UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

WORLDING DREAMS, MESSY REALITIES: DECONSTRUCTING DIALECTICAL IMAGES OF URBAN FUTURE AND THE POLITICS OF DIFFERENCE IN NEW DELHI SMART CITY

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
Degree of

DOCTOR OF PHILOSOPHY

By ADITI SINGH
Norman, Oklahoma

2026

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WORLDING DREAMS, MESSY REALITIES: DECONSTRUCTING DIALECTICAL IMAGES OF URBAN FUTURE AND THE POLITICS OF DIFFERENCE IN NEW DELHI SMART CITY

A DISSERTATION APPROVED FOR THE

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL SUSTAINABILITY

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ACKNOWLEDGEMENTS

I am indebted to many people on this journey to my PhD and would like to extend my heartfelt gratitude.

To my committee chair, Dr. Laurel Smith: Thank you for being a constant source of support all these years, for challenging me and pushing me to grow, and for always cheering me on from afar. I am deeply grateful for your belief in me, not only in my professional journey but also in your unwavering support for my personal life.

To my committee members, Dr. Diana Denham, Dr. Chandra Shekhar, and Dr. Amit Baishya: Thank you for your guidance, valuable input, and thoughtful feedback throughout this process. Your encouragement, especially given the distance, has meant so much.

To my Department of Geography and Environmental Sustainability for all the generous funding through assistantships, scholarships, and dissertation fieldwork opportunities during my time at OU. This project would not have materialized without your backing.

To Dr. Dawn Drake: We have met only once, and that too virtually, but you have been so supportive of my growth in countless ways. I truly appreciate it.

To the Dean's office of the College of Atmospheric & Geographic Sciences for funding my dissertation fieldwork. I am especially thankful to Petra Klein, Senior Associate Dean and Dr. Dolly Na-Yemeh, Assistant Dean of Student Services for extending funding assistance when I needed it most during my final semester. Thank you, Dr. Na-Yemeh for your continued support and encouragement.

To the Graduate College in awarding grants for conference, research, and travel over the years. Your contribution has played a key role in shaping me into the scholar I am today.

To my wonderful friends Dr. Gloria N. Nakyagaba and Dr. Lené Le Roux. You were my family far from home. You were always there for me through both joyful and challenging moments. I deeply miss our laughter, shared meals (especially the amazing African cuisines – missing Jollof rice!), birthday celebrations, tea sessions, and countless hugs. Thank you for reading my early drafts and offering your valuable time and thoughtful feedback. Thank you for those long calls and for just selflessly being there for me. Gloria, I am truly grateful to you for reading the entire dissertation draft and helping shape it into what it is today. I couldn't have asked for a more incredible family in Oklahoma. Cheers to us, the *doctoral sisters*!

To my accountability buddies, Dr. George K. Darkwah and Dr. Ekaterina Tikhonyuk: Thank you for being an amazing source of motivation during those writing sessions and beyond. Your presence during moments of doubt and confusion meant more than I can express.

To my greatest support system, my family: I am deeply grateful to my siblings – my sister Pragati, my brother Unnat, and my sister-in-law Neha, the little joys of our family – my niece Arna and

my nephew Tejas – as well as my wonderful in-laws. Your patience, understanding, and constant presence, even during my long silences, have meant everything to me. I can't thank you enough.

To my mother, Abha Singh: Maa, you sat beside me as I applied to PhD programs abroad and witnessed every struggle and doubt from the very beginning till date. Today, you are earning another PhD – first with Papa and now with me. Thank you for being the most incredible mother.

To my father, Professor J. P. Singh: You have always been my role model. I grew up drawing inspiration from your PhD thesis and watching your dedication to teaching and lifelong learning. Thank you for showing me what it means to never stop growing.

Last, and most certainly not least, to my husband, Nishant: I truly struggle to find words that fully express my gratitude. Thank you for being my strength. Your patience, encouragement, and care – especially those comforting home-cooked meals – carried me through some of the most challenging times. In every sense, you have been with me through sickness and health, and this achievement belongs to you as much as it does to me. Congratulations on graduating, and I love you.

Finally, I would like to thank myself. This journey to my PhD brought a number of challenges that pushed me to grow, reflect, and understand myself more deeply. It taught me resilience, dedication, and perseverance. While it is easy to dwell on mistakes, it takes strength to acknowledge the courage to rise each time. For that, I am truly thankful to myself.

