartments, highly secured gated societies, and dependence on motorised vehicles in cities resulting in less social interaction and high cultural disintegration. Urban areas have been ignoring the section of people who are homeless, jobless, poor and unemployed; making urban areas highly segregated (Onyeneke, C.C. and Karam, A.H., 2022). Residential segregation (Luco, C.A. and Lazo, N.M., 2006), economic deprivation (Gillani et al., 2009), criminogenic condition of residential environment, criminogenic exposure (Wikström et al., 2016) in urban areas are few of the core components related to crime.

The “sense of safety” although rooted in physical and social environments, is largely subjective. The perception of safety or insecurity is highly correlated with built environment quality, walkability and security

<sup>1</sup> Namrata Talukdar, PhD Scholar, Dept. of Architecture, Jadavpur University, Kolkata, Email: [namratatalukdar91@gmail.com](mailto:namratatalukdar91@gmail.com)

<sup>2</sup> Bhargav Bharadwaj, Architect, Urban Planner, Email: [bhargav10oct@gmail.com](mailto:bhargav10oct@gmail.com)

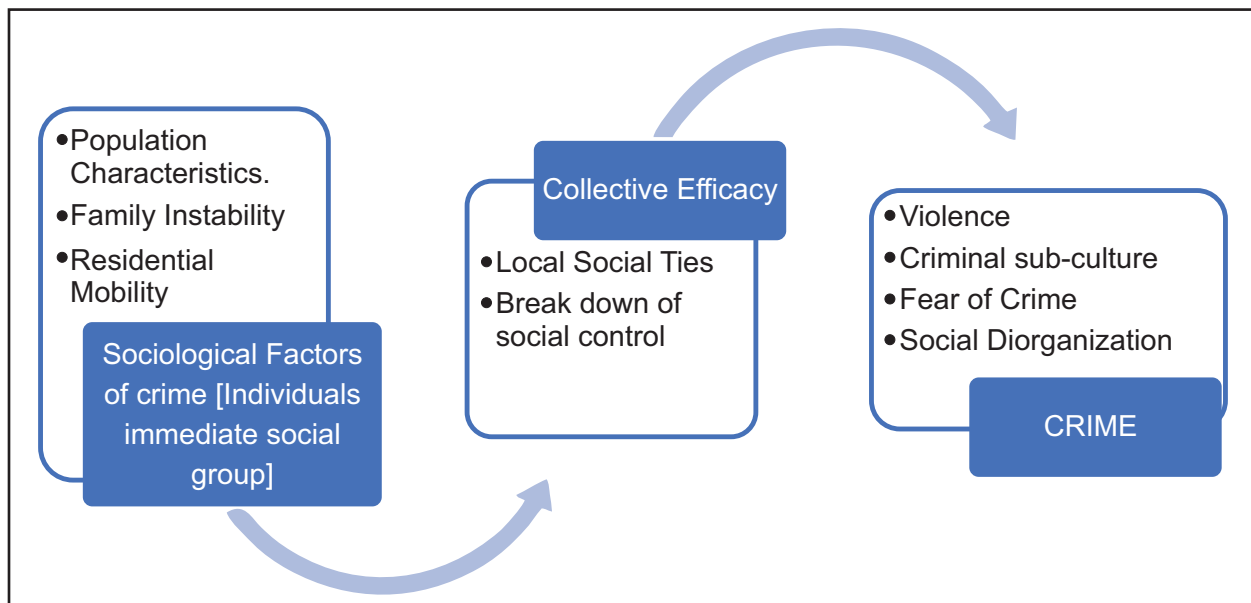
<sup>3</sup> Dr. Mainak Ghosh, Professor, Dept. of Architecture, Jadavpur University, Kolkata, Email: [mainak.ghosh@jadavpuruniversity.in](mailto:mainak.ghosh@jadavpuruniversity.in)

arrangements of a residential neighborhood (Arellana, J., et al., 2020).

The social disorganization theory (1942) (figure 1), by Shaw and Mckay, discusses the role of social forces and social control through institutes such as families, religious organisations and schools in fighting against crime. According to this theory, urban areas

are divided into three distinct areas: the areas dominated by the rich, areas dominated by the middle-income group and a portion of the urban areas where the poor people live with poor infrastructure (Lynch et al., 2019). This theory discusses that low-income residential neighbourhoods with a lack of infrastructure, poverty, unorganised social spaces and lack of social integrity are susceptible to crime.

**Figure 1: The Social Disorganization Theory**



Source: (Onyeneke, C.C. and Karam, A.H., 2022).

Causes like family instability, frequent migration, fewer local social ties, and breakdown of social control collectively contribute to crime or fear of crime.

Crime mapping is a study done by analysts and policymakers to assess the crime hotspots and the pattern of crime in an area. Crime analysis is a systematic way to identify the linkages of crime with socio-economic factors, demographic and temporal aspects and helps to comprehend crime statistics for the prevention of crime and ensuring the safety to the inhabitants.

## 2. RESEARCH METHODOLOGY

The crime data for three consecutive years i.e. 2018, 2019 and 2020 were collected from

primary and secondary data and mapped in the GIS interface. The Gwahati Municipal Corporation wards are divided as per the jurisdiction of the police stations. The data are analysed through frequency distribution and percentage distribution. All the crime data of the years are used for “hotspot analysis” to get crime hotspot zones in the study area.

A primary survey was conducted during the research with 310 samples from the wards within different Police Station (PS) jurisdictions. In the first part of the survey, a questionnaire was prepared and people were asked which areas they would consider to be safe and which areas they felt to be unsafe. They were also asked about their experience



or heard about any sort of crime incidents in his/her wards. This part was followed by another questionnaire with more open questions to understand what the people think to be the reasons behind safety in their neighbourhoods. The data overlapped and inferences were drawn to understand the relation between crime incidents, sense of safety and resulting quality of life.

A total of 310 samples are obtained in the primary survey, through a simple random process. To make the survey process simple, 10 samples from each ward have been selected, even though each ward has a different area and population. Each respondent is asked whether they have heard of or personally experienced crime in their wards, and accordingly, the statistics of crimes ward-wise are generated. Using a specific questionnaire, a team of three surveyors including the researcher completed the study in two months. Based on data from the primary survey, a bar diagram is used to demonstrate the frequency of crime at the ward level. After plotting the data in the form of a bar diagram in M.S Excel, consistency has been observed between the reported crime statistics (as gathered from PS and interpreted above) and primary survey data (Ward-wise).

### 3. LITERATURE REVIEW

#### 3.1 Fear of Crime and Sense of Safety

‘Crime’ and ‘Sense of safety’ are two widely used terms in the field of quality of life study. Experience of crime incidents and fear of the occurrence of crime both have a greater influence on the overall perceived “sense of safety”. The sense of safety in urban areas perceived by citizens is deeply rooted in the urban form and physical attributes of urban areas. Fear of crime by Warr, M., (2000) has been stated as a “*negative emotional state of mind*” which can be caused by the experience of crime and sometimes, from the anxiety of becoming a victim of a crime. The fear of

crime affects people more than the experience of crime. The unplanned urban areas, urban voids, areas with less human activities, dark areas etc., can increase the anxiety of becoming a victim resulting into increase in insecurity and thus affecting the quality of life. Many times, the fear of experiencing a crime affects the personal safety and security of an individual so harshly that it may cause depression and severe psychological disorders like sleeplessness, reduced concentration and anxiety. In the urban scenario, people avoid those places that are perceived to be unsafe. Increase of unsafe places results in limited access of people to urban public areas and also restricts mobility of people. The increase in crime spots and unsafe places within the city affects freedom of mobility particularly of women and aged citizens. Reduced mobility related to decreased participation in the workforce, and decrease recreational and leisure activities affecting economic empowerment and health dimension of women in urban areas.

‘Victimization risk’ a terminology coined by (Guedes et al., 2018) describes a sense of safety as a “cognitive dimension” which might be inspired by the surrounding environment of an individual. According to him, crime occurs when there is a lack of awareness and attention to potential and dangerous environment. A person with low victimisation risk is aware of the surroundings and avoids the potential unsafe spots.

Urban design and planning can play a vital role in improving the spatial quality of cities by correcting faults in legibility, developing a safe and clear mental image for the city, enhancing the physical attributes of the city and thus contributing to the improvement of quality-of-life indicators. Traditional, indigenous design elements can be used for designing urban environments for better legibility. The optimum visual quality, visual

connections and uninterrupted visuals in urban areas improve visual perception, establish a connection between a place and a citizen and thus contribute positively to the sense of safety. The victimization risk in urban areas can be controlled by creating visually connected spaces (Behnoush M Nia, 2017).

Nicola Dempsey (2008) has discussed the factors responsible for the generation of fear of safety in urban environments such as high residential density, mixed land uses, accessibility, connectedness and permeability, legibility, attractiveness, maintenance, safety and character. New Urban Agenda, 2016 mentioned affordable housing, safer streets, quality public spaces, and road design as factors of safety in urban environments.

### 3.2 Safety and Quality of Life

It was found that peoples' overall life satisfaction depends on the country's crime rate and neighbourhood safety they live in (Cohen, M.A., 2008). The dread of being mistreated in public spaces can affect the overall sense of security affecting negatively the quality offered by urban spaces. In an urban place where there are many strangers, there is likely a victimisation danger. Instead, a familiar space full of known people develops a sense of protection and thus reduces victimisation danger. The 'perception of victimization' has a relationship with the quality of life of people. The same research concluded that the built environment has a significant impact on controlling the crime incidents and affects the perception of being victimised developing concern for safety and thus, has a direct connection to the quality of life (Christmann et al. 2004).

Cohen, M.A. (2008), while surveying the effect of crimes on Americans, mentioned that the crime rates of any country are a dependent factor of overall life satisfaction.

### 3.3 Physio-Social Factors

Research has discovered that the socio-economic, demographic and environmental conditions of a neighbourhood have a direct impact on its crime profile (Onyeneke & Karam, 2022). The research has mentioned unemployment, economic deprivation and inequality as significant parameters of the increase of crime profile in an area. Omotor, D.G. (2010) also mentioned poverty, social exclusion, income inequality, unemployment, religion etc. as the decisive factors for the crime that can happen in a neighbourhood while analysing the crime profile of Nigeria. Lombardo, R. and Falcone, M., (2011), in their research, have identified demography, economic performance and education as few of the crime indicators.

The types of spatial distribution or land use control the demographic variations in a neighbourhood. Onyeneke & Karam. (2022) viewed that mixed land use encourages crime in the neighbourhoods and highlights that a wisely prepared land use map plays a significant role in managing crimes.

The interweaving of land uses, which demands activities throughout the day, attracts human footfall and makes people less vulnerable to crime instead of monocentric land uses. Different types of land uses show variations in human activities and thus, can be rated differently for safety (Sypion-Dutkowska, N & Leitner, M 2017).

### 3.4 Crime Status in India

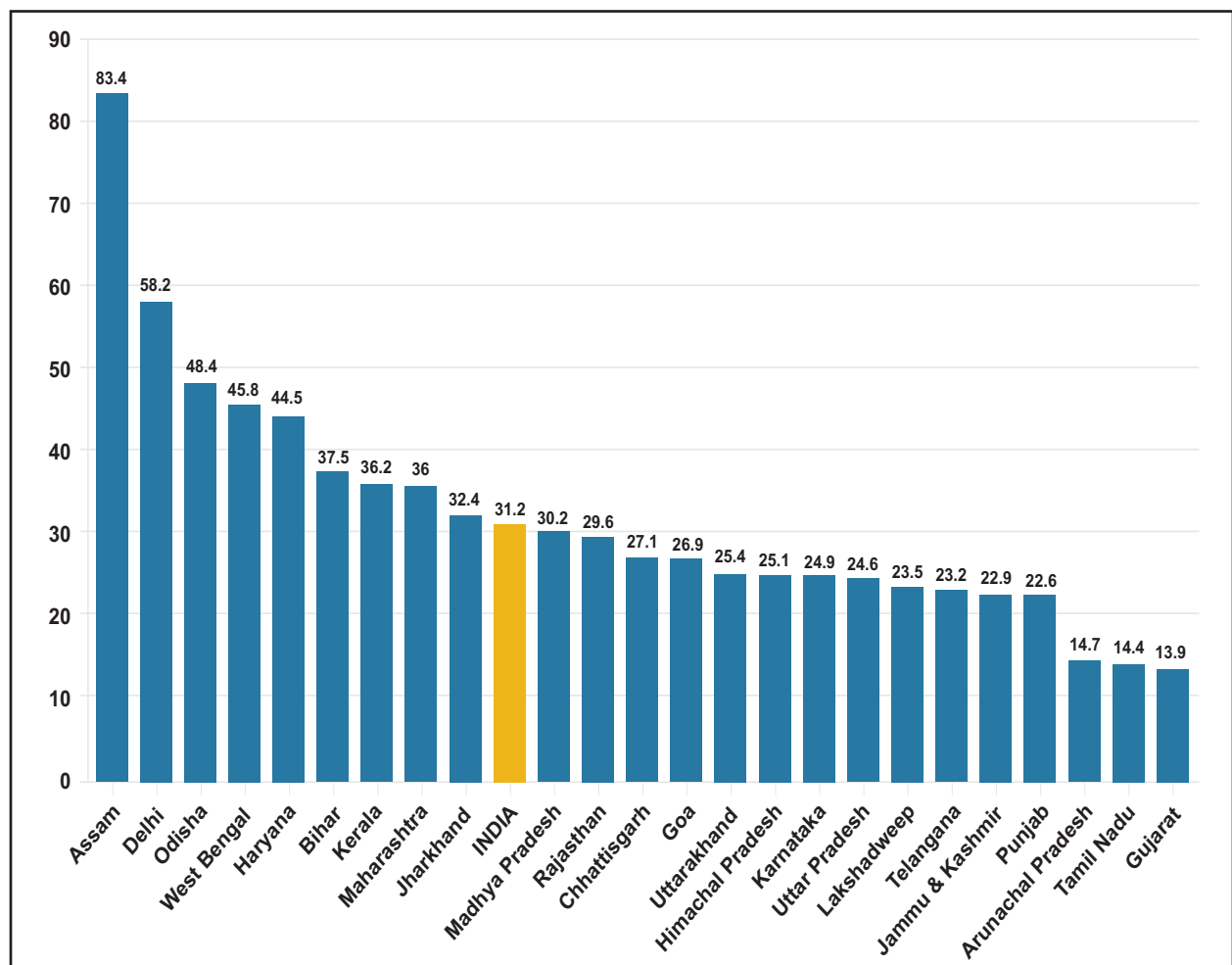
The crime rate in India is rising with 68 percent in Megacities and 32 percent in smaller cities as per the registered crimes under IPC, 2015. Among all the crimes reported 8.1 percent are violent crimes in India. The 'Crime in India' report for the year 2021 mentioned that there is a 0.3 percent increase in murder cases, an increase of 19.9 percent in

kidnapping and abduction, an increase of 15.3 percent in crime against women, increase of 16.2 percent crime against children, 5.3 percent increase of crime against senior citizen over 2020 (National Crime Records Bureau., 2021).

Assam has the third-highest rate of violent crime in the nation in 2011 (National Crime Records Bureau., n.d.). However, crime statistics submitted by the State Home Department in the year 2012 to the State Assembly showed that the Kamrup (metro) district had the highest number of instances, including thefts, dacoity, and murders, compared to all other districts in the state (Desai R. et al., 2014).

The state-wise crime rate of 2019 (figure 2) displayed that the number of violent crimes registered per lakh population is 83.4 for Assam, almost 2.7 times the national violent crime rate (31.2 per lakh). In recent years Guwahati has seen an increase in crime rate. As per reports by NUMBEO (Crime in Guwahati (n.d.) and National Crime Rate India, there was a significant increase in crimes from 2016 to 2019 with a percentage of 61.06 percent. As per the NUMBEO-2023 record, the crime Index of Guwahati city is 45.42 whereas the safety index stands at 54.58 (moderate). This indicates that there are high incidents of crime in Guwahati that have reduced the safety index of the city intensively (Crime in Guwahati (n.d.).

Figure 2: Incident of Crime in Different States of India in 2019



Source: M, P.K. (2023)

The North-eastern metropolitan city of Guwahati, also, doesn't show a very upgraded status of quality of life in terms of personal safety and security. The current paper is an attempt to assess the crime scenario of Guwahati, to understand the sense of safety and to analyse the interconnection of the crime, sense of safety of people and quality of life.

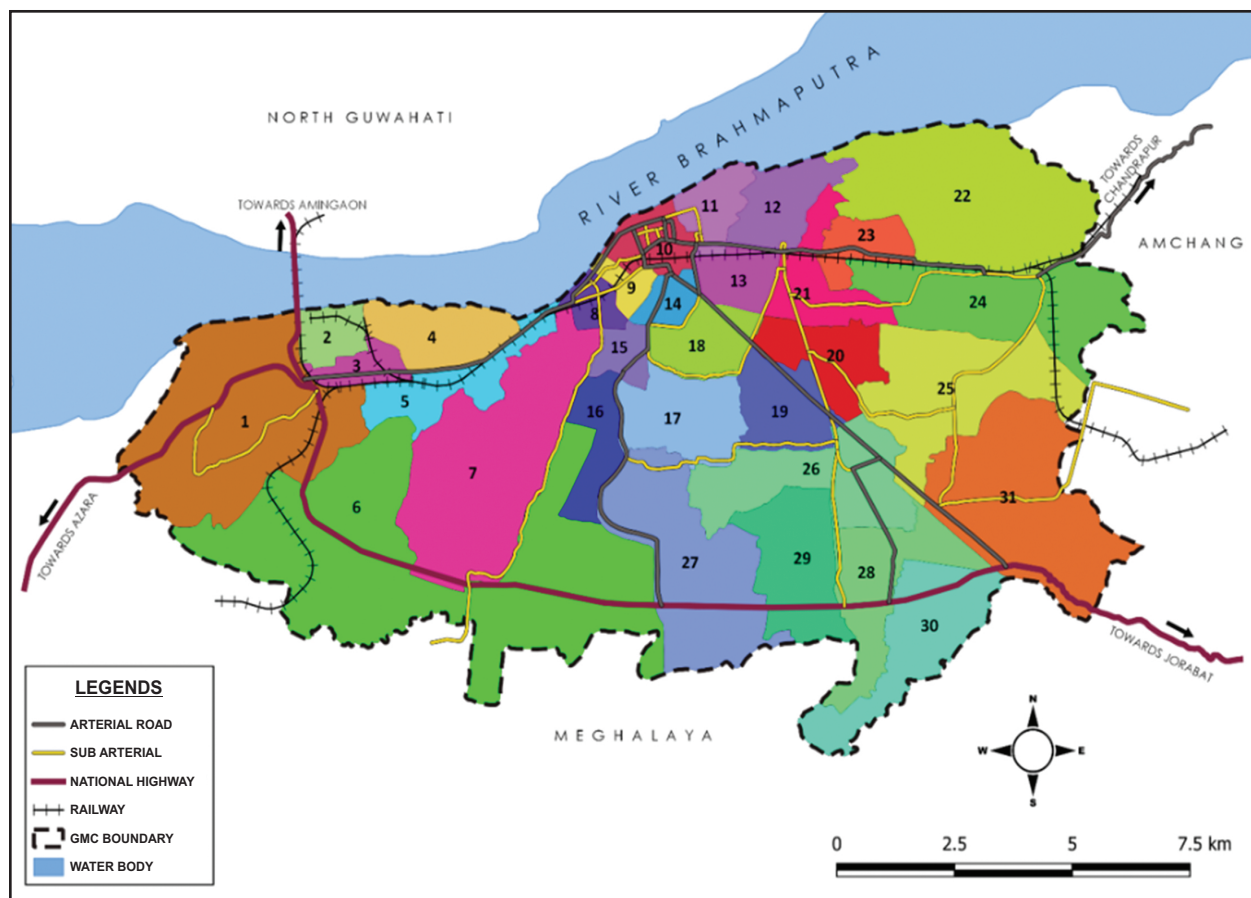
#### 4. ABOUT THE CASE STUDY AREA

Guwahati, the metropolis has been growing in population and area expansion rapidly. The

city of Guwahati is home to approximately 10 lakhs people as per 2011 census. Along with the population growth, the city has grown spatially to its present area of 216.79 sq.km.

The Guwahati Municipal Corporation (GMC) of the city has 30 wards (figure 3). The population of GMC is growing, and between 1991 and 2011, it grew at a pace of 76.48 percent. In terms of sex distribution, males contribute 52 percent of the population, while females - 48 percent of the total (Directorate of Census Operations, Assam, 2011).

Figure 3: Ward Map of GMC Area

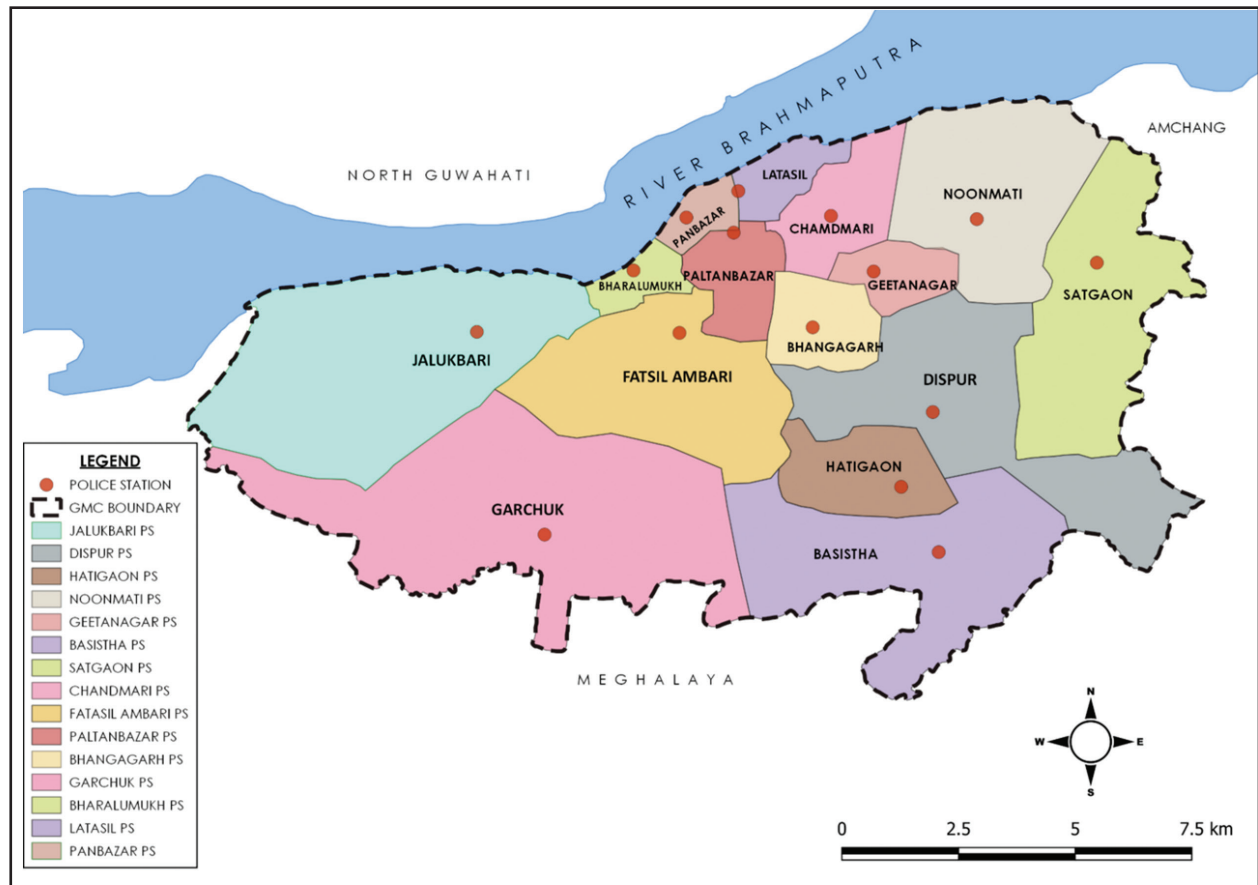


The rate of crime has risen in Guwahati in recent years, may be as a result of urbanisation and changing cultural aspects of the city in the run of becoming a cosmopolitan city. According to NUMBEO and National Crime Rate India data, there was a 61.06 percent increase

in crimes between the years 2016 and 2019. This indicates that there is a considerable increase in crime in the city.

As per data collected, there are 15 police stations (figure 4) present all over Guwahati



**Figure 4: Jurisdiction of Different Police Stations within GMC Area**

(GMC area) which serves the entire population of 9.57 lakhs as per Census 2011. The city is divided into three zones based on the jurisdiction of the police station that are; the West, Central, and East zones. The West zone comprises Bharalumukh, Jalukbari, Garchuk, and Fatasil (i.e. ward 1, 2, 4, 5 and 6). The Central zone covers Chandmari, Noonmati, Geetanagar, Satgaon, Panbazar, and Latasil (i.e. wards 10, 11, 13, 22, and 23). The East zone consists of Dispur, Hatigaon, Basistha, and Bhangagarh (i.e. wards 17, 18, 19, 20, 26, 27, 28, 29, and 30).

## 5. ANALYSIS AND DISCUSSIONS

The crime records and data from three consequent years (2018, 2019, 2020) are collected from the police stations by the researcher and analysed through percentage

distribution and frequency distribution. The data of crime incidents were mapped in GIS to understand the pattern of crime in Guwahati city. The results indicate that theft, robbery, murder, rape and dacoity are the most common crimes on the list for all the consequent years.

### 5.1 Analysis of Crime Data of 2018

In 2018, it was evident that among all the zones, the Central zone reported the highest number of crimes (figure 5 and 6). Theft has been found the most recorded crimes in the areas like Chandmari, Dispur, Jalukbari, Paltan Bazar, Basistha etc. (figure 7). Other recorded crimes than theft followed by robbery, murder, rape and dacoity (figure 7). In terms of overall crime rate, Dispur recorded the highest number of crimes followed by Jalukbari and Paltanbazar (figure 5).

Figure 5: Map showing Number of Crimes Recorded in Police Stations (Year 2018)

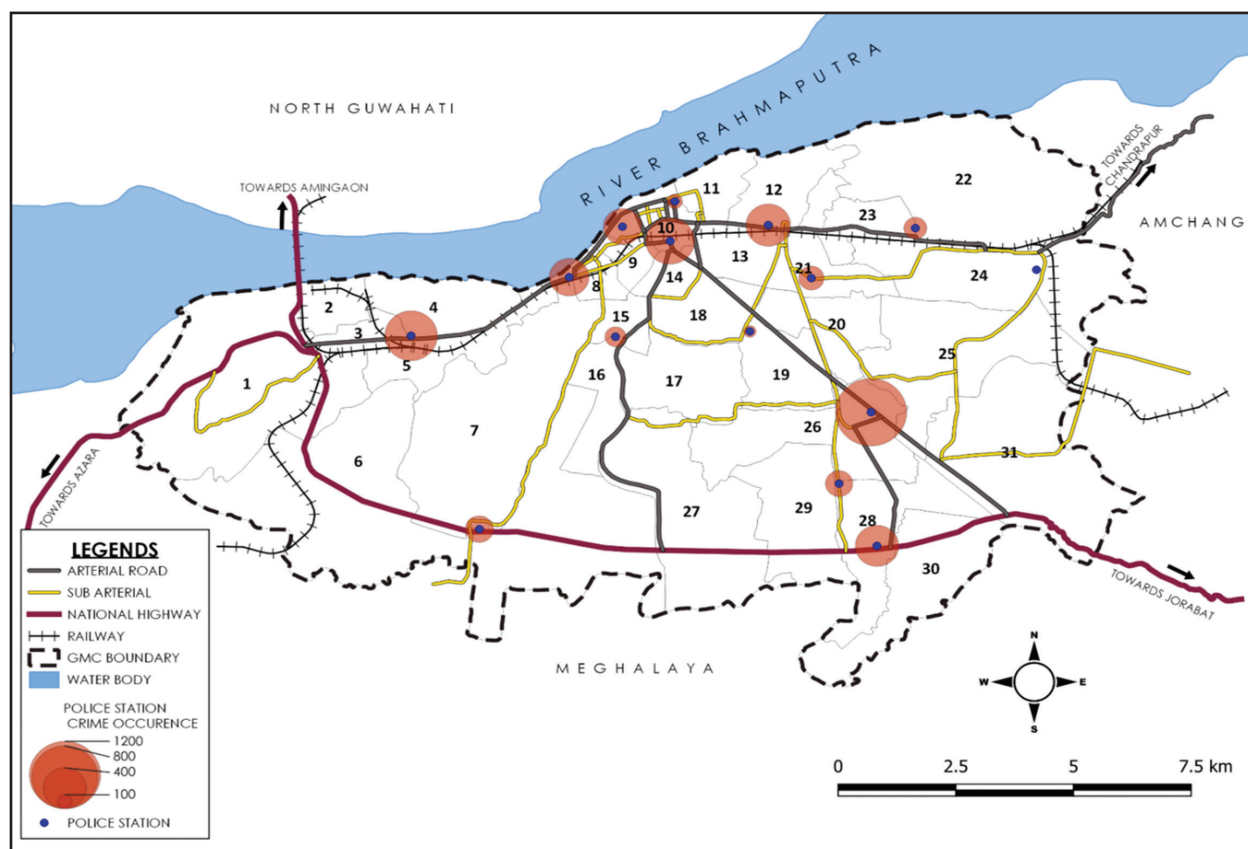
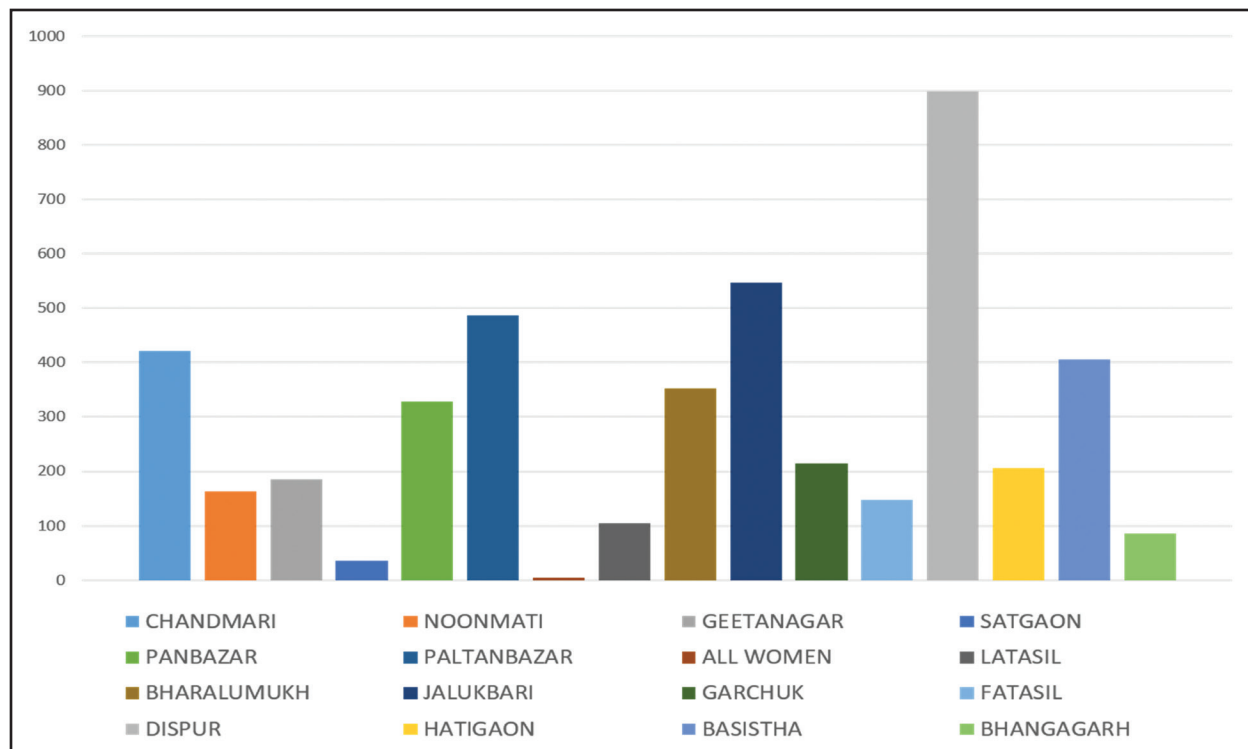
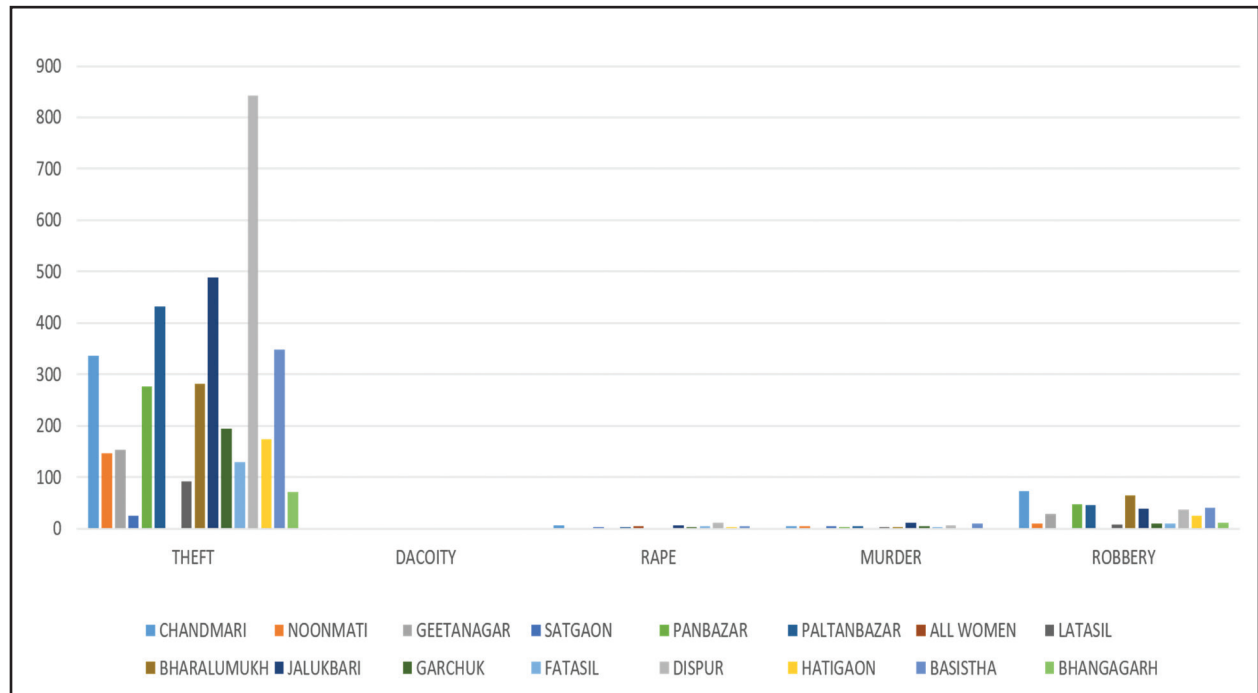


Figure 6: Crime Recorded per Police Station (Year 2018)



**Figure 7: Type of Crime Cases Registered in Police Stations of Different Localities (Year 2018)**



## 5.2 Analysis of Crime Data of 2019

In 2019, it was observed that the East zone among the three zones recorded the highest number of crimes. In terms of crime reported theft was the highest followed by robbery, murder, rape and dacoity (figure 8, 9 and 10). Dispur recorded the highest number of crimes followed by Basistha and Chandmari.

## 5.3 Analysis of Crime Data of 2020

A shift of the highest crime-rated zone from the central zone in 2018 to the East zone has been observed consisting of areas like Dispur, Hatigaon, Basistha, and Bhangagarh. In terms of crime type, theft was the highest followed by robbery, murder, rape and dacoity. Dispur recorded the highest number of crimes (as like that in 2018 and 2019) followed by Basistha and Jalukbari in 2020 (figure 11, 12, and 13).

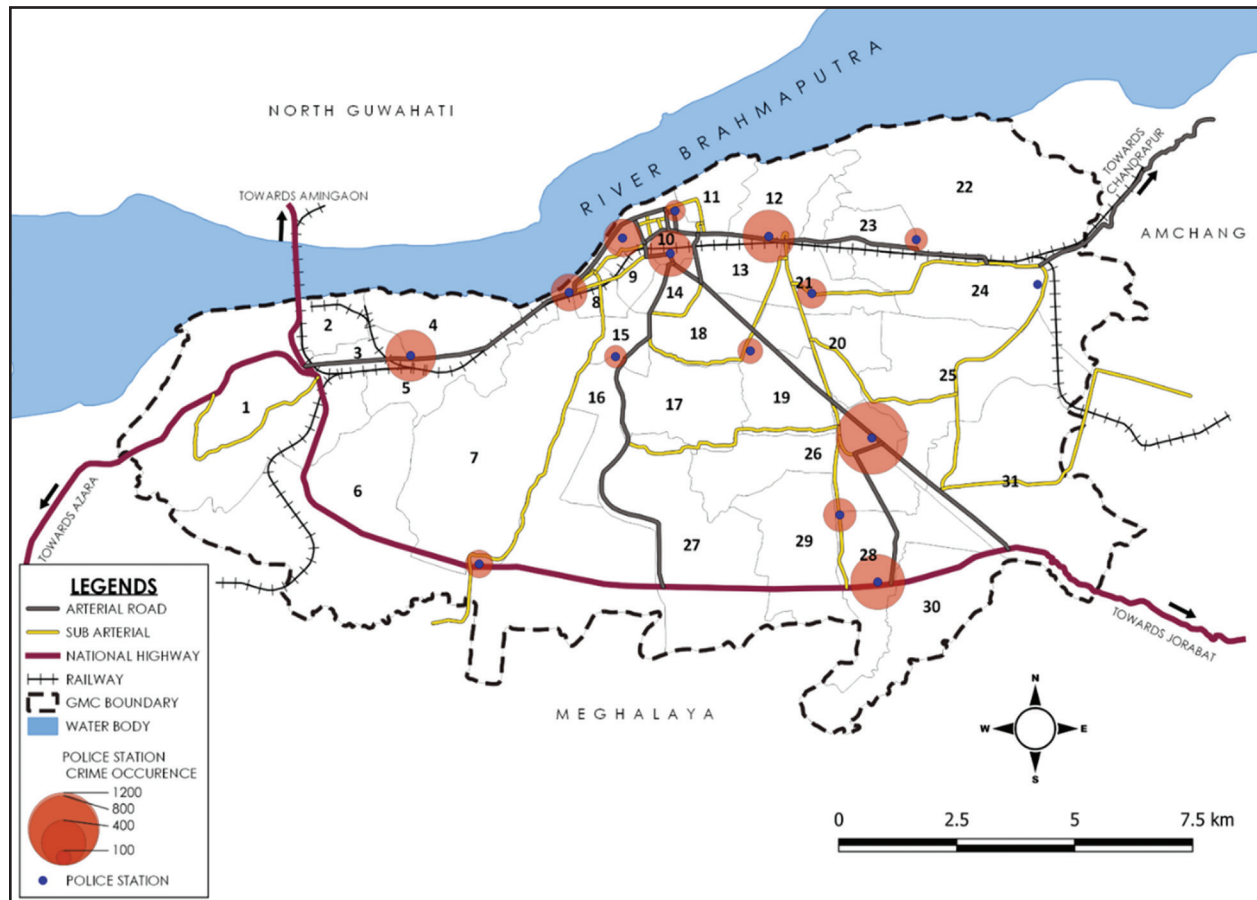
From the study, it was noticed that there was an increase in crime rate from 2018 to 2019, in terms of theft, Dispur recorded the highest increment in crime followed by Basistha

and Chandmari. For Rape cases registered, Dispur was the highest followed by Basistha. In terms of Dacoity, Jalukbari and Basistha recorded the highest cases followed by Garchuk. For Murder, Jalukbari and Basistha recorded the highest number of cases and for Robbery, the highest was recorded from Dispur followed by Bharalumukh.

The observation shows an increase in crime rate from 2019 to 2020. In terms of theft, Dispur and Panbazar recorded the highest followed by Gorchuk. As per rape records, Dispur and Jalukbari were the highest followed by Basistha. In terms of Dacoity, Dispur recorded the highest cases followed by Hatigaon and Sonapur. For Murder, Dispur Jalukbari, Basistha and Fatasil recorded the second highest cases and for robbery cases, the highest was recorded from Dispur followed by Basistha.