To my husband, Nishant

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ABSTRACT

In 2015, Indian Prime Minister Narendra Modi announced 100 smart cities under the central government's initiative of Smart Cities Mission (SCM) programme, with the goal to improve the urban infrastructural crisis of the nation. As often seen from other smart city cases around the world that center capital cities as pioneers of these innovative initiatives, it was unlikely that the capital of India – New Delhi – would not be chosen. Using Ananya Roy and Aihwa Ong's (2011) concept of *worlding*, this dissertation examines New Delhi smart city – assessing the aspirational claims and situated practices of worlding unfolding in New Delhi – and contributes to smart cities research in the Indian context. Drawing from methods of discourse analysis, semi-structured interviews, online survey questionnaires, and participant observations, this dissertation argues that India's rising global relevance is at the center of smart city discourse of both the central government and New Delhi Municipal Council (NDMC). Both the national and municipal actors actively leverage New Delhi's status as the national capital and its symbolic position as a global contender to justify and advance New Delhi smart city and its initiatives. What remains underexplored in worlding is the everyday improvisation and engagement by urban dwellers as they locate themselves within worlding projects, such as smart cities. Rohan Kalyan's (2017) discussion on *urban métis* and Amit Rai's (2019) on *jugaad* helps to illustrate such active and agential role of urban dwellers. Contrary to the policy discourse, stakeholders' narratives emphasize how New Delhi smart city initiatives are reinforcing exclusivity despite existing diverse socio-economic differences. Furthermore, on-ground realities showcase everyday engagements with smart city initiatives where urban dwellers improvise and remain skeptical of big, bold promises made by New Delhi smart city and by the SCM program more broadly.

CHAPTER 1: INTRODUCTION

1.1 Background

The concept of smart cities emerged in the Global North, primarily in the United States in the 1990s, as an extension of the smart growth movement. This movement aimed to address the political, economic, and governance challenges of metropolitan development, such as increasing traffic congestion, deteriorating air quality, and loss of open space (Scott 2007, 26). Rooted in voluntary and locally driven governance frameworks, smart growth was supported by local governments, regional institutions, and communities. Over time, smart growth evolved into a broader policy response to suburban sprawl, promoting controlled urban development that balanced the two complex policy agendas of development and sustainability (Scott 2007, 16–17; Herrschel 2013). The transition from smart growth to smart cities marked a shift from spatial planning tools (Herrschel 2013) to technology-driven approaches (e.g., sensors, data) intended to improve the quality of urban life (Das 2020). In this shift to smart cities, urban challenges central to smart growth movement remained key drivers behind the appeal of smart cities to governments, citizens, businesses, and urban developers seeking urban transformation (Albino, Berardi, and Maria Dangelico 2015).

Neirotti et al. (2014, 27) broadly categorize smart city features as “hard” and “soft.” The former are technology-centric ICT (Information and Communications Technology) features such as wireless communication network, wireless sensors, smart buildings, smart energy grids, water and waste management systems, and efficient modes of transportation, technologies, and management solutions (e.g., public transport, traffic control, electric vehicles, autonomous vehicles). The latter include features such as improving education services and facilities, cultural

development, policy innovations, social inclusion and welfare, and e-governance practices in which technology plays a less decisive role (ibid). Given these diverse features, smart cities are now widely recognized as innovative solutions that combine a variety of technologies and infrastructures to tackle persistent urban challenges, and the concept has been adapted beyond the United States and the Global North to the cities in the Global South such as New Delhi in India.

In 2015, the Government of India (GoI; from here onwards referred to as central government, which is USA equivalent of federal government) launched the Smart Cities Mission (SCM) program to tackle the nation's challenge of increasing urbanization (MoUD 2015a). The SCM program aimed at advancing a comprehensive development of "physical, institutional, social and economic infrastructure" that will enhance the quality of life and bring people and investments into the cities, "setting in motion a virtuous cycle of growth and development" (5). In the SCM program, Prime Minister Narendra Modi led-central government revised and shifted from its earlier promise of building 100 new (smart) cities to proposing 100 smart cities (Hoelscher 2016), focusing on "retrofitting," "redevelopment," and "pan-city" or city-wide initiatives (MoUD 2015a, 8). This new policy discourse on smart city focused on upgrading existing cities and their infrastructure, framing smart cities as "inclusive projects within existing cities" (Hoelscher 2016, 34).

The SCM program was to be implemented at a city level, and the selection of cities was divided into two stages. In the first stage of "Intra-State competition," potential smart cities were shortlisted with at least one city from each state (MoUD 2015a, 10). In the second stage, a list of potential 100 smart cities announced which cities then competed in an "All India competition" (10), known as the "City Challenge" (11), for central government funding. The Ministry of Urban Development (MoUD), a nodal ministry currently known as the Ministry of Housing and Urban

Affairs (MoHUA), collaborated with USA-based Bloomberg Philanthropies to design and develop the City Challenge. (The MoUD became MoUHA in 2017 after the former was merged with the Ministry of Housing and Urban Poverty Alleviation). The central government also invited various private corporations to collaborate with cities in preparing their smart city proposals (SCPs), which served as the main deliverables within the City Challenge. These proposals described urban challenges and answered other governance and technology-related questions prepared by the MoUD. After evaluating the proposals, the top 20 smart cities were declared under the round one, while the cities that were not selected revised their proposal for the next round of the competition (MoUD 2015a).

In round one of selection, the top 20 smart cities, also referred to as "winning cities" or "lighthouses of future development" (MoUD 2016, 1), included the national capital (New Delhi), state capitals, and other large and small cities. As often seen from other smart city cases around the world that center capital cities as pioneers of these innovative initiatives, it was unlikely that New Delhi would not be chosen. Following the selection and participation of New Delhi in the program nearly a decade ago, one might imagine extensive research on the city in the smart city context. However, empirical studies on New Delhi smart city remain scarce till date. Existing smart city research tends to focus on Delhi as the larger metropolitan area where New Delhi is located (see Saha and Singh 2017) and do not explicitly situate their analyses within the framework of the SCM program (see Sarkar 2019).

Furthermore, some scholarly research focused on the SCM program at a national level, often analyzing it with limited empirical depth (see Praharaj and Han 2019; Smith, Pathak, and Agrawal 2019; Das 2020; Prasad and Alizadeh 2020; Purandare 2023). Such broad focus has led to "sweeping accounts of cities" in the list of 100 smart cities (Parida 2022, 4708), largely engaging

with the phenomenon rhetorically without empirical depth. Using the concept of *worlding*, this dissertation examines New Delhi smart city – assessing the aspirational claims and situated practices of worlding unfolding in the context of New Delhi – and contributes to smart cities research in the Indian context. This dissertation argues that India's rising global relevance is at the center of smart city discourse of both the central government and New Delhi Municipal Council (NDMC). Both the national and municipal actors actively leverage New Delhi's status as the national capital and its symbolic position as a global contender to justify and advance New Delhi smart city and its initiatives. Both the central government and the NDMC discursively construct New Delhi as an exemplary site to establish new standards or break the established standards of a smart urbanism in and beyond Delhi. New Delhi is framed as inherently entitled to best-in-class status because it is the national capital and has already world-class parameters, logically qualifying it to become a smart city. On the contrary, stakeholders' narratives about New Delhi smart city emphasize how its initiatives are reinforcing exclusivity despite existing diverse socio-economic differences and on-ground realities also showcase attempts of resistance or *worlding from below*, improvisation or *jugaad*, and a practical engagement or an *urban métis* with the smart city initiatives. Broadly, this dissertation demonstrates how New Delhi smart city was not merely the outcome of an official selection criteria, but the result of a deliberate political and strategic decision.

1.2 Research gap and statement

National capitals are often seats of central power, sites of national identity formation, and often subjected to influence from the national governments. Given their national and international visibility, national capitals tend to serve as showcase or flagship sites for state-led development and image-building projects that positions them under political influence often not faced by other

cities. This visibility of national capitals has attracted extensive scholarly attention such as Nairobi (Guma and Wiig 2022; Sarkar 2022), Santiago (Irazábal and Jirón 2021; Jirón et al. 2021), Taipei (Chang, Jou, and Chung 2021), and Manila (Mouton 2021) among others. For many of these cities, especially in the Global South, a common observation from the studies is the disconnect between the aspirations embedded in smart city plans and policies and the on-ground urban realities and inequalities that have implications for infrastructural access, citizen participation, and technocratic modes of governance and control. In India, similar observations have been noted in many cities, including the national capital of New Delhi (Kumar 2017) and state capitals such as Bhubaneshwar (Mullick and Patnaik 2024), Chennai (Prasad, Alizadeh, and Dowling 2024), and Kolkata (Ghosh and Arora 2022) among others.

Comprehensive research on a national capital as a smart city and its initiative remains limited. Importantly, the literature lacks examination of how a city's status and position as a national capital influences and shapes its smart city agenda. This dissertation attempts to fill this gap by analyzing New Delhi smart city. Unlike other smart cities inquiries in India that have drawn on frameworks like provincializing (Datta 2015), governance (Prasad, Alizadeh, and Dowling 2021; Parida 2022), splintering urbanism (Van Gils and Bailey 2023), socio-technical imaginaries (Ghosh and Arora 2022), and policy mobility (Purandare 2021), this dissertation adopts *worlding* (Roy & Ong 2011) as a conceptual lens for the examination of New Delhi smart city in India.