The yearly occurrence of crime in Guwahati City has increased by 2.88 percent from 2018 to 2019. The possible reasons for these

**Figure 8: Map Showing Number of Crimes Recorded in Police Stations (Year 2019)**



**Figure 9: Crime Recorded Per Police Station (Year 2019)**

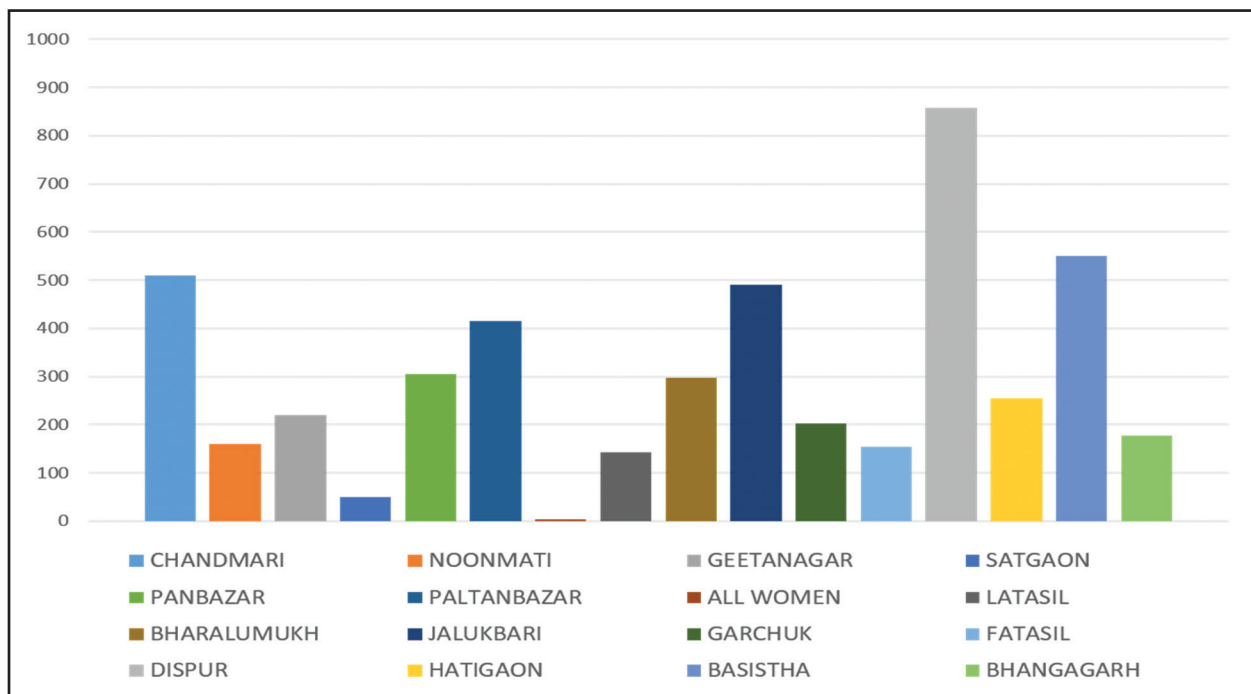




Figure 10: Type of Crime Cases Registered in Police Stations of Different Localities (Year 2019)

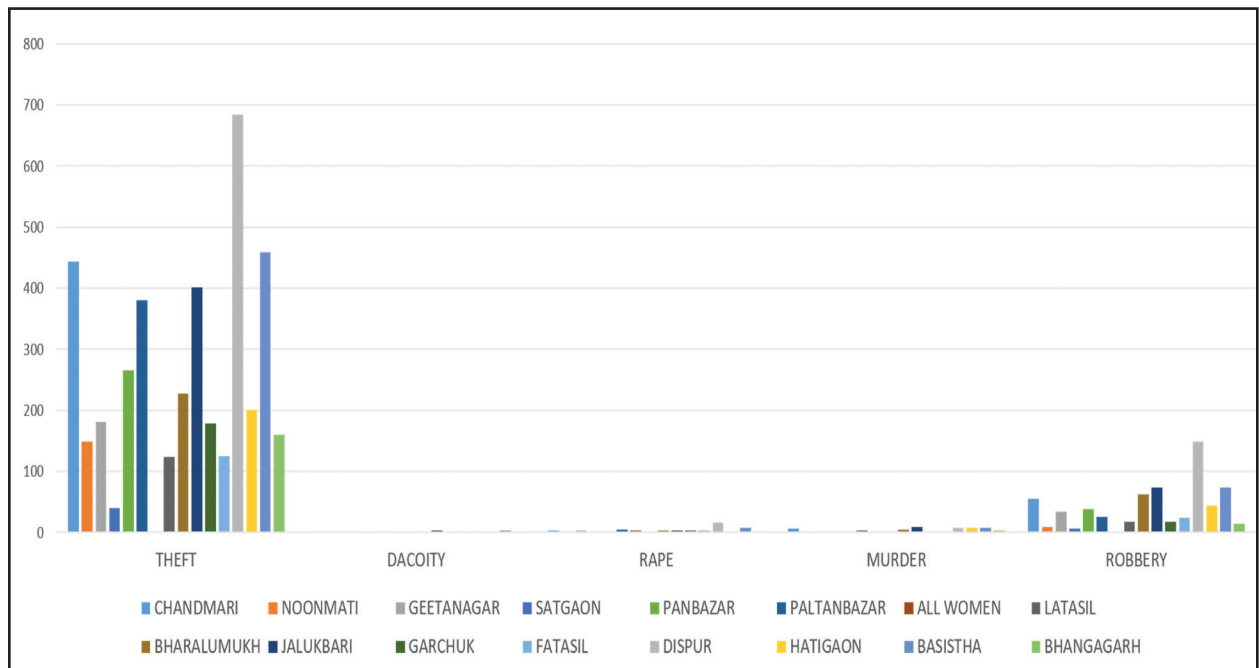
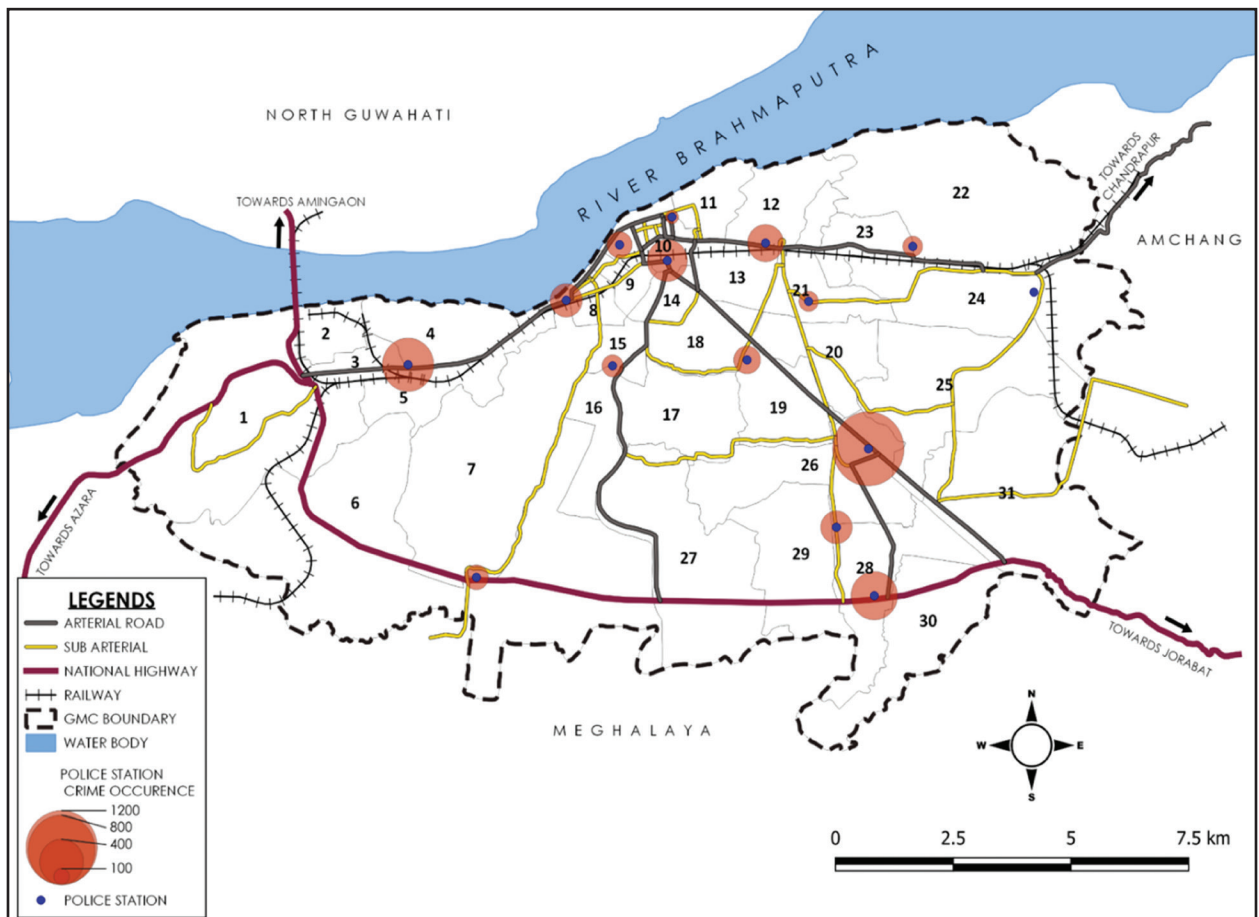
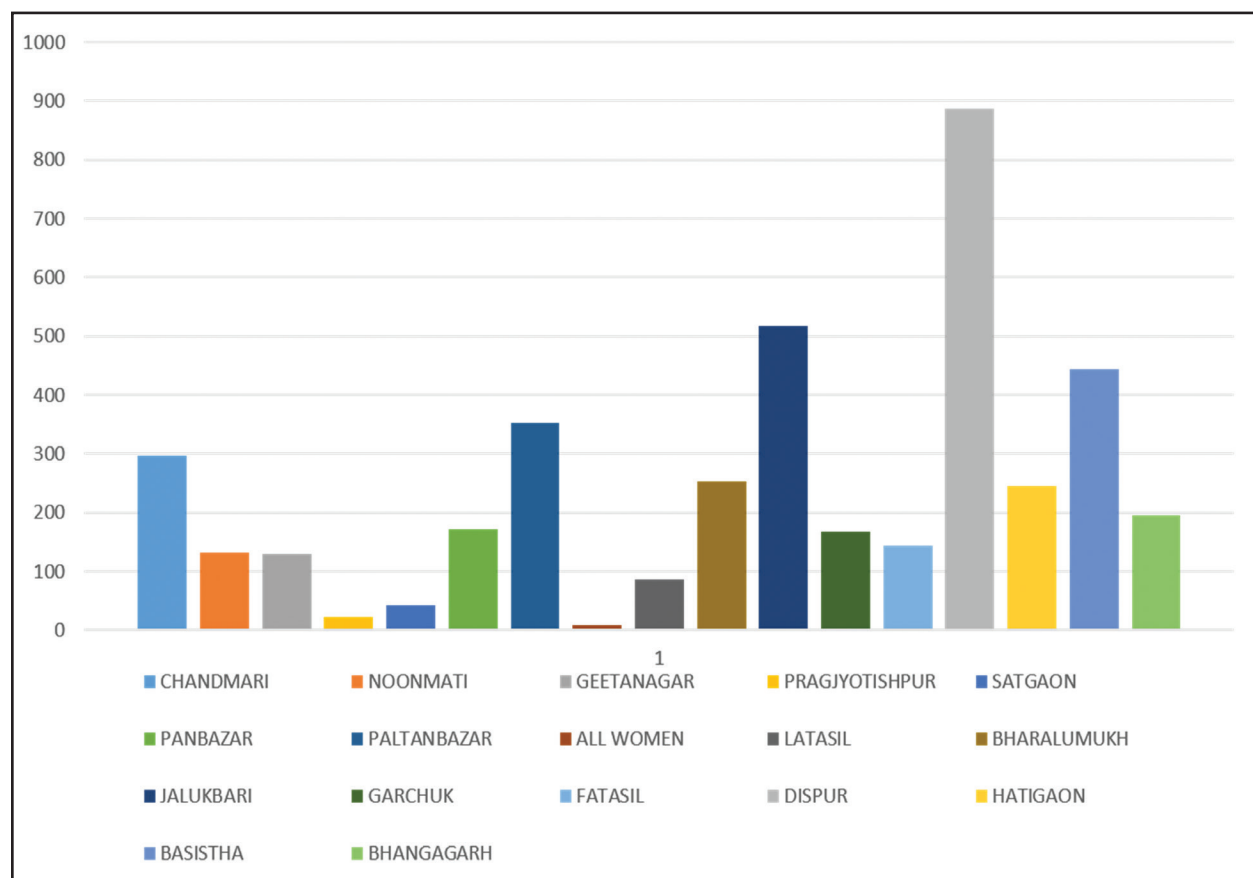


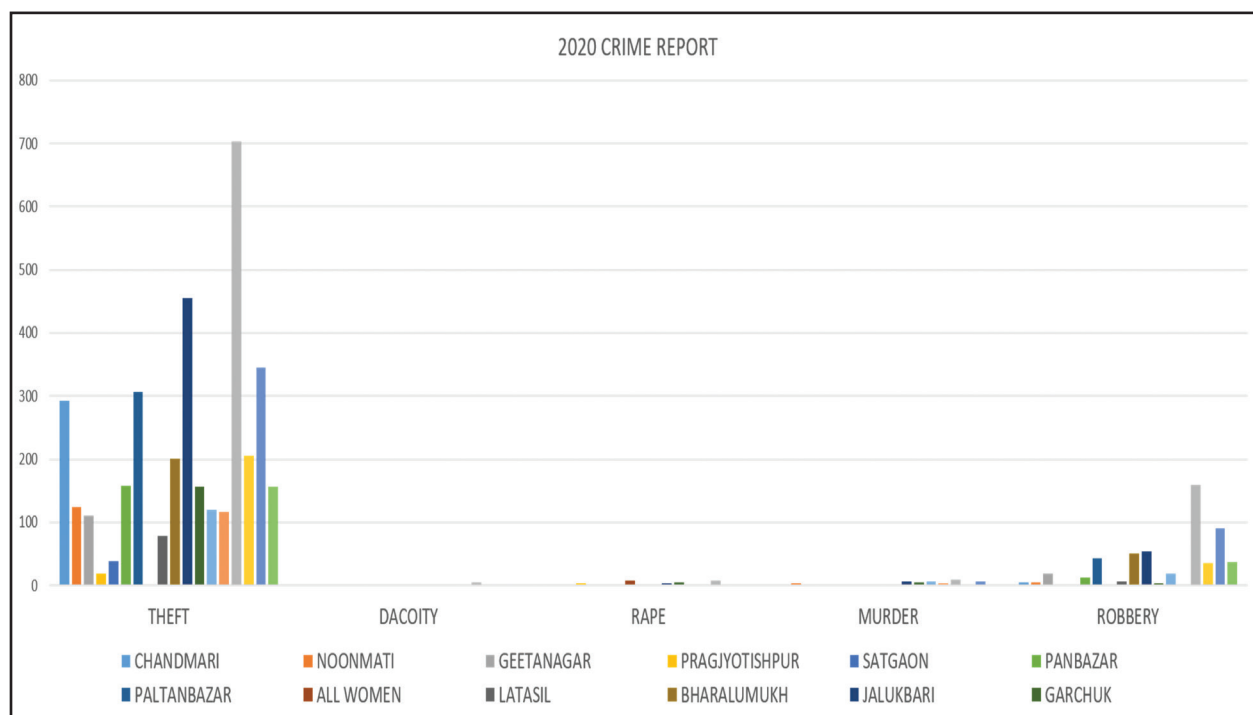
Figure 11: Map Showing Number of Crimes Recorded in Police Stations (Year 2020)



**Figure 12: Crime Recorded Per Police Station (Year 2020)**



**Figure 13: Type of Crime Cases Registered in Police Stations of Different Localities (Year 2020)**

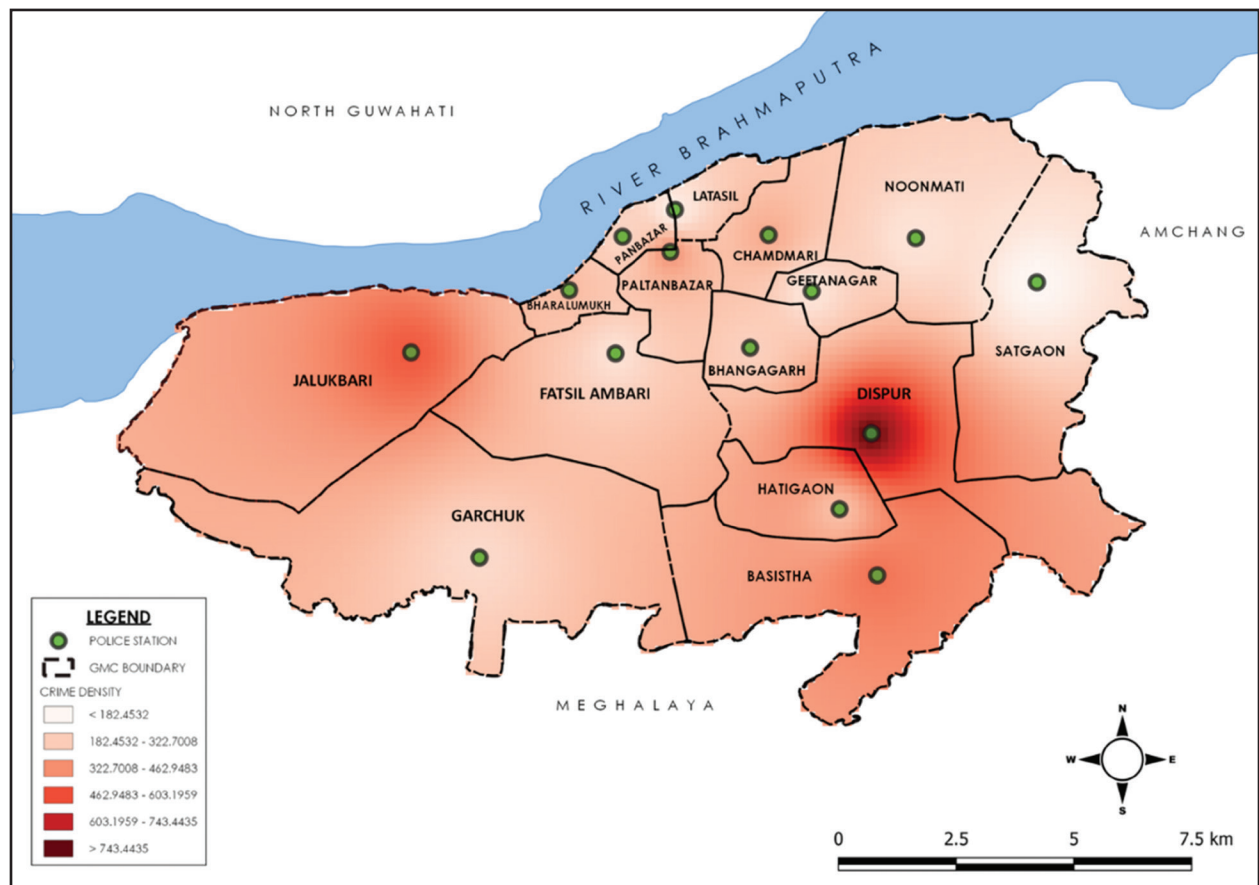


variations are probably due to the general elections in 2019, when surveillance during elections increases, a higher number of crimes may be reported by the police. Another reason is the pandemic situation, in 2020, which may result in the reduction of reported crimes (as

compared to 2018-2019) due to restricted movement of people in the city.

When the data from all the years are used for hotspot analysis, a visible crime occurrence zones were identified (figure 14).

**Figure 14: Heat Map Showing Crime Occurrences**



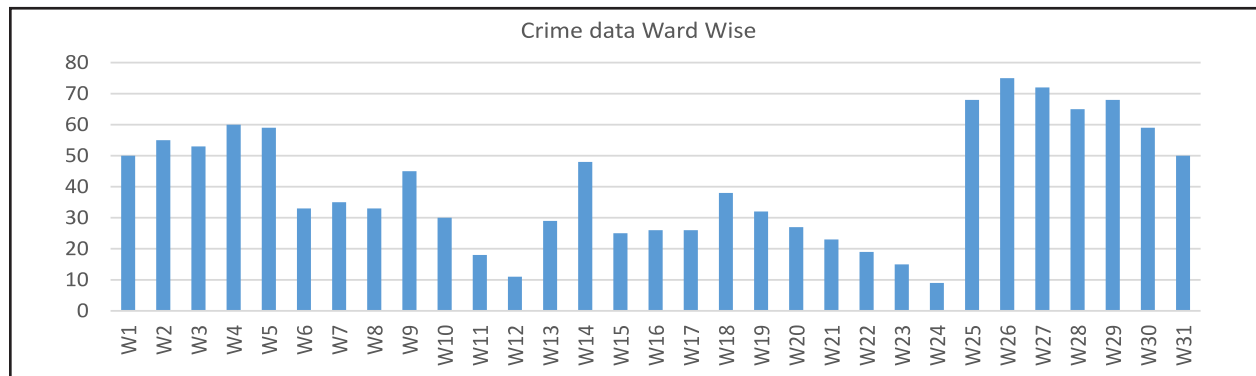
In the heat map, it is observed that Dispur reported the highest crime during all three years. Jalukbari and Basistha, also, had high crime rates. A significant shift can be observed in terms of crime rate, between 2018-19 when Paltanbazar and Chandmari followed Dispur in 2019. So, from this analysis, it can be concluded that Basistha, Dispur, Chandmari, Jalukbari and Paltan Bazar reported higher cases whereas Lataasil, Geetanagar, and Satgaon experienced low cases during the entire study period of three years (2018-2020).

Hence, all three zones west, central and east, possess areas which have high crime rates as compared to the Guwahati city (during 2018-2020). At the same time, the central zone possesses most of the low-crime areas like Lataasil, Geetanagar etc. (figure 14).

As per the collected data wards under Dispur PS such as 25, 26 (recorded highest crime occurrence with more than 70 percent respondents), and 31 with more than 50 percent people responded about the occurrence of crime; wards under Basistha PS such as 27, 28, 29, 30 and wards under

Jalukbari PS such as 1, 2, 3, 4, 5 and wards 9,14 (Paltanbazar PS) recorded highest crime which is more than 55 percent as responded (figure 15).

**Figure 15: Crime Data Ward Wise Collected through Primary Survey**



The low level of crime occurrence responses are from wards number 11, 12 (Latasil PS); 23 (Geetanagar PS); 22, 24, 25, and 31 (Satgaon PS) which responded as below 20 percent by the interviewee.

terms of recorded crimes are analysed. Most of the areas are occupied by residential, hills, and forest land uses. Very few commercial and industrial and few patches of institutional land uses are observed (figure 16).

## 6. INTERRELATION OF CRIME WITH PHYSIO - SOCIAL ASPECTS

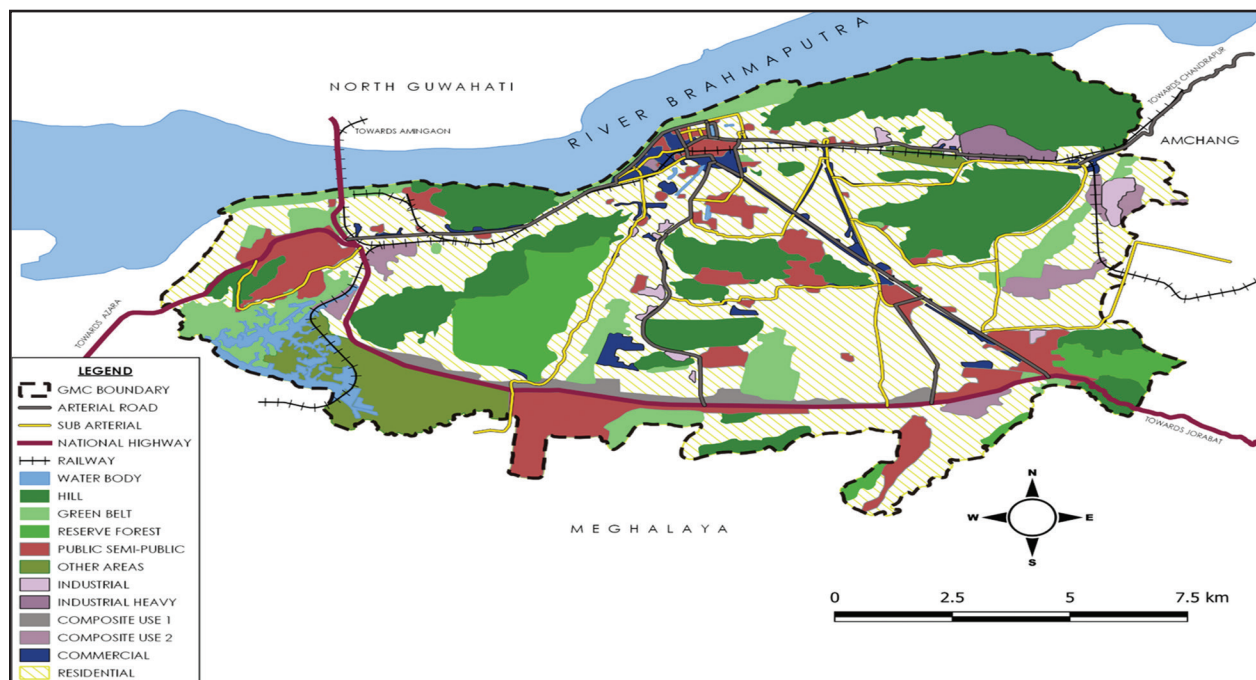
### 6.1 Land Use Land Cover and Safety

Land use and land cover aspects of the most vulnerable localities/ Police station areas in

### 6.2 Interrelation of Crime with Literacy, Population Density and Economy

For socio-economic status of the most vulnerable localities/ Police station areas in

**Figure 16: Land Use and Land Cover Map Highlighting most Vulnerable PS Jurisdictions**





terms of recorded crimes, the literacy rate (figure 17), population density (figure 18) and marginal workers rate (figure 19) has been taken into consideration.

Figure 17: Ward-Wise Literacy Rate (in Percentage)

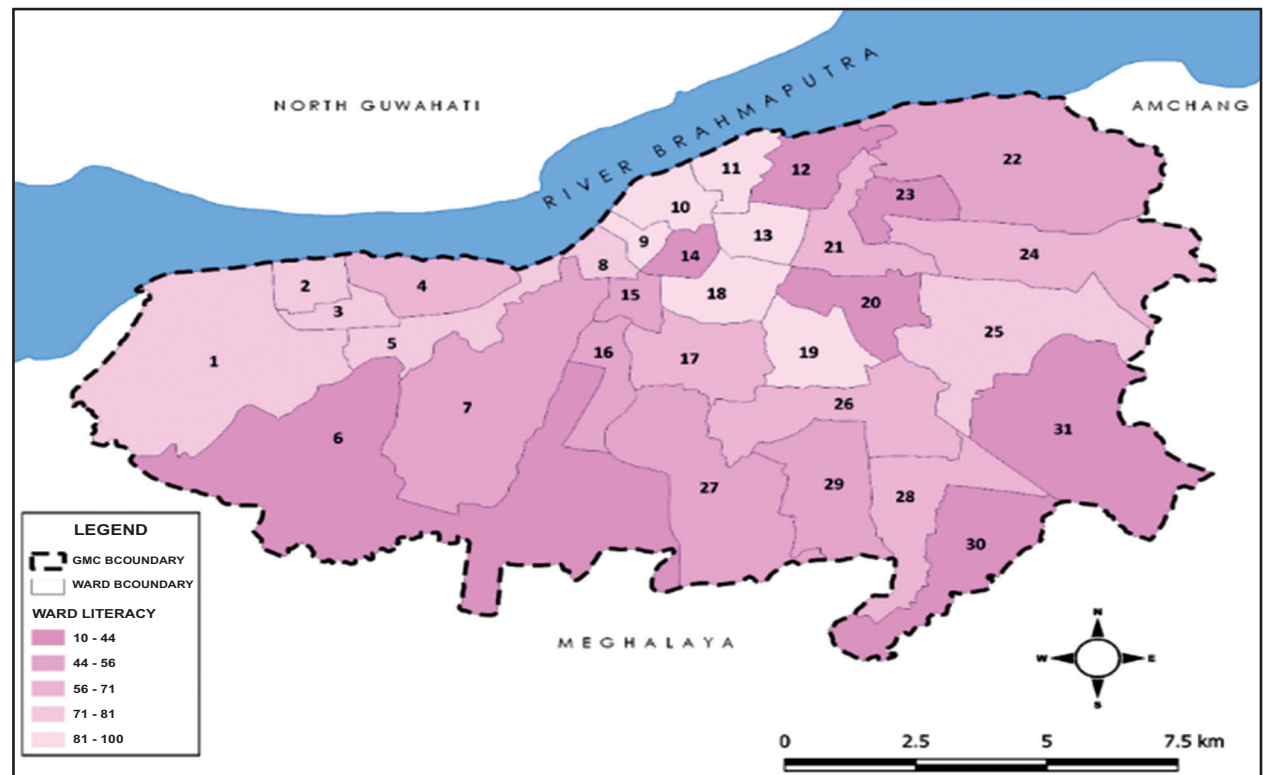


Figure 18: Ward-Wise Population Density (in Persons)

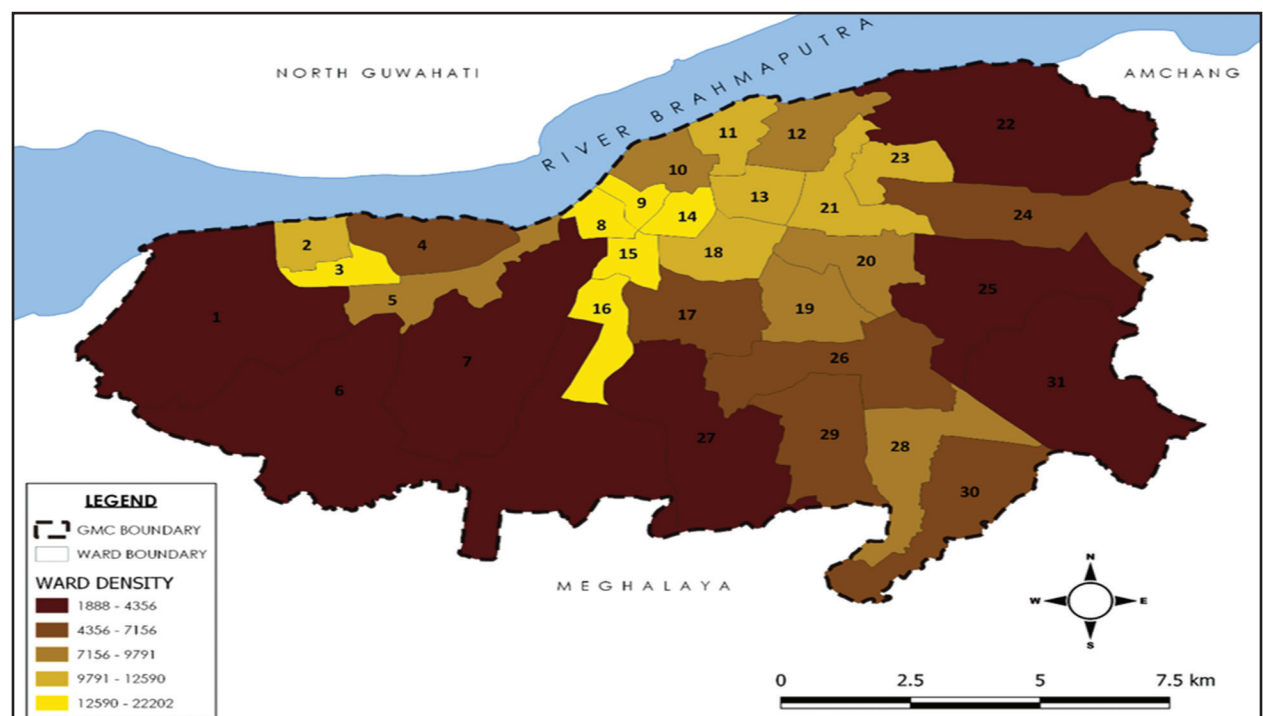
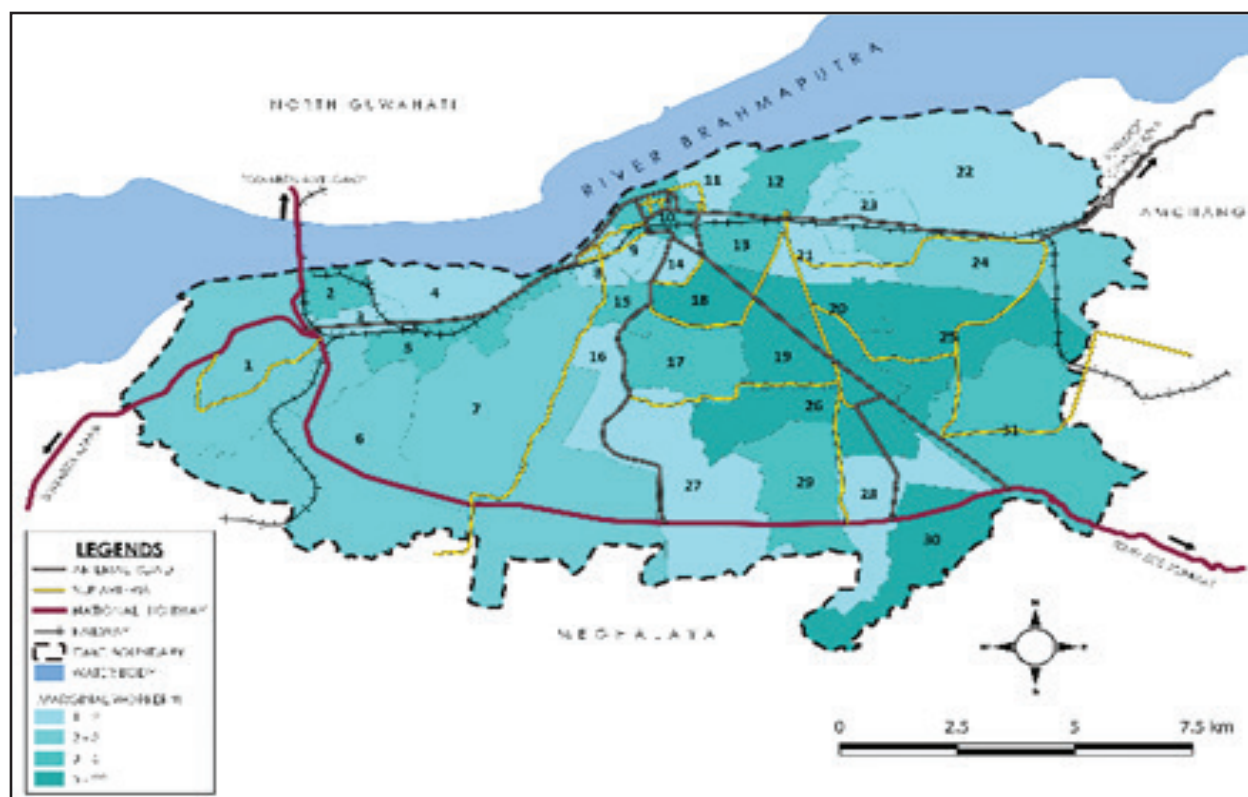


Figure 19: Ward-Wise Marginal Worker (in Percentage)



The above study on the Guwahati Municipal area infers the linkage between the physical,

social and economic factors. Table 1 shows an overall inference of the analysis done.

Table 1: Overall Inferences Drawn Analysing the Physio-Social Aspects

Major Area	Landuse	Land Cover	Literacy	Employment	Occupancy Type
Dispur	Mostly residential with institutional and commercial on road periphery	Hills towards Kharguli. Forest areas also present	Low	Low	70 percent tenant which implies non permanent population is higher.
Basistha	Mostly residential. Very low commercial Institutional area present Composite landuse present	Presence of forest areas	Very low	Fairly higher	Mostly permanent population
Jalukbari	Residential and industrial zone	Hill and reserve forests	Low	Low	45 percent tenant which implies high non permanent population present.
Chandmari	Residential and commercial along main road	Mostly hills	High	Fairly low	60 percent tenant, high migrant population.
Paltanbazar	Residential and commercial on road periphery		High	Low	60 percent tenants which implies higher migrant population.

Source: Author's observation after the study

The crime data collected from the primary survey, are compared with the socio-economic factors like literacy, marginal/main workers, and population density ward-wise. A matrix has been developed (table 2) considering

**Table 2: Crime Matrix Ward Wise**

Sl. No.	Wards	Crime	Literacy	Population Density	Main Worker
1	W1	50			
2	W2	55			
3	W3	53			
4	W4	60			
5	W5	59			
6	W6	33			
7	W7	35			
8	W8	33			
9	W9	45			
10	W10	30			
11	W11	18			
12	W12	11			
13	W13	29			
14	W14	48			
15	W15	25			
16	W16	26			
17	W17	26			
18	W18	38			
19	W19	32			
20	W20	27			
21	W21	23			
22	W22	19			
23	W23	15			
24	W24	9			
25	W25	68			
26	W26	75			
27	W27	72			
28	W28	65			
29	W29	68			
30	W30	59			
31	W31	50			

three criteria representing red, orange, and yellow colours which indicate high, moderate, and low ranges respectively. It has been seen from the matrix that, wards 1, and 2, 3, 4, 5 have the highest crimes despite having high literacy, population, and higher main worker population. Whereas, ward 22, 23, and 24 with moderate literacy rates, and higher main worker population, have the lowest crime incidents. Wards 17, 18, 19, and 21 having moderate crime occurrence show higher population density, literacy, and main worker population. The exception to this, in a few municipal wards such as wards 25, 26, 27, 28, 29, 30, and 31 crimes are observed higher, whereas the population density and literacy

rate seem to be moderate and show a high main worker population.

Therefore, in Guwahati's context, these inferences portray that the ward-wise crime occurrences are irrespective of population density, literacy, and main worker population and related to a few other factors; probably the surrounding built structure, the emerging cosmopolitan character, depleting local cultural and social engagements, ownership status, open space structure etc., as indicated by the respondents. These factors affecting the crime status of an area or ward specific to Guwahati city are beyond the scope of investigation in this research paper and might be a topic for further research.

## 7. ASSESSMENT OF "SENSE OF SAFETY" AND "QUALITY OF LIFE" THROUGH PERCEPTION STUDY

As per the results of the survey conducted, shockingly, Dispur is the safest place in peoples' perception which in the crime survey was mapped as the hotspot of crime in the city and also, which tops in all types of criminal activities. The people of areas under Geetanagar, Latasil police station were rightly claimed as safe places, which correlates with the data that showed the lowest number of crimes in these areas. On the other hand, the people feel unsafe in the areas like Chandmari, Paltan Bazar, and Maligaon. The reason may be the presence of a majority of the population that are job migrants and the majority (almost 60 percent) are residing as tenants. The absence of a sense of belongingness among the migrants who reside as tenants (non-permanent residents) in these areas may encourage the external forces to commit crime. Being a non-permanent population, differences in language (Maligaon being the Bengali-dominated area), and cultural differences might be a reason for the development of insecurity among the

residents. Among the localities such as Paltan Bazar, Chandmari, Dispur, Basistha and Jalukbari, the employment rate is very low. Instead of having a higher literacy rate, Jalukbari, Paltan Bazar's employment rate is less than 50 percent. Basistha areas having an 80 percent residential population show low levels of literacy and the employment rate is also moderate. The landcover of the Chandmari area is mostly hills with poor street conditions, low street lighting and crimes such as thefts are common near railway lines. The Paltan Bazar area is comprised of both residential and commercial land and presence of high migrating and floating population due to the presence of major transportation systems such as the railway station and ASTC bus stop. Crime is mostly registered in Gandhi Basti and Birubari regions near Paltan Bazar. The sense of safety in the Uzan Bazaar locality is high and respondents marked the area as safe which also co-relates with the crime statistics of the area.

The respondents were asked to suggest methods for reducing or preventing crime and encouraging a sense of safety in their neighbourhoods. The majority (41 percent of respondents) suggested increasing street illumination, 15 percent suggested installing contemporary crime-fighting tools like CCTV systems, 39 percent suggested having police patrolling and vigilance, 5 percent suggested having good education and employment scenarios for minimising crime in the city (figure 20). The respondents, on asking the reasons for crime events in the city cited reasons such as the increasing drug abuse victims (25 percent of respondents), insufficient street illumination (19 percent of respondents), unemployment status of the city (37 percent of respondents), Immigration (19 percent of the respondents) depleting traditional social and cultural systems, intermixing of culture and changing the ethos of Assamese society, are causes of increasing crime incidents in the city (figure 21).

Figure 20: Suggestions for Crime

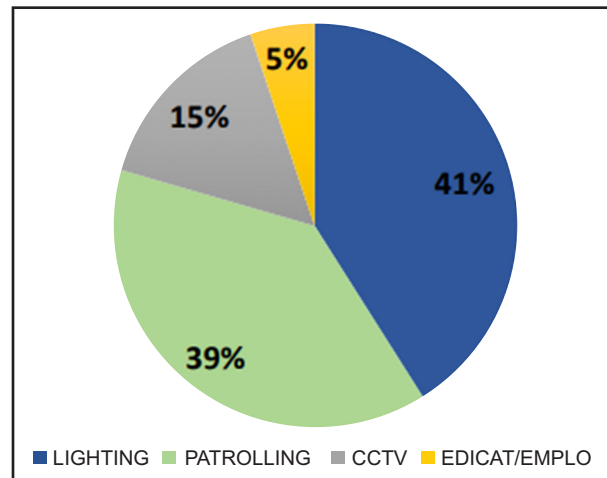
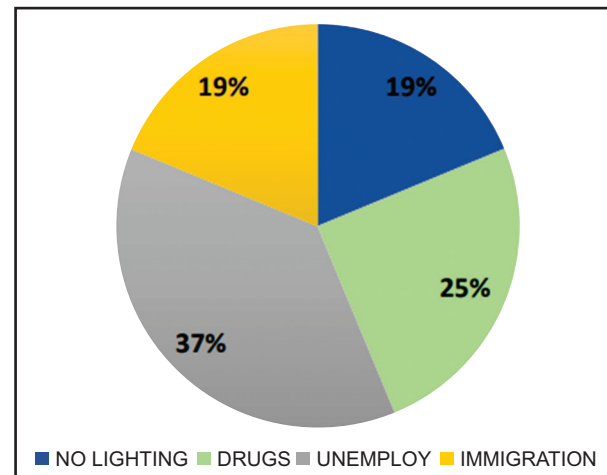


Figure 21: Reason for Occurrence of Crime Prevention



The perceived quality of life as responded to by the citizens is moderate in most of the areas of the city and significantly high in areas like Ujan bazaar, a traditional residential neighbourhood, Satgaon and Garchuk area. The low level of quality of life was responded to by the residents of Chandmari, Paltan Bazar, and Maligaon areas despite having a high level of urbanisation and a wealthy class. The results indicate that perceived quality of life is correlated with the sense of safety among inhabitants. Dispur, the capital despite having high crime incidents shows a high sense of safety and subsequently displays a high level of quality of life. The indication of a high quality of



life might be associated with other factors of quality of life that can be investigated as a topic of future research.