1.3 Research questions

This dissertation aims to answer the following three research questions. The first two research questions are answered in chapter four, and the third research question is answered in chapter five.

a. How is the smart city concept discursively constructed within the plans and policies of the central government and New Delhi smart city?
b. How do the on-ground realities and stakeholder narratives of the New Delhi Smart City differ from or contest the discourse constructed in plans and policies?
c. How do decision-making processes shape both the planning and implementation of New Delhi smart city's initiatives?

1.4 Conceptual lens

This dissertation draws from Southern urban theory that focuses on transforming urban studies by engaging with theorizations and conceptualizations that are more applicable to the empirical, historical, and intellectual diversities of Global South cities (Lawhon and Truelove 2020). Although the notion of a smart city and its adoption in urban policies originated in the Global North (Das 2020) and later travelled to cities in the Global South, Southern urban theory offers a critical and context-specific analysis that challenges the universality of these policies. This theoretical approach enables a deeper understanding of how smart city policies are reinterpreted, resisted, or reimagined in cities like New Delhi, where local realities often diverge significantly from those in the Global North. Southern urban theory offers a valuable lens to understand and explain the vision and development of smart city in my research location of New Delhi, a rapidly expanding city in India, without forcing a (Western) framework that follows a predictable or fixed trajectory of urbanization. Informed by Southern urban theory, my research presents a dynamic trajectory of urbanization, one driven by aspirations, visions, and experiments that challenge the universalizing logics of Euro-American urban models.

This dissertation uses *worlding*, one of the concepts of Southern urban theory, to view, understand, and study smart city development in New Delhi. Worlding emphasizes cities as

dynamic, constantly evolving spaces shaped by diverse urban dreams, projects, and speculative experiments, rather than being confined to spaces resulting from universal capitalist or postcolonial logics (Roy and Ong 2011). New Delhi's multiple prestigious traits such as its role as the political capital of India, historic significance, global diplomatic presence, cultural diversity, and as a key center for education and economic opportunities make it a valuable location for national projects. It is consistently chosen for key central government initiatives such as Pradhan Mantri Awas Yojana – Urban (PMAY-U), Deendayal Antyodaya Yojana – National Rural Livelihood Mission (NRLM), and Swachh Bharat Mission – Urban (SBM-U). New Delhi is also one of the top 100 smart cities selected under India's SCM program. The selection of New Delhi is not only motivated by New Delhi's status as the capital of India. The selection is also shaped by New Delhi's own ambitious vision to become the "global benchmark for capital cities" (NDMC 2015, 15).

In this context, worlding provides a lens to explore New Delhi in a way that can explain its smart city visions and initiatives without relying on a limiting *what constitutes a smart city* framework. This dissertation approaches New Delhi smart city as context-specific, shaped by New Delhi's capital status, political and administrative proximity, and purely symbolic role and position of the city that makes New Delhi an attractive site for demonstrating urban transformation. New Delhi's smart city not only reflects national objectives of inclusive and sustainable development listed in SCM program policy guidelines, but also, primarily, showcases the city's own attempts to assert a global urban identity. Both central government and the New Delhi Municipal Council (NDMC) along with private stakeholders and urban elites are the key actors driving New Delhi's smart city agenda. Instead of viewing New Delhi as passively adopting global smart city models, a worlding lens allows us to consider how New Delhi becomes a site of localized, yet globally aspirational experimentation.

Worlding also allows an examination of the disjuncture between aspirational discourse and implementation in New Delhi, treating the gap between both the aspirational discourse and implementation not as a failure but as constitutive of its worlding process. Although smart city implementation has largely been exclusive and the needs of certain citizens have been strategically bypassed in decision-making processes, New Delhi smart city continues to be branded as the *first* city that offers best practices for others to learn from and replicate. New Delhi smart city proposal has been duplicated by other cities selected to become smart cities, highlighting its demonstrative effect. These findings (from chapter 5) demonstrates that there is a clear gap between policy discourse and implementation and yet, New Delhi is celebrated as a global exemplary of a smart city. This shows that gaps are not in contradiction to worlding processes, rather a part of worlding.

I also engage with the conceptual lens of urban *métis* (Kalyan 2017) – an informed skepticism – that strengthens the concept of worlding by grounding it in the everyday practices of those who must inhabit global urban transformations such as smart cities. Whereas worlding describes the process of new urban futures through plans, visions, and aspirational projects, urban *métis* reveals how such projects are lived, interpreted, and navigated on the ground. It shows that worlding is also continually mediated by the improvisations of urban dwellers – much like the practices of *jugaad* (Rai 2019), another lens deployed in this dissertation – where residents and workers adapt technologies, infrastructures, and bureaucratic systems to make them function in precarious conditions.

1.5 Structure of dissertation

Following this introduction, Chapter 2 provides an in-depth conceptual discussions and literature review. Chapter 3 delineates and justifies the research methods I adopted along with addressing my positionality and ethics. It also provides a detailed context of my study area and

locations where I conducted fieldwork. Chapter 4 answers the first and the second research question and Chapter 5 answers the third research question. Lastly, Chapter 6 provides overarching conclusions and calls for future research.

CHAPTER 2: SMART CITY, SOUTHERN URBAN THEORY AND CRITIQUE, WORLDING: A LENS TO STUDY NEW DELHI SMART CITY

This chapter highlights and analyzes debates on smart cities by first providing an overview of what constitutes a smart city. It then reviews some of the broad scholarly critiques of smart cities. The discussion subsequently narrows to critical concerns, particularly those influenced by Southern urban theory. Finally, the chapter examines how India, and consequently New Delhi as a Global South city, fits into this debate on smart cities.

2.1 What is a smart city

Smart cities have been widely recognized as innovative solutions that combine a variety of technologies and infrastructures to solve urban challenges such as congestion, improve quality of life of urban dwellers, economic development, and promoting sustainable development. Big private technology corporations, such as IBM, CISCO, Microsoft, Intel, Siemens, SAP, Oracle, play a pivotal role in pushing the adoption of technologies by integrating ICT-based (Information and Communications Technology) infrastructure into cities (Kitchin 2014; Wiig 2015). For tech corporations, technology comprises the key component in their conception of smart cities. To push the adoption of ICT infrastructure, tech corporations advocate the outcome of better operational decisions in the city development by integrating live, real-world data collected via sensors, meters, appliances, and personal devices (Kitchin 2014). Predictably, even these abovementioned big tech corporations hold different visions and ambitions and do not share a unified conception of the smart city, largely because these oligopolists embrace different corporate ethos and sell different

products, such as consultancy, networks, hardware and devices, chips, software, system solutions (Kitchin 2015, 134).

Nonetheless, in this techno-centric vision of city development, smart cities are an outcome of a coalition between the key players involved in the creation of urban strategies – governments and tech corporations (Luque-Ayala and Marvin 2015). Governments, urban planners, and policymakers embrace the smart city concept because it promises cities will achieve economic growth, sustainable development, and an improved quality of life for citizens through technology integration (Albino, Berardi, and Dangelico 2015). Apart from national and local governments and the private sector, international bodies such as the United Nations (United Nations 2015) also play a pivotal role in promoting smart cities as *the* solution to complex urban problems in the Global South and the Global North (Purandare 2021, 81). Proponents from governments, tech corporations, and international private consultants and organizations share a favorable discourse on smart cities. They advocate smart city as a feasible or even *the* only solution to balancing sustainability and urban development through the use of ICTs (Mouton 2021).

Another perspective shared by these supporters is an economic policy perspective of smart cities, where technology is seen as the strategy to attract and connect talent and innovation, "enacted by smart people" (Kitchin 2014, 2). The assumption behind this economic policy approach is that technology will make cities more appealing to highly skilled professionals, entrepreneurs, innovators, and investors (Mouton 2021). Given these positive aspects associated with smart cities, cities around the world are adopting the features of smart cities, rebranding themselves or sections of their cities as smart cities. The definition of a smart city extends beyond a mere integration of technologies into the cities, necessitating a critical analysis of this concept.

A wide range of academic disciplines engage in discussions about the theoretical and practical challenges related to smart cities, including anthropology, architecture, computer science, economics, engineering, geography, planning, political science, and sociology (Miller et al. 2021). Additionally, a range of inter-disciplinary areas, such as business studies, development studies, environmental studies, and urban studies, have increasingly contributed empirical, methodological, and theoretical insights. In terms of its adoption across the world, the smart city concept has become a major policy and planning tool, particularly in the Global North, including North American countries of USA and Canada (Shelton, Zook, and Wiig 2015; see Levenda et al. 2020) and Western Europe (Joss, Cook, and Dayot 2017; Charnock, March, and Ribera-Fumaz 2021). It has also been deployed in many cities across the Global South, including in Asia (Datta 2015; Cowley et al. 2019; Chang, Jou, and Chung 2021; Curran and Smart 2021; Mouton 2021; Prasad, Alizadeh, and Dowling 2024), Africa (Watson 2014; Odendaal 2021; Guma and Wiig 2022), Latin America (Irazábal and Jirón 2021; Jirón et al. 2021), and Middle East (Breslow 2021).