The table 3 has been made using the crime statistics and sense of safety data collected from the primary survey. The sense of safety has been categorized into three categories high, moderate, and low depicting by colours red, orange, and yellow respectively. The matrix shows that perceived personal safety is not correlated always with the data on crime

**Table 3: Sense of Safety Matrix Ward Wise (as per Primary Survey)**

Sl. No.	Wards	Crime	Sense of Safety
1	W1	50	
2	W2	55	
3	W3	53	
4	W4	60	
5	W5	59	
6	W6	33	
7	W7	35	
8	W8	33	
9	W9	45	
10	W10	30	
11	W11	18	
12	W12	11	
13	W13	29	
14	W14	48	
15	W15	25	
16	W16	26	
17	W17	26	
18	W18	38	
19	W19	32	
20	W20	27	
21	W21	23	
22	W22	19	
23	W23	15	
24	W24	9	
25	W25	68	
26	W26	75	
27	W27	72	
28	W28	65	
29	W29	68	
30	W30	59	
31	W31	50	

occurrences. In wards 1, 4, 5, 25, 27, 28, and 30 crime occurrence is high as per police station data, but the people perceive these wards as having a high sense of safety. Likely, wards 2, 3, 29, and 31 are highest in crime, but people perceive these as moderately safe. On the other hand, Wards 17, 19, and 21 have moderate crime records still people feel a low sense of safety there. In wards 22, 23, and 24 have low recorded crime and people residing there, also, feel a higher sense of safety.

## 8. OVERALL FINDINGS OF THE RESEARCH

The major findings of the research are listed below:

- The research outlines a scientific-methodical approach to crime mapping in urban areas, identify hotspots of crime and investigates the sense of safety and quality of life through a “Perception Study”.
- It has been noticed that there was an increase in crime rate from 2018 to 2019, in the areas that are commercial, CBD areas and along the transportation routes. The crime rate in Guwahati city decreased during the COVID-19 times (from 2019 to 2020).
- The yearly occurrence of crime in Guwahati city has increased by 2.88 percent from 2018 to 2019, which might be due to increased surveillance during elections and a higher number of crimes that may be reported.
- The traditional Assamese neighborhoods of the city such as Uzan bazaar areas display less crime and a high sense of safety among the residents; due to the presence of social integrity and a sense of community.
- The areas of the city with highly migrated people, tenants such as Chandmari, Maligaon etc., display high crime rates and, a low level of sense of safety and

quality of life; this might be due to less belongingness and social integrity.

- The finding of the research is that the sense of safety and quality of life is subjective and does not totally correlate with the physical attributes of a space, although physical parameters has a vital role. Even incidents of crime are not an absolute reason for insecurity and low quality of life felt by an individual in an area.

## 9. CONCLUSION

People's perceived safety has a direct effect on their quality of life. The literature review proves that the psychological aspects of people play an important role in achieving safety and security. Apart from the psychological aspects; the physical aspects (like built environment quality, infrastructure availability, land use characteristics, active and vibrant places, walkable streets etc.) and the social aspects (such as interaction of people, public places, sense of community etc.) and social forces and control systems (norms and regulations, traditions, customs etc.) are vital for reduction of crime and increasing the sense of safety. The present research has highlighted the pattern of crime and sense of safety and subsequently the quality of life of the residents of Guwahati city. It is found that areas with low literacy rates, unemployment status and lack of effective infrastructure facilities show high crime rates and low sense of safety. At the same time, a few areas differ from this statement such as the case of Dispur locality, which has a high rate of crime despite showing a high sense of safety and quality of life; paving the way for a detailed investigation of this case in future. The respondents in a primary survey recommended a few crime control measures for Guwahati city like CCTV installation, street lighting, improvement of employment status and education among the citizens. The research calls attention to not only the physical aspects but claims the social

and perceptive aspects are equally important in ensuring safety and security and reduction of crime in urban studies. Further, research in the field of effective urban design and urban planning criteria, and urban planning interventions for increasing a sense of safety and quality of life can pave the ways for a sustainable, safe and resilient urban future.

## REFERENCES

- Arellana, J., Saltarín, M., Larrañaga, A.M., Alvarez, V. and Henao, C.A., 2020. Urban walkability considering pedestrians' perceptions of the built environment: a 10-year review and a case study in a medium-sized city in Latin America. *Transport reviews*, 40(2), pp.183-203.
- Australian Unity | Banking, financial advice, retirement living & private health insurance (no date). <https://www.australianunity.com.au/>
- Behnouth, A., 2017. Urban legibility, analyzing urban elements. *European Online Journal of Natural and Social Sciences*, 6(1), pp.147-162.
- Blachut, J., Gaberle, A. and Krajewski, K., 2001. *Kryminologia*. Gdańsk.
- Christmann, K. and Rogerson, M., 2004. Crime, fear of crime and quality of life: Identifying and Responding to Problems Research Report 35.
- Cohen, M.A., 2008. The effect of crime on life satisfaction. *The Journal of Legal Studies*, 37(S2), pp.S325-S353.
- Crime in Guwahati* (no date). <https://www.numbeo.com/crime/in/Guwahati>.
- Dempsey, N., 2008. Quality of the built environment in urban neighbourhoods. *Planning, Practice & Research*, 23(2), pp.249-264.
- Desai, R, Mahadevia, D, & Mishra, A 2014, *City Profile: Guwahati Centre for Urban Equity (CUE)*, <[www.cept.ac.in/cue](http://www.cept.ac.in/cue)>.
- Directorate of Census Operations, Assam, 2011. *District census handbook, Kamrup Metropolitan*. Guwahati.
- Gillani, S.Y.M., Rehman, H.U. and Gill, A.R., 2009. Unemployment, poverty, inflation and crime nexus: Cointegration and causality analysis of Pakistan. *Pakistan Economic and Social Review*, pp.79-98.
- Guedes, I.M.E.S., Domingos, S.P.A. and Cardoso, C.S., 2018. Fear of crime, personality and trait

emotions: An empirical study. *European Journal of Criminology*, 15(6), pp.658-679.

Lombardo, R. and Falcone, M., 2011. Crime and Economic Performance. A cluster analysis of panel data on Italy's NUTS 3 regions. *Università della Calabria, Dipartimento di Economia, Statistica e Finanza (Ex Dipartimento di Economia e Statistica)*.

Luco, C.A. and Lazo, N.M., 2006. Citizenship and security in Chile: Reviewing the role of segregation in the causes of crime in large cities. *Eure-Revista Latinoamericana De Estudios Urbano Regionales*, 32(97), pp.37-48.

Lynch, M.J.; Barrett, K.L. (2019) Social disorganization theory. In *The Routledge Companion to Criminological Theory and Concepts*; Routledge: London, UK, 2019.

M, P.K. (2023) Pavithra K M, author at FACTLY. <https://factly.in/author/pavithrakm/>.

National Crime Records Bureau (n.d.), <http://ncrb.gov.in/>.

National Crime Records Bureau., (2021) *Crime in India 2021 Statistics Volume I*.

New Delhi: National Crime Records Bureau (Ministry of Home Affairs).

Omotor, D.G., 2010. Demographic and Socio-economic determinants of crimes in Nigeria (A panel data analysis). *The Journal of Applied Business and Economics*, 11(1), p.181.

Socha, R. (2021) Sense of Security and Crime: The Residents' Perspective. *European Research Studies Journal*, 24(Special 4), pp.501-511.

Sypion-Dutkowska, N & Leitner, M 2017, 'Land use influencing the spatial distribution of urban crime: A case study of Szczecin, Poland', *ISPRS International Journal of Geo-Information*, vol. 6, no. 3.

Warr, M., 2000. Fear of crime in the United States: Avenues for research and policy. *Criminal justice*, 4(4), pp.451-489.

Wikström, P.O.H. and Treiber, K., 2016. Social disadvantage and crime: A criminological puzzle. *American Behavioral Scientist*, 60(10), pp.1232-1259.



# Cash Holding Puzzle: A Cross Country Municipal Finance Analysis Based on Selected ULBs

**Sobhith Mathew Jose, Harshit Sosan Lakra**

## Abstract

*This research examines the reasons behind the cash reserves held by Urban Local Bodies (ULBs) and determines if they reflect prudent municipal financial management or lead to agency problems. Due to difficulty predicting their exact revenue and expenditure requirements, ULBs frequently maintain cash reserves to deal with unexpected financial shocks. To better understand why ULBs hold cash and whether excess cash leads to agency problems, the study analyses 38 ULBs from India and 104 ULBs from Canada. The statistical findings reveal that the factors contributing to cash holdings vary across ULBs in different countries, with Municipal Corporations' growth, population size, state revenue receipts, capital expenditure requirements, and debt-per-capita being significant determinants. Additionally, the study investigates the relationship between excess cash and administrative overhead, finding no evidence of agency issues but indicating that excess cash is managed prudently. Overall, the results suggest that ULBs hold cash primarily for precautionary and transactional purposes.*

## 1. INTRODUCTION

Niti Ayog, Government of India, (2021) report titled: Reforms in Urban Planning Capacity In India” emphasizes the need to build local leadership in mobilizing finances among other needs to make cities more economically productive, livable, and inclusive. Accordingly, multiple urban reforms have been initiated in the country for Urban Local Bodies (ULBs). Furthermore, the 15<sup>th</sup> Finance Commission pumped in considerable funds to support ULBs; however, constraints of capacity to absorb and spend remain prevalent (Forbes India, 2021). Keeping this in perspective, the study reviews the ULB’s capacity to absorb and spend money by reviewing cash holdings. The level of cash holding is a crucial parameter for the sustenance of any organization (Ginglinger & Saddour, 2007). Cash flow is the lubricant that maintains

the smooth working of the organization. It has been argued that the world’s financial crises, recently experienced, have impacted corporate organizations or nations to such an extent that a lack of cash holding can put any organization into insolvency (Lima, 2020). Municipal Corporations are not an exception to this phenomenon; therefore, they must monitor their cash holdings. Municipal Corporations provide public services essential for the function of cities (Rusek et al., 2016). ULBs have been identified as the agents for stimulating socio-economic development in cities and towns of any nation. They serve as the third level of government within the administrative framework and represent the government entity closest to the general Population (Singh & Singh, 2015). Cash holding procedure will help ULBs with urban planning that will lead to prudent investment for the development of urban areas. The ULBs shoulder the responsibility of establishing the basic socio-economic amenities and infrastructure to cater to the population’s diverse needs. Their role in sustaining the sharing economy is vital as they play crucial

<sup>1</sup> Sobhith Mathew Jose, Research Scholar, Department of Management Studies, IIT Roorkee, Email-sjose@bm.iitr.ac.in

<sup>2</sup> Harshit Sosan Lakra, Assistant Professor, Department of Architecture and Planning, IIT Roorkee, Email-hsl31fap@iitr.ac.in



roles in urban planning and policy formulation (Pagan *et al.*, 2021). Hence, the ULBs occasionally keep varying their cash reserves to absorb the shocks of economic stagnation. So, policymakers must design a proper cash management plan for ULBs in India to optimize the efficient use of liquid assets.

A significant contribution in the domain of ULBs and cash holding is seen by Gore (2009), Bates *et al.* (2009) for the US context, Hoque *et al.* (2020) for New Zealand, and Abdullah & Muthia (2017) for Indonesia. The researchers noted that ULBs experiencing fluctuations in revenue receipts, limited revenue sources and rapid growth tend to maintain higher cash reserves. Meanwhile, the larger ULBs, which receive substantially higher funding from the state governments, maintain lower cash balances. Such understanding helps in decision-making for the varied ULBs in the country.

Therefore, the study explores the pattern of cash holdings among the ULBs and identifies its determinants to enable a greater financial understanding of the ULBs in the country. Scholarly investigations into the determinants shaping municipal cash reserves have been pursued in the United States (Gore, 2009), Indonesia (Abdulla & Muthia, 2017), and New Zealand (Hoque *et al.*, 2020). However, no comparable research endeavors have been undertaken within the academic landscape of Canada and India. Due to the structural, political, and constitutional differences that exist between these nations, there exists a felt need to evaluate the determinants of municipal cash holdings among Indian and Canadian Municipal Corporations and to evaluate whether cash holding results in prudent financial management or leads toward agency issues by analyzing the case from a developing and developed economies perspective.

This paper helps municipal councilors see whether they are keeping an optimum level of

cash in their Corporations, considering their operational, precautionary, and speculative demands. It also helps the municipal councilors and stakeholders (residents) to see whether they are using these funds prudently or whether it is leading to agency conflicts, as pointed out by Jenson (1986) and Fisman & Hubbard (2005). It is expected that the mayors, municipal councilors, and city planners can use this study results and suggestive directions to see whether they are keeping appropriate funds or not, and this will also help them to budget their infrastructural needs with a more scientific base.

## 2. LITERATURE REVIEW

### 2.1 Urban Planning, Urban Finance, and Municipal Cash Holdings

Urban planning and urban finances are essential components of sustainable urban development. Cities can address complex urban planning challenges and create inclusive, resilient communities by leveraging innovative financing mechanisms and embracing participatory approaches (Glaeser & Gottlieb, 2008). Urban areas are dynamic hubs of economic activity, social interaction, and cultural exchange, which attract millions of people seeking opportunity and a better quality of life. However, the sustainable development and effective management of cities require careful coordination between urban planning and urban finance. Urban planning involves strategically designing, regulating, and managing urban spaces to achieve desired social and economic environmental outcomes (Fainstein & Campbell, 2011). On the other hand, urban finance facilitates the funding mechanisms to finance urban planning activities through public investments, public-private partnerships, and raising funds through capital markets (Slack, 2009; Zhao *et al.*, 2022). Sustainable financing channelized through urban local bodies ensures the timely construction, maintenance, and expansion of

essential public infrastructure to meet the needs of urban populations (NP Simpson et al., 2009)

Urban planning and municipal cash holdings are interconnected elements vital for cities' effective management and development. Urban planning involves systematically organizing urban spaces to optimize resources, enhance livability, and promote sustainable growth (NP Simpson et al., 2009). On the other hand, municipal cash holdings refer to local governments maintaining reserves of liquid assets to manage cash flow, respond to emergencies, and fund capital projects (WB Hildreth, 1996). Though there existed limited literature in the past to directly link urban planning and municipal cash holdings, their relationship is implicit in the financial management strategies of cities (A. Camparano et al., 2018). As cities implement urban plans and development projects, they require adequate financial resources to fund infrastructure, public services, and other initiatives outlined in their plans. Municipal cash holdings provide the financial stability and flexibility necessary to support these endeavors, ensuring that cities can effectively implement their urban planning objectives while managing fiscal uncertainties and unforeseen expenses (WB Hildreth, 1996; A Camparano et al., 2018). Moreover, prudent cash management can enhance a city's creditworthiness, enabling it to access financing at favorable terms for long-term investments in urban infrastructure and development (NP Simpson et al., 2009). Therefore, integrating financial management with urban planning is crucial for sustainable urban development and improving city resilience.

## 2.2 Urban Finance Structure in India and Canada

The urban finance structure in India is a dynamic framework governed by a

combination of constitutional provisions, central and state government schemes, finance commission recommendations, and the revenue-raising capabilities of ULBs (PK Mohanty et al.; 2007; NITI Ayog, 2021; R Awasthi et al.; 2021). Constitutionally mandated devolution of financial powers to ULBs ensures their fiscal autonomy, while central government schemes in past and present, such as the Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Smart Cities Mission, and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) provide financial assistance for urban development projects. The NITI Aayog and State Finance Commissions are pivotal in evaluating the financial status of Urban Local Bodies (ULBs) and proposing revenue-sharing guidelines between State Governments and ULBs (NITI Aayog, 2021; Verma et al., 2022). ULBs generate revenue through property taxes and user fees, supplemented by grants, loans, and transfers from state governments. Some ULBs also utilized municipal bonds as a mechanism to raise money from the capital market (PK Mohanty et al., 2007; Nallathiga, 2015; Agrawal, 2020; NITI Ayog, 2021; Verma et al.; 2022). The urban finance structure in India is characterized by a continuous interplay of policies, recommendations, and fiscal instruments aimed at fostering sustainable urban development and improving the quality of life in urban areas (Tan & Taeihagh, 2020; NITI Ayog, 2021).

The financial framework of urban municipalities in Canada involves a blend of revenue streams, such as property taxes, charges for services, subsidies from provincial and federal authorities, and assorted additional fees (H. Kitchen et al., 2019; Meloche & Vaillancourt, 2021). Municipal Corporations in Canada have considerable autonomy in setting property tax rates and determining service charges. Property taxes are the primary revenue sources for

municipalities, constituting a significant portion of their operating budgets. However, user fees and intergovernmental transfers also account for a significant share (H. Kitchen et al., 2019; Meloche & Vaillancourt, 2021). Grants from higher levels of government play a crucial role in supporting Canadian Municipal Corporations' infrastructure and service delivery. These grants often target public transit, affordable housing, and infrastructural renewal (Tremblay-Racicot et al., 2023). Sustainable urban finance requires a combination of stable revenue sources, predictable funding mechanisms, and strategic investment planning to address the growing infrastructure needs of Municipal Corporations.

The lack of human resource capacity building hinders urban planning and finance by limiting the effectiveness and efficiency of project executions. Designing and managing projects, especially those involving collaboration with the private sector, becomes challenging without adequately trained personnel with skills like project management, communication, and negotiations. This limitation can impede the development and implementation of robust urban plans and financing strategies, potentially leading to inefficiencies, delays, and suboptimal outcomes in urban developmental projects. However, cash-holding in Municipal Corporations provides the financial resources necessary to invest in human resources capacity building, thereby improving the effectiveness, efficiency, and sustainability of urban planning. Ensuring robust urban finance structures is essential to support the continued growth and development of Indian and Canadian cities.

### 2.3 Cash Holdings and its Significance

Cash on its own cannot earn any profit or benefits unless it is judiciously used or invested. Idle cash indicates that the organization cannot use cash for the

betterment of its stakeholders (Maheshwari & Rao, 2017). Bates et al. (2009) observed a significant elevation in the proportion of cash-to-assets holdings among US firms, which they attributed to heightened risk associated with cash flows. The information asymmetry of larger organizations is lesser than that of small organizations. As a result, small organizations experience higher limitations while borrowing and the cost of external financing are also high (Ang, 1991). Corporate bodies consider cash holdings a policy variable in the business world. According to Opler et al. (1999), the policy may vary the holdings according to the changes in the market opportunities and firm-specific reasons, including risk, business size, credit accessibility, and growth. Cash is vital to every operation for profit and non-profit entities, particularly business entities (Weston, 2013). Researchers quite often debate the reasons for cash holdings by corporate entities. Prior studies relating to corporate cash holdings confined that there exists a practice of holding cash by entities functioning in developed countries and emerging economies. Corporate cash holdings literature defines cash holdings as "a proportion of cash and cash equivalents deflated by total assets" (Opler *et al.*, 1999). Under UK settings, the average cash holdings were 9 percent (Al-Najjar & Belghitar, 2011) and 13 percent in U.S. firms (Dittmar & Mahrt-Smith, 2007). Ferreira and Vilela (2004) pointed out that 14.8 percent of cash holdings by the firms are in the "European Monetary Union." In the context of Real Estate Investment Trusts (REITs), cash holdings were reported to be as small as 1.57 percent of total assets (Damodoran, 2006).

### 2.4 Cash Holdings: Determinants

The empirical study conducted by Gore (2009) during the period 1997-2002 among U.S. ULBs revealed that more giant corporations try to

accumulate more liquid funds to correspond with the growing population size in the region. The fund's requirements for the execution of the infrastructure projects are the reason for increased cash holdings (Gore, 2009). The financially constrained ULBs tend to conserve high levels of cash holdings for tapping the market opportunities as and when they arise. Further, future growth potential is empirically found to cause higher cash holdings, as established by Denis and Shibikov (2009).

Numerous prior studies have emphasized the importance of firm size in relation to cash reserves. According to Miller and Orr (1966), larger companies tend to maintain lower levels of cash compared to smaller ones, a trend attributed to the efficiencies gained through economies of scale in production. Additionally, the model proposed by Miller and Orr (1966) posits that smaller firms typically hold more cash due to the perceived higher costs associated with external fundraising. Liquidity is a primary concern of small-sized firms and significantly influences their cash management practices. Further, access to the capital market enables large firms to manage their cash position (Kahle & Stulz, 2013). Titman and Wessels (1988) contend that the reduced risk of financial distress justifies larger companies maintaining lower levels of cash reserves. Previous research provides empirical backing for a negative correlation between firm size and cash holdings (Ferreira & Vilela, 2004; Gore, 2009; Bigelli & Sanchez, 2012). However, Ozkan & Ozkan (2004) and Guney et al. (2007) did not discover any significant association between organizational size and cash reserves.

The ULBs receiving higher state revenue will likely hold less cash. Prior studies indicate that ULBs with higher cash reserves receive a comparatively lower percentage of state revenue. Bates et al. (2009) suggest an inverse

relationship between capital expenditure and cash reserves, positing that capital expenditures contribute to asset creation or enhancement, thereby serving as collateral for borrowing. However, offering a contrary viewpoint, Riddick and Whited (2009) contend that increased capital expenditure actually correlates with higher cash holdings. They argue that substantial investment in capital signifies promising investment opportunities and serves as a buffer against financial distress. Gore (2009) describes operating expenditure as a control variable in a study among ULBs in the US. Availability and accessibility to the debt market are inevitable for sustaining any economic or non-economic activity. Gore (2009) indicates that ULBs' cash holding and credit market accessibility are negatively related due to the high transaction cost and imperfect access to the credit market. Access of ULBs to the credit market results in lesser precautionary cash holding (Zainon *et al.*, 2014). Availability and accessibility to the debt market are inevitable for sustaining any economic or non-economic activity. Financial leverage significantly impacts the extent of cash holdings. Empirical evidence has been put forth by Kim *et al.* (1998), Opler *et al.* (1999), and Ozkan & Ozkan (2004) in support of the viewpoint above.

## 2.5 Cash Holdings and Agency Issues

In a representational democracy, the people are governed by elected officials who serve as trustees of the people and are answerable to the people for the authority they rest with (Stewart, 1984). As per Managerial Accountability theory, those individuals who have been given responsibility must account for the creation of outputs or the efficient use of resources to accomplish goals (Mulgan, 2000). So, Municipal Corporations context is a clear-cut case for checking agency issues as there exists the principal-agent relationship. Jensen, 1986 pointed out the potential possibility of agency issues when excess cash



has been accumulated in the organization. Gore (2009) attempted to investigate the potential impact of excess cash reserves on agency problems versus prudent financial management by examining the association between municipal efficiency (measured by taking ‘administrative overhead’ as a proxy) and managerial compensation and tax reductions.

### 3. DATA COLLECTION AND METHODOLOGY

Municipal financial data has been collected from 38 Indian ULBS from 2013-14 to 2017-

08 financial year, 39 ULBS from the U.S., and 104 Canadian ULBs data for 2014-2019 based on data availability and consistency. Financial data for 2020 and 2021 has been ignored as the year can’t be considered normal due to the exceptional circumstances resulting from the COVID-19 pandemic. The study considered the cash holding ratio as the dependent variable and considered tax revenue, growth, size, state revenue, capital expenditure, administrative expense ratio, and debt per capita as independent variables (table 1).

**Table 1: Municipal Finance Management Variables & Formula**

Sl. No	Municipal Finance Management Variable	Formula
1.	Cash Holding Ratio (Dependent Variable) (Gore;2009)	The ratio of cash and bank balance to monthly operating expenditure
2.	Tax Revenue (Independent Variable) (Edwards et al., 2016)	The ratio of Tax revenue (t) to Tax revenue (t-1) deflated by Population (t)
3.	Growth w.r.t Population (Independent Variable) (Myer, 1977; Baber and Gore, 2008; Gore, 2009; Denis and Sibikov, 2010)	The ratio of Population (t) to Population (t-10)
4.	Population Size (Independent Variable) (Miller and Orr, 1966; Rajan and Zingales, 1995; Opler et al, 1999; Core et.al, 2006)	Log of the Population
5.	State Revenue (Independent Variable) (Gore, 2009)	The ratio of state revenue to total revenue
6.	Capital Expenditure (Independent Variable) (Bates et al., 2009; Ridrick and Whited, 2009; Kim et al., 2011)	The ratio of Capital Expenditures (fixed assets of current year - fixed assets of previous year + accumulated depreciation of current year) to total assets
7.	Administrative Expense Ratio (Independent Variable) (Gore, 2009)	The ratio of administrative operating expenses (establishment expense + administrative expense) to Total Expenditure
8.	Debt Per Capita (Independent Variable) (Kim et al, 1998; Opler, 1999; Ozkan and Ozkan, 2004, Gore, 2009)	The ratio of Debt outstanding (secured + unsecured loans) to Population (t)

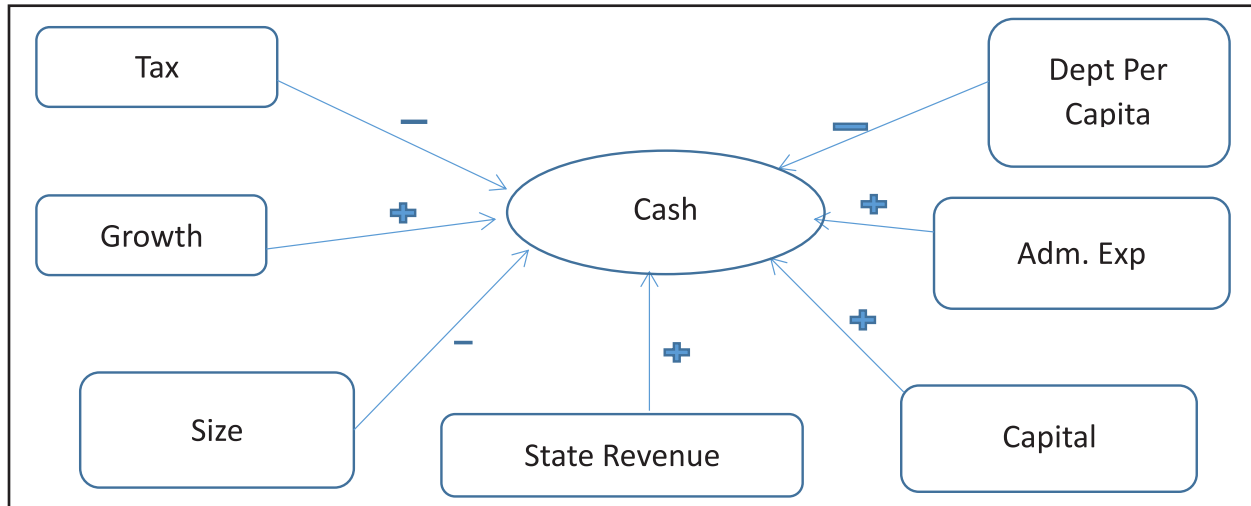
The study investigates the determinants of municipal cash holdings, considering cash holding as the ratio of cash and bank balance to monthly operating expenditure. The independent variables explored include tax revenue, growth, size of the corporation, state revenue, capital expenditure, administrative expense ratio, and debt per capita. The hypotheses posit a positive association between

municipal cash holdings and tax revenue, growth, state revenue, and administrative expenditure ratio while suggesting a negative relationship with the size of the corporation, capital expenditure, and debt per capita. These hypotheses are grounded in existing literature (Rajan & Zingales, 1995; Lang et al., 1995; Core et al., 2006; Bates et al. (2009) Riddick and Whited (2009) Gore, 2009 and by Kim et

al. (2011) Edwards *et al*, (2016) and theories surrounding municipal finance such as fiscal federalism theory and revenue diversification theory, aim in to provide insights into the

factors influencing cash management practices within Municipal Corporations and its graphical representation of the hypotheses is shown in figure 1.

Figure 1: Framed Hypothesis



Source: Authors Estimations based on literature Review

### 3.1 Cash Holding Model Specification

In this study, 27 determinants were identified, out of which seven variables were selected for the data collection and analysis based on the availability of data concerning ULBs Canada. Accordingly, the specified model for cash holding includes -tax revenue, growth,

size, state revenue, capital expenditure, administrative overhead, and debt per capita. In this study, the balance at the end of the financial year is considered by Gore (2009).

The subsequent model is employed to assess the factors influencing cash reserves for Canadian ULBs; the basic model for the our paper is:

$$\text{Cash holding}_{it} = \beta_0 + \beta_{jxrit} + \alpha' + \delta' + \mu_{it} \quad (\text{equ 1})$$

*Cash holding<sub>it</sub>*

$$= \beta_0 + \beta_1 TR + \beta_2 G + \beta_3 LS + \beta_4 SR + \beta_5 CE + \beta_6 AO + \beta_7 DPC_{it-1} + \alpha' + \delta' + \mu_{it} \quad (\text{equ 2})$$

Were,

$i=1, 2, \dots, N$ ; and  $t=1, 2, \dots, T$ ; for every variable  $j = 1, \dots, k$ ;  $x'$ = vector of explanatory variables;  $\alpha'$ = vector of industry dummy variables;  $\delta'$ = vector of year dummy variables;  $CH$ = Cash and bank balances deflated by total expenditure per month in a financial year;  $TR$ = Tax revenue received by the corporation deflated by total revenue;  $G$  = Population change from year

$t-10/t$ , divided by Population in the year  $t-t-10$ ;  $S$ = Log of Population;  $SR$ = State revenue received by the corporation/total revenue;  $CE$ = Capital Expenditure/Total Asset;  $AE$ = Administrative overhead expense/Total operating expenses;  $DPR$ = Total debt/total population.

## 4. RESULTS AND DISCUSSION

Table 2 displays OLS, fixed effect, and random effect results. Initially, we applied

the OLS method and tried to analyze the data through fixed effect and random models (F.E and R.E models), when large data sets are applied, the chances of statistical errors are high in the OLS Model. It is concluded that the random effect (RE) method is best suited for data set as the fixed effect (FE)

model is not recommended when the same data points are repeated. So, the outcomes are obtained using the random effect (RE) method and identified size, state revenue, administrative expenses, and debt per capita as factors influencing cash holdings among Indian ULBs (table 2).

**Table 2: OLS, FE & RE Model Results of Indian ULBs**

Dependent Variable: Cash Holding	OLS	(Fixed Effect Model)	(Random Effect Model)
Tax Revenue	.002 (.004)	.004 (.003)	.004 (.003)
Population Growth	1.04 (8.728)	0 (.)	-5.679 (15.785)
Size	-21.185*** (3.662)	0 (.)	-21.346*** (6.53)
State Revenue	0 (.002)	.007** (.003)	.005* (.003)
Capital Expenditure	-16.748*** (6.319)	11.028 (10.023)	-1.457 (7.919)
Administrative Expense	5.206 (6.178)	10.908* (5.752)	9.254* (5.334)
Debt Per Capita	-.001 (.002)	-.008*** (.003)	-.006** (.003)
-cons	149.497*** (22.117)	10.766** (4.875)	143.83*** (39.281)
Observations	190	190	190
R-squared	.275	.482	.070

Source: Authors estimation based on data; Note: a) Standard errors are in parentheses \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

The relationship between tax revenue and cash holding was positive, indicating that if tax revenue increases, then cash holding will also increase, support Stewart's (2009) work. The negative growth coefficient indicates that local governments with more growth opportunities hold less cash. There is an inverse relationship between size and municipal cash holding, indicating that a large size of any organization is better for taking to diversifying opportunities, and they can easily manage cash in a shorter period compared to their smaller counterparts; they need to hold less cash or cash equivalents. The study results depict the inverse relationship between cash holding and state revenue,

and the results support prior works done by Gore (2009). The negative and statistically significant coefficients associated with capital expenditure indicate that councils with elevated levels of capital expenditure typically maintain lower cash reserves.

The results backed Bates *et al.*, 2009; Gore, 2009; Kim *et al.*, 2011. The research Our findings demonstrated a direct correlation between administrative expenses and the amount of cash held by municipalities.

The result points out the fact that any rise in administrative expense may lead to a corresponding positive change in the level of cash holdings of Municipal Corporations and

supports the previous study done by Gore, 2009. Negative relationship between municipal cash holding and debt per capita was expected, and the results of the present research proved the same. The study empirically pinpointed size, administrative expenses, state revenue, and debt per capita as the primary factors influencing cash holding among Indian ULBs.

Table 3 displays OLS, random effect, and fixed effect results. Initially, the OLS method was applied, but the large data set created several chances for errors because the error term was not adequately interpreted in the OLS method. Thus, random and fixed-effect

regression methods are applied. Based on Hausman's finalized text, the fixed effect method is the best method for our data set because the R square value is high compared to the value of the R square in the random effect method.

The link between tax revenue and cash holding was positive, indicating that if tax revenue increases, then cash holding will also grow and the study findings confirm that of Stewart (2009). Nevertheless, the growth coefficient was found to be both significant and positive, indicating that ULBs with higher growth potential tend to hold more.

**Table 3: OLS, Random and Fixed Effect Regression Model of Canadian ULBs**

Dependent Variable: Cash Holding	OLS	(Random Effect Model)	(Fixed Effect Model)
Tax Revenue	2.834* (1.588)	-4.066*** (1.398)	-5.204*** (1.536)
Population Growth	17.65*** (4.532)	9.271*** (2.435)	5.789* (3.451)
Size	-2.184** (1.015)	1.886 (1.625)	11.375 (8.84)
State Revenue	-.359 (3.306)	4.582** (1.939)	5.388*** (1.981)
Capital Expenditure	-9.577* (5.497)	-11.164*** (3.574)	-13.19*** (3.689)
Administrative Expense	-1.43 (2.82)	6.113** (2.839)	8.06*** (3.115)
Debt Per Capita	-.001* (0)	0 (0)	0 (0)
-cons	22.839*** (4.835)	7.215 (6.279)	-24.81 (29.344)
Observations	624	624	624
R-squared	0.45	.21	.88

Source: Authors estimation based on data; Note: a) Standard errors are in parentheses \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

The research results indicate a favorable relationship between ULBs size and cash reserves; larger organizations are in a better position to capitalize on diversification opportunities and thus have a greater need to maintain higher levels

of cash and support the study of Al-Najjar (2013). Overall, the results regarding the correlation between size and cash reserves demonstrate variability. Regarding the link between size and cash holdings, the findings display inconsistency across the ULBs. The



results revealed an inverse link between cash holdings and state revenue, and providing evidence for earlier findings by Gore (2009). Historically, corporations with more capital spending used to hold less cash; however, the literature results are mixed in this regard, and we framed a negative association between these variables. The study results showed a positive association between these variables, and support the prior works of Opler et al. (1999) and Riddick and Whited (2009).

The findings demonstrate that any increase in administrative expenses may cause a comparable rise in Municipal Corporations' cash holding levels, supporting Gore's 2009 work. As a result, the study offers empirical support for the notion that administrative expenses play a significant role in determining economic outcomes in developed economies, which makes it a significant contribution to the body of knowledge. The research states an inverse relationship between debt-per-capita and cash holding in the context of Canadian ULBs. The complete model's explanatory power is 88 percent, indicating that it can examine the 88 percent of reasons for holding cash in the Canadian context explained by these seven selected variables under study. From the study result, it can be concluded that variables, namely growth, size, capital expenditure, and administrative expenditure, are the major determinants for holding cash among the Canadian ULBs.

The second phase of the research investigates how municipal managers utilize excess cash, which is defined as funds held above certain benchmark levels as outlined in tables 4 and 5. Table 4 pertains to Indian Municipal Corporations, while table 5 pertains to Canadian corporations. There are several potential rationales for holding excess cash; however, the study primarily focused

on two critical factors identified by Gore (2009). Excess cash reserves mitigate future service volatility, aligning with prudent financial management principles. Secondly, managers may accumulate excess cash due to self-interest, intending to utilize it for their purposes. Jensen (1986) delves into how such accumulation of excess cash can lead to agency problems when managers fail to return the surplus to shareholders, possibly because they have utilized it for personal gain.

**Table 4: The Relation between Excess Cash and Administrative Overhead Expenses Variable (Indian ULBs Case)**

Variable	Model (1)	Model (2)
Intercept	1.16 (.045) ***	0.705 (0.715) ***
Excess casht-1	-.007 (.016) ***	-
High casht-1	-	-0.011 (0.004) ***
Low casht-1	-	-0.03 (-0.05) ***
DPC	-0.005 (3.291) ***	-4.56 (4.614) ***
Size	-0.081 (0.002) ***	0.215 (0.005) ***
Year dummies	Included	Included
State Dummies	Included	Included
Adjusted R2	0.23	0.64

Source: Authors' estimation

\*\*\* Indicate significance at  $p < .01$ .

"Excess cash = Residual of cash holding and calculated separately each year (2014-2019). High cash = Dummy variable equal to 1 if the residuals of cash holding is high from the mean of residuals for each year.

Low cash = Dummy variable equal to 1 if the residual of cash holding is low from the mean of residuals for each year.

Debt per capita = Total Debt outstanding / total Population; and

Size = Log of Population"

Note: The calculation basis is derived from Gore's (2009) methodology.

**Table 5: The Relation between Excess Cash and Administrative Overhead Expenses Variable (Canadian ULBs Case)**

Variable	Model (1)	Model (2)
Intercept	1.164 (0.037) ***	0.394 (0.281) ***
Excess casht-1	-0.005 (0.006) ***	-
High casht-1	-	-0.007 (0.006) ***
Low casht-1	-	-0.00 (-0.04)
DPC	-0.001 (4.731) ***	-3.59 (4.78) ***
Size	-0.092 (0.010) ***	0.114 (0.088) ***
Year dummies	Included	Included
State Dummies	Included	Included
Adjusted R2	0.12	0.82

Source: Authors estimation; Notes:\*\*\* Indicate significance at  $p < .01$ .

“Excess cash = Residual of cash holding and calculated separately each year (2014-2019). High cash = Dummy variable equal to 1 if the residuals of cash holding are high from the mean of residuals for each year. Low cash = Dummy variable equal to 1 if the residual of cash holding is low from the mean of residuals for each year. Debt per capita = Total debt outstanding/total population; and Size =Log of Population”

Note: he calculation basis is derived from Gore’s (2009) methodology.

Additionally, the present study investigated the connection between surplus cash reserves and municipal efficiency, particularly in terms of administrative overhead. The objective is to ascertain whether maintaining surplus cash reflects sound financial management practices or gives rise to agency concerns. If there is a positive correlation between administrative expenses and surplus cash, it implies inefficient expenditure by the municipal entity. In contrast, a negative correlation indicates improved efficiency and prudent financial management, as Core et al. (2006) and Gore (2009) noted. The research employed an Ordinary Least Square (OLS) model to assess this relationship. Two measures of excess cash are used - one based on residuals from an expected cash model, as proposed by Core et al. (2006) and Gore (2009), and another based on quartiles of residuals specific to different types of municipalities.

The research includes control variables such as Debt per Capita (DPC) and municipality size. Moreover, the research incorporates indicator variables for state and years. Below is the model employed to investigate the association between surplus cash and administrative overhead expenses for ULBs in India and Canada:

$$AE_{it} = \beta_0 + \beta_1 Excess\ cash_{it-1} + \beta_2 High\ cash_{it-1} + \beta_3 Low\ cash_{it-1} + \beta_4 DPC_{it} + \beta_5 Size_{it} + \sum \beta_6 State_{it} + \sum \beta_7 Year_{it}$$

Tables 4 and 5 present the results regarding the relationship between surplus cash and administrative overhead expenses consistent with the findings of Core et al. (2006), which demonstrated a positive correlation between outstanding debt and efficiency. This study includes debt per capita as a control variable. Furthermore, ULBs subject to external scrutiny by voters are more likely to demonstrate higher efficiency levels. Large ULBs tend to operate with economies of scale, particularly in administrative functions. Hence, this study

incorporated the logarithm of population size as a control variable.

Furthermore, indicator variables for the year and state are included. It’s crucial to acknowledge that the sample size in tables 4 and 5 is relatively smaller compared to tables 2 and 3 due to the lagged nature of the excess cash variable. Column 1 illustrates a significant inverse association between surplus cash and administrative expenses, suggesting improved efficiency and prudent

financial management practices, which aligns with the conclusions drawn by Core et al. (2006) and Gore (2009). This indicates that, on average, Municipal Corporations in India and Canada are effectively addressing agency costs by implementing prudent financial management practices within ULBs. In Column 2, the strong inverse correlation between the highest levels of cash reserves and administrative expenses persists when using an indicator variable for the highest quartile of surplus cash. Concerning control variables, population size exhibits a negative association with administrative overhead expenses in Column 1 and a positive association in Column 2. Moreover, Municipal Corporations subject to sensitive voter scrutiny due to higher levels of outstanding debt exhibit lower overhead spending.

Overall, the regression model analyzing the relationship between excess cash and administrative overhead expenses yielded adjusted R-squared values of 64 percent, 74 percent, and 82 percent, comparable to previous studies conducted within the context of non-profit organizations.

## 5. CONCLUSION

Urban Local Bodies (ULBs) play a crucial role in the socio-economic advancement of a nation, serving as instrumental entities for executing planned initiatives of both local and state governments within a federal governance system. The cash holdings pattern of ULBs is vital since the absence of cash holdings results in the cut-back of some essential local public services, timely disbursement of payment towards different infrastructural projects, and payment towards vendors and bondholders. Our study findings generally align with the idea that municipal councilors and administrative staff hold cash as a precautionary measure and for operational

purposes. Moreover, our results suggest that ULBs in both India and Canada are not prone to agency problems.