While the smart city concept has become mainstream in global urban discourse, its comprehensive implementation remains uneven across regions. Notably, despite scholarship on smart cities being more established in the Global North, the highest concentration of large-scale smart city initiatives is found in the Global South, particularly in countries such as India, China, Korea, Saudi Arabia (Datta 2018a). This faster uptake of smart city initiatives in the Global South reflects rapid urbanization projects and significant investment in technology-driven urban development. Although the smart city concept emerged from the Global North, it has been more extensively implemented in the Global South, where it is pursued not only as a means of addressing urban challenges but also as a strategy to advance technological innovation. Yet the very prominence of smart cities in policy and planning has also made them a focal point of critique.

Indeed, smart cities have been subject to scholarly examination in recent decades across both the Global North and the Global South. I discuss these critiques in the following section.

2.2 Critiques of the smart city concept

Much of the critique of the smart city concept centers on issues of definition and applicability. These concerns have critical implications for planning and policy, citizenship, governance, and infrastructure. Scholars highlight not only the persistent ambiguity of the term, but also the ways in which corporations, governments, and policymakers have mobilized the term to advance particular techno-centric and entrepreneurial visions of urban development. The following discussion reviews these critiques, ranging from definitional imprecision and corporate agendas to technocratic governance, citizenship, and the urban bias within smart city research.

Critical scholars argue that the term smart city is widely used in various urban plans and policies without a universally accepted definition, resulting in persistent ambiguity around its conceptualization. Hollands (2008) argues that the lack of definitional imprecision surrounding the term smart city stems from its varied and inconsistent use. For instance, the usage of term ranges from referring to technological development using ICTs to creative industries and e-governance. The term is often conflated with related terms such as wired cities, digital cities, and knowledge cities and it is difficult to separate these terms (ibid).

Hollands further asserts that the term hides various unspoken assumptions about urban transformations, such as the "notion of IT transforming life and work within a region" discussed in literature that automatically assumes "there is some kind of community consensus and involvement in the transition, and that such a change is inherently positive" (306). This lack of clarity and unspoken assumptions leave unanswered questions about impacts on marginalized populations (Wiig 2015). Vanolo (2014) also raises concern with common keywords such as social

cohesion and participation, which are commonly found in the discourse central to smart city policies across the world. Despite this ambiguity, Das (2020) contends the relevance of the smart city concept citing how it frames technology as a panacea for urban challenges and welcomed by urban policymakers and planners across the world.

Critical scholarship on smart cities argues that techno-centric visions of urban development remain overshadowed by various economic and entrepreneurial priorities linked with ICT deployment (Hollands 2008). With the lack of clear definitions, Caragliu and Del Bo (2016) point out an intentional attempt by technology corporations to create a "buzzword" (658) of smart city, persuading municipalities to adopt and invest heavily in ICTs. Söderström, Paasche, and Klauser (2014) deeply analyze such intentions by focusing on the constitutive elements and imaginaries in the smart city discourse of IBM corporation, a key actor leading the global and massive smarter cities campaign. The authors contend that the imaginaries in the smart city discourse are a corporate "storytelling activity" and they critique smart urbanism as an "ideological construct" used by IBM to secure and strengthen its market position (309). These observations reveal that smart city is at times a marketing rhetoric far from any evident outcomes. However, Wiig (2015) challenges the overemphasis on IBM's agency in driving smart city discourse within critical studies. He emphasizes the need to look beyond the company narratives and to actively ground the analysis in cities that have adopted these policies. Examining "the rationale cities gave for enrolling in smart city policymaking to begin with" (259) requires unpacking "how and why cities" (258) engaged in smart city policymaking with IBM and demonstrating the agency of city governments who are key actors in advancing the smart city paradigm.

Kitchin (2014) raises critical questions regarding technocratic governance, which "presumes that all aspects of a city can be measured and monitored and treated as technical

problems which can be addressed through technical solutions" (9). The claims that smart cities are inherently beneficial, driven by technological innovation, data-driven governance, and market-based solutions are mainly driven by academics in the sciences and computational social sciences, municipal and national governments, and businesses (Kitchin 2015). Smart city advocates often assume that technologies, techniques and visions are "scientific, objective, commonsensical and apolitical" (132). Kitchin (2014) also questions the corporatization of city management. He argues that smart city agendas are often shaped by large software services and hardware companies that embed their systems deeply into city governance. Such companies create dependencies and "technological lock-in that beholden cities to particular technological platforms," prioritizing vendor-driven solutions over local "uniqueness of places, peoples and cultures (10). Kitchin further highlights how the growing reliance on software-driven infrastructures produces system vulnerabilities, resulting in city services and spaces that are "buggy, brittle and exposed city services and spaces that are prone to viruses, glitches, crashes, and security hacks" (11). Alongside these technical risks, he raises ethical concerns related to surveillance that "threaten to stifle rights to privacy, confidentiality, and freedom of expression" (12).