As most Indian and Canadian Municipal Corporations primarily hold cash due to precautionary motives to ensure financial stability and mitigate risks associated with unexpected events or emergencies. As India reaches the tipping point of transforming from a primarily rural to an urban society, the focus of the Indian cities should be on seizing the best opportunities for development in their respective areas. Since Indian Municipal Corporations mainly depend on intergovernmental transfers and taxes for their significant source of funding, they need to hold cash during prosperous times to enhance their city's appeal to residents by providing better amenities for community living and ensuring readily available funds to cover unforeseen expenses such as natural disasters, public health crises or economic downturns. Canadian Municipal Corporations, already in a developed phase, also maintain cash reserves as a precaution rather than for speculative purposes. However, our study results indicate that overall, Indian and Canadian Municipal Corporations are free from agency issues, suggesting the presence of prudent financial management. This, in turn, suggests that wealthier Municipal Corporations experiencing higher population growth in their cities over time may engage in investment activities with surplus funds to make their cities more vibrant and appealing to residents.

However, the prudent financial management by the selected ULBs from these countries under this study period doesn't guarantee that the situation will be the same throughout the upcoming years. Any day, the situation can reverse back to agency issues. So, as a policy instrument, Mayors, through their declarative rights or even as a federal law from the parliament, can incorporate

the checking of agency issues as a part of their general audit procedures. In this way, the administrators can project their accountability to the citizens and, in turn, help them face the next elections with more confidence and win ability.

The study also confirms that large and medium-sized corporations used to hold less cash. In contrast, smaller corporations tend to hold more cash, and the primary reason for this is the debt-raising capacity of the more giant corporations and the economies of scale enjoyed by the larger corporations. For those Municipal Corporations that don't have easy access to debt markets and face volatility in cash inflows, it is better to hold more cash, as the organizational theorist argues in the same direction. Mayors, Municipal Councilors, and Municipal managers can take this study result as a guide toward cash management, and they can plan the level of cash holding based on the corporations' size, Further expansion plans, and debt-raising capacity. Various countries' central-level Government administrations, Lawmakers, and parliamentarians need to make legislative guidelines to check the efficiency of the excess cash usage by their local government administrators to see in the future whether the municipal managers are judiciously using the funds or not. Countries' Chartered Accountancy boards also had a relevant role to play by framing new guidelines to incorporate these evaluation measures as a part of their municipal audit compliance.

## 6. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Like any research work, the study is also not wholly free from limitations, which upcoming researchers in Municipal Finance research can better address. Firstly, research analyses were conducted based on secondary data alone, so it suffers from its adhered limitation of mono-method bias. To get more clarity on the variables identified as factors, they need to be further explored by employing qualitative interviews to revalidate them. Hence, the

study highlights the need for a qualitative investigation into the moderating factors contributing to municipal cash holdings. Secondly, our research study addresses the context of Indian and Canadian Municipal Corporations, and it cannot be considered a generalizable result globally. The Western developed world itself may differ due to a nation's unique political, economic, and cultural setting. So, further research needs to happen across the globe in both developed and emerging economies for a better and more generalizable understanding. Moreover, the absence of an accepted model in public finance to study non-profit entities also stands as a limitation for this research study.

## REFERENCE

- Abdullah, S., & Muthia, N. (2017). Determinan saldo kas akhir tahun pada pemerintah daerah di Aceh. *Jurnal Akuntansi Dan Auditing Indonesia*, 21(2), 130-140.
- Agrawal, R. (2020). Review of infrastructure development and its financing in India. *Paradigm*, 24(1), 109-126.
- Al-Najjar, B. (2013). The financial determinants of corporate cash holdings: Evidence from some emerging markets. *International business review*, 22(1), 77-88.
- Al-Najjar, B., & Belghitar, Y. (2011). Corporate cash holdings and dividend payments: Evidence from simultaneous analysis. *Managerial and decision Economics*, 32(4), 231-241.
- Ang, J. S. (1991). Small business uniqueness and the theory of financial management. *Journal of small business finance*, 1(1), 1-13.
- Awasthi, R., Nagarajan, M., & Deininger, K. W. (2021). Property taxation in India: Issues impacting revenue performance and suggestions for reform. *Land Use Policy*, p. 110, 104539.
- Baber, W. R., & Gore, A. K. (2008). Consequences of GAAP disclosure regulation: Evidence from municipal debt issues. *The Accounting Review*, 83(3), 565-592.
- Baltagi, B. H., & Kao, C. (2001). Nonstationary panels, cointegration in panels and dynamic panels: A survey. In *Nonstationary panels, panel cointegration, and dynamic panels* (pp. 7-51). Emerald Group Publishing Limited.



- Baltagi, B. H., Bratberg, E., & Holmås, T. H. (2005). A panel data study of physicians' labor supply: the case of Norway. *Health Economics*, 14(10), 1035-1045.
- Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why do US firms hold so much more cash than they used to?. *The journal of finance*, 64(5), 1985-2021.
- Bigelli, M., & Sánchez-Vidal, J. (2012). Cash holdings in private firms. *Journal of Banking & Finance*, 36(1), 26-35.
- Campanaro, A., & Masic, J. (2018). Municipal asset management in China's small cities and towns: Findings and strategies ahead. *Journal of Infrastructure, Policy and Development*, 2(1), 142-173.
- Core, J. E., Guay, W. R., & Verdi, R. S. (2006). Agency problems of excess endowment holdings in not-for-profit firms. *Journal of accounting and economics*, 41(3), 307-333.
- Damodaran, A. (2006). The cost of distress: Survival, truncation risk and valuation. *Truncation Risk and Valuation (January 2006)*.
- Denis, D. J., & Sibilkov, V. (2010). Financial constraints, investment, and the value of cash holdings. *The Review of Financial Studies*, 23(1), 247-269.
- Dittmar, A., & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal of financial economics*, 83(3), 599-634.
- Edwards, A., Schwab, C., & Shevlin, T. (2016). Financial constraints and cash tax savings. *The Accounting Review*, 91(3), 859-881.
- Fainstein, S. S., & Campbell, S. (Eds.). (2011). *Readings in urban theory*. John Wiley & Sons.
- Ferreira, M. A., & Vilela, A. S. (2004). Why do firms hold cash? Evidence from EMU countries. *European financial management*, 10(2), 295-319.
- Fisman, R., & Hubbard, R. G. (2005). Precautionary savings and the governance of nonprofit organizations. *Journal of public economics*, 89(11-12), 2231-2243.
- Glaeser, E. L., & Gottlieb, J. D. (2008). *The economics of place-making policies* (No. w14373). National Bureau of Economic Research.
- Gore, A. K. (2009). Why do cities hoard cash? Determinants and implications of municipal cash holdings. *The Accounting Review*, 84(1), 183-207.
- Guney, Y., Ozkan, A., & Ozkan, N. (2007). International evidence on the non-linear impact of leverage on corporate cash holdings. *Journal of Multinational financial management*, 17(1), 45-60.
- Harris, M., & Raviv, A. (2017). Why do firms sit on cash? An asymmetric information approaches. *Review of Corporate Finance Studies*, 6(2), 141-173.
- Hildreth, W. B. (1996). Financial management: A balancing act for local government chief financial officers. *Public Administration Quarterly*, 320-342.
- Hoque, M. N., Bhuiyan, M. B. U., Nomura, T., & van Zijl, T. (2022). Determinants of cash holdings—evidence from New Zealand local councils. *Public Money & Management*, 42(8), 605-615.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, 76(2), 323-329.
- Kim, J., Kim, H., & Woods, D. (2011). Determinants of corporate cash-holding levels: An empirical examination of the restaurant industry. *International Journal of Hospitality Management*, 30(3), 568-574.
- Kitchen, H., Slack, E., & Hachard, T. (2019). *Property Taxes in Canada: Current Issues and Future Prospects*. Institute on Municipal Finance and Governance.
- Lang, L., Poulsen, A., & Stulz, R. (1995). Asset sales, firm performance, and the agency costs of managerial discretion. *Journal of financial economics*, 37(1), 3-37.
- Lima, V. (2020). The financialization of rental housing: Evictions and rent regulation. *Cities*, 105, 102787.
- Maheshwari, Y., & Rao, K. V. (2017). Determinants of corporate cash holdings. *Global Business Review*, 18(2), 416-427.
- Meloche, J. P., & Vaillancourt, F. (2021). *Municipal Financing Opportunities in Canada: How Do Cities Use Their Fiscal Space?* Institute on Municipal Finance and Governance.
- Miller, M.H., Orr, D., 1966. A model of demand for money by firms. *Quarterly Journal of Economics* 80 (3), 413-435 (<http://www.jstor.com/stable/1880728>)
- Mithlesh Verma, Amir Bazar & Manish Dubey (2022). *Indian Municipal Finance 2022: An Update*. Indian Institute for Human Settlements.

- Mohanty, P. K., Misra, B. M., Goyal, R., & Jeromi, P. D. (2007). Municipal finance in India: An assessment. *Development Research Group Study*, p. 26.
- Mulgan, R. (2000). 'Accountability': an ever-expanding concept? *Public administration*, 78(3), 555-573.
- Nallathiga, R. (2015). Municipal bonds as a source of finance for urban infrastructure development in India.
- NITI Ayog Report, (2021). Reforms in Urban Planning Capacity in India
- Opler, T., Pinkowitz, L., Stulz, R., and Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of financial economics*, 52(1), 3-46. (DOI:10.3386/w6234)
- Ozkan, A., & Ozkan, N. (2004). Corporate cash holdings: An empirical investigation of UK companies. *Journal of banking & finance*, 28(9), 2103-2134.
- Palgan, Y. V., Mont, O., & Sulkakoski, S. (2021). Governing the sharing economy: Towards a comprehensive analytical framework of municipal governance. *Cities*, 108, 102994.
- Rajan, R. G. and Zingales, L. (1995) What do we know about capital structure? Some evidence from international data, *Journal of Finance*, 50, 1421-1460
- Riddick, L. A., & Whited, T. M. (2009). The corporate propensity to save. *The Journal of Finance*, 64(4), 1729-1766.
- Rusek, R., Marsal-Llacuna, M. L., Fontbona, F. T., & Llinas, J. C. (2016). Compatibility of municipal services based on service similarity. *Cities*, 59, 40-47. (<https://doi.org/10.1016/j.cities.2016.05.024>)
- Simpson, N. P., Simpson, K. J., Shearing, C. D., & Cirolia, L. R. (2019). Municipal finance and resilience lessons for urban infrastructure management: a case study from the Cape Town drought. *International journal of urban sustainable development*, 11(3), 257-276.
- Singh, Charan, and Chiranjiv Singh. "Financing of urban local bodies in India." (2015).
- Slack, N. E. (2009). *Guide to municipal finance*. UN-HABITAT.
- Stewart, M. (1984). The future of local democracy.
- Tan, S. Y., & Taeihagh, A. (2020). Smart city governance in developing countries: A systematic literature review. *sustainability*, 12(3), 899.
- Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of finance*, 43(1), 1-19.
- Tremblay-Racicot, F., Prémont, M. C., & Leclair, K. (2023). Overview of ecofiscal powers for municipalities: Implementation of new measures in Québec. *Canadian Public Administration*.
- Weston, K. (2013). Lifeblood, liquidity, and cash transfusions: beyond metaphor in the cultural study of finance. *Journal of the Royal Anthropological Institute*.
- Zainon, S., Atan, R., & Wah, Y. B. (2014). An empirical study on the determinants of information disclosure of Malaysian non-profit organizations. *Asian Review of Accounting*. (DOI 10.1108/ARA-04-2013-0026)
- Zhao, K., Chen, D., Zhang, X., & Zhang, X. (2022). How Do Urban Land Expansion, Land Finance, and Economic Growth Interact? *International Journal of Environmental Research and Public Health*, 19(9), 5039.

# Critical Appraisal of the 'Ease of Living' Framework, to Incorporate Parameters of Urban Resilience

Hasna. P

## Abstract

*The 'Ease of Living' is a framework prepared by the MoHUA. It endeavors to evaluate the 'Ease of Living' Framework. It assesses the life quality metrics in 111 Indian cities, including capital cities, cities those designated under the Smart Cities Mission, and other urban centres with populations exceeding one million. The intertwined elements of sustainability, liveability and resiliency collectively shape the urban quality of life. Urbanization, climate change, and the increase in disasters affect cities' sustainable development and resilience. Cities worldwide are formulating strategies and outlining objectives for fostering resilient urban development. Sustainability and resiliency need to be linked but with care and clarity. For better living conditions and 'Ease of Living' in cities, resilient urban planning is essential. India's vulnerability is very high due to its geo-climatic location and socio-political conditions. If climate change proceeds unchecked, urbanization could accelerate rapidly, potentially exacerbating poverty unless measures are taken to enhance urban resilience. The rapid concentration of the population in urban centres subject more individuals to acute disasters and enduring difficulties, including shocks and strains. This research is an attempt to appraise critically the 'Ease of Living' framework in terms of qualities of urban resilience and give suggestions to incorporate parameters of urban resilience in the 'Ease of Living' framework by studying in detail every pillar and indicators of 'Ease of Living' framework and selected various urban resilience frameworks such as 'Framework of Climate Disaster Resilience Index', 'Baseline Indicators for Community Resilience', 'Peoples Framework', 'City Resilient Index'. Then, indicators of the 'Ease of Living' framework are compared and these Urban Resilience frameworks analyze the problems and potentials of 'Ease of Living' framework and how far the components of resilience are included in the framework. Then suggested relevant resilience indicators and solutions are suggested for problems in the 'Ease of Living' framework. The study will pave the way to improve, find out, and ascertain various future actions and programs that are required to achieve resilient urban development, and thus to achieve 'Ease of Living and Inclusiveness in Cities'.*

## 1. INTRODUCTION

The 'Ease of Living Index' is a metric devised by the Ministry of Housing and Urban Affairs (MOHUA). Its purpose is to assess the living standards across 111 Indian cities, including capital cities, smart cities and several other cities with populations exceeding 1 million. This index aims to aid cities in evaluating their strengths, weakness, opportunities and threats. By leveraging information from this evaluation, cities can develop strategies and allocate resources more effectively. Urban resilience denotes the capacity of an urban

structure within a city to tolerate, adapt, and thrive in the face of various chronic stresses and acute shocks.

Sustainability, liveability, and resilience are interconnected facets that collectively shape the quality of life for both present and future inhabitants. So, resilience is important for liveability.

This research aims to appraise the framework - The 'Ease of Living' index in terms of urban resilience qualities by comparatively analyzing various frameworks of resilience with the 'Ease of Living' framework to incorporate missing parameters of resilience in urban development which are relevant for 'Ease of Living' in Indian

<sup>1</sup> Hasna. P, Planner Associate, The Department of Town and Country Planning, Kannur, Kerala, Email-hasnaparakkanni@gmail.com

cities along with addressing solutions to the problems associated with the framework.

## 2. LITERATURE REVIEW

### • The ‘Ease of Living’ Index

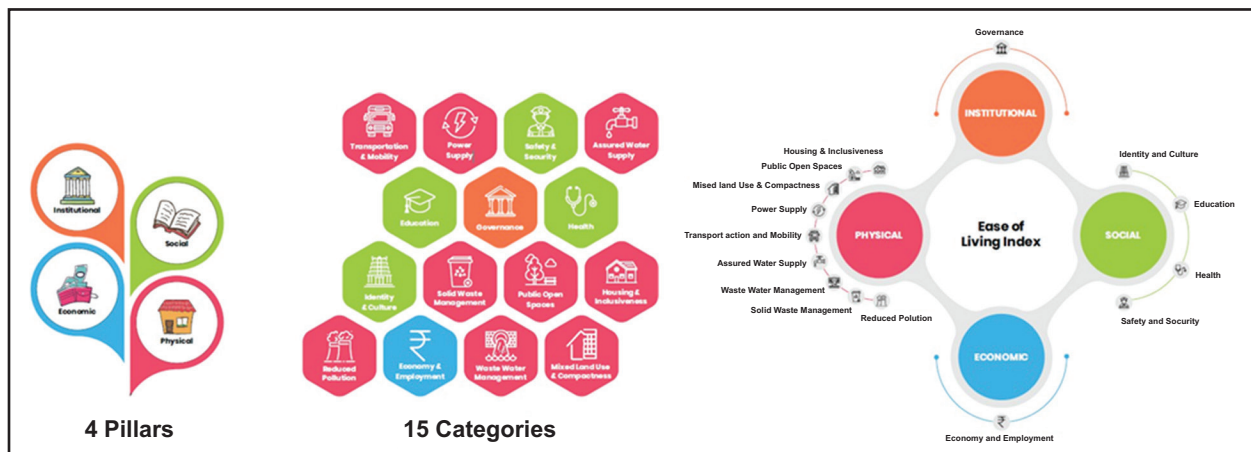
The ‘Ease of Living’ Index, spearheaded by the Ministry of Housing and Urban Affairs, aims to aid cities in evaluating their liveability vis-à-vis global and national standards. It encourages cities to adopt an outcome-based approach to urban planning and management. Conceived

in June 2017, the survey was officially inaugurated in January 2018 by Minister Hardeep Singh Puri.

The framework is prepared by a panel of experts by from various fields, but still, there are criticisms to this framework. In 2018 there were 15 categories and 78 indicators under 4 pillars in its initial stage (figure 1). In 2019 some indicators were added to the ‘Ease of Living’ framework for better performance of the index.

### • Structure of the “Ease of Living” index

Figure 1: Pillars and Parameters of ‘Ease of Index’ Framework 2018

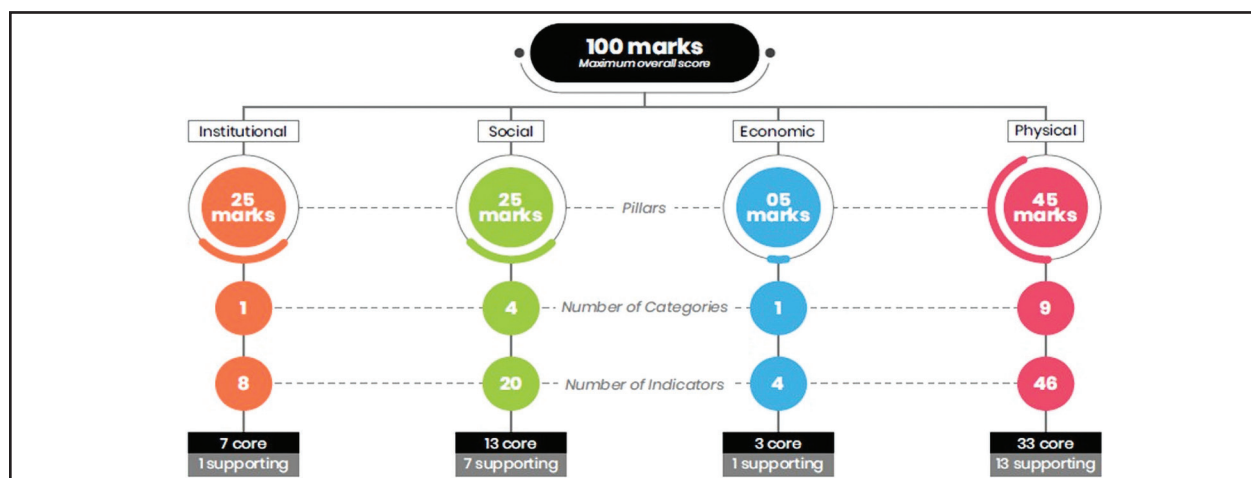


Source: *Ease of Living Index, National Report (2018)*

### • The ‘Ease of Living’ framework of 2018 encompasses four pillars: social, economic, institutional, and physical (figure 2). These

pillars are then subdivided into 15 categories and 78 indicators. The assessment standards of ‘Ease of Living’ are intricately connected

Figure 2: Ranking Methodology of ‘Ease of Living’ Index



Source: *‘Ease of Living Index’, National report (2018).*



to the SDGs (Sustainable Development Goals), aiming to bolster India's endeavor in systematically monitoring the progress of SDGs in urban regions.

A lot of criticism came after the publication of Ranking - Ease of Living.

In the Ease of Living Index 2018, Maharashtra's Pune, Mumbai, and Navi Mumbai claimed the top three spots, with Thane securing the 6th position. However, the national capital, New Delhi, was placed at the 65th spot. Chennai, the capital city of Tamil Nadu, secured the 14th position in the rankings.

The cities ranking lowest on the Index of Ease of Living 2018 were Rampur, Kohima, and Patna.

Pune is the best city according to the framework of Ease of Living. In terms of economic prospects Delhi is among the worst cities. Regarding security and safety, the 'Ease of Living' report suggests that Bangalore is among the worst. It leads to a question - how much do these ranking reflects the realities of India's urban life?

Two key issues need to be clarified about the rankings: the arbitrariness in constructing the index and the use of incomparable or questionable data.

The rankings of the 'Ease of Living Index' rely on 78 indicators categorized into four main "pillars": social, economic, physical and institutional. Among these, physical services such as sanitation, water supply and housing carry the highest weightage that is (45 percent) in determining city rankings. In contrast economy and employment are given a minimal weightage of only 5 percent.

Public services play a fundamental role in society, yet the absence of any indicator

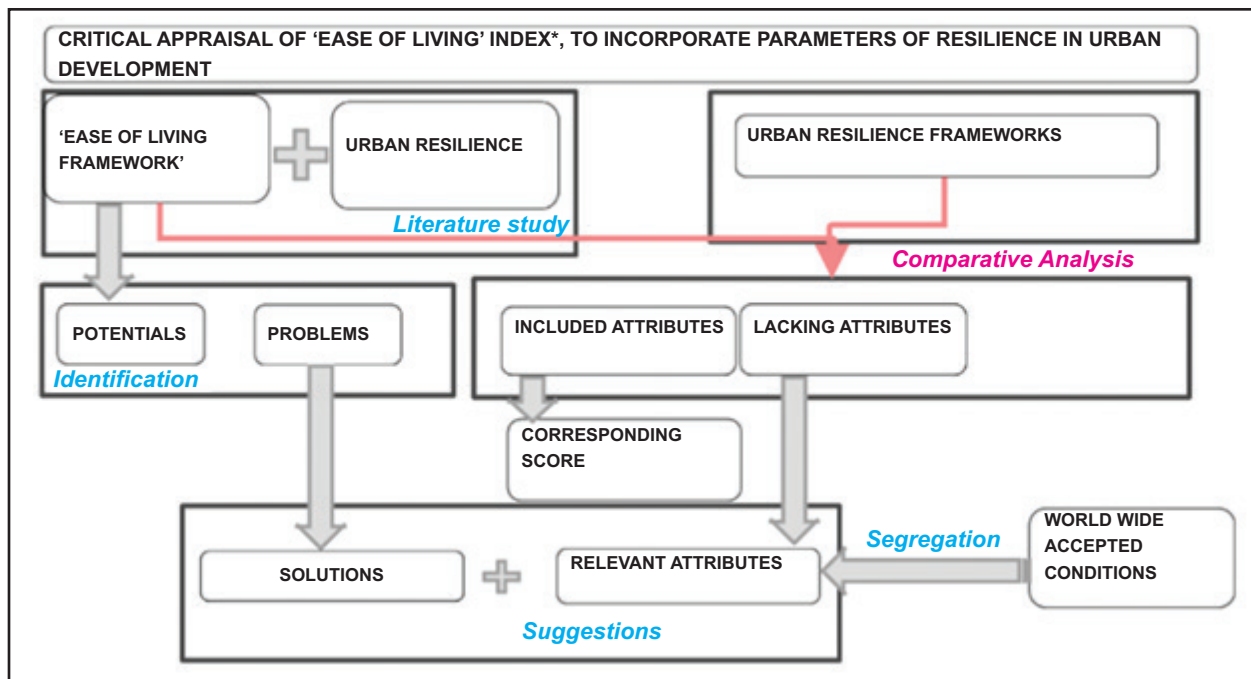
pertaining to employment or productivity diminishes the index's significance.

The primary data source for calculating the 'Ease of Living index' encompassed secondary data, which city administrations gathered from diverse origins. The absence of data affects the ranking.

### 3. DATABASE & METHODOLOGY (FIGURE 3)

- Problems
  - Rankings are more about data than performance. It's only through data collection and analysis that resource allocation can be optimized.
  - For some "cities" there is no data available for certain indicators, in such cities, the score for that indicator is zero, it is not due to the weaker performance of that city in that indicator.
  - Mainly the data utilized in computing the 'Ease of Living Index' predominantly consisted of secondary data. The lowest weightage is assigned to economic prospects.
  - The allocation of only 5 percent weight to economy and employment underscores the minimal emphasis placed on these factors. The absence of indicators reflecting job opportunities or productivity poses a significant challenge. In India, cities are not officially acknowledged as economic entities, complicating the assessment of their economic contributions.
- Potentials
  - The city rankings signify a transition towards an evidence-based approach to urban planning and management, nurturing positive competition among urban centers.

Figure 3: Methodology of Study



Source: Self-Generated

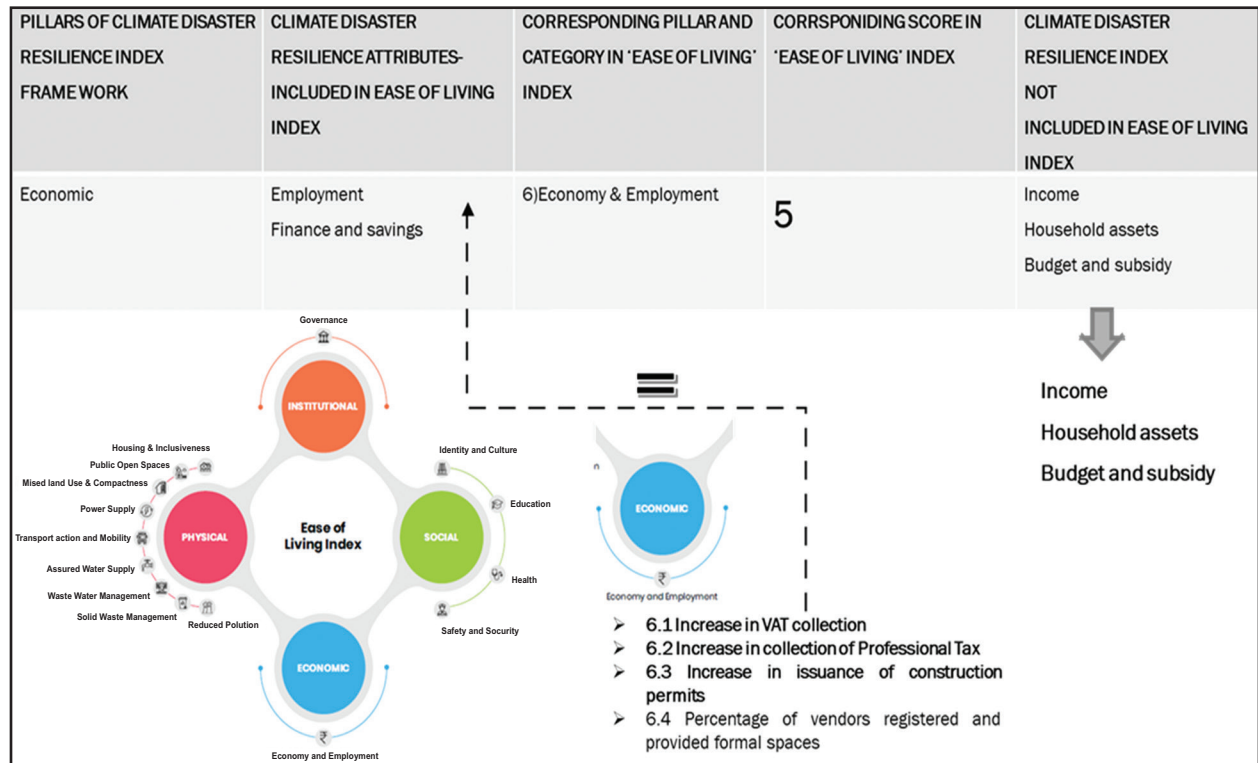
- Strong linkage with sustainable development Goals
- Urban Resilience
  - Studied the concept of Resilience in Urban areas.
  - Urban resilience refers to the capability of an urban system to acclimatize and thrive despite facing various acute shocks and chronic stresses.
  - Resilient cities are cities that have the capability to adapt, recover from disasters and
  - A city that has developed capacities to absorb future shocks and stresses is often referred to as “resilient”.
  - Qualities of resilient urban development are Reflective, Resourceful, Robust, Redundant, Flexible, Integrated, Inclusive
- Frameworks of resilient urban development
  - To find out which are lacking elements of urban resilience in the ‘Ease of Living’ framework by comparing various urban resilience

frameworks. Selected various frameworks of resilience. The frameworks are chosen in a manner that encompasses all facets of resilience (figure 4). The selected frameworks are the ‘Framework of Baseline Indicators for community Resilience; Peoples Framework’, ‘Climate Disaster Resilience Index’, and ‘City Resilient Index’. Selected various Urban resilience frameworks for the comparative analysis with the work of ‘Ease of Living Index’ to find out including and not including

#### 4. RESULTS & DISCUSSIONS

To find out how far the concept of resilient urban development is incorporated with the ‘Ease of Living Index’, a table for the above four resilience frameworks is made (table 1).

- Identified the domains or dimensions of resilient urban development included and not included in; ‘Ease of Living’

**Figure 4: Example of Comparative Analysis of Ease Living Framework with Various Frameworks of Urban Resilience**

Source: Self-Generated

**Table 1: Example of Differentiating Attributes of Resilience Framework According Relevancy in 'Ease of Living'**

Pillars	Climate Disaster Resilient Framework	Baseline Indicators for Community Resilience	Peoples Framework	City Resilient Index
Environment	Natural Land use, Eco System services, intensity/severity of natural hazards Environmental policies, Frequency of natural hazards (Relevant for all cities)		Quality of Soil, Diversity of eco system, Biomass, Other natural resources (Not much relevant, it depends on the character of the city, it is difficult to allot scores and rank the cities according to these conditions)	

Source: Self-Generated

index by comparing the indicators of ease of living index and resilience framework and also calculated the scores allotted for dimensions of resilient urban development in 'Ease of Living' Index, by using the ranking methodology of 'Ease of Living' framework.

- Then listed the domains/dimensions of selected frameworks of resilience urban development in a common format, that is under common pillars. Liveability, sustainability and resiliency are intertwined so selected pillars of sustainability and pillars of the 'Ease

of Living' index to make the analysis convenient.

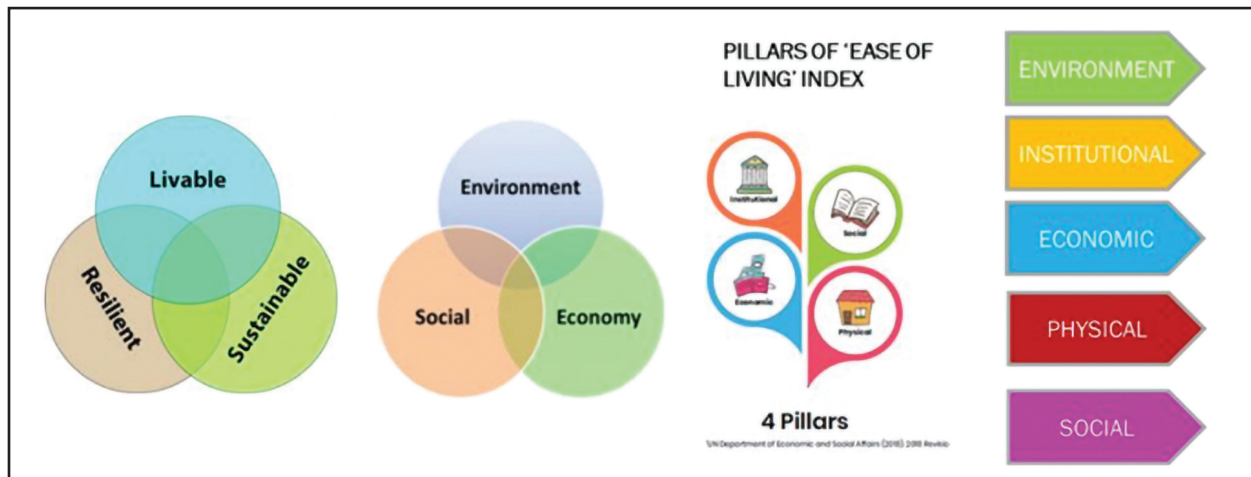
- Pick out the dimensions and indicators of resilient urban development not included in the 'Ease of Living' Index.
- Differentiate attributes of resilience frameworks according to relevancy in 'Ease of Living' using worldwide accepted conditions
- Then justified are these dimensions relevant for 'Ease of Living', by worldwide accepted conditions.

#### • Selection of Pillars

List out the domains/dimensions of selected frameworks of resilience urban development in a common format, that is under common pillars. Liveability, sustainability and resiliency are intertwined so selected pillars of sustainability and pillars of the 'Ease of Living' framework is selected (figure 5).

Social pillar and the economic pillar are the common pillars of sustainability and 'Ease of Living' framework. The

Figure 5: Selection of Pillars



Source: Self-Generated Image

Environment pillar is from the concept of sustainability. The institutional pillar is from the framework of 'Ease of Living'.

The suggested problems for solutions and relevant resilience attributes in 'Ease of Living' framework are mentioned in table 2.

Suggested urban resilience attributes that help to improve the framework of 'Ease of Living' and thus pave the way to improve the liveability of Indian cities (table 3).

## 5. CONCLUSION

Liveability, sustainability, and resilience are interconnected elements that collectively shape the quality of life for both current and

future residents. So, resilience is important for liveability. Due to urbanization and climate change cities will have to battle several stresses. Many cities in India are vulnerable to disasters, which leads to bad living conditions. 'Ease of Living' is a framework prepared to measure the liveability of Indian cities. Many aspects of resilience are not considered to prepare the framework of the 'Ease of Living' Index.

This study aims to suggest qualities of resilient urban development to improve the framework of 'Ease of Living' index. Many elements of resilient urban development that are essential for liveability are missing within the framework of 'Ease of Living' Index,



Problems	Solutions
Rankings more about data than performance. It's only through data collection and analysis that resource allocation can be optimized.	Give importance to performance than data, for that have to data collection must be accurate and data must be available for every indicator. Change the data driven approach and give importance to urban development and management.
For certain cities, there is a lack of data available for specific indicators. In these cities, the score for that indicator is zero, not because of poorer performance in that indicator. Secondary data primarily drives the calculation of the 'Ease of Living' index, sourced by city governments from diverse outlets.	Primary survey will be helpful for the data collection, which cannot be collected from secondary data. It will be helpful for ranking more about performance through data collected from primary and secondary sources through that resource allocation will be more powerful and accurate.
The low weighting given to economic prospects, with economy and employment together only accounting for 5 percent, coupled with the absence of indicators related to jobs or productivity, poses significant challenges. In India, cities are not formally documented as economic units, complicating the measurement of their economic contributions.	Increase the weight assigned for economy and employment, It is essentials to recognize economy and employment as a unit of development.

Source: Self-Generated

**Table 3: The Suggested Attributes**

Attributes	
Natural Environment	New pillar
Disasterrisk reduction / zone's crisis management	Incorporate within the pillar of institution
Diverse livelihood and economy	Already economy and employment together are a pillar of 'Ease of Living index'. The lowest weightage is assigned to economic prospects. Economy and employment are collectively given a minimal weight of just 5 percent. Increase the weightage
Community participation	Incorporate as an indicator within the social pillar
Communication	Incorporate as an indicator within the physical pillar
Affordable food supply	Incorporate as an indicator within the physical pillar

Source: Self-Generated

for example, human vulnerability is not considered in the 'Ease of Living' Index. These elements need to incorporate with the 'Ease of Living' framework, for better performance of the index.

The main elements are to incorporate and improve

- Natural Environment (New pillar)

- Disaster risk reduction/zone's crisis management (incorporate in institutional pillar)
- Diverse livelihood and economy (Need to increase it's weightage)
- Community participation
- Communication
- Affordable food

- Many elements of resilient urban development that are essential for 'ease of living' are missing in the framework of the 'Ease of Living' Index. These elements need to be incorporated within 'Ease of Living' framework, for better performance of the index.

The important element missing in the framework of the 'Ease of Living' Index are human vulnerability conditions. e.g.: affordable food supply, conditions of vendors, housing and inclusiveness. Slums /EWS households covered through affordable/formal housing is there in the framework. But these indicators are not enough for preparing a framework while considering cities in India. There are only few planned cities in India. The conditions of Indian cities are different from other countries. In India there is slums, CBD (Central Business District), town areas, transportation networks.

- While preparing a framework for Indian cities, We have to consider inclusiveness

and happiness of everyone (Lokha Samastha Sukhino Bhavanthu - May all beings be free and happy, and may the feelings, words, and activities of my own life contribute in some way to that pleasure and liberty for all.)

## REFERENCES

Ministry of Housing and Urban Affairs (MoHUA), Ease of Living Index - Full rank list, 2018, Govt. of India, New Delhi.

Ministry of Housing and Urban Affairs (MoHUA), Ease of Living Index 2018, National report, Govt. of India, New Delhi.

Lorenda Figuerido, Taku Honiden, Abelschumann, 2018, Indicators for resilient cities, OECD

International federation of red cross and red society, 2016, IFRC Framework for Community Resilience

E. Lisa F. Schipper & Lara Langston, 2015, A comparative overview of resilience measurement Frameworks analyzing indicators and Approaches, United Nations, University.



# Enhancing Implementation and Stakeholder Participation: A Critical Appraisal of Delhi's Land Pooling Policy

Ish Kumara, Deepak Rana

## Abstract

*Land acquisition for urban development projects has traditionally relied on methods that are often marred by legal constraints, social resistance, and rising costs. In response, development agencies have turned to alternative mechanisms like land pooling as a means of assembling land for urban expansion. Delhi's Land Pooling Policy, introduced in 2013, represents a unique approach wherein landowners, irrespective of their land size, can participate, with private developers playing a significant role in development. However, the policy's success hinges on stakeholder participation and effective implementation. The paper critically examines the policy's current state, focusing on its impact on urban villages and its ability to address the city's growing population and infrastructure needs. Through an analysis of stakeholder responses and factors influencing participation, the study aims to propose recommendations for enhancing the policy's efficacy and attractiveness.*

## 1. INTRODUCTION

Urbanization is rapidly reshaping India's landscape, with its urban population projected to more than double by 2050. As cities expand, the need for systematic land procurement becomes paramount to accommodate growth while ensuring planned development and adequate infrastructure provision. Traditional methods of land acquisition, primarily governed by The National Land Acquisition Act, have faced criticism due to legal complexities, social discontent, and escalating costs. In response, alternative strategies such as land pooling have gained traction, offering a collaborative approach to land assembly.

Delhi, as India's capital, faces immense pressure to accommodate its burgeoning population and provide adequate infrastructure. The Delhi Land Pooling Policy, initiated in 2013 and operationalized in 2018, represents a paradigm

shift in land acquisition, emphasizing private sector involvement and flexible participation criteria. Unlike conventional acquisition methods, this policy aims to incentivize landowners to voluntarily pool their land for development, thereby fostering a more inclusive and sustainable approach to urban expansion.

However, the success of the Delhi Land Pooling Policy hinges on several critical factors. Firstly, it must effectively address the complex dynamics of urban growth, particularly in rural peripheries and urban villages, where land ownership patterns and socio-economic considerations play a significant role. Secondly, the policy's implementation framework and regulatory mechanisms must be robust enough to ensure transparency, fairness, and accountability, thereby fostering trust among stakeholders. Moreover, the policy's ability to deliver on its promises of equitable development and improved infrastructure will be closely scrutinized, particularly in light of past shortcomings in urban planning and housing provision.

Against this backdrop, the research paper seeks to critically appraise Delhi's Land

<sup>1</sup> Ish Kumara, Assistant Professor, Department of Transport Planning, School of Planning and Architecture, New Delhi, Email: [28ishdhamija@gmail.com](mailto:28ishdhamija@gmail.com)

<sup>2</sup> Deepak Ranab, PG Scholar, the Department of Urban and Regional Planning, School of planning and Architecture, Bhopal

Pooling Policy, examining its implications on urban growth, land use dynamics, and socio-economic development. By analyzing stakeholder responses, landowner participation patterns, and the underlying factors influencing decision-making, the study aims to provide insights into improving the policy's implementation and attractiveness. Through this examination, the paper aspires to bridge the gap between policy objectives and stakeholder needs, facilitating a more informed and inclusive approach to sustainable urban development in Delhi.

## 2. RESEARCH METHODOLOGY

This research aims to enhance the implementation process and stakeholder participation in Delhi's land pooling mechanism through a structured methodology. The methodology is divided into three main objectives. Firstly, a critical analysis of land pooling models from both domestic and international contexts was conducted, focusing on operational processes, compensation methods, and key strategies. This involved reviewing relevant literature, policy documents, and case studies from cities and countries that have successfully implemented land pooling.

Secondly, a comprehensive review of Delhi's land pooling policy was undertaken, including its timeline, key implementation stages, and stakeholder roles. Primary data collection involved site visits, semi-structured interviews with stakeholders, and questionnaire surveys to understand the current status of land pooling, challenges, and factors influencing participation. The sample size for the primary survey was determined using simple random sampling, ensuring a 95 percent confidence level and a 5 percent margin of error, resulting in a sample size calculation of at least 123 out of 180 landowners in Tigipur village in sector 2 of zone P-II.

The data collection methods included the preparation of a detailed questionnaire

to gather information on landowners' perceptions of the Delhi Land Pooling Policy. The questionnaire covered general questions regarding land ownership, occupation, involvement in agriculture, and specific questions about awareness, perceived benefits, and drawbacks of the policy. It also explored alternative models and the role of landowners in the policy. Site visits were conducted to collect data and identify issues in the current policy. Personal interviews and group discussions with landowners provided qualitative insights, while the survey was administered through face-to-face interviews, telephonic interviews, and online forms. A total of 92 responses were collected and analyzed.

Visits to the Delhi Development Authority (DDA) office for the land pooling cell in Pitampura were conducted to collect data and discuss implementation challenges with key officials. This included a detailed discussion with the Deputy Director Land Pooling, DDA, to understand the current scenario and issues faced by the DDA.