Calzada and Cobo (2015) argue that being digitally connected should not be mistaken for the acquisition of social capital. They mean that mere participation in digital social networks (such as social media) does not automatically generate trust, foster strong social ties, or meaningful relationships. This distinction matters because smart city discourse often assumes that increased connectivity and digital participation will naturally strengthen communities and civic life. Calzada and Cobo's critique challenges the techno-deterministic assumptions embedded in the dominant smart city approach of large tech corporations, which often overlook the social and political dimensions of human interaction. Similarly, Vanolo (2014) contends that participation or citizen-

centric policies are often portrayed as neutral terms or inherently positive practices. These terms can mask underlying contestations and power imbalances. Vanolo's critical assessment emphasizes how the techno-centric orientation of the smart city concept can reformulate the concept of citizenship by co-producing "smart citizens," who are compelled to be technologically literate and have "a moral obligation to behave in a certain way" (2014, 893).

The smart city concept is also critiqued for exclusion of non-urban contexts such as smaller, rural, and remote communities or municipalities pursuing smart city development. In their study of two remote communities in northern Canada, Spicer, Goodman, and Olmstead (2021) find that the mainstream smart city accounts continue to focus predominantly on cities, equating smartness with large, dense urban settings. They contend that there is limited understanding of the reasons and incentives that drives smaller, rural, and remote communities or municipalities of all sizes in pursing smart city development. Often cities in non-urban context adopt smart technologies out of basic necessity to support their communities and not to compete with advancing cities. Shifting the focus toward rural and remote communities allows better understanding of how such contexts are positioned at the frontier of digital opportunity, with the potential to benefit significantly from the adoption of smart technologies. In addition to large cities, mainstream smart city research also relies on use of "canonical examples" of smart cities, such as Songdo (South Korea), Masdar (United Arab Emirates), PlanIT Valley (Portugal), as indicative of all smart city initiatives and cities' efforts everywhere (Kitchin 2015, 133). This imbalance in how smart city initiatives are understood and studied gives disproportionate importance to large cities, sidelining both the needs of smaller cities and the lessons that might emerge from such contexts.

Critical scholarship on smart cities often critiques what is seen as a one-size-fits-all approach to smart city development (e.g., Hollands 2008; Townsend 2013; Söderström, Paasche,

and Klauser 2014; Vanolo 2014). A one-size-fits-all approach refers to the way many smart city plans, policies, and visions – often promoted by governments and big technology corporations such as IBM, Cisco, etc. – present technology-led urban development as universally applicable across all cities. Kitchin (2015) argues that such critiques themselves can reproduce one-size-fits-all narratives by applying theoretical framings, such as neoliberal urban governance or ICT-based networked urbanism, to all smart city initiatives. This approach risks overlooking the varied "logic, drivers and deployment" of smart city initiatives and representing "actually existing smart cities development" in overly generalized ways that fail to account for diverse histories, cultures, political economies, and forms of capitalism shaping urban development in different locales (133).

Neoliberal rationale remains a key theoretical framing for understanding and analyzing smart city initiatives across the world. It is, therefore, important to discuss its meaning, its relationship with technology, and how it shapes smart city narratives. The following section reviews key literature on neoliberal rationality and its connections to smart cities. The section concludes by outlining my dissertation's stance on the topic.

2.3 Understanding the neoliberal rationality

Neoliberalism is "a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade" (Harvey 2005, 2). These characteristics suffice a *utopian* and a theoretical sense of what neoliberalism is (19). Neoliberalism advances ideals of "human dignity and individual freedom" (5) as fundamentals while identifying market and trade as the means through which those ideals are supposed to be secured. Harvey (2005) also discusses neoliberalism as a "political project to

re-establish the conditions for capital accumulation and to restore the power of economic elites" (19), arguing that this political agenda of neoliberalism dominates in practice.