Lastly, the framework aimed to propose restructuring measures for enhanced inclusivity by incorporating landowners' perceptions and innovative approaches. Data from interviews, surveys, and site visits were integrated to inform these recommendations. The developed hybrid model aimed at increasing awareness about policy benefits and empowering stakeholders. The primary research question addressed the factors contributing to the low percentage of land pooled for the policy in different sectors. This mixed-methods approach provided actionable suggestions for improving landowner participation and enhancing the overall effectiveness of the land pooling policy.

## 3. LITERATURE REVIEW

The literature review delves into various alternative mechanisms for land assembly,



focusing on global and domestic perspectives. Alternative models explored include land readjustment, land pooling, private sector participation (PPP), land lease policies, price negotiations, and non-monetary compensation (Shanu Raina, 2018). These mechanisms emerge as responses to the challenges posed by traditional land acquisition processes, particularly in terms of efficiency, equity, and social acceptance. For instance, land readjustment is highlighted for its participatory nature, which minimizes public discontent and promotes equitable outcomes (Larsson, 1997). Moreover, global case studies, such as Germany's land readjustment model (Davy, 2024), Japan, South Korea, and China's adaptations, and Australia's land pooling practices (Archer, 1994; Karki, 2004; Kresse & van der Krabben, 2022; Larsson, 1997; Mathur, 2013b) underscore the diverse approaches and their contextual nuances. The German model, renowned for its streamlined processes and transparent valuation mechanisms, offers valuable insights into successful implementation (Davy, 2024; Mugisha et al., 2023). Similarly, Japan and South Korea's participatory approaches emphasize the importance of engaging diverse stakeholders for effective outcomes (Habibi & Ono, 2017; Seong et al., 2023). Furthermore, India's experiences with Town Planning Schemes (TPS) and Land Pooling Schemes (LPS), particularly in Gujarat (Mathur, 2013b), Andhra Pradesh's Amaravati, and Haryana, showcase innovative strategies for addressing land acquisition challenges. Lessons learned highlight the voluntary nature of land pooling, stakeholder inclusivity, mitigation of disputes, and the role of political leadership in ensuring success (Das et al., 2024; Li & Love, 2022). However, key prerequisites for a workable land pooling policy, including transparent communication, stakeholder trust-building, financial capacity, and integrated land management approaches, underscore the need for comprehensive frameworks to navigate complexities and ensure sustainable urban development (Habibi

& Ono, 2017; Shanu Raina, 2018). Despite the successes observed, challenges such as land valuation discrepancies, rehabilitation concerns, and procedural delays warrant further research to bridge existing gaps and optimize policy effectiveness (DDA, 2021a).

#### 4. CITY PROFILE: DELHI

Delhi, with a total area of 1483 sq.km, comprises nine districts and 27 sub-divisions as per the gazette notification of 1996. Over time, Delhi has transitioned from predominantly rural areas to urban regions. The number of villages has decreased significantly, from 300 in 1961 to 112 in 2011, while the number of urbanized villages has increased from 20 to 135 during the same period. Census towns also saw a rise, from three in 1971 to 110 in 2011. This urbanization trend has been further propelled by the declaration of most areas in the National Capital Territory of Delhi (NCT) as urbanizable areas under the Master Plan Delhi (MPD) 2021. Governance in Delhi is managed by four main institutions: the State Government of Delhi, the Office of the Lieutenant Governor, the Municipal Corporation of Delhi (MCD), and the Delhi Development Authority (DDA). According to the 2011 census, Delhi's population increased from 13.85 million in 2001 to 16.75 million in 2011, with 97.5 percent residing in urban areas. The decadal growth rate, which was over 50 percent from 1951 to 1991, reduced to 21 percent between 2001 and 2011. Additionally, net migration to NCT Delhi declined from 17.6 lakh during 1991-2011 to 6.8 lakh during 2001-2011, possibly due to development in neighbouring areas.

##### 4.1 Land Policy and Urban Development in Delhi

This section delves into two key policy areas relevant to Delhi's urban development: land pooling and mixed land use.

**Land Pooling Policy:** A comprehensive review of Delhi's land pooling policy was conducted.

This review examined the policy's timeline, from its inception to the present day, along with the key implementation stages involved. It also identified the various stakeholders involved in the process, including landowners, developers, and the Delhi Development Authority (DDA). Secondary data on landowner willingness to participate, obtained from DDA reports or online portals, was analyzed using descriptive statistics. This analysis helped identify the distribution of willingness percentages across different sectors within the city. Additionally, primary data collection through site visits and interviews with stakeholders was conducted. This data collection aimed to identify the challenges faced during the implementation of the land pooling policy and the factors influencing landowner participation.

**Mixed Land Use:** The concept of mixed land use was explored within the context of Delhi's urban development. This analysis examined how mixed land use strategies, where residential areas are integrated with commercial spaces and public amenities, can be effectively integrated with the land pooling policy. The research considered how such integration could create more vibrant and sustainable communities. It specifically focused on how mixed land use can improve accessibility by reducing travel needs and enhancing the overall quality of life for residents through closer proximity to essential services and amenities.

#### **4.2 Review of Land Pooling Policy of Delhi**

The land pooling policy aims to involve landowners as partners in the development process by pooling land parcels. Under this policy, a minimum of 70 percent contiguous land of the developable area must be pooled, with 60 percent retained by the consortium and 40 percent by DDA. The policy outlines land use distribution, including residential, commercial, industrial, recreational, and

public and semi-public (PSP) areas. Land use distribution for urbanizable areas under the policy includes residential, commercial, industrial, recreational, and PSP areas.

#### **4.3 Background and Timeline**

The timeline of the land pooling policy spans from its proposal in the Master Plan 2021 to its operationalization. The Policy underwent several modifications and delays, with the involvement of various stakeholders and regulatory amendments. In June 2017, 95 villages were declared as development areas, followed by regulatory modifications in January 2018. However, operationalizing the policy faced challenges, with the launch of an online portal for landowners' expression of willingness in February 2019. The timeline reflects the complexity and time-consuming nature of policy implementation in Delhi (figure 1).

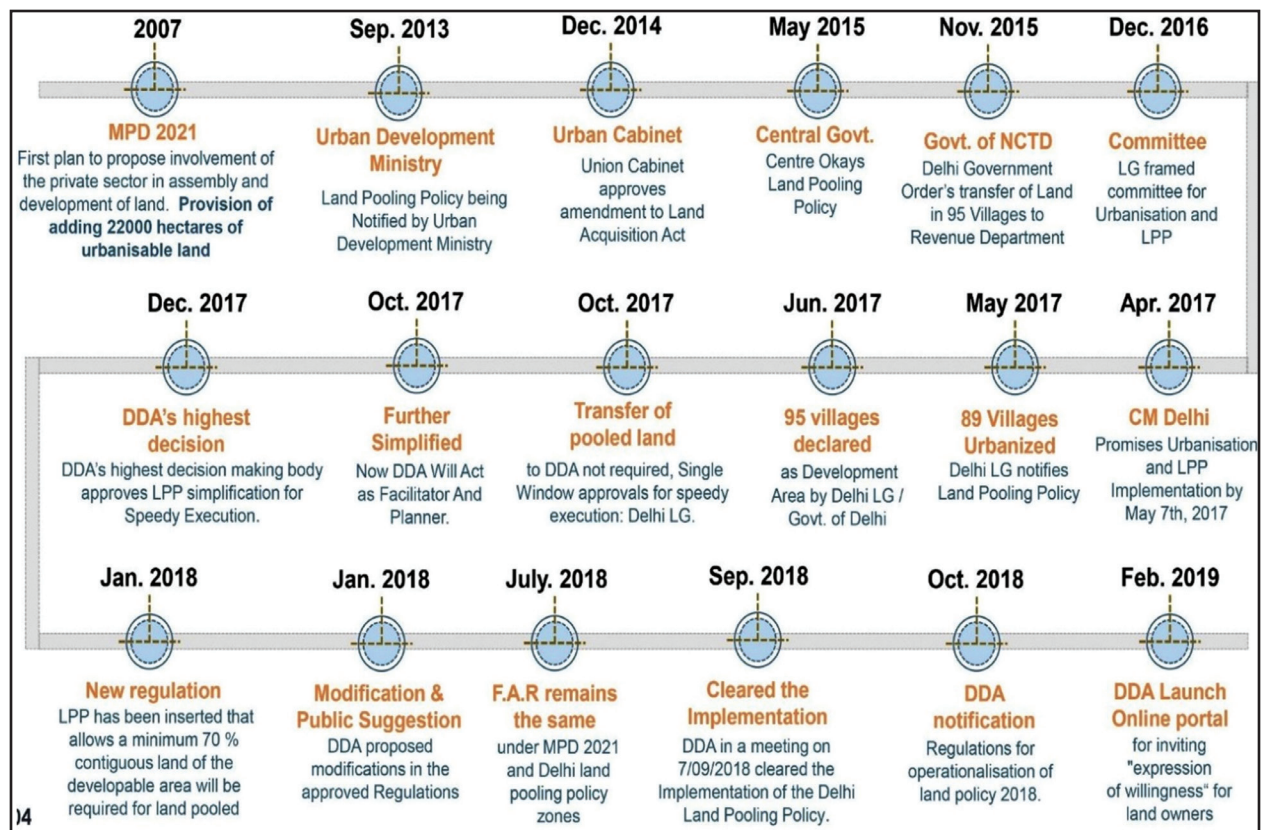
#### **4.4 Delhi Land Pooling Policy Process**

The key stages of the land pooling policy involve landowners expressing willingness to participate, forming consortia, applying for provisional development licenses, and obtaining necessary approvals. The process also includes obtaining final development licenses, securing building plan approvals, and executing the project. However, low participation rates highlight challenges in policy implementation.

#### **4.5 Comparison with Town Planning Scheme (TPS) in Gujarat**

The Town Planning Scheme (TPS) implemented in Ahmedabad City offers valuable insights into the management of urban land and the integration of land use planning with service provision in expanding urban peripheries. Initially introduced under the Bombay Town Planning Act of 1915, the TPS gained prominence after the 1999 amendment to the Gujarat Town Planning and Urban Development Act, evolving into

Figure 1: Timeline of Land Pooling Policy



Source: Author generated from secondary sources

a transformative mechanism for urban development (Chatterjee, 2011).

**Overview of the TPS Mechanism:** The TPS in Ahmedabad operates as a land pooling and readjustment mechanism, enabling the appropriation of private lands for public purposes such as roads, open spaces, low-income housing, and utility infrastructure. This process involves negotiations between local planning authorities and landowners, facilitating more equitable allocation of urban land.

**Achievements and Transformative Outcomes:** Through the TPS mechanism, Ahmedabad has successfully obtained land for various public purposes, including the construction of low-income housing units, development of green spaces, and provision of essential infrastructure. For instance, approximately

33,000 dwelling units were constructed under the Basic Services for the Urban Poor of the Jawaharlal Nehru National Urban Renewal Mission, highlighting the TPS's role in addressing housing challenges (Mahadevia et al., 2018; Mathur, 2013a).

**Challenges and Limitations:** Despite its achievements, the TPS faces challenges such as time delays, financing constraints, and opposition from certain stakeholders, particularly farmers in distant locations from urbanizing peripheries. Additionally, the TPS's effectiveness in ensuring equitable outcomes is limited by factors such as the state's prioritization of public needs over private land rights and inadequate participation of all stakeholders in the negotiation process.

**Lessons Learned and Future Implications:** The TPS model in Ahmedabad provides valuable lessons for urban land management



and planned development. By overcoming barriers to land acquisition and promoting inclusive urban growth, the TPS offers a replicable framework for other Indian cities grappling with similar challenges of unplanned urbanization and land scarcity. However, addressing the limitations and enhancing stakeholder participation are crucial for maximizing the TPS's transformative potential and ensuring equitable urban development outcomes.

In comparison, Delhi's Land Pooling Policy operates under a different framework, focusing on incentivizing landowners for pooling their land for development purposes. While the TPS in Gujarat emphasizes land consolidation and infrastructure development within predetermined parcels, Delhi's Land Pooling Policy encourages participation through incentives such as increased FAR and infrastructure development charges (Mahadevia et al., 2018). The TPS in Ahmedabad represents a significant milestone in urban land management, facilitating planned urban extensions and addressing housing and infrastructure needs (AUDA, 2012). While challenges persist, the TPS's success underscores the importance of innovative land pooling mechanisms in achieving sustainable and inclusive urban development goals. By leveraging lessons learned from Ahmedabad's experience, policymakers and urban planners can design more effective strategies for equitable land allocation and integrated urban development in Indian cities.

#### **4.6 Enhancing Land Pooling Policy Implementation**

Effective implementation of land pooling policies requires inclusive stakeholder engagement, transparent communication, and participatory planning. Engaging all stakeholders, including landowners, tenants, informal settlers, and community organizations, fosters trust and addresses diverse concerns

comprehensively. Clear communication about the benefits, processes, and timelines of land pooling mitigates resistance, while regular updates and open forums for questions build stakeholder confidence. Inviting inputs during the planning stages leads to more accepted and sustainable outcomes, and participatory mapping and workshops help stakeholders visualize benefits and contribute to decision-making.

Enhancing stakeholder willingness involves providing attractive incentives such as increased land values, improved infrastructure, and fair compensation for appropriated land. Establishing formal mechanisms to address grievances and disputes enhances confidence, and mediation services and clear legal frameworks facilitate smoother negotiations. Additionally, educating stakeholders on the technical, legal, and economic aspects of land pooling through training programs and informational sessions demystifies the process and empowers effective engagement.

The role of key entities in land pooling policies is crucial. Some models involve a Developer Entity (DE) coordinating the process, which can streamline operations and bring in technical expertise but may prioritize profit over public interest. In contrast, the Gujarat Town Planning Scheme (TPS) model features a Town Planning Officer (TPO) overseeing pre- and post-reconstitution processes, ensuring a focus on public welfare and equitable land distribution. The TPO's quasi-judicial powers facilitate balanced negotiations and adherence to statutory requirements, often ensuring higher accountability and transparency compared to private DEs. A TPO, as a government representative, might inspire more public trust than a private DE, which could be perceived as profit-driven. While DEs might bring efficiency, the TPO model emphasizes equitable outcomes, critical for inclusive urban development.



A hybrid approach, where a TPO oversees regulatory and equitable aspects and a DE handles technical and operational tasks, can balance efficiency and equity. Strengthening legal frameworks to define roles, responsibilities, and powers of both TPOs and DEs ensures a balanced and transparent process. Implementing robust monitoring and evaluation mechanisms to track progress, address issues promptly, and make data-driven adjustments to policies and practices is also essential. Combining best practices from models like Gujarat's TPS with innovative approaches can lead to more effective and equitable outcomes, ensuring successful land pooling policies that enhance stakeholder willingness and overall success.

## 5. RESULTS

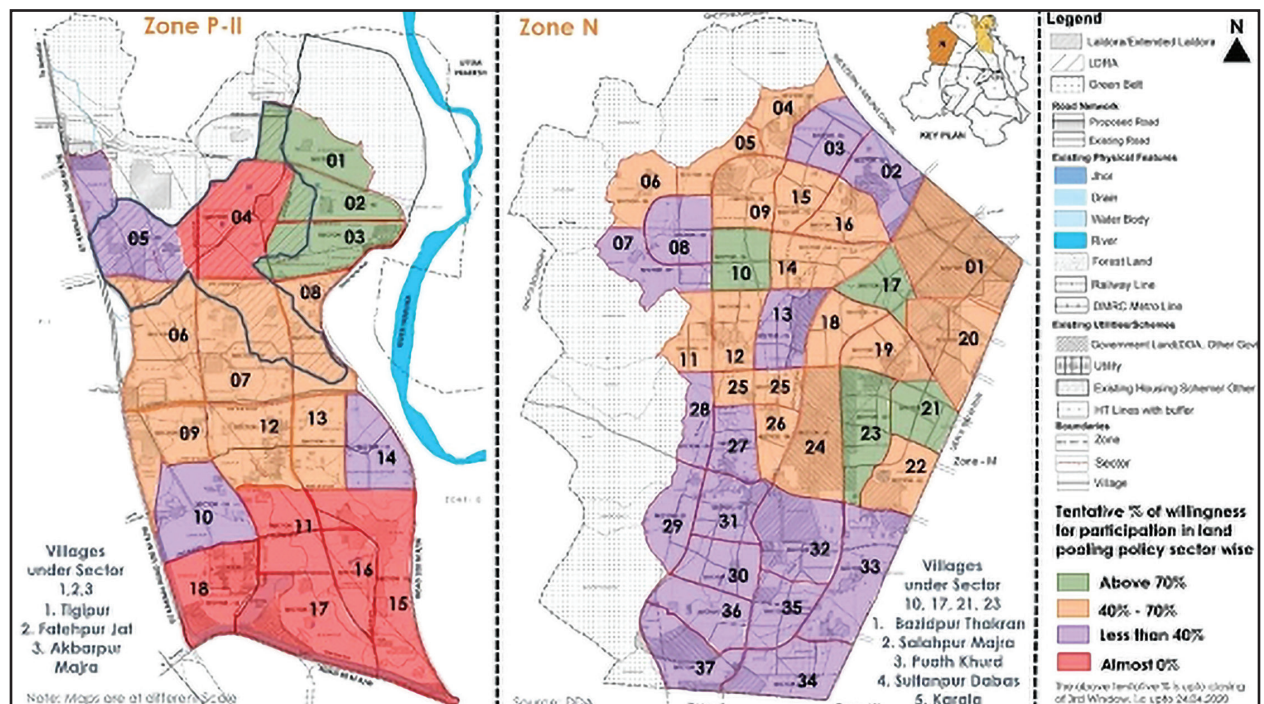
This section delves into an in-depth discussion of the findings presented in the preceding chapters regarding the Delhi Land Pooling Policy 2018 and offers comprehensive recommendations to address the identified challenges and optimize policy efficacy. The overview of the Delhi Land

Pooling Policy delineates its fundamental objectives, intricacies of the implementation process, and the associated challenges encountered during its execution. The study area, comprising Zone P-II, N, K-I, and L (figure 2, 3, and 4) is comprehensively analysed to understand the factors influencing willingness towards the land pooling policy.

### 5.1 Data Analysis on Tentative Willingness

The analysis delves into the tentative percentage of willingness for participation in Zone P-II, N, K-I, and L until April 24, 2020. The percentage data was divided into six categories while the sectors were divided according to the percentage of vacant land pooled for land pooling. Through this analysis, it was observed that the distribution of willingness varied significantly across sectors within each zone. The data revealed that 70 percent of willingness to pool the land was noted among only 6.4 percent of the sectors whereas around 12.8 percent of the sectors showed no willingness.

Figure 2: Zone P-II & N: Land Pooling Participation by Sector



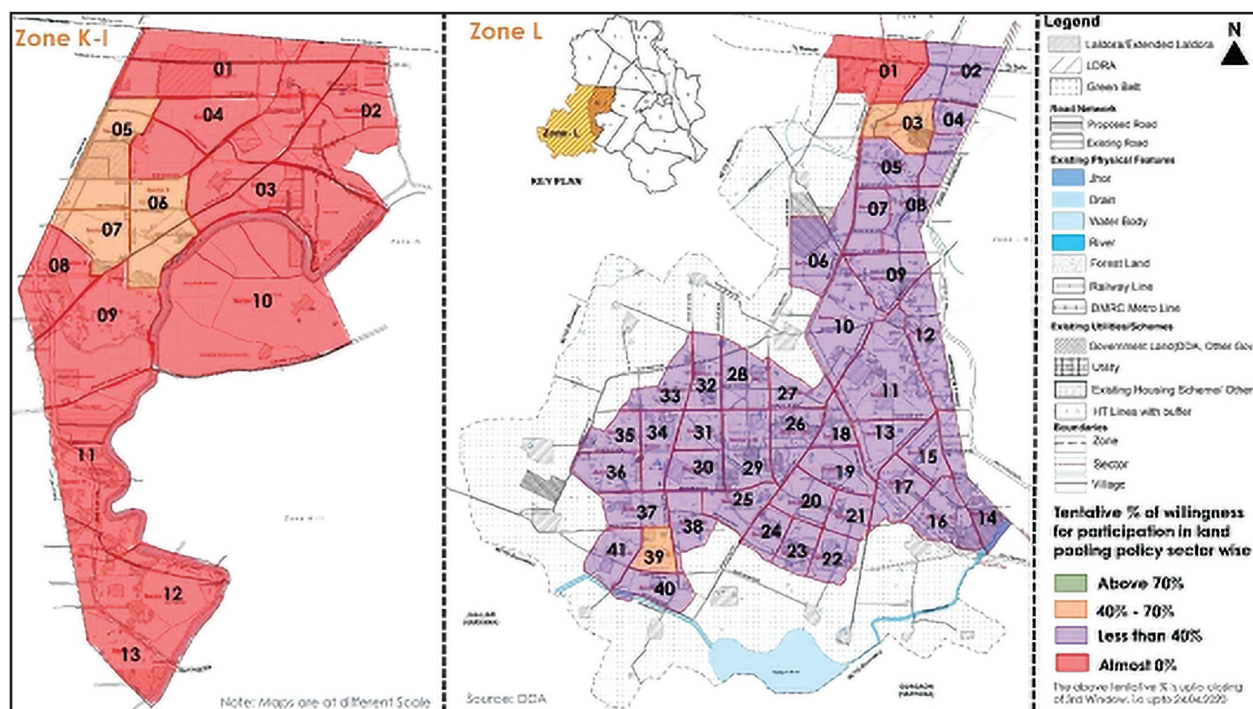
Source: Author generated from secondary sources (DDA, 2021b)

Zone P-II was found to be very diverse with north 3 sectors in the Northeast of the zone showing more than 70 percent willingness, while Sector 1, sector 2 and sector 3 showed approximately 71 percent, 90 percent and 78 percent respectively, as described in Map 1. The analysis revealed that land in sector 4 comes under low density residential area (LDRA) and is not a part of land pooling policy. Similarly, sector 5 which is along National Highway also has a major part of its land in LDRA. The sectors 6, 7, 8, 9, 12 and 13 showed willingness less as compared to other sectors

due to their spatial location in the middle of the zone. The lowest willingness percentage was observed in sector 10 and 14 due to their location along the National Highway and periphery road of the zone respectively. Sector 11, 15, 16, 17 and 18 displayed no interest in the policy as no land was pooled as per the data available on 24 April 2020.

In zone N, only 4 sectors namely sector 10, 17, 21 and 23 showed more than 70 percent willingness towards the land policy. Of the total 38 sectors, 16 sectors which were present

**Figure 3: Land Pooling Participation (Zones K-I & L) by Sector**



Source: Author generated from secondary sources (DDA, 2021b)

majorly in the south of the zone showed less than 40 percent willingness. However, results revealed that all sectors in this zone showed interest towards the policy as the percentage of land pooled is highest in this zone.

Zone K-II showed no interest in the policy. Out of total 13 sectors, only sector 5, 6 and 7 showed 25 percent, 16 percent and 20 percent willingness respectively, as described in figure 3. This zone has the least area of land

pooled under policy. It is important to study the factors responsible for such low willingness. In Zone L, most of the sectors showed less than 50 percent willingness while only sector 1 showed no interest in the policy. The overall scenario suggests that geographical location plays a pivotal role in analysing the willingness towards the land pooling policy. Zones in the North and Northwest of Delhi showed more willingness as compared to the zones in the Southwest of Delhi.

**Table 1: Sector in Each Zone and the Percentage of Land Pooled**

Percent of Land Pooled	Total No. of Sector	Sector in Zone P-II	Sector in Zone N	Sector in Zone L	Sector in Zone K-I
> 70 percent	7	1, 2, 3	10, 17, 21, 23	---	---
60 percent - 70 percent	8	9	5, 11, 16, 18, 19, 20, 24	---	---
50 percent - 59 percent	9	6, 13	1, 4, 8, 9, 14, 15	3	---
40 percent - 49 percent	8	7, 8, 12	12, 22, 25, 26	39	---
< 40 percent	60	5, 10, 14	2, 3, 6, 7, 13, 27 to 37	2, 4 to 38, 40, 41	5, 6, 7
No interest	17	4, 11, 15, 16, 17, 18	---	1	1, 2, 3, 4, 8, 9, 10, 11, 12, 13

Source: Author generated from secondary sources (DDA, 2021b)

Table 1 provides a summary of the total 109 sectors of the four zones included in the policy. A combination of data revealed that total of 7 sectors showed more than 70 percent willingness while 17 sectors across different zones showed no interest towards the policy. Maximum number of sectors with no interest were in the zone P-II and zone K-I. Zone N has maximum number of sectors between 40 to 70 percent of willingness while Zone L has maximum number of sectors with less than 40 percent willingness.

To study the diverse tentative willingness in different zones and identify the factors responsible for it, Zone P-II was selected based on the following factors: 1) The location of the zone is completely isolated from any other zone in the land pooling policy. 2) Between Zone N and P-II, by considering the tentative willingness excluding sectors with no willingness, then zone P-II has highest willingness. 3) Analysing the data on change in land cover in zone P-II and zone N over the last decade, then maximum change was observed in Zone P-II. 4) Among all the zones it showed diverse willingness for pooled land in among

different sectors. Some sectors showed willingness close to 90 percent.

## 5.2 Analysis of Study Area : Zone P-II

Zone P-II is in the North of Delhi with a total urbanisable area of 6285 hectares under the land pooling policy. There are total 18 sectors and 23 urban villages in the zone. Sectors are delineated for land pooling policy considering the zonal development plan.

Table 2 shows the sector-wise tentative percentage of area under land pooling. The average percentage of willingness for zone P-II is 33.46 percent. Out of total 6285-hectare land, 2248-hectare land is vacant. 1043-hectare land is pooled for land pooling from 2448-hectare vacant land. Sector 1, 2 and 3 showed tentative willingness more than 70 percent. Sector 9 showed willingness between 60 to 70 percent. Sector 6, 7, 8, 9, 6 and 13 showed willingness between 59 to 40 percent. Sector 5, 10 and 14 showed less than 40 percent willingness. Sector 4, 11, 15, 16, 17 and 18 showed almost no willingness to pool their land. Table 3 shows the sectors categorized by pooled land in Zone P-II.



**Table 2: Sector wise Tentative Percent of Area Under Land Pooling**

Sector	Total Area of Sector (ha)	"Vacant Area in Sector (ha)"	Tentative Area Under Land Pooling (ha) upto 24.04.20	Tentative Percent of Area Under Land Pooling upto 24.04.20
Sector 1	275	172	123.63	71.88
Sector 2	221	140	126.08	90.06
Sector 3	311	210	164.56	78.36
Sector 4	421	0	0	0
Sector 5	456	69	17.8	25.8
Sector 6	470	231	124.18	53.76
Sector 7	554	237	104.52	44.1
Sector 8	284	123	57.91	47.08
Sector 9	268	148	92	62.16
Sector 10	362	164	39.31	23.97
Sector 11	293	123	0	0
Sector 12	336	198	84.5	42.68
Sector 13	245	165	86.5	52.42
Sector 14	244	223	22.15	9.93
Sector 15	553	110	0	0
Sector 16	195	26	0	0
Sector 17	455	67	0	0
Sector 18	342	42	0	0
Total	6285	2448	1043.14	33.46

Source: Author generated from secondary sources (DDA, 2021b)

**Table 3: Sectors as per Category of Pooled Land in Zone P-II**

Percent of Land Pooled	Total No. of Sector	Sector Number
> 70 percent	3	1, 2, 3
60 percent - 70 percent	1	9
50 percent - 59 percent	2	6, 13
40 percent - 49 percent	3	7, 8, 9
< 40 percent	3	5, 10, 14
No land pooled	6	4, 11, 15, 16, 17, 18

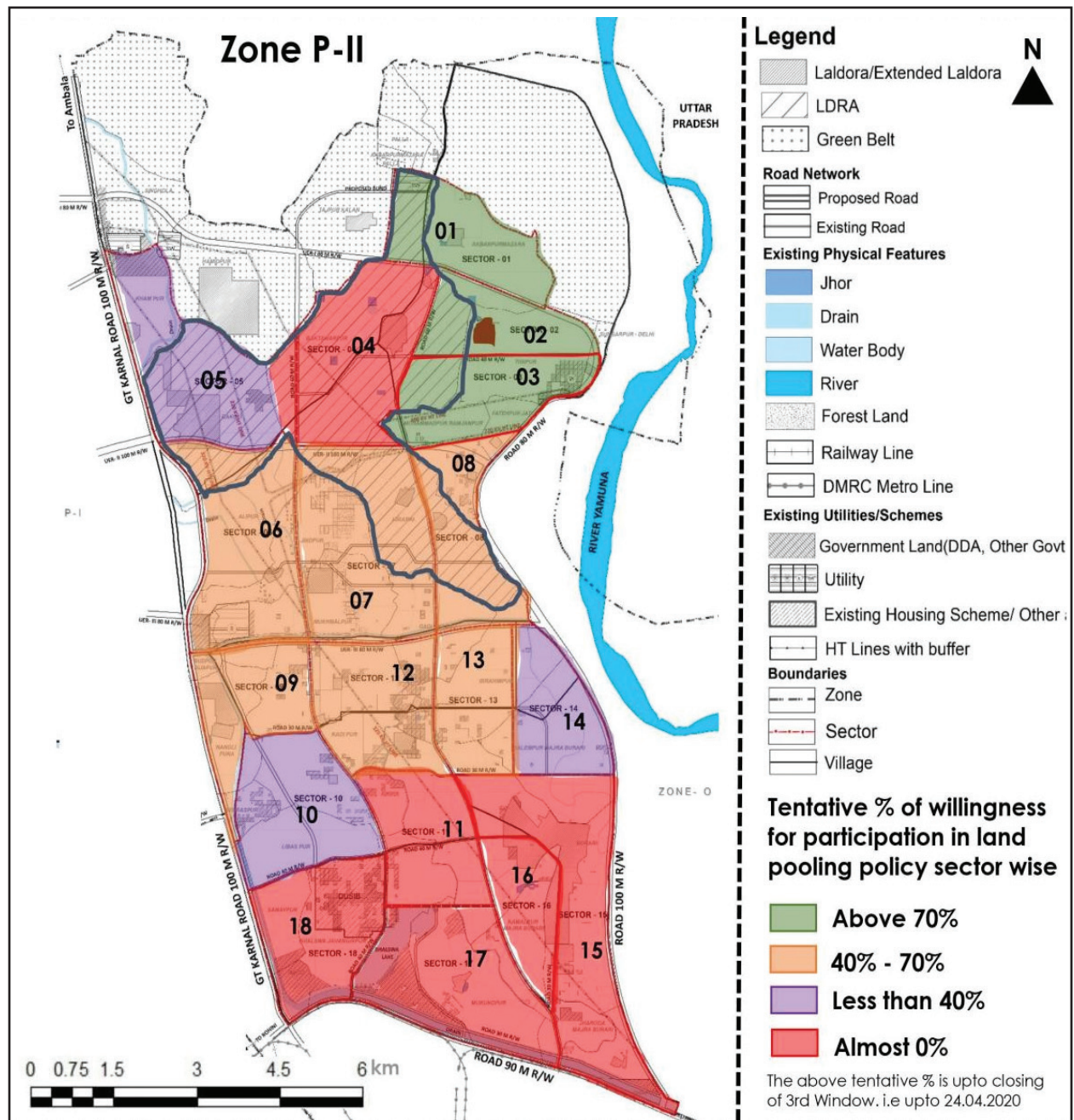
Source: Author generated from secondary sources (DDA, 2021b)

On further analysis of the willingness data in the Zone P-II, varied spatial patterns were observed, as shown in figure 3. In the Northeast part of the zone, 3 sectors showed willingness more than 70 percent. The sectors in the

middle of the zone showed willingness ranging between 40-70 percent while the South sectors showed almost no interest and sectors hence no land was pooled in these sectors. From the analysis, it was inferred that location of the sectors



Figure 3: Sector Wise Tentative Percent of Willingness for Pooled Land



Source: Author generated from secondary sources (DDA, 2021b)

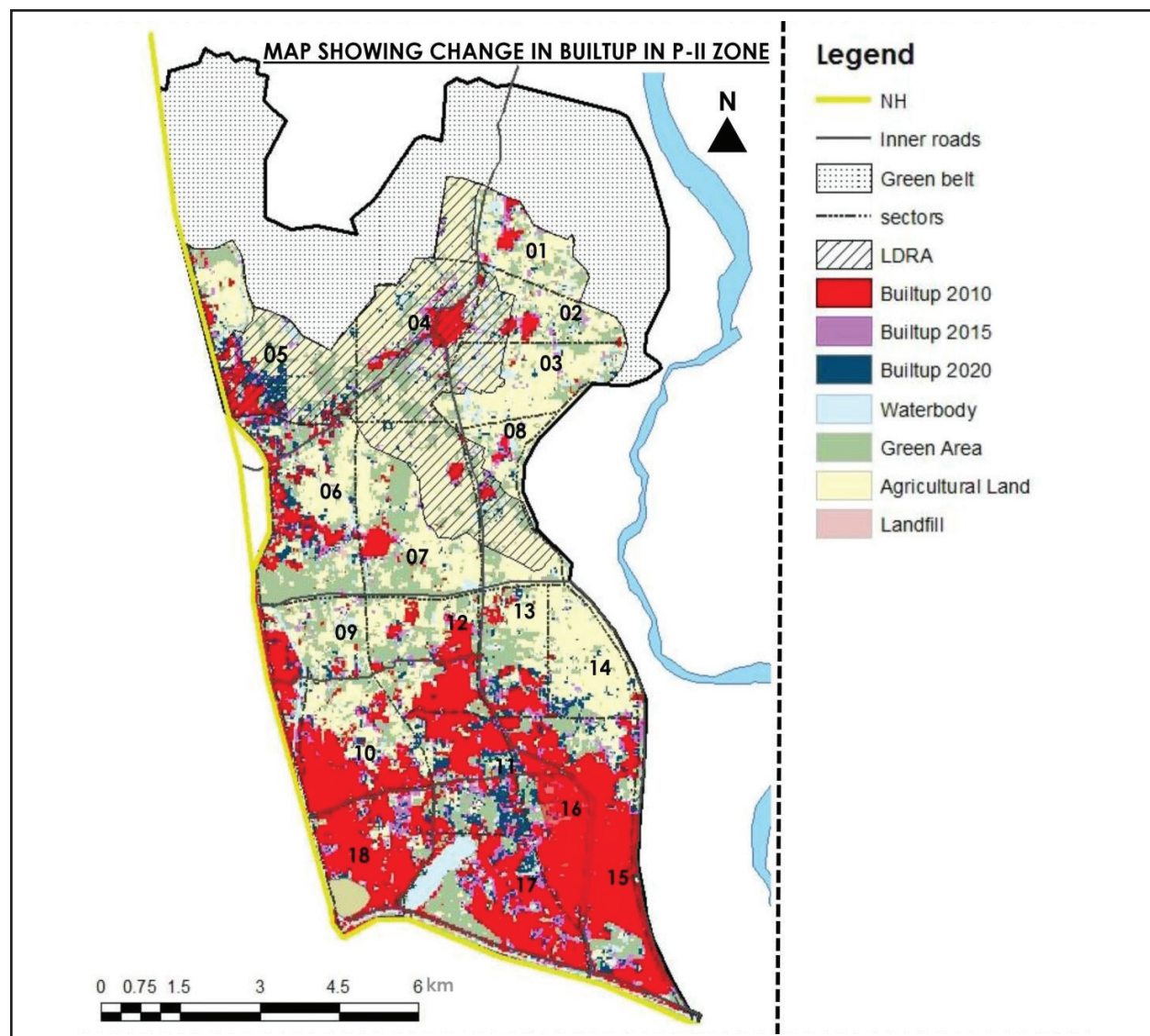
and willingness to pool land have some influence over each other.

### 5.3 Land Use and Land Cover Analysis

This section examines land-use and land-cover (LULC) changes in Zone P-II between 2010 and 2020. We employed spatial analysis techniques to identify growth patterns and inform our

research on landowner participation in the Land Pooling Policy.

An LULC (figure 4) visually depicts these changes. Red areas represent built-up areas in 2010, while purple and dark blue represent areas converted to built-up use between 2010-2015 and 2015-2020, respectively. The figure

**Figure 4: Change in Land Use Land Cover in Zone P-II**

Source: Author generated from secondary sources (DDA, 2021b)

reveals a concentration of new development in the zone's south and northwest, often adjoining existing built-up areas.

Table 4 further details these changes agricultural land has significantly decreased, dropping from 45.74 sq. km in 2010 to 35.94 sq. km in 2020, representing a loss of nearly 12 percent. Conversely, built-up area has grown from 15.85 sq. km to 22.26 sq. km, reflecting a 7.79 percent increase. Green cover and landfill areas have witnessed minimal change.

These findings suggest a trend of unregulated conversion of agricultural land to other uses. This highlights the importance of the land pooling policy in facilitating a more controlled and planned approach to development within Zone P-II. Interestingly, the analysis also suggests a potential correlation between existing built-up area and lower landowner willingness to participate in the policy. Sectors with significant recent development demonstrated lower participation rates compared to those with less growth. This warrants further

**Table 4: Change in Land Use Land Cover from 2010 to 2020 (Zone P-II)**

Land Use	2010		2015		2020		Difference 2010 - 2020	
	Area (Sq.km)	Land use (percent)	Area (Sq.km)	Land use (percent)	Area (Sq.km)	Land use (percent)	Area (Sq.km)	Land use (percent)
Water Body	5.78	7.02	5.57	6.76	5.20	6.31	-0.58	-0.71
Built-up Area	15.85	19.25	18.41	22.36	22.26	27.04	6.41	7.79
Green Area	13.62	16.54	14.69	17.85	17.56	21.33	3.94	4.79
Agriculture Land	45.74	55.57	42.24	51.32	35.94	43.66	-9.8	-11.91
Landfill	1.31	1.59	1.37	1.66	1.34	1.63	0.03	0.05

Source: Author generated

investigation into the factors influencing landowner decisions within the context of existing development patterns.

#### 5.4 Analysis of Land Ownership

The land ownership analysis for Sectors 2 and 3 of Zone P-II revealed important insights into the willingness of landowners to participate in the Delhi Land Pooling Policy. In these sectors, the willingness to pool land was 90 percent and 78 percent, respectively. A significant majority of landowners, 91 percent, possessed less than 5 acres of land, with 31 percent relying primarily on agriculture for their livelihood. Despite 60 percent of respondents expressing willingness to participate in the land pooling policy, only 13 percent had detailed knowledge of the policy's implementation stages, indicating a significant gap in awareness and understanding. However, this willingness included both full and part khasra pooled. When considering only fully pooled khasras, the willingness in both sectors decreased, impacting their eligibility for the policy, which requires a minimum of 70 percent of the developable area to be pooled with contiguous land parcels. Figure 5 displays the distribution of fully pooled and partially pooled khasras, while figure 6 illustrates

land ownership patterns within Sector 2 and Sector 3 of Zone P-II.

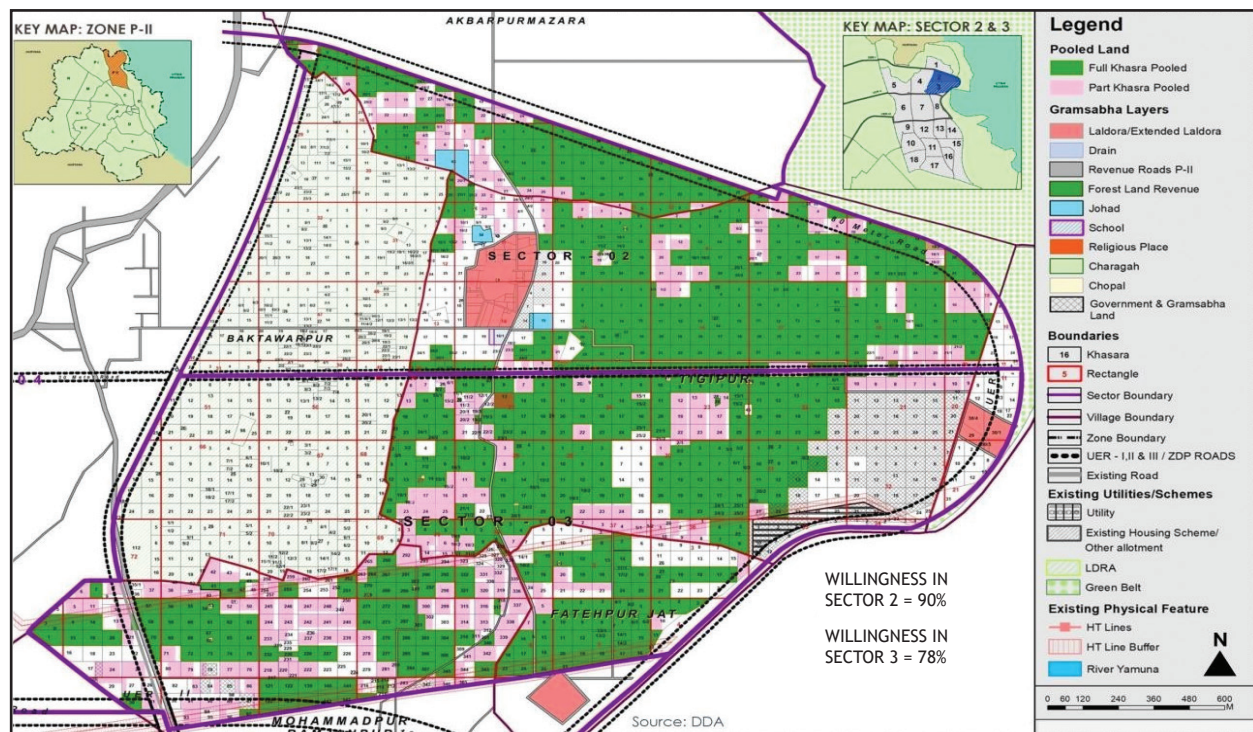
The analysis, illustrated in the figure 5 and figure 6, highlighted the distribution of land ownership among villagers and other landowners. In Sector 2, of the total 344 acres of vacant land, villagers owned approximately 259 acres (75.5 percent), with 43 acres (12.5 percent) already sold and 42 acres (12 percent) partially sold. In Sector 3, out of 504 acres, villagers owned 284 acres (56 percent), while 135 acres (26 percent) were sold and 85 acres (17 percent) were partially sold. Overall, villagers owned 64 percent of the land in both sectors.

Financial constraints emerged as a major barrier, with 94 percent of landowners lacking the resources to pay external development charges. Additionally, only 35 percent were willing to involve private developers in the development of their land, and 38 percent were open to forming a consortium with developers, reflecting trust issues and a preference for greater involvement from the Delhi Development Authority (DDA).

The analysis highlights key barriers to participation, including financial limitations,

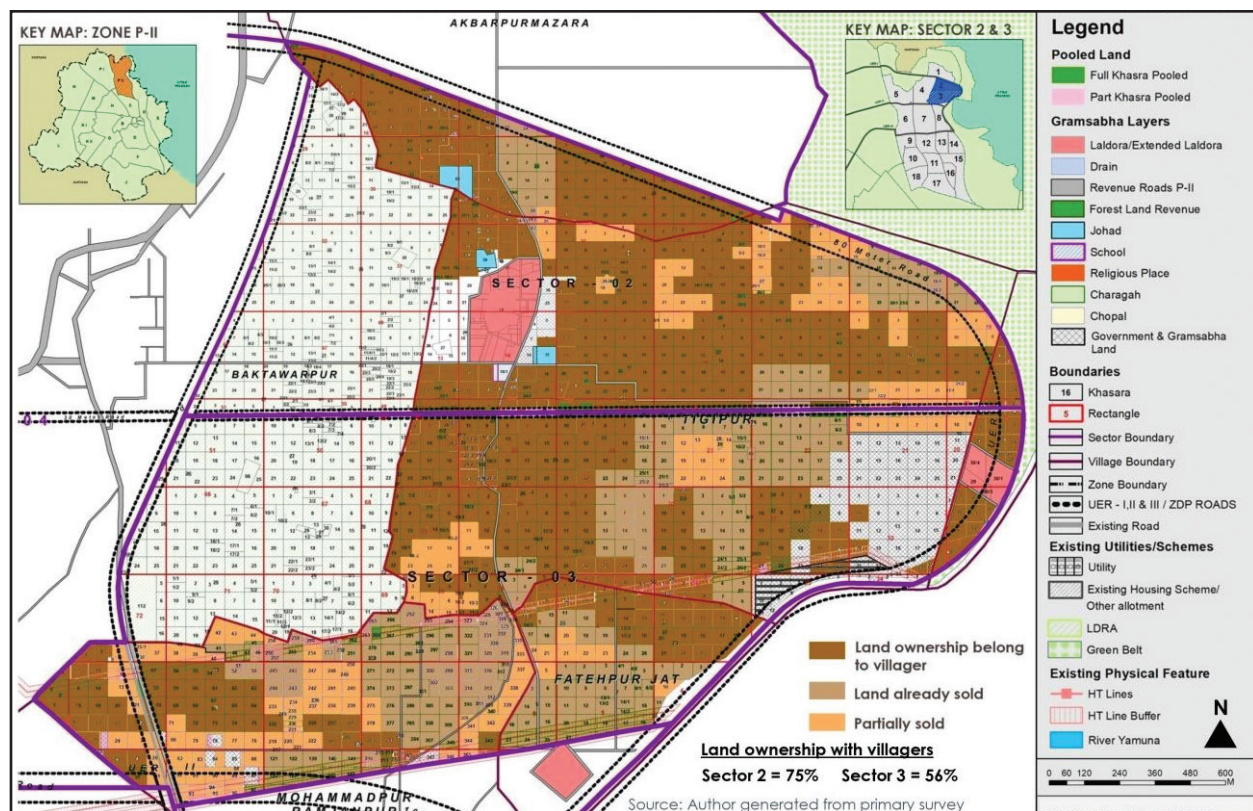


Figure 5: Full Khasra and Part Khasra Pooled in Sector 2 and 3 of Zone P-II



Source: Author generated from secondary source (DDA, 2021b)

Figure 6: Land Ownership in Sector 2 and 3 of Zone P-II



Source: Author generated from secondary source (DDA, 2021b)



lack of awareness, and mistrust of private developers. These findings underscore the need for the DDA to provide better financial support, enhance awareness campaigns, and foster trust to improve participation rates and ensure the policy's effective implementation.

## 6. CONCLUSION

The introduction of the land pooling policy in Delhi marked a significant step towards addressing the challenges of urban development and land assembly. However, the effectiveness of this mechanism remains uncertain, and its success hinges upon proactive measures from the development authority and government. Despite efforts to regularize the policy in 2018, it has struggled to attract landowners to participate in the pooling process. Timely amendments and a hybrid approach are essential to revitalize the policy framework and make it more appealing to stakeholders. This necessitates offering landowners more options at the award stage, enhancing awareness about the policy benefits, and addressing negative perceptions stemming from implementation delays. A proactive role from both the development authority and government is crucial for fostering a successful model of land assembly. Moreover, incorporating landowners' suggestions and experiences into the policy framework is imperative for its effective implementation. By fostering a participatory approach and making timely amendments, the current policy has the potential to evolve into a successful model for land assembly in Delhi.

To further advance the land pooling policy, a comprehensive analysis of each zone and sector is essential. Understanding the factors influencing willingness and

addressing sector-specific issues are critical for policy optimization. Moreover, examining the perception of landowners towards the policy, particularly in proximity to built-up areas, is necessary to address underlying concerns and enhance participation. Additionally, exploring different consortium formation strategies and pre-emptively addressing implementation challenges are vital for streamlining the process. Simplifying the implementation process while mitigating conflict areas should be the focus of future studies, ensuring timely completion and effective realization of urban development goals.

## REFERENCES

- Ahmadabad Urban Development Authority (AUDA). (2012). *History of planning*. [http://www.auda.org.in/tp\\_scheme.html](http://www.auda.org.in/tp_scheme.html)
- Archer, R. W. (1994). Urban land consolidation for metropolitan Jakarta expansion, 1990-2010. *Habitat International*, 18 (4), 37-52. [https://doi.org/10.1016/0197-3975\(94\)90016-7](https://doi.org/10.1016/0197-3975(94)90016-7)
- Chatterjee, A. (2011). Town Planning Scheme - An Effective mechanism of land management : Gujarat Experiences. *Indian Journal of Landscape System and Ecological Study*, 34.
- Das, M., Das, A., & Pereira, P. (2024). Impact of urbanization induced land use and land cover change on ecological space quality- mapping and assessment in Delhi (India). *Urban Climate*, 53, 101818. <https://doi.org/10.1016/J.UCLIM.2024.101818>
- Davy, B. (2024). The German Verkehrswert (market value) of land: Statutory land valuation, spatial planning, and land policy. *Land Use Policy*, 136, 106975. <https://doi.org/10.1016/J.LANDUSEPOL.2023.106975>
- DDA. (2021a). *Land Policy and Regulations for Operationalization of Land Policy*. <https://online.dda.org.in/landpooling/AppForm/docs/FAQEng.pdf>
- DDA. (2021b). *Master Plan for Delhi 2021*. <https://dda.gov.in/master-plan-2021>

- Habibi, S., & Ono, H. (2017). *A Literature Review on Land Readjustment (LR) Practices in Developed and Developing Countries*.
- Karki, T. K. (2004). Implementation experiences of land pooling projects in Kathmandu Valley. *Habitat International*, 28 (1), 67-88. [https://doi.org/10.1016/S0197-3975\(02\)00085-1](https://doi.org/10.1016/S0197-3975(02)00085-1)
- Kresse, K., & van der Krabben, E. (2022). Rapid urbanization, land pooling policies & the concentration of wealth. *Land Use Policy*, 116, 106050. <https://doi.org/10.1016/J.LANDUSEPOL.2022.106050>
- Larsson, G. (1997). Land readjustment: A tool for urban development. *Habitat International*, 21 (2), 141-152. [https://doi.org/10.1016/S0197-3975\(96\)00059-8](https://doi.org/10.1016/S0197-3975(96)00059-8)
- Li, X., & Love, P. E. D. (2022). Procuring urban rail transit infrastructure by integrating land value capture and public-private partnerships: Learning from the cities of Delhi and Hong Kong. *Cities*, 122, 103545. <https://doi.org/10.1016/J.CITIES.2021.103545>
- Mahadevia, D., Pai, M., & Mahendra, A. (2018). *Ahmedabad: Town Planning Schemes for Equitable Development—Glass Half Full or Half Empty*. <https://doi.org/10.13140/RG.2.2.12683.75040>
- Mathur, S. (2013a). Self-financing urbanization: Insights from the use of Town Planning Schemes in Ahmadabad, India. *Cities*, 31, 308-316. <https://doi.org/10.1016/J.CITIES.2012.09.004>
- Mathur, S. (2013b). Use of land pooling and reconstitution for urban development: Experiences from Gujarat, India. *Habitat International*, 38, 199-206. <https://doi.org/10.1016/J.HABITATINT.2012.06.007>
- Mugisha, J., Kombe, W. J., Babere, N. J., & Uwayezu, E. (2023). Uncovering ‘sleeping beauty’: Land readjustment for self-financing urbanisation in developing countries. *Social Sciences & Humanities Open*, 8 (1), 100539. <https://doi.org/10.1016/J.SSAHO.2023.100539>
- Seong, E. Y., Kim, H. M., Kang, J., & Choi, C. G. (2023). Developing pedestrian cities: The contribution of land readjustment projects to street vitality in Seoul, South Korea. *Land Use Policy*, 131, 106735. <https://doi.org/10.1016/J.LANDUSEPOL.2023.106735>
- Shanu Raina, A. (2018). Transformation of Urban Villages, Delhi. In *Journal of Civil Engineering and Environmental Technology* (Vol. 5, Issue 6). <http://www.krishisanskriti.org/Publication.html>



# Spatial Manifestations and Implications of Urban Reforms in Surat City Post 1991 Economic Reforms

**Shilpi Aggarwal**

## Abstract

*The aim of the reforms is to bring about changes that can upgrade the present system with sustained growth of the place and facilitate well-being of the people. Adoption of urban reforms focuses on enhancing spatial quality of the cities transforming them into engines of economic growth which finally results in achieving the above-mentioned goal. In 1991, Indian Government conceived economic policies to achieve economic growth of the nation. To achieve the objectives of economic policies, a series of national and urban reforms were initiated covering a wide range of developmental sectors. National policies like promotion to private investment and 100 percent FDI in infrastructure and real estate resulted in boosting transport infrastructure and industrial, residential, commercial development. In addition to those urban reforms such as JnNURM (2005-12), AMRUT, Smart City Mission, PMAY, Swachh Bharat Abhiyan, etc. from 2015-2020 restructured the scenario of urban development creating investor friendly environment, transforming cityscape and lifestyle of citizens. Therefore, the purpose of this study is to relate the objectives of urban reforms with the transforming-built environment in various forms ultimately achieving the goal of economic growth and well-being of people with an empirical case of Surat city.*

## 1. INTRODUCTION

The progressive growth of human habitation from nomads to early civilizations followed by agrarian communities and industrialization has led to the formation of towns and cities. Population growth is observed accelerated with the advent of industrialization during 19th century, when mechanization increased efficiency and production, towns required workforce and induced in-migration from hinterlands. A systematic approach of governance, rules and regulations, law and order came in place for managing the people, economic and socio-cultural activities of the settlements at all levels with the aim of well-being of citizens and national growth. To achieve these goals, the countries evolved and practiced different economic regimes and kept on innovating their policies. From dictatorship to republic sovereign

countries, closed economy to open market driven economy or globalization, world has witnessed various formats of practicing trade and governance over its people.

India too has gone through the process of transformation of regimes and economic policy changes. The geography, administrative boundaries, politics, economic activities, socio-cultural aspects, everything kept on changing from one system to another till independence in 1947. Post-independence, for long period of time urban sector remained neglected since policies focused on primary sector (agriculture) growth to mitigate the challenges of food security, resettlement of refugees, industrial housing etc. whereas post adoption of economic reforms in 1991, rural sectors are observed neglected since policy focus shifted addressing urban sector. There have been continuous policy revisions and new policy formulation to meet the ever-changing demands, but periodic addressal of all sectors could have

<sup>1</sup> Shilpi Aggarwal, Ph.D. Scholar at Dept. of Physical Planning, School of Planning and Architecture, New Delhi, Email-shilpiphd208pp18@spa.ac.in

resulted in a better sustained growth for the society. The surge of balance of payment crisis during 1980s, called for adoption of economic reforms in 1991 which were aimed at revival of economic crisis country was going through and not directly aiming at growth of the people (Nayyar, 1996). Cities being economic growth drivers, large scale urban policies were adopted in continuation to national policy regime which resulted into transformed cityscapes in various forms. This paper is an effort to explore and understand the influence of reform led development post 1991 in Indian cities. Following section throws light on the reviewed literature to understand the objectives of reform adoption and its manifestations at national and ULB levels.

## 2. LITERATURE REVIEW

To understand the phenomenon of reform led spatial transformations, theories of urban economics, and economic geography are reviewed, and observations suggest that spatial manifestation of reforms have multiplier effects on place and people. Various theories have emphasised on the role of land use with respect to organisation of activities as important aspect bringing prosperity and well-being for people and place. It is believed that reforms play an important role in managing the ever evolving concerns and achieving sustained balance growth of the society. With respect to the land utilisation as an asset and organisation of activities Alonso (1964) Muth (1969) Mills (1967) Model is valid in the present context which explains that CBD holds higher cost of living and it decreases towards fringe. The commuting cost is balanced by differences in prices of living space in CBD and periphery. The model further explains about the conical form of the city due to built-form being high rise with smaller units in the centre and

low rise with larger units towards fringes. The concerns in the theory of Traditional Economic Geography is relevant even today about the phenomenon of clustering of activities based on availability of natural resources, proximity to the transport facility as driving factors of development. In 1970 Paul Krugman's New Trade Theory distinctly explains the network effects with respect to agglomeration of economic activities leading to increasing returns in production by cost reduction. From here the concept of preferred locations for investment to augment agglomeration benefits and global cities justifies its applicability that can guide policy formulation in creating such environment attracting investors.

It can be concluded that there are various factors responsible for economic growth and spatial transformations of a place, therefore policy formulation must acknowledge the body of thoughts to argument holistic benefits. Some recent reports and scholarly works in new millennium have distinctively identified the economic role played by the cities and these researches have propounded on the effects of economies of scale, economies of agglomeration (M. D. Bok, 2011) and economies of urbanisation with diversification (Habitat, 2011) resulting into transformations, cities are going through.

Gradual shift from closed economy models to adoption of market oriented economic policies by countries in 19<sup>th</sup> and 20<sup>th</sup> century, and shift from industrialisation to Information Communication Technology (ICT) based work culture (also known as 4<sup>th</sup> IR) has further increased efficiency and productivity demanding for improvising the pattern of spatial development that can meet the pace of technological advancement. This transformation is reducing the requirement to relocate the workforce and offering to work from remote locations. This means



reduction in physical meetings is reducing spatial demand for work places. There will still be need for manufacturing based activities and other spaces (for housing, commercials education and healthcare, etc.) in addition to ICT based technological advancement within industry, and therefore recent researches have emphasised on the importance of spatial quality of the place for firms and people to make location choices for investment. M. Assink (2009) explains that spatial quality is evaluated based on use value, perceived value and future value of the place by the investor.

Basudeb Bhatta (2010) elaborates on the components that are assessed by the firms and people while making location choices in and around a city and are the causes of urban growth or as applicable in our case spatial transformations. These components include value of land, development regulations, government policies w.r.t. development, demand from and access to market along with future returns, social structure, availability of physical, social infrastructure, quality of life, etc. The assessment of place value based on these components becomes the cause for city's growth as compact, expansions or sprawl in nature. Basudeb Bhatta (2010) has classified the spatial growth pattern of cities as 1) in-fill development (development on vacant lots within the existing core city), 2) expansion to the existing city limits, 3) outlying growth beyond city boundaries. The outlying growth is further classified as 3a) linear growth (along the corridors), 3b) cluster growth, and 3c) isolated growth (habitats growing away from city limits). A lot of these developments are results of policy interventions in different time periods playing a crucial role in increasing or decreasing place value.

With respect to the above discussion, further research is carried out with reference to

the adoption of economic reforms in 1991 by Indian Government. The reforms adoption in 1991 was a turning point in Indian history bringing radical changes in the economic landscape of the country. The adoption of urban reforms was the way forward for ground execution of economic reforms to address the pressing needs in urban sector and create investor friendly ecosystem in cities. Before discussing urban reforms a brief overview of economic reforms 1991 provides insights about approach and motives behind these efforts. To mitigate the balance of payment crisis India was going through during 1980s, the economic reforms were adopted in 1991 in two segments- 1) Macro-Economic Management and 2) Structural Adjustment Program (SAP). Macro-Economic Management focused on reducing the fiscal deficit by restraining expenditure and subsidies, to contain excess cumulative demand which was expected to fall on the balance of payments. To achieve this government adopted policies to reduce defence expenditure, subsidies in export and fertilisers, tax reforms, reducing workforce in the overstaffed ministries by abolition of certain departments and mergers of other departments (Ahluwalia, 2016). The SAP focused on comprehensive addressal of the developmental sectors. Learning from the past efforts, the policies are adopted under three major heads- 1) Liberalisation, 2) Privatisation, and 3) Globalisation (Nayyar, 1996). Liberalisation policies focused upon divestment, and deregulation in existing legal framework (which have been conservative and restrictive in nature) offering flexibility and openness promoting development. To overcome the financial crisis and strengthen the developmental aspects for rebuilding the country, it was important to encourage all kinds of financial sources such as private investment, Foreign direct investment, financial institutions etc. therefore the policies of privatisation and globalisation.

Privatisation aimed at encouraging privatization of some public sector units as well as increasing participation of private sector in the developmental processes such as trade, industries, infrastructure development along with financial sector policies attracting Foreign Direct Investment (FDI) and technology to partner in the process. Efforts for globalisation were attempted for increasing trade in global market and meeting international standards of development for creating environment to welcome global investors in India.

### 3. DATABASE AND METHODOLOGY

With respect to the discussion above, the spatial manifestation of reforms has been explored in three stages. At first stage, spatial manifestations of national reforms are explored to establish continuity of growth pattern and extension of development from regional to city level. In second stage extent of implementation of urban reform has been discussed. This is a resultant of created growth opportunities and infrastructure development in these cities and city regions. At third stage Surat city is examined to understand the manifestations and implications of urban reforms at ULB level.

**Spatial Manifestations of National Reforms:** The government had realised that effectiveness of economic reforms was related with the efficiency of infrastructure facilities such as power, roads, ports, railways and telecommunication for better living and making cities attractive for national and global business and investment. The poor performance of PSUs has created a perception that operations of PSUs are inefficient and comparatively insensitive to consumer concerns. The other challenges in front of government were the required scale of infrastructure development meeting the demand and

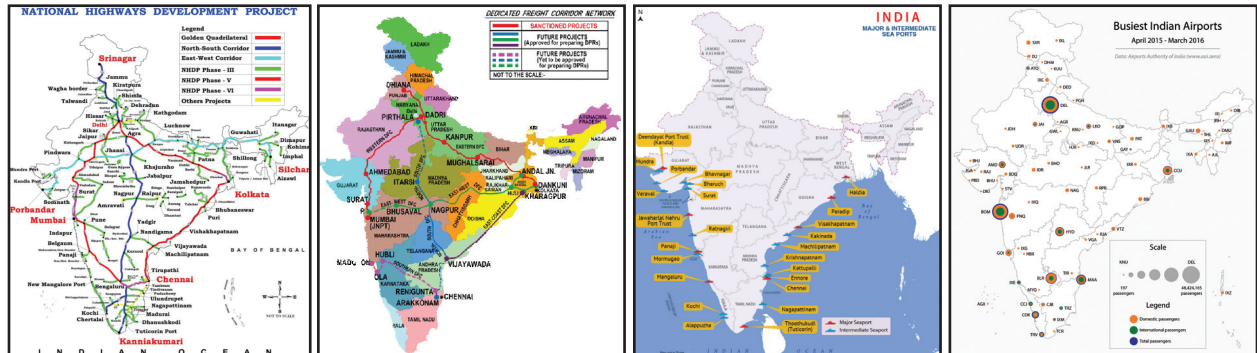
since the immediate beneficiaries are large section of society, the development has to be cost effective. Government realised that the public sector will be natural supplier of infrastructure for basic nature services such as Power in rural areas, roads and railways which are prerequisites for large section of society therefore needs to be affordable, relatively of low expectation of quality and it is found appropriate to shift other services to pvt. sector supplier, where expectations of quality increases with corresponding willingness to pay for better services such as Telecom, Airports, and Port development. Therefore, policy announcement to promote private investment in various sectors were made in phased manner. From 1992 to 1999, Government of India initiated infrastructure development program such as policy for private investment in Power (1992), National Telecommunication Policy (1994), Telecommunication Regulatory Authority of India (1996), establishment of National Highway Authority of India (1995), Airport Authority of India (1995), Port Privatization Program (1995), and IRCTC (1999).

The promotion to FDI in 2000 and public private partnership in infrastructure and real estate, and privatization of services (power, water supply and telecom sector) increased supply of infrastructure transforming spatial landscape at regional level and in Indian cities. Creation of 33000 km. length of National Highway (NHAI, 2022), 130 airports (AAI, 2022), 12 major and 205 minor seaports have facilitated trade, business, and freight-oriented development. National Highways increased opportunities for rural areas, small and medium town to become new investment destinations. Approximately ₹ 163.0 Cr FDI (2000-2020) is received in the port sector (Manual, 2022). Out of 130 operational airports 16 are operated and maintained by pvt. investors on a PPP basis.

The figure 1 represent various infrastructure Development Projects at national level, the

economic growth corridors connecting cities from East to West and North to South.

**Figure 1: Location Maps of National Highway, and City Clusters in India.**



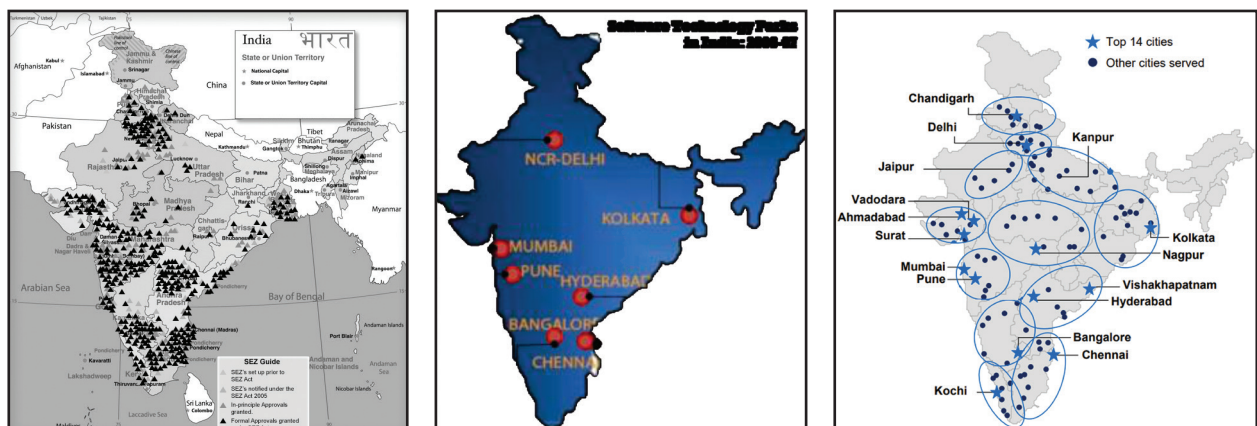
Source: National Highway Development Project, NHAI, <https://dfccil.com/home/corridor>; [https://en.wikipedia.org/wiki/Civil\\_aviation\\_in\\_India](https://en.wikipedia.org/wiki/Civil_aviation_in_India); <https://www.mapsofindia.com/maps/sea-ports/>

Spatial Manifestations of Urban Reforms: Increased access to urban land (due to Repeal of ULCRA 1976), and finances through FDI and private investment fueled large scale real estate development such as development of IT parks, SEZs, residential townships, commercial and international retail outlets and hospitality venues in and around cities creating employment opportunities in various related ancillary activities and resulting in transformed cityscape. Similarly, reforms like JNNURM AMRUT, Smart City Mission, Swachh Bharat Abhiyan, etc. enhances urban

infrastructure and governance system in majority of the ULBs.

McKinsey (MGI, 2012) has reported 12 major city clusters in India as emerging investment regions by the companies. These clusters are two or more big cities closely connected to their surrounding towns. The report estimate that by 2030, these city clusters will contribute 40 percent of the GDP. Following maps in figure 2 represent the spatial presence and concentration of SEZs, the hub of software technology parks in India resulting into formation of the city clusters in different states and Union Territories across nation.

**Figure 2: Location Maps of SEZ and STP Clusters and City Clusters in India**



Source: [www.sezindia.nic.in](http://www.sezindia.nic.in); STPI in India- Indian Brand Equity Foundation (IBEF) ; McKinsey India Urbanization Econometric Model as cited in *Urban world: Mapping the economic power of cities*, Page 35, McKinsey Global Institute 2011

SEZs comprising of manufacturing units developed on the fringes majorly along corridors whereas IT parks took place on the prime lands in the cities. Investment of ₹ 6.28 crores in development of 425 SEZs covering an area of 47051.92 Ha. employed more than 25.6 Lakhs of people (SEZ India, 2022). Total labor force in urban areas had increased from 8.06 crore to 9.29 crore between 1993-1994 and 1999-2000 (Muttur, 2008), of which more than 70 percent is employed in service sector. Approximately \$2454 crore FDI is received in real estate from 2000 to 2019 (Fabiani, 2024). The office space absorbed in the top seven cities is approximately 4.2 crore Sq. ft in 2023 and gross lease area approximately 6.3 crore Sq.

ft. (IBEF, 2024). As a result, these investments achieved a sharp rise in GDP from ₹ 5,86,212 crores in 1991 to ₹ 1,35,76,086 crore, (up 2216 percent) by 2016 (A. Rao, 2016).

The preference of location based on proximity to workplace and affordability, the population distribution resulted in addition of new million plus cities, census towns, urban agglomerations and city regions such as National Capital Region of Delhi, Mumbai, Bangalore, Pune, Hyderabad Metropolitan Regions to name a few. The table 1 suggests an addition of 30 million plus cities and a 54 percent rise in number of census towns and urban agglomerations from 1991 to 2011.

**Table 1: Number of Towns and Urban Agglomerations as per Census 1981-2011**

Census Year	No. of Million Plus Cities	No. of Towns/UA	Percent Rise Towns/UA
1981	12	3378	--
1991	23	4689	30 percent
2001	35	5161	10 percent
2011	53	7935	54 percent

Source: Census of India 1981, 1991, 2001, 2011

To support this development, the central government launched Jawaharlal Nehru National Urban Renewal Mission (JnNURM) in 2005 providing central assistance of ₹ 60,000 crores to states and ULBs with an aim to upgrade urban infrastructure, governance and basic services for urban poor and make cities investor friendly. A total of 23 reforms in the JNURM were classified under two categories i.e. mandatory and optional. States were to exercise 7 mandatory and 3 optional reforms while ULBs were to implement 6 mandatory and 7 optional reforms. The policies complimented each other and succeeded in achieving the target of economic growth in most of the cities. Private investors participated with ULBs on PPP model in carrying out infrastructure development in cities. The CAG (2011) reported that

only 105/532 (20 percent) projects under UIG, 126/766 (16 percent) projects under UIDSSMT, 8/499 (1.6 percent) projects under BSUP, and 14/1018 (1.4 percent) projects under IHSDP are completed under JNURM by March 2011. Another review of the status of reform implementation at the end of mission period (2013) reveals that among the relatively prosperous and advanced states approximately 14 were ahead with 80-94 percent success while the success story of other 12 states fell between 50-79 percent (Sharma, 2018). North-Eastern states have shown slow progress below 50 percent. The awards and recognition by the mission also encouraged cities to compete and perform.

With new government formation in 2014, reform efforts continued and JnNURM succeeded with adoption of AMRUT, Smart



City Mission (SCM), PMAY, and Swachh Bharat Abhiyan for a period of 5 years 2015-2020 with further extensions. Due to availability of data at national level, performance of these reforms is discussed at Surat city level. Many incomplete projects of JnNURM were completed under AMRUT. The competition led reform execution continued with SCM and Swachh Bharat Survekshan. Under SCM citizen's participation was equally important for cities to get selected to avail funds under this scheme. Swachh Bharat Survekshan, involved citizen's participation declaring their city clean which played a key role in achieving the outcome of clean cities, and a sense of belongingness for keeping the city clean among citizens.

**Manifestation and Implications of Reforms:** The reforms did manage to not only revive the country from financial crisis but also created direct and indirect employment opportunities and improved standard of living to common man. Informal sector employment can be seen as a by-product of the formal economy system. Rising demand for watchmen's, security guards, drivers, house maids, care takers, day care centers, home delivery boys, restaurant and hospitality staff etc. are ancillary services and support system for smooth conduct of formal economy and people employed in them. These kinds of skill-oriented jobs created employability for a large section of society. The other side of development and transformation is seen relatively skewed for these employees in informal sector in terms of poor access to housing basic services, and social security to lead a dignified life. Lakhs of urban poor were evicted from prime land to facilitate the private investment led development in Mumbai, Bangaluru etc., rather than fulfilling the basic needs of this marginalized section of society. Affordable housing schemes are executed on the fringes

which are far away from the workplaces of these people and turn more expensive than affordable in most of the cities. This results in subletting the unit or sale of the property and shifting back of the slum dwellers to nearby location from their workplaces resulting in recurrence of slums leaving with the same filthy unhygienic conditions. The above discussed performance of BSUP and IHSDP component of JNNURM are evidence of the government spending and preferences of the local bodies for the same. The review of scholarly articles suggests that either there are highly skilled jobs, availing luxury lifestyle or below average incomes causing poor living conditions.

#### **4. RESULTS AND DISCUSSIONS- MANIFESTATIONS OF REFORMS AND TRANSFORMATIONS IN SURAT CITY**

The economy and trade in Surat dates back to 16th century when Surat served as international port for trade with 84 countries. Since then invaders looted the city and Surat witnessed rise and fall of economy till 1950s. Traditionally, economy of Surat city was based on handwoven fabric and Zari work. Europe produced its own fabric and France made cheaper Zari which resulted in declining economy due to limited export of the two important commodities. Modernisation of textile from handwoven to powerloom and revival of Zari with use of copper captured the market again. Post independence Surat augmented the benefits of government policies and efforts made by the ULB to evolve the city from economic rise and fall.

In 1960s policy gave a boost to small scale industries with fiscal budget allocation to ₹ 2480 M in 3<sup>rd</sup> Five Year Plan resulting in setting up of textile processing units. At the same time, Import Replanishment Scheme by Government of India in 1958 enlarged

scope of import of rough diamonds from London. Both of these events resulted in the rise in number of looms and diamond cutting and polishing units. City witnessed establishment of GIDCs (Katargam, Pandesara, Udhna and Sachin) starting from core city in the centre towards south up to Sachin. The industrial development in Surat opened doors for the investors from Suarashtra region in Gujarat and other states establishing themselves in textile and diamond industry and employment opportunities for marginalised migrant workers from Bihar Orrisa, Uttar Pradesh and Maharashtra. This migration was also due to unemployment and low yield in agriculture produce in their respective regions. Surat observed migration of both investors as well as workers in manufacturing sector.

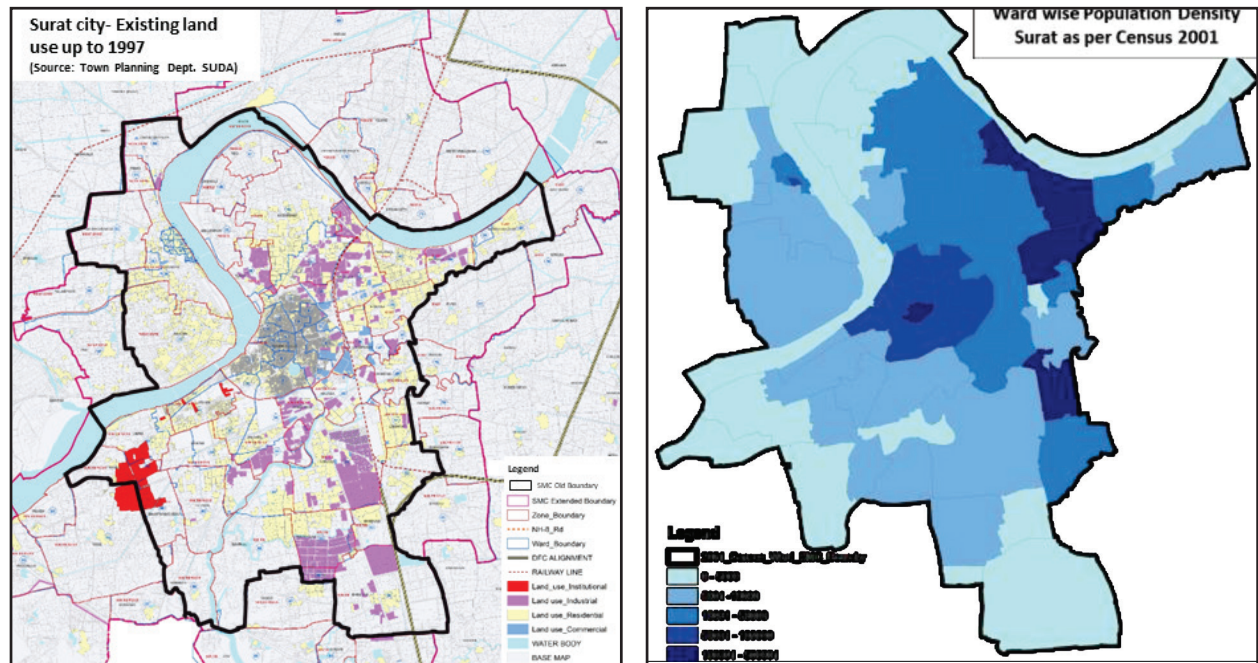
The textile requires ground coverage for processing such as weaving through powerlooms, dyeing, printing, Zari work etc. as against diamond industry which can accommodate 4 workers in a space of 8'0" width x 8'0" length x 8'0" height for four workers and can be stacked in multistoried buildings due to the nature of work that requires focused space for cutting, polishing, processing the diamonds. Both the industries employing more than 12 lac migrant workers from UP, Bihar, Maharashtra, MP who settled themselves in the proximity of work place (Kamal Saiyad, 2020). This is one of the reasons for core city to grow with high density low rise nature of development.

The plague effect in 1994 resulted in escape of 60 percent population with economic loss of ₹ 12 billion. This was alarming for the ULB to adopt administrative reforms, clean-up drive with solid waste management on PPP model, public health mapping with 24X7 surveillance centres majorly in slums to get rid off filthy unhygienic condition of the city. These

efforts facelifted the image of the city from the filthiest to second most clean city after Chandigarh in 1996. The demolition drive removed illegal constructions and resulted in road widening.

Reforms continued in the other administrative areas of financial management, computerisation of ULB services such as property tax billing that offered 80 percent tax collection efficiency, payroll and pension roll of employees. Some projects adopted on PPP model such as redevelopment of streets, river front development, water parks, indoor stadium, MRTS, City Trade Centre, power projects etc. Surat first campaign increased citizen's participation in the development process and played a pivotal role in changing attitude towards belongingness to the city and respect for civic body. The figure 3 demonstrate the existing fabric of residential, industrial and commercial development in the old city limits of 112.0 sqkm. upto 1997. Approximately 40 percent lots that were lying vacant within city limits grew to 80 percent built-up by 2001 with increasing industrial worker's residential preference in the Approximately to work places. Ward wise density shows the spatial growth towards North, South, South-west and West across Tapi river.

The inflow of Foreign Direct Investment (FDI) resulted in setting up of large scale Industries in energy, oil, petroleum along the coastlines of Hazira port area towards West. In 1985 Hazira Area Development Authority was constituted under GTPUD Act 1976 to organise prospective growth of this region along Surat. Industrial development continued to take place along railway line running across city from North to south. Post 1991 reforms, the Development of Goldan Quadrilateral under National Highway Development Program and State Industrial Policies promoted MSMEs and eased the

**Figure 3: Existing Land Use of Surat City up to 1997; Density as per Census 2001**

Source: Existing Land use Map-1997, Surat Development Plan-2004, SUDA, Surat; Census of India 2001

process of setting up industrial establishments which resulted in formation of GIDCs, SEZs, and industrial parks along the transport corridors of NH 53 connecting Hazira in west, and Sachin GIDC in south, with NH 48 running North South towards East of the city as visible in figure 4. major industrial development took place towards south due to connectivity with Hazira port via NH53 and proximity to Mumbai being the major consumer market for goods produced in Surat. Therefore the migrant industrial workers employees of textile and diamond industries arriving from east kept on setting organically along the railway line.

Figure 5 represents spatial growth pattern of industrial, residential and commercial development in Surat city up to 1997 and from 1997- 2014 in light and dark shade of colours of respective land use. This figure is recreated based on existing land use maps prepared by SUDA in 1997 and 2014 for the preparation of DP 2004 and DP-2035 respectively.

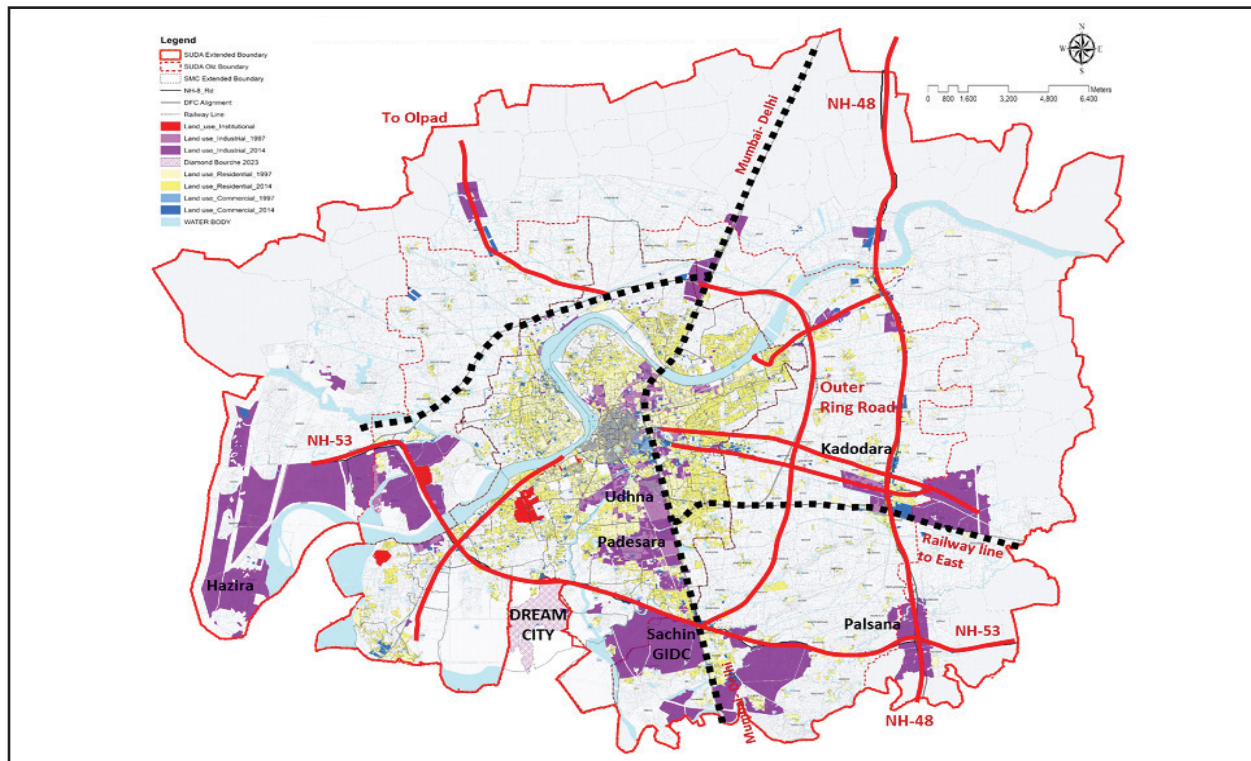
Employment opportunities created in Surat led to population growth to 4.8 Million in

2011 from 2.8 Million in 2001 from 1.4 M in 1991. This resulted into densification as well as sprawl of the city. Promotion to private investment opened doors for developers and investors to invest in real estate development encouraging farmers from South Gujarat, textile and diamond merchants with surplus money to partner with the developers and invest in real estate. The development pattern of Mumbai in the proximity influenced demand for lifestyle driven development of apartments, malls, multiplexes in Surat city.

As discussed in the literature review, development in Surat has taken place on similar aspects of spatial quality. Post 1991, investments in industries, residential and commercials have taken place based on use value perceived value and future value assessed by the investors. In table 2 the growth pattern from core (in-fill) to outside the city limits towards periphery clearly indicates the importance of CBD, regional linkages and the need for peripheral growth. Referring to figure

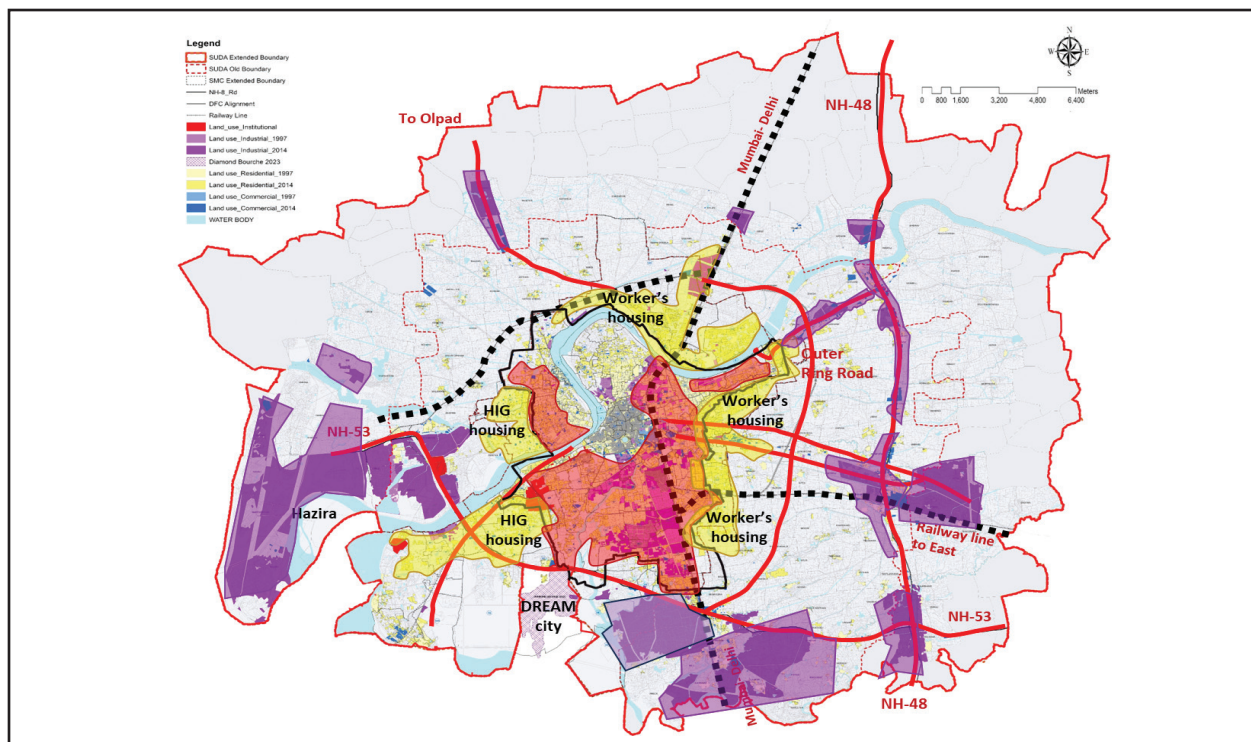


**Figure 4: Spatial Growth of Transport Residential, Commercial, and Industrial Land Uses up to 1997 and 2014 in Surat**



Source: Author's interpretation of existing land use from Surat Development Plan-2035, SUDA

**Figure 5: Spatial Growth Analysis of Surat City upto 2014**



Source: Author's interpretation



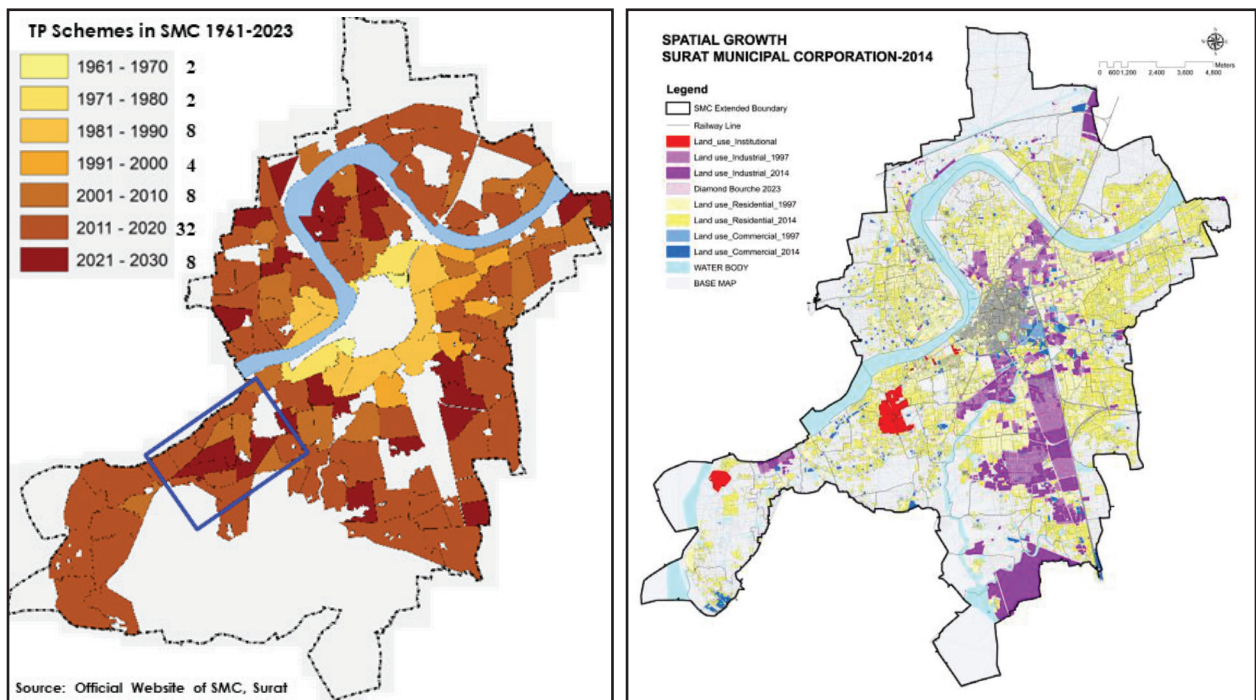
**Table 2: Spatial Growth Pattern in Surat City (1997-2014)**

No.	Spatial Growth Areas	Nature of Development	Land Use	Extent of Development
1.	Core city	Infill	Ind., Resi., Comm.	High density, Low rise
2.	Extended city	Expansion	Ind., Resi., Comm.	High Density, Medium rise
3.	Outside city limits	Outlying	Ind., Resi., Comm.	High Density, High Rise
3a.	Habitat away from city limits	Isolated growth	Residential	Low rise, Low density
3b.	Linear Growth	Along corridors	Ind., Comm.	Low Density, Medium rise
3c.	Cluster growth	Outside city limits	Industrial	Low density, Medium rise

Source: Author's Interpretation

6 and legends from table 2, it can be stated that the infill development in the core city is a result of growing establishment of diamond industry and wholesale textile markets, that expands toward north and south due to push factor of congestion and overcrowding in existing city and connectivity with NH-48 and NH-53. Outlying growth beyond city limits toward

West, South and SE can be classified as clustered growth of industries and towards east as linear development of residential, commercials majorly due to transport connectivity of NH 48, NH 53 and railway line that connect Surat with Mumbai, Delhi and Ahmedabad and with the eastern states of Vidarbha region of Maharashtra, Bihar, Jharkhand, Odisha etc.

**Figure 6: TP Schemes in SMC from 1961-2023**

Source: Town Planning Department, SMC and SUDA, Surat

Extent of development has shifted from high density low rise in the core to high density high rise in the new developing areas of SW and West zones due to the demand for space within city limits. HIG housing and retail commercials started growing in these areas which connects the industrial zones of large industries across river towards west and MSMEs in south zone. Majority residents belonging to MIG and LIG are located in North Zone due to low cost of living as compare to West and South West. Isolated hemlet growth are also observed on the outskirts due to affordability to own a better living away from city. The secondary data analysis and field surveys confirm that, 80-90 percent provisions made in the past planning efforts conform with existing development that has taken place in Surat city. TP schemes mechanism has been instrumental in the execution of the provisions of Development Plan which is discussed in detail along with efforts made in urban reform implementation.

Town Planning Schemes for implementation of Development Plan in cities of Gujarat under GTPUD Act 1976 offer land availability for development in planned manner with infrastructure in place. In 1999, amendments in the act eased the process of implementation of TP schemes. Earlier, TP scheme implementation could only be started after finalisation from state government Post amendments in the act, road and other infrastructure provision can be started after the submission of draft TP scheme to state government. This facilitated the infrastructure development by the time preliminary is submitted and final plots are handed over to owners. Figure 6 suggests that maximum TP schemes (approximately 48) have been executed between 2001 to 2023 i.e. post amendments in the Act. Observing the fast growth in 2006, SMC extended city

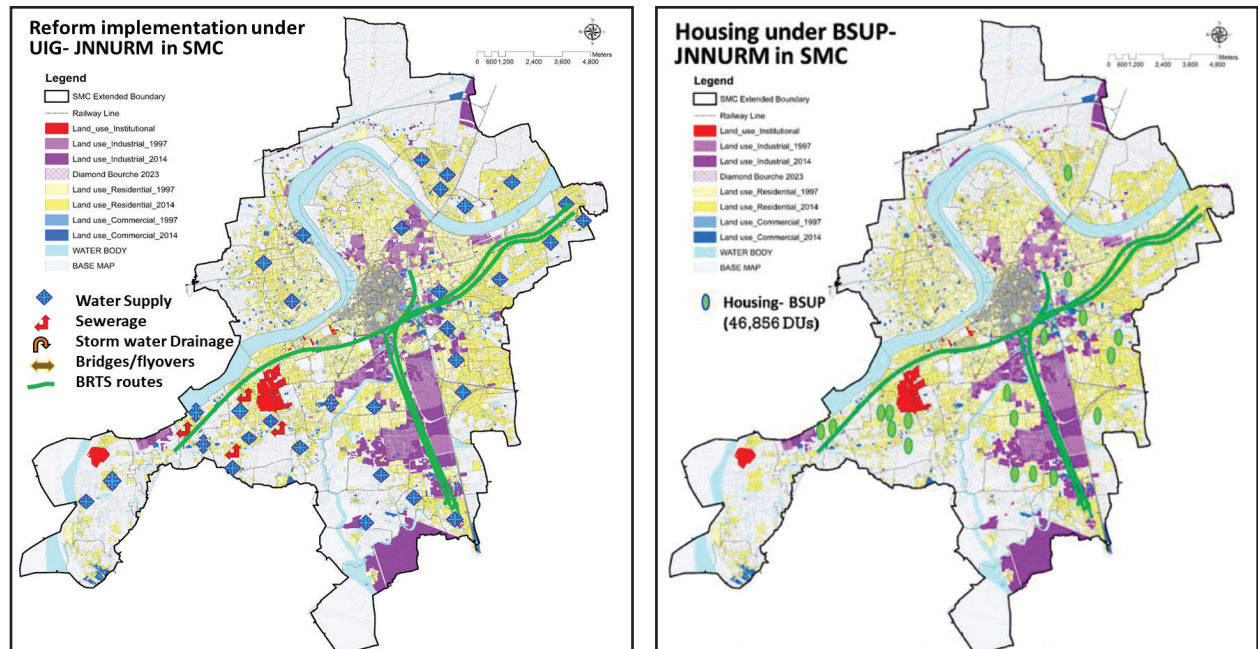
jurisdiction from 112 sq. km. to 326 sq. km. in the growth direction towards North and South. This coincided with the launch of JNNURM that supported the infrastructure development in the sanctioned TP schemes in newly developing areas.

Revised Development Plan of Surat also expanded SUDA limits from 715.0 sq. km. to 1351.0 sq. km. in 2017. In 2020, The SMC limits are extended towards east making it 430 sq. km. and SUDA limits are reduced to 1035 sq. km. by denotifying some villages in the north based on objections suggestions received from the stakeholders on publishing the draft plan in the public. This paper refers to the changed jurisdictions upto 2017 for the spatial analysis of the city.

Reform Efforts in Surat: The opening up of market for private investors, amendments in GTPUD Act in 1999 and launch of centrally funded urban reforms JNNURM AMRUT, SCM coincided for adoption of maximum number of TP schemes during 2001-2020. All these factors have been instrumental in spatial quality enhancement of the new developing areas of Surat offering use value, perceived value and future value to the investors facilitating growth in the region. Investments can be seen from core city to outlying areas of the city. Following figure 7 and 8 display the reforms undertaken by the Surat Municipal Corporation under JNNURM, AMRUT and Smart City Mission from 2006-12 and 2015-2020 respectively.

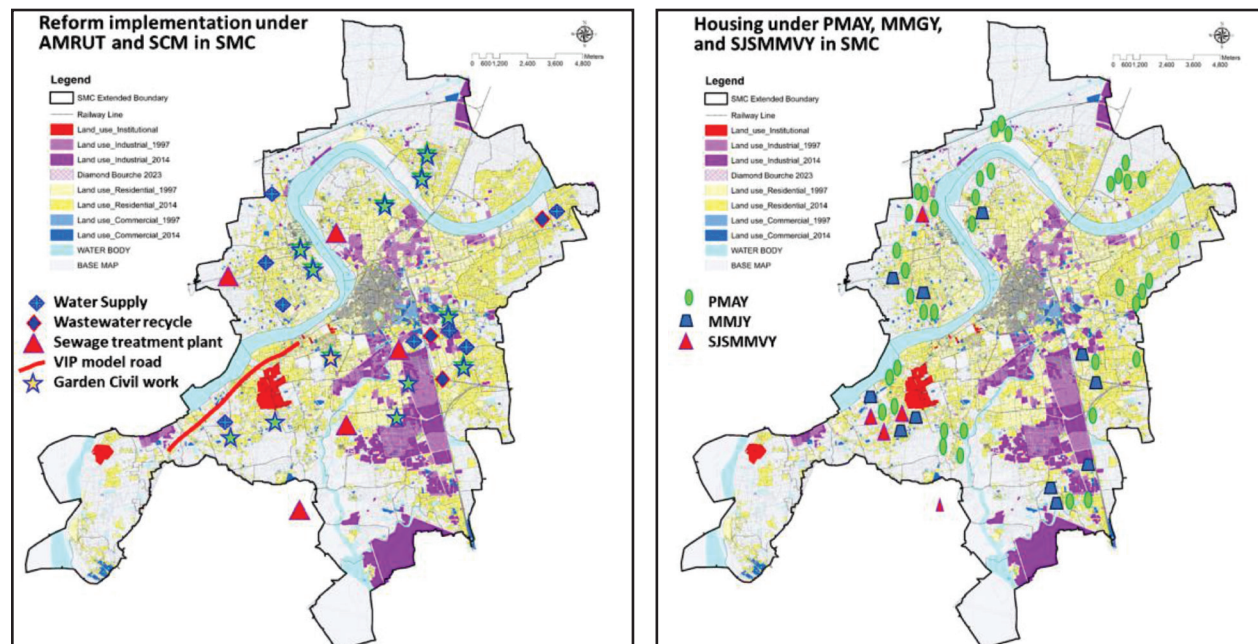
There are many efforts which which could not be mapped spatially such as smart and intelligent features under IT enabled services and upgradation of existing services, Mobile app “Mysurat City”, app enabled ticketing system, Common City Payment Card System etc. overall surat corporation has made efforts to upgrade the civic services with more citizen centric approaches which has

Figure 7: Reform Implementation under JnNURM from 2006-2012



Source: <http://www.suratmunicipal.gov.in/Departments/>

Figure 8: Reform Implementation under AMRUT and Smart City Mission from 2015-2020



Source: Respective departments/cell of AMRUT and Smart City Mission of SMC, Surat

resulted in spatial quality enhancement of the place offering better opportunities for the citizens.

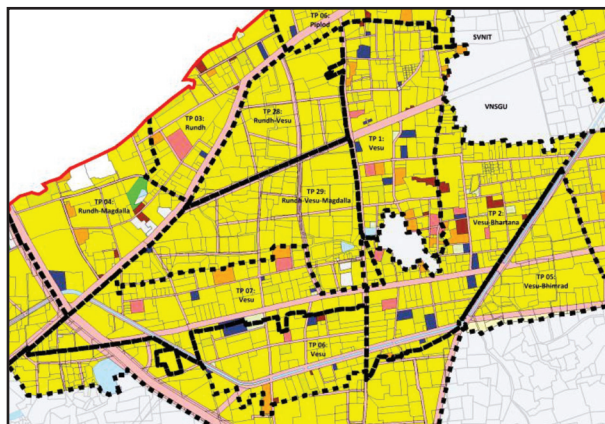
Figure 7 also showcases part of SW zone with reference to the adoption of TP Schemes where

maximum HIG and commercial development has taken place. A sample of 4 TP schemes 1, 2, 7 and 28 in the South West zone as shown in figure 7 are selected to display the reform efforts in the city. Remaining TP schemes are references showing in continuation of



development in the SW zone (figure 9). To correlate the layout and ground reality of the executed schemes, google earth imagery as shown in figure 8 showcases the reforms manifestation at sub city level.

**Figure 9: Sample TP Schemes in SW Zone of Surat**



Source: Town Planning Department, SMC, Surat

The layout and Google Earth imagery (figure 10) confirms the 80 percent implementation of these schemes along with other schemes in the vicinity. The highlighted yellow and blue parcels in the image are private investment led residential and commercial development.

**Figure 10: Google Earth image of Implemented TP Schemes**



Source: Author's Interpretation of land uses

During the field survey, it is observed that same investors have purchased and developed continuous parcels of land for different

purposes. It is informed that majorly these are speculative purchase of land by the investors at a very affordable rate which they had the opportunity to develop as per demand from the market. Real estate growth in this area is an outcome of private investors led development and choices made by the migrant population from other cities and core city resident's decision to move out due to congestion and smaller dwelling units for growing family size and invest in better bigger property in the new areas. Nature of development has shifted from low rise high density to high rise high density due to rising demand of space facilitated with higher FSI for development within city limits.

Other highlighted lots in orange colour are executed affordable housing schemes under JnNURM, PMAY, and MMGY on the reserved land and allowed lots (for EWS) of the schemes. Development of affordable housing along with HIG in this prime location of Surat indicates the considerations for marginalised section and provisions under legal framework (TP schemes as per GTPUD Act 1976) and utilisation of policies in the right spirit. Water supply and drainage network are also developed under the UIG component of JnNURM in 2005. The execution of urban services in this zone automatically benefitted the abeneficiaries of affordable housing schemes. The Pink highlighted plots reserved for public purposes are developed with elevated and underground service reservoirs under AMRUT. BRTS executed under JnNURM is upgraded with smart intelligence features under Smart City Mission (SCM). VIP road is a model road developed under SCM with implementation of Non-vehicle zone street, Footpath, Signages, LED and Smart Street Lighting and Monitoring System etc. BRTS is majorly used by students to reach SVNIT and VNSGU and other institutions in the area, by the EWS residing here and people commuting from nearby regions to their workplaces.



#### 4.1 Implications

Spatial implications of encouragement to private investment is that it opened doors for everyone to invest in new businesses, real estate and variety of ventures. In case of real estate, investors have provided luxury housing with lifestyle amenities, along with shopping malls, multiplexes, food courts and other entertainment options in the form of integrated townships. Magarpatta, Amenora, Lavasa, in and around Pune, Rajarhat in Kolkata are some examples of privately owned and maintained integrated townships under the company's act. Magarpatta is one of the successful example of farmers turning developers with share holding in the company for creating a township at the time when developers were investing and acquiring land for real estate development due to market forces. The spatially existed local cityscape before 1991, started transforming into a new globalized cityscape. The population growth, work culture, daily routines, standard of living for common man and a cosmopolitan culture has given quite similar physical growth to all cities of India. Almost all cities facing parallel urban challenges, started delivering comparable lifestyle.

From the primary survey carried out and examining the existing land use, Surat represents a unique pattern of growth of the city. In case of Surat financial gains rotated within industrial setup and real estate. As discussed earlier, assessing the future gains, anyone with surplus money started investing in real estate from industrialists, farmers, textile and diamond merchants and real estate developers started investing in textile and diamond business. Other strong point is businesses are run by specific communities with water tight arrangements not allowing new entrants easily. Within communities of Patels, Jains, Desai, etc. majority are into joint family business. One brother takes care of processing, and others looks after the marketing, sales and expansion of business on clear terms.

The housing scenerio suggests that the workers belonging to LIG and MIG have settled from north to south zone from Katargam to Sachin GIDC, Whereas industrial owners of these Industries in North and South zone and employees working in Hazira Industrial Area in the west belonging to HIG category prefer residing in the west and SW zone. Accordingly, the commercial retail malls, multiplexes and entertainment hubs have also developed in SW and west zone as compared to east, south and north zone of the SMC. The core serves as wholesale market for textile traders with establishment of textile processing unit continuing to grow towards north and south. The concept of privately owned bungalow in city limits is changed to desire of owning luxury by investing in a weekend home or farmhouse on the outskirts at lower rates. This form of investment is resulting into outlying development on the outskirts of the city.

Development pattern in Surat slightly differs from the concept placed by Alenzo-Muth-Mill of conical form since TP schemes practices, development control regulations and higher FSI offered and organised development of activities with high rise growth in the new developing areas. This promoted the development based on perceived and future value of the place and encourages supply and utilisation of public infrastructure due to achieving optimum density across city. This pattern of growth offers win-win situation for investor, developer, civic authorities and citizens to augment the agglomeration benefits.

With most of the development in place bringing economic returns to the city and quality of life to the citizens, the air and water pollution due to smoke and disposal of untreated industrial wastewater into creeks is a matter of concern to safeguard the city and citizens from environmental hazards before dropping the quality of life people. Interactions with the workers during the primary surveys also informed the lay offs in diamond industries for two reasons - 1) depression after covid,

and 2) computerisation of most of the units preferring skilled workforce thereby reducing the strength to 20-30 percent. Textile workers reported growing opportunities with the beginning of powerloom textile units in Varanasi and some other cities in Uttar Pradesh which may result in returning back to their homelands anytime in future. The workers are satisfied with the housing provision by the government but payment of property tax approximately Rs. 1400/- and electricity bills of average 2000/- per month in addition to travel cost and time to reach their work places is expensive to afford. Lack of public transport (frequency and availability of BRTS) leads to expensive and time consuming travel to workplaces from allotted dwellings under various schemes. Most of the workers are use shared rickshaw, bicycle or two wheelers to commute for workplaces. Though as of now the income working in Surat is higher than what they get paid in their homestates still this scenario indicates questions on retainment of workforce to run these industries. While in case of Surat, efforts in city planning, and execution and management of urban services and governance is very much in place but it requires attention to be paid towards specific needs of upliftment of the economically weaker section in various areas of concerns. For example, affordability is related to total expenses of the household to survive their family, social security and dignified living as basic right of human being therefore it is important that policies must be guidelines to be adopted as per local requirements and not just executed as per standard provisions.

## 5. CONCLUSION

Findings from literature review suggest that to achieve sustained economic growth it requires policy interventions to enhance spatial quality of the place which brings investments in the region. Spatial quality of the place is dependent on various parameters that determine the value of a place. It can be concluded that spatial manifestation of

reforms have transformed cityscapes and regions resulting into 2000 percent higher economic growth of GDP as compare to 1991. Reforms created investor friendly environment that encouraged multi national corporations to invest in Indian cities. The development of transport infrastructure not only facilitated transport of goods and enhanced business opportunities for investors but also enabled efficient movement of workforce within and across regions. The clustering of economic activities resulted in forming city clusters turning them into city regions. This nature of development is mainly due to land availability at affordable rates as compare to urban centers. The proximity to work place and access to urban facilities induced residential, commercial and other physical social infrastructure development resulting peripheral expansion of cities. ICT driven work culture transformed built forms with advance technology adoption even in the housing sector. ICT based services have offered efficiency and smooth functioning of civic services which has also resulted in changed behavioral aspects. For example- it has enabled citizens with ease and efficient service delivery, at the same time, such efficiency has resulted into reduced patience levels of individuals and changed attitude towards service providers as they demand for quick services than to wait for a while to a greater extent. The e-commerce, web based and app based services have offered access to variety of goods and services across sector but has also resulted in reduced face to face interaction for most of the service industry. This is subsequently leading to reduced physical activity, getting out to avail any service and human connections.

The urban reforms facilitated civic services in the cities, and 100 percent FDI in real estate and construction industry, along with integrated township policies, transformed the cityscape with new form of residential enclaves. The air-conditioned shopping

experience in malls in place of crowded markets, entertainment facilities, wellness centers, comfortable travel in metro rails and use of smart intelligent technology on Fingertip have enhanced user experience. This nature of spatial transformation has also given rise to socio-economic implications of changing lifestyle and social structure. The savings oriented society till 1990s is now consumer driven society. Rising income levels have changed expenditure pattern in terms of spending on luxury goods, sales and discounts to avail consumer goods and services, dining out, weekend entertainment, frequent holiday trips with family. Certainly, it forms a vicious cycle of economic growth bringing economic growth from support industries.

The observations from Surat city analysis showcase the effective implementation and coherency between town planning process and urban reforms offering access to jobs, housing, and other city services to most of the population. There is still scope of comprehensive approach and effective policy implementation addressing social security of industrial workers and environmental concerns for the city and citizens making sure of holistic development and well-being of the place and people.

## 6. ACKNOWLEDGEMENT

This research is a collective effort of a lot of people who have contributed directly indirectly, and I take this opportunity to extend my gratitude towards them.

## REFERENCES

- Rao, K. K., 2016. *25 years of liberalisation: A glimpse of India's growth on 14 charts*, s.l.: s.n.
- AAI, 2022. *Ministry of Civil Aviation*. <https://www.civilaviation.gov.in/>. Accessed on Jan. 22, 2022.
- Ahluwalia, M. S., 2016. The 1991 Economic Reforms, How home-grown were They? *Economics and Political Weekly*, 16 July, 51 (29), pp. 39-46.
- Bhatta, B., 2010. *Analysis of Urban Growth and Sprawl from Remote Sensing Data*. (S. D. Shivanand Balram, Ed.) Kolkata (West Bangal) : Springer.
- CAG, 2011. *Performance Audit of JNNURM*, New Delhi: Comptroller and Auditor General of India.
- Commonfloor, 2019. : <https://www.commonfloor.com/guide/farfsi-2019-updates-floor-space-index-in-indias-top-cities-55546>. <https://www.commonfloor.com>. Accessed on Jan. 12, 2024
- Fabiani, H., 2024. *Leveraging FDI for commercial real estate growth in India*. <http://etinsights.et.edge.com>. Accessed 30 May 2024.
- Habitat, U., 2011. *The Economic Role of Cities*. Nairobi, UN Human Settlement Programme.
- IBEF, 2024. <https://www.ibef.org/industry/real-estate-india>. <https://www.ibef.org>. Accessed 31 May 2024.
- M. Assink, N. G., 2009. *Spatial Quality, Location Theory and Spatial Planning*. Leuven, Belgium, Regional Studies Association.
- M. D. Bok, F. V. O., 2011. Agglomeration Economies, accessibility and spatial choice behaviour of relocating firms. *The Journal of Transport and Land use*, 4 (1), pp. 5-24. doi:10.5198/jtlu.v4i1.144
- Manual, M., 2022. *Maritime Mnuual*. <https://www.maritimemannual.com/ports-in-india>. Accessed on Jan. 22, 2022
- MGI, 2012. *Urban World: Cities and the rise of Consuming Class*, s.l.: s.n.
- Muttur, R., 2008. <http://www.e.u-tokyo.ac.jp/cirje/research/dp/2008cf543.pdf>. Bangalore: s.n.
- Nayyar, D., 1996. *Economic Liberalisation in India: Analytics, Experience and Lessons*. Culcutta, Orient Longman.
- NHAI, 2022. *National Highway Authority of India*. <https://nhai.gov.in/>. Accessed on Jan 22, 2022
- NHDP, 2022. *National Highway Development Project*. <https://www.india.gov.in/>. Accessed on Jan. 22, 2022.
- PPRC, 2014. *Performance Evaluation of JNNURM in BJP ruled States*, New Delhi: Public Policy research Centre.
- SEZIndia, 2022. *Special Economic Zones in India*. <http://www.sezindia.nic.in> [Accessed 2 February 2022].
- Sharma, P., 2018. *Urban Reforms under JNNURM- An Assessment*. <https://www.researchgate.net>. Accessed on May. 28, 2024
- Zhang, X. Q., 2011. *The economic Role of Cities*, Nairobi: United Nations Human Settlements Programme.



# Adoptability as a Strategy in Formulating Responses to Every Changing Market Dynamic with Special Focus on Urban Informal Sector – A Case Study of Hyderabad

Vijaya Kumari Manukonda, Pallavi Sharma, S. V. Ravindra

## Abstract

*The economy of any city/metropolis is a mix of formal, informal, and non-formal activities, influencing its shape and form. The formal sector is characterized by rightful inclusion in planning efforts. However, the informal sector has to fend for itself as it is made up of a poor, vulnerable population - women, even children, and aged apart from men. This section is forced to become resilient and resourceful for survival through gainful employment. Informal activity, historically pervasive in India, bridges the last-mile gap in goods and services, surpassing governmental reach. The Ministry of Urban Employment and Poverty Alleviation, Government of India, as detailed in the National Policy for Urban Street Vendors 2009, reveals that street vending engages around 2 percent of the urban population, providing livelihoods for nearly one crore urban individuals. The study underscores the vital role of street vendors and hawkers in Hyderabad's liveability, emphasizing their resilience and innovative contributions to the city's spatial and aesthetic appeal. They not only provide a distinct identity for Hyderabad but also ensure security and public safety. It is imperative that this section gets integrated inclusion in sustainable physical planning programs of the city of Hyderabad.*

## 1. INTRODUCTION

In the complex urban fabric of today's rapidly evolving cities, Street vendors serve as integral role that often goes beyond their visible presence on active pavements and market corners. These entrepreneurial individuals make a substantial impact on the local and regional economic landscape and offer an array of commodities and services that meet the diverse needs of urban dwellers. Creating the last mile connectivity on a scale un-matched by formal sector. However, their

presence is not merely transactional; it is woven into the intricate tapestry of urban resilience and adaptability.

As cities grapple with an array of challenges, ranging from economic fluctuations and rapid urbanization to environmental uncertainties and global crises, the ability of urban systems and communities to recognise the fresh needs and accommodate them quickly need to be considered. Among the diverse actors within the urban landscape, street vendors stand as resilient contributors who navigate these challenges with an innate flexibility and innovation, often propelled by their socio-economic conditions and adaptive strategies for their own survival but helping the city to sustain itself through changes.

This study embarks on a comprehensive exploration of street vendors' socio-economic conditions, their adaptive strategies, and their impact on the urban resilience paradigm.

<sup>1</sup> Ar. Vijaya Kumari Manukonda, Associate Professor, BMS School of Architecture, Yelahanka, Bangalore, & Research Scholar, Department of Planning, Amity University Haryana, Gurugram, Email-viji.architectplanner@gmail.com

<sup>2</sup> Prof. Dr. Pallavi Sharma, Professor, Amity School of Architecture & Planning, Amity University Haryana, Gurugram, Email-psharma3@ggn.amity.edu

<sup>3</sup> Prof. Dr. S. V. Ravindra, Professor (Retd), Architecture Department, UVCE Bangalore University, JB Campus, Bangalore, Email-Ravindra2355@gmail.com



Through a multi-faceted lens, this study seeks to uncover the intricate dynamics that underlie street vendors' ability to not only survive but thrive in the face of adversity.

## 2. OBJECTIVE OF THE STUDY

This exploration is anchored in four primary objectives.

- To define and assess the socio-economic conditions of street vendors to obtain valuable insights into their capacity for resilience when confronting challenges.
- To conduct a comprehensive analysis of the impacts arising from the implementation of prevailing legislative acts and policy frameworks by urban governing bodies.
- Identify various strategies employed by street vendors and best practices that contribute to their capability to adopt and devise alternate delivery systems.
- To recommend guidelines and strategies, enhancing the status and street vendors' circumstances, recognizing their role as resilient contributors to the economy and formal inclusion as a parameter in all planning programs both economics level and physical planning level.

## 3. LITERATURE REVIEW

### 3.1 Definition of "Street Vendors"

As per "the Street Vendors act, 2014", "Street Vendor means a person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, sidewalk, footpath, pavement, public park or any other public place or private area, from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific."

For Example: Fruits and vegetable seller, Perishable items seller, hosiery sellers, kitchen utensils seller, hawkers etc.

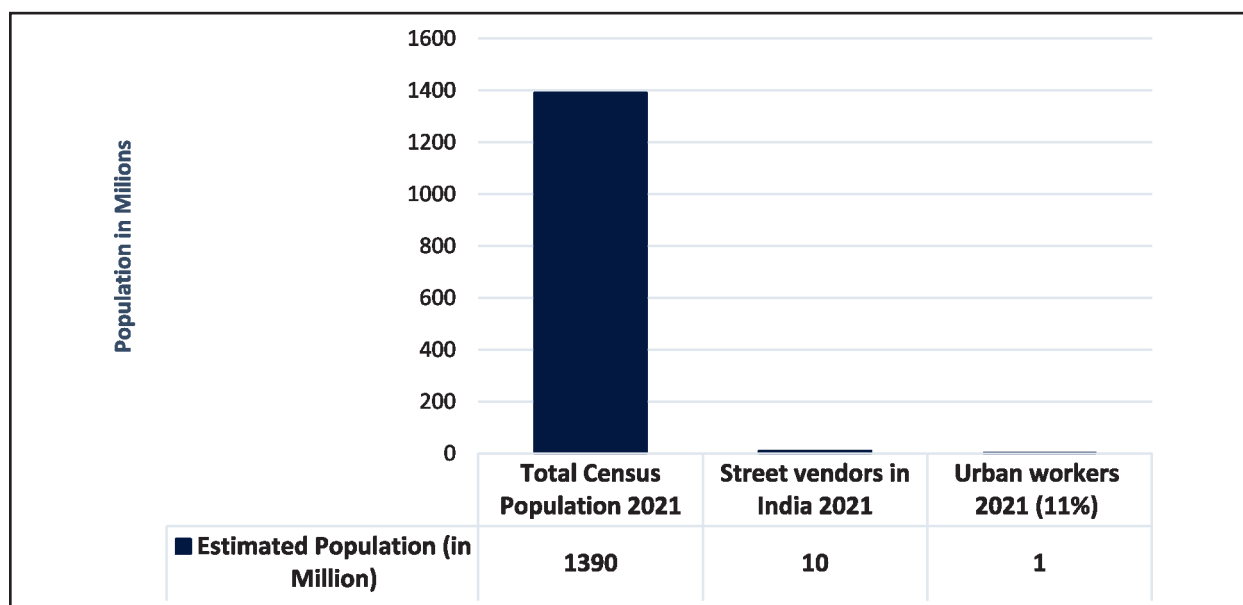
Street vendors have been categorized based on their mobility and vending duration Bhowmik (2003, 2005). There are three distinct categories:

- **Stationary Vendors:** These vendors operate consistently from fixed locations.
- **Occasional Vendors:** This group includes vendors who lack regularity and specific locations, often selling goods during holidays and festivals or in weekly bazaars.
- **Mobile Vendors:** These vendors are characterized by their mobility, selling their goods while moving from one place to another

### 3.2 Need of Study

The Ministry of Urban Employment and Poverty Alleviation, Government of India, as detailed in the National Policy for Urban Street Vendors 2009, reveals that street vending engages around 2 percent of the urban population, providing livelihoods for nearly one crore urban individuals. Figure 1 illustrates the distribution of street vendors within the context of the overall population in India as of 2021. The total census population is reported at 1390 million, with approximately 10 million individuals engaged in street vending. This demographic highlights the significant role that street vending plays as a source of livelihood within urban areas. Furthermore, among the estimated 153 million urban workers, street vendors represent a substantial segment, underscoring their critical role in the urban economy.

Moreover, this sector plays a substantial role in generating employment opportunities, ameliorating employment challenges. However, in spite of their economic input, street vendors are often labelled as "encroachers" and "public nuisance," primarily due to lack of legal provision & perceived disruptions to traffic flow.

**Figure 1: Total Estimated Street Vendors in India**

Source: A survey analysis of the implementation and progress of the PM SVANidhi credit scheme for street vendors in India; 15 Sep, 2021

Street vending in urban India serves as a crucial sustainable livelihood option for many who lack access to formal capital and education. Street vendors contribute to the liveliness of urban streets, fostering social interactions often side-lined by e-commerce trends. However, regulatory inconsistencies, exemplified in Bangalore and Ahmedabad, pose challenges, with many vendors denied licenses and facing police interventions. Study on Mumbai's vendors highlights their significant role in the vegetable distribution network, illustrating the repercussions of their removal. In Hyderabad, vendors grapple with economic, legal, and spatial challenges, resorting to local solutions amidst adversities. Despite facing marginalization and harassment, vendors exhibit resilience, finding innovative solutions "Jugaad" (Jugaad is a Hindi term that refers to cost-effective, local, and innovative practices in products or processes that cater to essential local needs). Empirical understanding of their issues can inform inclusive policies, fostering their socio-economic upliftment and formal inclusion in urban planning

initiatives, aligning with the need for inclusive sustainable growth.

### 3.3 Share of Informality at Global Level and Country Level

The International Labour Organization (ILO) reported in 2018 that about two billion individuals, comprising 61 percent of the global workforce, are engaged in the informal economy. In developing nations, including Chad, Congo, Mali, Bangladesh, and India, high levels of informality persist, as highlighted in the ILO's 2021 report. In India alone, the street vending economy generates approximately Rs 80 crore daily, supporting over 2 crore vendors (ILO, 2018) and their dependents.

In accordance with the "National Policy for Street Vendors, Street Vending and Hawking" have been reported to engage approximately 2 percent of the populace in urban areas. This statistic signifies that street vending not only constitutes a substantial portion of urban livelihood activities but also functions as a vital source of sustenance for a significant percentage of the city's population.

According to “*Telangana Mission for Elimination of Poverty in Municipal Areas*” (TMEPMA), 2022”, as shown in table1, there are approximately 6.13 lakhs street vendors in Telangana, with Hyderabad accounting for an estimated 2.23 lakhs of them. Collectively, street vendors in Hyderabad contribute 36.33 percent out of the entire street vendor population at the state level.

### 3.4 Street Vendors Hyderabad and Telangana

In the perspective of Telangana, their existence is especially notable, with a

significant number identified across the state. As per the online report of “*Telangana Mission for Elimination of Poverty in Municipal Areas*” (TMEPMA) dated August 8th, 2022, the number of registered street vendors in Telangana is estimated to be approximately 6.13 lakhs. This diverse group comprises approximately 37.02 percent males, 62.95 percent females, and a minimal 0.03 percent transgender individuals, as shown in table 1.

Hyderabad, Telangana, with approximately 2.23 lakh street vendors, illustrates the significant presence of this workforce, with women constituting 40.20 percent. Understanding

**Table 1: Total Street Vendors Identified in Hyderabad, 2022**

No. of Street Vendors identified (TMEPMA, 2022)					
Sl. No.	District	Male	Female	Transgender	Total
1	Adilabad	5097	3691	4	8792
2	Bhadradi Kothagudem	3668	8989	4	12661
3	GHMC	72542	90450	35	163027
4	Rangareddy	8980	22350	11	31341
5	Medchal Malkajgiri	8064	20398	9	28471
6	Hanumakonda	12910	29696	27	42633
7	Jagtial	5346	10001	4	15351
8	Jangaon	891	4044	0	4935
9	Jayashankar Bhupalpally	885	2306	0	3191
10	Jogulamba Gadwal	2480	3984	1	6465
11	Kamareddy	3101	6639	2	9742
12	Karimnagar	9953	11632	9	21594
13	Khammam	8834	16460	3	25297
14	Komaram Bheem (Asifabad)	1320	1847	1	3168
15	Mahabubabad	7215	14841	6	22062
16	Mancherial	5920	14880	9	20809
17	Medak	3068	3686	3	6757
18	Nagarkurnool	2539	4700	2	7241
19	Nalgonda	6888	14500	5	21393
20	Narayanpet	2373	2996	0	5369
21	Nirmal	5019	5654	2	10675
22	Nizamabad	12681	21411	9	34101
23	Peddapalli	6171	13017	15	19203
24	Rajanna Sircilla	3169	7134	3	10306

No. of Street Vendors identified (TMEPMA, 2022)					
Sl. No.	District	Male	Female	Transgender	Total
25	Sangareddy	7015	13385	4	20404
26	Siddipet	5217	9777	2	14996
27	Suryapet	4586	9825	5	14416
28	Vikarabad	5138	3473	3	8614
29	Wanaparthy	2061	4914	1	6976
30	Warangal	1387	2865	3	4255
31	Yadadri Bhuvanagiri	2523	6578	2	9103
Total		227041	386123	184	613348

TMEPMA. (2022). Total Street Vendors Identified. Retrieved from <https://tmepma.cgg.gov.in/home.do> on 8th August 2022.

their dynamics and challenges is crucial for effective policy formulation, emphasizing their vital role in the urban economy and the need for harmonious integration.

### 3.5 Evolution of “Street Vending” at Policy Initiatives in India

Any course of action at implementation level needs to be supported by a policy framework. Hence, a cursory glance at attempts at policies in Indian context is provided here.

**1983:** The Bombay Hawkers Union challenged the “Bombay Municipal Corporation Act”, 1888, citing arbitrary power to deny licenses and seize goods without hearings.

**1985:** The “Bombay Hawkers Union” versus Bombay Corporation case emphasized permitting hawking while regulating against adulteration.

**1988:** In the “Municipal Corporation of Delhi” v. Gurnam Kaur case, the state’s non-responsibility towards evicted dwellers was established, highlighting that public roads aren’t meant for running businesses causing nuisance.

**1989:** The Sodan Singh v. “New Delhi Municipal Committee” clarified Article 19(1)(g) covers street vending but can be reasonably restricted under Article 19(6). Hawking’s can operate on sidewalks with permits but not claim permanent occupation.

**2001:** The “Indian Government” initiated a task force to draft “A Street Vendor Policy”.

**2004:** The “National Policy on Urban Street Vendors” was launched, aiming to balance vendor livelihood and prevent overcrowding and unsanitary conditions. It introduced digital surveys and outsourcing spatial planning.

**2009:** The “National Policy on Urban Street Vendors” underwent revision to further align vendor livelihood and urban planning. It recommended professional agency involvement in spatial planning.

**2012:** The “Union Cabinet”, approved the “Street Vendors Protection of Livelihood and Regulation of Street Vending Bill”.

**2013:** The “Supreme Court” directed State Chief Secretaries to establish “Town Vending Committees” as per the 2009 Policy.

**2014:** The Parliament passed the “Street Vendors Act, 2014”, providing an inclusive legal structure to oversee street vending and ensure the protection of vendors’ livelihoods.

#### 3.5.1 Drawbacks and Challenges in Street Vending Policies

The National Street Policy 2009, many street vendors’ associations have the limited possibilities of stake-holder participation in the “Town Vending Committee” that are in



many states, heavily populated by high level state executives. Concerned activist groups have the city specific legal frameworks under which any “Street Vendor Policy” is to work.

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill, 2012, Challenges within street vending regulations encompass the lack of clear principles for issuing vending certificates and allocating zones, absence of stakeholder consultation in plan formulation, and potential conflicts due to overriding state laws, reflecting variations in “*Town Vending Committee*” powers and dispute resolution mechanisms.

The Street Vendors Bill, 2013, seeks to ensure protection for street vendors; however, its effectiveness could be contingent on the “*Town Vending Authority’s*” willingness. The proposal for street vendor representation in the “*Town Vending Committee*” may hold potential, yet its practical impact remains uncertain. Challenges arise from the reliance on pre-eviction surveys, possibly leading to delays and fairness concerns.

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014, lays a strong foundation; however, enforcement challenges due to potential political and bureaucratic hurdles are anticipated. Designating vending zones could trigger spatial conflicts and overcrowding in specific areas, while ensuring effective implementation and adaptation to local contexts presents further challenges.

The Telangana Street Vendors Act, faces implementation challenges, evident in the absence of vendor representation in “*Town Vending Committees*”, inconsistent enumeration, limited issuance of vending certificates, and incomplete vending plans. The “*Telangana State Street Vending Scheme, 2016*”, further compounds issues with unclear survey methods and ambiguous

roles and responsibilities for the authorities. These setbacks underline the necessity of streamlining implementation processes to safeguard street vendors’ rights effectively. (Bedi, Jayana and Prashant Narang. 2020.),

### 3.5.2 Challenges

India’s street vending policies face challenges in stakeholder engagement, uniformity, and adaptability, necessitating improvements. The absence of spatial planning and area-specific regulations raises concerns about urban conflicts and overcrowding. Incorporating these aspects would enhance the regulatory framework’s effectiveness and ensure seamless integration of street vending into urban landscapes.

### 3.6 Empowering Informal Livelihoods: Initiatives for Street Vendors in India

The National Association of Street Vendors of India (NASVI), 2003. The “National Association of Street Vendors of India” (NASVI) functions as an entity dedicated to safeguarding the livelihood rights of street vendors throughout the nation. This organization forms a coalition that comprises “Community-Based Organizations” (CBOs), “Trade Unions”, “Non-Government Organizations” (NGOs), and professionals. NASVI’s primary objective in its inception was to unite street vendor organizations across India, facilitating a collective effort to advocate for significant systemic changes. These changes were deemed essential to support the livelihoods of approximately 10 million vendors who faced substantial threats due to outdated regulations, evolving policies, and shifts in the attitudes of those in positions of authority (National Association of Street Vendors of India, 2019).

Rashriya Swasthya Bima Yojana (RSBY)-2009-10. The “Rashtriya Swasthya Bima Yojana” (RSBY), initially launched in 2009-10, has been extended to encompass street

vendors, furthering its reach and impact. This extension brings a host of valuable benefits to this segment of society. Among these benefits, one finds a smart card-based cashless health insurance cover of Rs. 30,000 annually, designed to cater to the healthcare needs of a family of five on a family floater basis. This coverage includes all pre-existing diseases, hospitalization expenses and financial relief for a broad spectrum of illnesses, including maternity-related requirements. Apart from, the transportation expenses incurred by offering Rs. 100 per visit, with an overarching limit of Rs. 1,000 annually. This extended scheme provides, Street Vendors access to essential healthcare provisions, enhancing their well-being and quality of life.

Deendayal Antyodaya Yojana National Urban Livelihoods Mission (DAY-NULM), 2013. exploring urban street vending dynamics - examining best practices, insights, and challenges within an urban context under the “Deendayal Antyodaya Yojana National Urban Livelihoods Mission” (DAY-NULM), an initiative by the “Ministry of Housing and Urban Affairs, Government of India”, that aims to alleviate the concerns of urban street vendors. The Mission focuses on enabling access to appropriate vending spaces, providing institutional credit, enhancing skill sets, and establishing social security linkages.

Pradhan Mantri Street Vendors’ Atmanirbhar Nidhi Yojana, June 2020. The “Ministry of Housing & Urban Affairs” has introduced a innovative initiative named the “PM Street Vendor’s Atma Nirbhar Nidhi” (PM SVANidhi) Scheme, aimed at empowering street vendors through a multifaceted approach. This scheme not only provides loans to these vendors but also focuses on their comprehensive development and economic betterment. The core objective of “PM SVANidhi” is to offer collateral-free working capital loans with a one-year tenure, amounting to up to INR 10,000. This endeavour is set to benefit around 50 lakh street vendors, enabling them to

recommence their businesses in urban areas, including the adjacent peri-urban and rural regions. Through this strategic initiative, the Ministry envisions not only the revival of these vendors’ livelihoods but also the enhancement of their overall socio-economic status.

However, the challenges remain in teaching the reluctant claimants due to lack of knowledge and bureaucratic hurdles.

### **3.7 Challenges in Recognizing and Integrating Street Vendors within the “Hyderabad Master Plan 2031”**

The Master Plan acknowledges the presence of informal units along roads, the “Master Plan Hyderabad 2031” falls short in terms of inclusive zoning for the unrecognized sector, which receives limited government backing. This situation results in street vendors facing challenges, including the absence of allocated spaces and basic amenities. Urban authorities often prioritize road expansion and infrastructure development over the needs of vendors. Addressing this disparity, it becomes imperative to emphasize ergonomic design and establish social security mechanisms for vendors. Furthermore, implementing education programs and employing safe relocation strategies are recommended measures to enhance the overall urban landscape while safeguarding the livelihoods of street vendors. The problem also relates to the fact that such schemes were superimposed on already existing Master Plan which had been planned without any provision formally for this sector.

### **3.8 Local Insights to Global Comparative-Case Studies of Street Vendors’ Resilience**

#### **3.8.1 A Comparative Analysis of Street Vending in Global North and Global South: An Examination of Informal Sector Dynamics**

The study by (Recchi, Sara, 2020), presents a comprehensive comparative literature review

focusing on street vending practices in the Global South and Global North regions. In the Global South, a significant portion of street vendors are engaged in informal activities, mainly involving rural migrants, impoverished individuals, and those with limited education. This informal sector holds a culturally embedded and stable role, interconnected with the formal economy through licensing systems, thereby facilitating integration into global value chains. Urban policies and strategies of resistance, both individual and collective, constitute key themes explored in the literature. In the Global North, a smaller informal street vending segment comprises immigrants and temporary workers, often leading to conflicts with regular vendors. The literature emphasizes migrant street vendors' activities and their distinctive challenges, as well as individual resistance strategies. By examining these dynamics, the study provides insights into the intricate nature of informal economies, shedding light on street vendors' diverse approaches in their respective contexts.

### 3.8.2 Durban's Informal Economy Policy: Empowering Street Vendors

In 2001, Durban implemented a comprehensive informal economy policy influenced by successful pilot projects. This policy aimed to enhance street vending conditions through simplified registration, negotiated site allocation, transparent operating fees, and gender-sensitive by-laws. It strived for wide applicability, translation into Zulu, easy dissemination, and gender-sensitive language. The "*Self-employed Women's Union*" (SEWU) and the Informal Trade Management Board, established in the 1990s, played vital roles in advocating for vendor infrastructure and integrating vendors into city planning.

### 3.8.3 Evolving Urban Street Vending Policies in India

In India, a shift from prohibition to regulation is evident in the national policy on urban street

vending. The initial adoption in 2004 marked this transition. Subsequently, a revised "*National Policy in 2009*" emphasized the importance of a legislative framework and introduced the "*Model Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill*" to better address street vending activities. This evolution in policy underscores the country's commitment to regulating and protecting the livelihoods of street vendors.

### 3.8.4 Socio-Economic Dynamics Shaping Street Vendors' Resilience in Urban Settings: Evidence from Ten Indian Cities

*Bhowmik, S. K., & Saha, D., (2012)*, examined street vending dynamics in ten cities in India. Their study reveals distinct patterns, where factors such as gender dynamics, literacy rates, economic activities, and caste compositions play pivotal roles. The prevalence of female vendors in cities like Imphal and the varying representation of genders across other cities underscore the importance of gender-related socio-economic factors in shaping resilience. Additionally, literacy rates, with variations from minimal illiteracy in Bhubaneswar to higher rates in Delhi and Hyderabad, highlight how education acts as a foundational element of adaptability and resilience. The dominance of stationary vendors in numerous cities, primarily those with higher illiteracy rates, implies an interconnection between economic activity and educational backgrounds. Moreover, the prominence of OBCs in vendor communities across cities emphasizes the role of caste-based socio-economic factors. Overall, the comprehensive analysis illustrates that the socio-economic context significantly influences street vendors' resilience in navigating the challenges of urban settings.

### 3.8.5 Urban Markets: Insights Enhancing Street Vendors' Resilience, Yeola's Central Market Area, Nashik, Maharashtra

*Patil, A. V., Gogte, J. C., & Talnikar, K. (2019)*, conducted a meticulous study in

Yeola's central market area, employing primary surveys and randomized sampling. The investigation underscores the symbiotic relationship between street vendors' socio-economic context and their exhibited resilience. Several key insights emerge: inadequate municipal provisions prompt vendor relocation within Yeola; financial institutions proactively assist vendors facing uncertainties; vehicular congestion adversely affects sales; and the study calls for systematic improvements. Synthesizing literature and primary survey findings, the paper advocates strategic interventions like ULB-issued identification cards, trade-specific relocations, microfinance for financial stability, health check-ups, pension schemes, and optimized vending spaces through timely redevelopment. These recommendations collectively aim to bolster vendor resilience, integrating them more effectively within the primary market fabric.

### 3.8.6 Fostering Livelihood Opportunities for Street Vendors: A Comprehensive Study of Community Organization and Government Initiatives

*Bhushan Mamidi & Chada, (2014)*, examines various community organization types (Advocacy, Capacity building, Critical path agencies) and government initiatives (MEPMA, Aarogyra project) to support street

vendors. NGOs like Dr Reddy's Foundation, Sannihita, Centre for Environment Education, and Centre for Action study are involved. The study adopts a multi-layer SHG approach for vendor outreach through community mobilization. It emphasizes the importance of aligning community efforts with local context and recommends enhancing community mobilization. Thus, it significantly supports street vendors in enhancing their livelihood opportunities.

### 3.8.7 The Livelihood Challenges and Socio-Economic Dynamics of Street Vendors in Hyderabad, Telangana

The study (*Begari, 2018*), focuses on informal and weekly market vendors in Hyderabad, Telangana. Data collected from different places examines age, gender, education, housing, social and health security, work conditions, and challenges. Key findings as shown in figure 2, 3, 4 & 5, include male dominance (82.5 percent), majority aged 15-39 (51.67 percent), high illiteracy, varied housing, social security gaps, inadequate health facilities, long working hours, lack of legal recognition, rent payments, and insufficient credit access. The study highlights challenges like inadequate infrastructure, limited government support, unawareness of programs, harassment, and lack of formal credit, impacting vendors' livelihoods and well-being.

Figure 2: Gender Composition, (Begari, 2018)

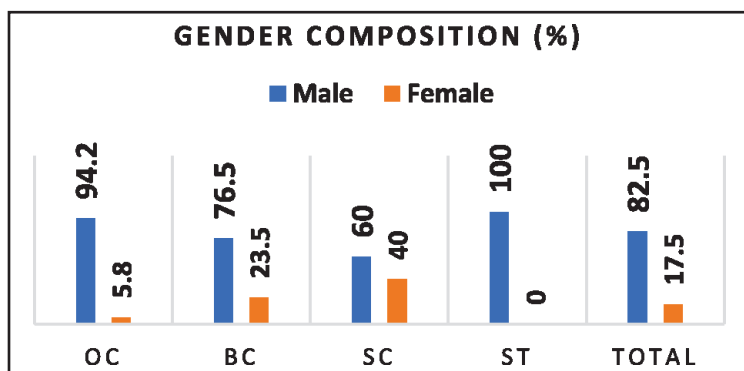


Figure 3: Age Distribution of Vendors, (Begari, 2018)

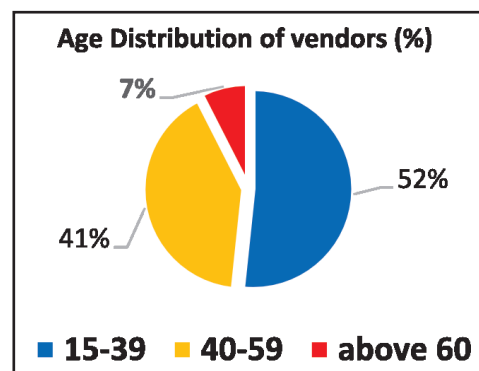




Figure 4: Literacy Rate, (Begari, 2018)

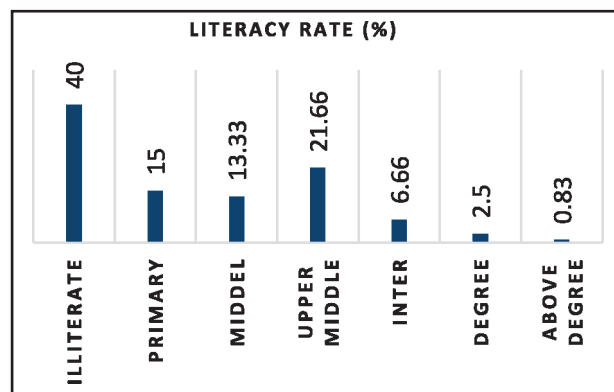
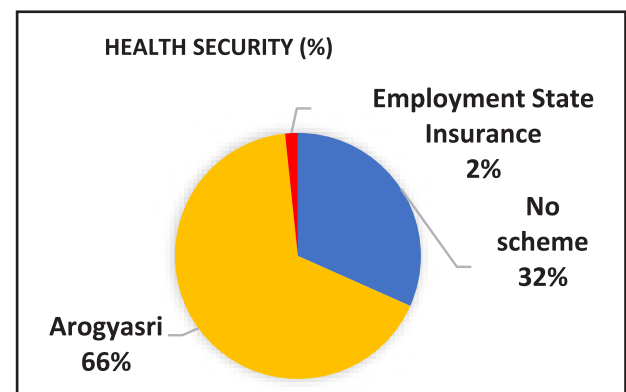


Figure 5: Health Security, (Begari, 2018)



#### 4. GAP IN THE LITERATURE

Spatial Distribution and Accessibility: studies are to include the impact of zoning regulations, land use policies, and urban planning decisions on the spatial arrangement of street vendors, as to whether they contribute or hinder their ability to perform their activities.

#### 5. THE STUDY HYPOTHESIS

To assess 'vulnerability' and 'resilience' of urban informal sector and inclusive cities in term of spatial needs and economy.

#### 6. METHODOLOGY ADOPTED

This paper amalgamates an extensive literature survey derived from both international and national journal articles, and subsequently delves into an in-depth analysis of the resilience exhibited by street vendors in Hyderabad. This analytical approach is complemented by an integration of community service viewpoints, with the ultimate objective of furnishing a comprehension of the determinants that shape the resilience dynamics of street vendors within the context of India.

#### 7. EMPIRICAL OR THEORETICAL RESULT

##### Empirical Findings

- **Socio-economic Conditions:** The study revealed diverse socio-economic conditions of street vendors in Hyderabad, highlighting

gender distribution, educational backgrounds, and regional variations.

- **Policy Implementation Challenges:** Challenges in policy implementation, including limited vendor representation, inconsistent enumeration, lack of clear vending plans, were identified and lack of overall policy - omnibus policy
- **Urban Dynamics and Challenges:** Inadequate infrastructure, limited government support, harassment, and credit access challenges were found to impact vendors' livelihoods, well-being and also transparent identification process of licensing;
- **Spatial Planning Gap:** Notably, the study reveals that spatial planning issues, crucial for effective allocation and management of vending zones not only in CBD but also across the city in existing master plan remained unaddressed across the empirical findings.

##### Theoretical Findings

- **Resilience Dynamics:** The resilience of street vendors is driven by socio-economic factors. It is evident that this resilience stems from the absence of an organized plan to support the economic, physical needs of the informal sector and changing needs of consumer behaviour. However, this lack of organized support also underscores the vulnerability of street vendors within the informal sector.

- **Policy Evolution:** The study highlights the attitudinal shift from prohibition to regulation through legislative measures. A case of inclusive approach, however an overlapping comprehensive and composite policy is still overdue. Also
- **Urban Economic Impact:** Street vending's substantial contribution to urban economies and its presence within the informal sector were emphasized, calling for recognition and integration into urban planning. Also, its role can't be under played in a developing economy like that of India - a fact observed in all developing economies.

In conclusion, the empirical findings identified socio-economic distribution relating to gender, caste, educational and earning, limited participation of all street vendors in policy formulation, challenges like lack of infrastructure, threats, credit access, amenities facilities etc, also evident is omission of spatial provision in physical plans across Hyderabad shows lack of vision of an "Inclusive" planning effort by the authorities.

## 8. FINDINGS OF THE STUDY

### • Socio-economic Conditions

It is the marginalized section of the economy/society that constitute the informal sector which has remained outside of any economic or physical planning process, forcing the group with wide variation across gender, age, locality, and income to seek informal sector participation for survival - more of self-help initiatives.

Furthermore, socially this sector rolls with little formal education, low capital, flexible work hours, absence of age restriction and lack of trained head groups; resulting in tardy progress.

### • Policy Implementation Challenges

The success of any policy depends on effective implementation which calls for

synergy between/among policy framers, participants and implementing agencies. Presently, policies benefit at ground realities, lack of trained implementing manpower, and awareness among the target head groups have resulted in tardy progress.

### • Urban Challenges

This sector faces many challenges which range from lack of physical organized space for one's activity, like washrooms, minimal facilities for children & babies, poor sidewalk design, harassment by different officials, security & safety threats for the elderly and women/ children, lack of credit access, garbage/ waste management, local crime gangs, money lenders, encroaching buildings or even big shops restricting their presence, parking, storage, etc.

### • Resilience

Resilience results from vulnerability as a means of survival instinct. Hence the informal sector in Hyderabad has to resort to this, as the preferences of the public keep changing without notice - novelty is highly appreciated. Further, the nature of the informal sector itself is fashion/ taste, which is driven by many other factors (e.g., Advertisement, Films, TV, etc.) Most of the products on sale also get produced by local or small manufacturers, where quality is also questionable, hence, constant change. They also do not depend on Govt for jobs. Other factors like strikes, riots, disturbances - bandhs at times, contribute to the vendors' thinking on their feet rather than long-term planning. This fact became self-evident during the study.

### • Policy Evolution

That for nearly four decades there was policy vacuum demonstrates marginalization of this sector in the post-independent India. It is only in 2004 the "Street Vendor Policy" came into being

providing relative protection & regulation of this sector. The change from prohibition to regulation makes it a positive change but still falls short of inclusion. and participation both at planning and execution with enumeration level by all the stakeholders.

An omnibus-overarching policy is the need of the hour recognising this sector as an organised sector and industry amenable to all the benefits available to organised sector and as a contributory constituent of the national economy.

- Urban Informality

That informal sector will coexist with formal sector due to the large-scale poverty in the country and affordability, income etc. need to be recognised. The same will continue for considerable time and future also needs to be understood. Hence the inclusion of this sector as a regular constituent of economic and physical planning is of utmost urgency. The average earning in the country is still less than 2 dollars/day - hence informal sector will always have relevance on marginal sectors. Furthermore, the city also thrives on migrants who support this sector/ depend on this sector considerably.

- Spatial Planning Initiatives

At present the presence of this sector in physical space terms lacks any definite guidelines - mostly ad-hoc. Knee-jerk reactions by municipal authorities driven by political law and order considerations rather than a consistent state policy. Telangana and the study area Hyderabad have been experimenting with sporadic efforts rather than a comprehensive policy, especially in the preparation of 'Master Plan' for the city.

In conclusion the study emphasizes & brings out strongly; further call for the state's intervention in protecting the 'Vulnerable Sections' of the economy.

On this case, the 'Informal sector' by recognizing their 'Resilience' as an ability to address the changing dynamics of the city of 'Hyderabad City' (case study area).

The study encourages the states intervention in supporting social issues (gender, age, education etc.) as also economic ones. Apart from challenges faced by the sector, policy support (formulation, execution and implementation) and finally a permanent, mandatory inclusion in all future economic & spatial master plans recognizing their rightful presence in Hyderabad's future without any delay.

## 9. IMPLICATION FOR THEORY AND PRACTICE

### Theoretical Implications

- Resilience Theory

Resilience demonstrates life, and change is a constant in any living system for continuance and survival. Any urban system is no exception to the above observation; for the increasing pressures from so many factors, space, traffic, economy, technology economy, changing social norms etc., make it imperative for the urban system to change, which otherwise will see death. Hyderabad is no exception.

A major facet of such 'Resilience' in a complex city is its 'Informal sector'- more so in Indian context; as it is still burgeoning & has a hungry arm to meet the varied and unspecified needs, which the formal sector cannot match in speed to meet the informal sector; ready to change at short notice, at times on vulnerable spots & challenges for it constantly reinvents itself despite calamities of varied nature.

India as an entity is getting urbanised unlike the already developed west and needs 'Informal Sector' to meet the rising aspirations of the likely mobile rural

population thronging the urban areas looking for jobs. Informal sector welcomes them with myriad opportunities. Hence, the inclusion of this sector in urban planning process cannot be overstated.

- **Informality**

The Indian urban scenario is not monolithic and it cannot be classified strictly in to categories as (unlike in the west). It contains many shades of economic strata whose needs will be overlapping, based on local, cultural and economic sense.

No formal sector can cater to such wide-ranging mixed needs; which can change at short notice. Only informal sector has the resilience to identify and cater to such highly localized needs at short notice.

The informal networks will be throbbing in degraded areas (slums) of a city to cater to the varied products & services at nominal costs not possible by organized sector.

The study reinforces the ability and reach of this sector in Hyderabad and by no stretch of imagination it will disappear & it is here to stay, serving a large section of population which has its own vulnerabilities and needing the informal sector for the existing and emerging needs.

- **Policy Evolution**

A policy essentially is designed to protect and encourage a set of actions pertaining to a set of people to promote their well-being. Due to its absence any programme by the government cannot be enforced legally. Any policy is always forward looking & prospective.

The informal sector, though present throughout history, has now come to be recognized as a major contributor to both urban and national economy - providing financial and social support to vulnerable population which/who otherwise have little opportunity to participate directly in the national economy & activities.

Urbanization has unwittingly attracted informal sectors' activities; whose presence has to be formally acknowledged through the participation & inclusion at all levels.

It has taken more than five decades to recognize the need for a comprehensive approach post - independence. Consequently, the piecemeal strategies must be replaced by an overarching, inclusive policy for the informal sector. This policy should be designed with the flexibility to accommodate emerging changes in the future. It is essential that this policy includes all relevant stakeholders: policy framers, affected users, implementing agencies, and civil society.

### **Practical Implications**

- **Policy Formulation**

Part of policy formulation is giving voice to the unrepresented all stakeholders and to create a means to reach the bottom of the pyramid then move to ending the apex - i.e. represented only by the association. Inclusion of network of smaller groups is needed to provide broader representation.

A policy needs a 'RELOOK' at regular intervals for the removal of non-performing clauses and enhancing the scope of performing clauses; apart from inclusion of such new clauses which accommodate emerging issues for greater effectiveness.

Further policy formulation effort needs to specify intangibles - action modes, people/personnel involved - their training and accountability. All these need to be clearly spelt out; apart from corrective actions that need to be taken e.g. an Ombudsman - involving transparency.

- **Spatial Planning**

It is absent in the prevailing masterplans for cities without exception. Late realisation results in ad-hoc measures



without back-up policy and randomly imposed on the existing system. Multiple agencies create problems in enforcing any order meaningfully.

Further there is nuance/scale of spatial requirements of variety of street vendors/hawkers based on their needs and distribution of space based on frequency of need eg: daily, a few times a week, weekly etc. and assign space on priority depending on accessibility and space available on the street (either on both sides or on one side). Activities which attract people infrequently/can be relegated to side or parallel or other streets to manage available space optimally.

The case suggests that provision for informal sector needs to be provided at the master plan preparation itself unlike the present practice which are blind to the needs of a developing economy like ours with multiple layers of stakeholders. This will also prevent overcrowding, conflicts as also regulate the number of vendors/hawkers in an area.

- Community Support

Community organizations like NASVI have demonstrated the power of advocacy as NGOs in creating awareness to both public and authorities regarding the problems & needs of the unorganized sector especially the street vendors' sphere of activities.

Community support is essential as both the street vendors & the local community need & depend on each other. The street vendor association should / needs to have members from the local community also to strengthen their claim for well-rounded support. Local communities can identify space for vendors to operate - healthcare & social security.

- Healthcare & Social Security

Both Central and State governments need to generate schemes targeting specifically at street vendors and making them part of

general schemes relating to health, death, home/shelter, and possibly old age too.

Schemes like RSBY and PMJAY are in the right direction but agencies like LIC, Max Bupa etc. might can also offer innovative schemes.

- Resilience Building Schemes

Resilience is an essential characteristic of street vending due to the unpredictable & changing tastes of the users. This needs constant observation, identification, sourcing items, storage & distribution at short notice.

Innovation is a key in resilience building. This can mostly be provided by government departments, NGOs and street vendor networks and associations in skill building, product identification and marketing strategies - both in formal & informal modes.

The government's role needs to be that of a facilitator than as a direct actor in such cells - supporting actions by the street vendors, especially financial inclusion schemes.

The study of street vendors of Hyderabad demonstrates they are open to new technology/ideas, motivation to enhance their livelihood support and improve their social and economic stature.

- Inclusive Zoning

The masterplan of any city normally allocates space for wholesale and partially to retail trade during the preparation of the masterplan. However, street vending receives hardly any attention requiring an adhoc, often-genuine and haphazard development with resultant clashes with municipal & police authorities who are not at all a party during master plan preparation.

Further the problem is acute, in the CBD area of any city, - Hyderabad is no exception as it has both local & floating population

(e.g., tourists). The high density of activities & footfall necessitates an adhoc street vending activity to support immediate, unstructured needs which cannot be met by the formal sector due to its rigidity - in terms of place, price & choice.

It is imperative that during master plan preparation while planning for commercial areas both at the town (Central Business District) and at different wards / district levels, provision for street vending activities need to be provided (based on field surveys for that city before master plan preparation; this is due to the variation from one city to another).

Further the street design/at, Traffic framing scheme as part of master plan provision for street vending space, need to be incorporated in street module (or Right of Way).

In existing cities/urban areas - the sidewalks space needs to be rationalized long for better management - removing encroachments, proper edge & pavement design removal of obstructions transformers etc. Identifying and allowing vending activities depending on the available space and type of goods & space required for selling. Aspects/details like stationary, mobile, head loaders, handheld goods can be studied by the municipal authorities or supportive NGOs. Further, the number of traders need also to be limited depending on the space available, and licensing them. Time of business can also be partially restricted. Also, slow moving goods can be moved to parallel or secondary streets to reduce congestion.

In conclusion, this study provides insights and infers for reading resilience as a trait displayed by the street vending community of Hyderabad. Further, it articulates strongly the invaluable role in terms of economic contribution / role

both at city's and national level despite its absence formally both at economic and Physical / Spatial Planning levels in the planning bodies.

It confirms the fact that it is imperative that the governments- both at National and State level recognize and support the self-employed, through legislative measures to livelihood (as per constitutional right) and their physical accommodation through physical planning process.

The Indian physical planning efforts (Master Plans) need to be "Inclusive" to the presence of street vending activities as a part of urban setup. The need for an Indian model, where in the resilient street vending vendor finds his rightful place in the scheme of things is strongly felt.

## REFERENCES

- Periodic Labour Force Survey (PLFS). (2019).  
 International Labour Organization (ILO). The Regulatory Framework and the Informal Economy.  
 PRS Legislative Research. (2013, June 20). The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill, 2012.  
 Department of Urban Employment and Poverty Alleviation, Ministry of Urban Poverty Alleviation, Government of India. (2004). National Policy on Urban Street Vendors, 2004.  
 Government of India. Ministry of Housing and Urban Poverty Alleviation. (2009). National Policy on Urban Street Vendors, 2009.  
 The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill. (2012).  
 The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill. (2013).  
 Ministry of Housing and Urban Affairs, Government of India. (2013, September). National Urban Livelihood Mission.  
 Naik, A. (2005). Contextualizing Urban Livelihood: Street Vending in India. [Publisher not provided].  
 Bhowmik, S. K. (2005). Street Vendors. In S. K. Bhowmik (Ed.), [Book title not provided] (pp. 2256-2264). [Publisher not provided].  
 Ministry of Housing and Poverty Alleviation, Government of India. (2009). India - Urban Poverty Report; 2009.

- Bedi, J., & Narang, P. (2020). Progress Report 2020: Implementing the Street Vendors Act. Centre for Civil Society.
- Recchi, S. (2020). Informal street vending: A comparative literature review. *International Journal of Sociology and Social Policy*. Advance online publication. <https://doi.org/10.1108/IJSSP-07-2020-0285>
- Government of Durban. (2001). Durban's Informal Economy Policy, December 2001. Retrieved from [http://www.durban.gov.za/Resource\\_Centre/Policies/Documents/INFORMAL percent20ECONOMIC percent20POLICY percent20FINAL percent20DOCUMENT.pdf](http://www.durban.gov.za/Resource_Centre/Policies/Documents/INFORMAL%20ECONOMIC%20POLICY%20FINAL%20DOCUMENT.pdf)
- Bhowmik, S. K., & Saha, D. (2012). Street Vending in Ten Cities in India. Conducted for the National Alliance of Street Vendors of India (NASVI) by Tata Institute of Social Sciences (TISS).
- Patil, A. V., Gogte, J. C., & Talnikar, K. (2019). Study of Informal Sector (Street Vendors) in Central Market Area of Yeola, Maharashtra (India). *International Journal of Applied Engineering Research*, 14(13), 3022-3027.
- Bhushan Mamidi, B., & Chada, R. R. (2014). Organizing Street Vendors: An Indian Case Study: A case study of Hyderabad city.
- Begari, P. (2018). Issues and Challenges of the Weekly Market Street Vendors in Telangana: A Special Reference to Hyderabad. *Economic Affairs*, 63(1). <https://doi.org/10.30954/0424-2513.2018.00150.6>
- Harlan, D. (2008). Street Vendors: Urban Problem and Economic Potential. Working Paper in Economics and Development Studies.
- Rachna, A. P. (2014). Street Vendors in India: An Overview. *International Research Journal of Commerce Arts and Science*, 5(3).
- Bhowmik, S. (2001). Hawkers and the Urban Informal Sector: A Study of Street Vendors in Seven Cities. [Report]. National Alliance of Street Vendors of India (NASVI).
- Chen, M. A., Bonner, C., Chetty, M., Fernandez, L., Pape, K., Parra, F., Singh, A., & Skinner, C. (2013). Urban Informal Workers: Representative Voice & Economic Rights. [Report]. World Bank.
- Skinner, C. (2008). The struggle for the streets: Processes of exclusion and inclusion of street traders in Durban, South Africa. *Development Southern Africa*, 25(2), 227-242. <https://doi.org/10.1080/03768350802090709>
- Ray, C. N., & Mishra, A. (2011, November). Vendors and Informal Sector A Case-Study of Street Vendors of Surat City [Working paper No. 15]. Centre for Urban Equity, CEPT University.
- Patil, A. V., Gogte, J. C., & Talnikar, K. (2019). Study of Informal Sector (Street Vendors) in Central Market Area of Yeola, Maharashtra (India). *International Journal of Applied Engineering Research*, 14(13), 3022-3027.



## Book Review

# Sustainable Urban Logistics: Concepts, Methods, and Strategies

**Ish Kumara, Chidambarab**

### 1. INTRODUCTION

*Sustainable Urban Logistics: Concepts, Methods, and Information Systems*, edited by Jesús Gonzalez-Feliu, Frédéric Semet, and Jean-Louis Routhier, London, Springer, 2014, 300 pp, ISBN 978-3-319-12838-3.

Urban freight logistics has gained increasing importance due to the pressures of rapid urbanization, the rise of e-commerce, and growing environmental concerns. Cities face significant challenges in moving goods efficiently while minimizing congestion, pollution, and the broader environmental impacts. The book provides a timely academic and practical resource to address these challenges. It offers a multidisciplinary perspective, catering to urban planners, policymakers, logistics operators, and researchers. The book is divided into four main sections, each addressing crucial aspects of sustainable urban logistics: Current Urban Logistics Landscape, Methodological Approaches, Tactical Planning and Consolidation, and Strategic Planning for Urban Logistics. These sections explore key topics such as logistics consolidation, vehicle routing optimization, freight demand modeling, and public-private partnerships. The editors emphasize the role

of collaboration between stakeholders in addressing both economic and environmental goals, particularly in optimizing last-mile delivery systems.

Given the increasing strain on urban freight systems due to e-commerce, especially during the COVID-19 pandemic, the book provides practical case studies and methodologies that can help cities implement sustainable logistics practices. This review evaluates the book's contributions, particularly its relevance to contemporary challenges in urban freight logistics and its practical applicability for sustainable freight strategies. The book offers a comprehensive exploration of urban logistics, focusing on sustainability across four main sections. The first section, Current Urban Logistics Landscape, outlines the evolution of urban freight systems, emphasizing collaboration between public and private stakeholders to address environmental and logistical challenges. The second section, Methodological Approaches, introduces tools and models for analyzing urban freight flows, with real-world case studies illustrating their application. In the third section, Tactical Planning and Consolidation, practical solutions like logistics consolidation and vehicle routing optimization are explored to improve delivery efficiency and reduce traffic congestion. Finally, the fourth section, Strategic Planning for Urban Logistics, delves into long-term strategies such as public-private partnerships and logistics pooling, emphasizing policy-driven sustainable freight systems.

<sup>1</sup> Ish Kumara, Assistant Professor, Department of Transport Planning, School of Planning and Architecture, New Delhi.  
Email: 28ishdhamija@gmail.com

<sup>2</sup> Chidambara, Associate Professor & Head, Department of Transport Planning, School of Planning and Architecture, New Delhi.



The book provides a comprehensive, multidisciplinary approach to urban freight systems, focusing heavily on sustainability. It addresses logistics platforms, freight demand modeling, and public-private collaboration. However, its applicability is somewhat limited to European contexts, and a broader global focus could increase its relevance. The structured approach of the book, divided into four sections, provides a logical progression from theory to practice. The inclusion of diverse contributors enriches its interdisciplinary nature. The book's focus on sustainability bridges economic efficiency with environmental responsibility, with concrete examples like the Urban Consolidation Center in Padova demonstrating public-private collaboration. The methodological section offers valuable tools for professionals dealing with large-scale urban freight systems, particularly freight demand modeling. The book lacks a strong focus on emerging technologies like automation, drones, and smart logistics systems. Additionally, expanding the case studies to include more diverse global regions could enhance the book's relevance to rapidly urbanizing cities.

The book aligns with current trends in logistics, focusing on optimization through freight consolidation, demand modeling, and public-private collaboration. These approaches are central to addressing the challenges of growing e-commerce and the demand for efficient last-mile delivery systems.

The book covers four major themes central to sustainable urban logistics: Urban Logistics Platforms, Sustainable Supply Chain Management (SSCM), Freight Demand Modeling, and Public-Private Collaboration. Urban logistics platforms, such as Urban Distribution Centers (UDCs) and Urban Logistics Zones (ULZs), are critical for consolidating goods before final delivery. These platforms

play an essential role in reducing congestion and emissions, particularly in densely populated areas where e-commerce has significantly increased delivery volumes. By optimizing the flow of goods, these platforms help mitigate the environmental challenges posed by traditional urban freight systems.

The book also extensively addresses Sustainable Supply Chain Management (SSCM), which aims to balance economic, environmental, and social factors in urban logistics. SSCM principles are illustrated through case studies, such as the Urban Consolidation Center in Padova, Italy, where collaboration between multiple stakeholders has reduced the number of delivery vehicles entering city centers. This collaboration enhances operational efficiency while minimizing environmental impacts, highlighting the crucial role of sustainability in the long-term viability of urban freight systems.

Freight Demand Modeling is another key theme, providing essential tools for predicting and managing urban freight flows. The authors present several approaches, such as simulation models and data collection frameworks, to estimate freight demand and optimize logistics networks. Accurate freight demand modeling helps decision-makers allocate resources more effectively, ensuring that logistics systems operate efficiently while reducing negative environmental impacts. Lastly, the book emphasizes the importance of Public-Private Collaboration in achieving sustainable logistics systems. Successful urban freight strategies rely on strong partnerships between public authorities and private logistics operators. These partnerships align economic efficiency with environmental sustainability goals, as demonstrated by the Padova Urban Consolidation Center. Public-private collaboration ensures that logistics systems meet urban freight demands while minimizing their environmental footprint.



through the adoption of innovative solutions like low-emission vehicles and logistics pooling.

The book offers numerous practical applications for both public and private stakeholders in urban freight. The book highlights the central role of logistics platforms, such as Urban Distribution Centers (UDCs) and Urban Logistics Zones (ULZs), in improving last-mile efficiency by consolidating shipments and reducing congestion, emissions, and noise. Additionally, it emphasizes the importance of Sustainable Supply Chain Management (SSCM) through collaborative efforts between businesses and public authorities, demonstrated by the Urban Consolidation Center (UCC) in Padova, Italy. Freight demand modeling also plays a key role, allowing cities to predict future needs and make informed infrastructure investments. By using data-driven approaches, such as simulation models, urban planners can optimize logistics systems while minimizing environmental impact. Finally, public-private collaboration is crucial in developing sustainable urban freight strategies. The book advocates for joint initiatives, such as public-private partnerships (PPPs) and logistics pooling, to reduce the environmental footprint and promote sustainable freight solutions. These partnerships can be supported by policy incentives like tax benefits or low-emission zones, ensuring that logistics systems meet both economic and environmental goals.

The book presents a detailed examination of urban freight logistics, highlighting both theoretical and practical approaches to sustainability. Its strength lies in its multidimensional exploration of tactical and strategic planning through logistics platforms, supply chain management, freight modeling, and public-private collaboration. However, it would have benefited from further exploration of emerging technologies like autonomous vehicles and AI-driven logistics management, which are reshaping the industry. Furthermore, a broader, global perspective, including case studies from regions like Asia and Africa, could have increased its relevance to diverse urban environments. Despite these gaps, the book offers valuable insights applicable across various contexts and provides clear examples of collaborative efforts optimizing urban freight systems.

The book offers a comprehensive resource for urban planners, academics, and logistics operators, blending theory with actionable insights. Its focus on holistic solutions, combining technological innovation, collaboration, and data-driven planning, aligns with the challenges posed by e-commerce and last-mile delivery pressures. While the book could further address emerging technologies and global perspectives, it remains a significant contribution to the study of sustainable freight systems, offering crucial strategies to balance environmental goals with logistical efficiency in rapidly growing cities. These insights will be vital as urban logistics systems continue to evolve.



# **INSTITUTE OF TOWN PLANNERS, INDIA**

## **4-A, Ring Road, I.P. Estate, New Delhi**

**ITPI COUNCIL 2023 – 2025**

### **Office Bearers**

Shri N. K. Patel	- President
Shri Anoop Kumar Srivastava	- Vice President
Shri V. P. Kulshrestha	- Secretary General

### **Council Member**

Dr. L. P. Patnaik	Shri Pradeep Kapoor	Shri Satish Kumar Shrimali
Shri Gurpreet Singh	Shri S. Devender Reddy	Shri Pankaj Bawa
Shri James Mathew	Shri Dipankar Sinha	Shri U. C. Gadkari
Prof. Dr. Sanjay Gupta	Dr. Ramesh Srikonda	Shri Nepram Gitkumar Singh
Shri S. B. Honnur	Shri Prem Prakash Singh	Shri Jagdeep Kumar Kapoor
Shri Rajesh P. N.	Shri Akash Dharendra Jha	

### **Executive Committee**

Shri N. K. Patel	- President, ITPI
Shri Anoop Kumar Srivastava	- Vice President, ITPI
Shri V. P. Kulshrestha	- Secretary General
Shri Pradeep Kapoor	- Member
Dr. L. P. Patnaik	- Member
Shri Pankaj Bawa	- Member
Shri S. K. Shrimali	- Member
Prof. Dr. Ashwani Luthra	- Secretary (Publication)
Shri R. Srinivas	- Secretary (Examination)

---

ITPI reserves the right to correct, modify or delete  
the content of the papers, published in the Journal.

---

Views expressed and material referred in the papers published in the Journal of ITPI are  
those of the Authors only and not of the ITPI. ITPI is not responsible for authentication  
of data referred in the articles.

---

**Subscription may be addressed to**  
The Secretary General,  
Institute of Town Planners, India  
4-A, Ring Road, I.P., Estate,  
New Delhi - 110 002  
Email: [publication@itpi.org.in](mailto:publication@itpi.org.in)

#### **Subscription (Including Postage)**

- Annual ₹ 3000.00 + Applicable GST (In India) & US\$ 150.00 (Outside India)
- Per copy ₹ 1000.00 + Applicable GST (In India) & US\$ 40.00 (Outside India)





## ITPI HQ, New Delhi

4-A, Ring Road, I.P. Estate, New Delhi-110002

Phone: 011 - 2370 2454, 2370 2457

6461 2462, 6469 2457

Email: [itpidel@itpi.org.in](mailto:itpidel@itpi.org.in)

Website: [www.itpi.org.in](http://www.itpi.org.in)