In Harvey's account, the "neoliberal state" is a state apparatus whose fundamental mission is to facilitate profitable capital accumulation for both domestic and foreign capital (7). He compares it with the postwar (Second World War and the Great Depression) order of "embedded liberalism," in which markets were surrounded by social and political constraints, welfare arrangements, and active state regulatory interventions (11). For Harvey, neoliberalization is therefore the project to disembed capital from such constraints of welfare systems (such as education, health care) and state's intervention in industrial policy and both restoring or reconstructing the power of economic elites. Harvey also contends that the language of freedom in theory does not remain a broad social freedom in practice. He views that neoliberalism debases the concept of freedom, one that is "a mere advocacy of free enterprise" and in practice favors those who already possess income, leisure, and security (183). He emphasizes that neoliberal theory and the rhetoric of freedom and liberty surrounding it function primarily as a "mask" for the "maintenance, reconstitution, and restoration of elite class power" (188), broadcasting that free markets and free trade will eliminate poverty.

Harvey provides an extensive political-economic history of neoliberalism and how it proliferated and why. Focusing on a broader and more global level, Harvey explains that the United States sought to impose neoliberalism by restructuring state apparatuses so that their fundamental role became the facilitation of capital accumulation for both domestic and foreign capital. In the case of Iraq, this was done directly through political and military power and introducing policies such as privatization, foreign ownership rights, repatriation of profits, and removal of trade barriers. In Latin America, Harvey identifies Chile after the 1973 coup as the first major

experiment in neoliberal state formation. The coup against Salvador Allende was supported by domestic elites, US corporations, the CIA, and US political leadership, and it led to the installation of policies designed by economists trained in neoliberal theory. The policies included privatization of public assets, opening natural resources to private exploitation, encouragement of foreign investment, and the promotion of free trade. More broadly, Harvey contends that the spread of neoliberalism from the mid-1970s onward reflects the reach of US power, though it is not reducible to it alone. He notes that similar restructurings of state apparatuses occurred in different regions (UK, China, parts of Europe) and periods under the coercive influence of the US and the use of international financial institutions such as the IMF (International Monetary Fund), suggesting a pattern of global proliferation. At the same time, he emphasizes that domestic factors also played a role and that neoliberalization developed unevenly across different geographical contexts.

Focusing particularly on cities as "strategically central sites" for advancing neoliberal restructuring projects and resistance to them, Peck, Theodore, and Brenner (2009) shift the focus to "actually existing neoliberalism" (49). The authors argue that neoliberalization is not uniform but variegated, contextually embedded and path-dependent, unfolding through policy experimentation and adaptation across different urban settings. They accentuate the mutation and uneven geographical context – "defined by the legacies of inherited institutional frameworks, policy regimes, regulatory practices and political struggles" (50) – of neoliberal urbanism rather than a singular model. The authors critique the idea that the gaps between neoliberal ideals and outcomes are accidental, arguing instead that the "disjunctures…between ideology and practice; doctrine and reality; vision and consequence" are defining features of neoliberalism itself (51).

Building on this emphasis on contextual variation and uneven outcomes, Roy and Ong (2011) also do not identify neoliberalism as a fixed system or an ideology. Rather than viewing

the neoliberal as a set of market conditions that are tied to a particular form of state, Roy and Ong mark it as "a set of maximizing rationalities that articulates particular assemblages of governing" (2011, 4). It is a way of thinking that shapes the organization of governance. They also describe neoliberalism as a "mobile technology" – a circulating and adaptable technology – that can be taken up by a government or any other institution "to recast problems as non-ideological and non-political issues that need technical solutions to maximize intended outcomes" (4). This explains how neoliberal reason has also infiltrated areas that resist market principles such as NGOs, cultural production, and social movements. As a broader logic of entrepreneurialism, neoliberal reason has also influenced how different actors operate. This reasoning leads to situations where neoliberal practices coexist with, and even support, discourses of "anti-neoliberalism," revealing a complex and intertwined relationship rather than a clear opposition (5).

Roy and Ong (2011) further argue that the spread of neoliberal techniques creates complex urban environments where different actors and ideas mix in unexpected ways and processes. These processes generate "borrowings, appropriations, and alliances" that cut across class, ideological, and national boundaries and still rely on constantly re-establishing such boundaries through discourse (language, ideas, rationalities) (5). Even "opposing ideological positions" (such as pro- and anti-neoliberal) becoming interconnected and shaped in relation to each other, sharing some common norms. Because of this entanglement, Roy and Ong suggest that judging urban practices as simply "right" or "wrong" is not useful. Instead, avoid such judgments and focus on understanding the variability and specific dynamics of urban initiatives as they unfold, moving both forward and experiencing challenges (ibid).

Similar understanding that neoliberal rationality is not the sole driver of urban transformation, other scholars contend that critiques of neoliberalism have become too dominant

in urban theory and risk overextending its explanatory power. Parnell and Robinson (2012) maintain that while neoliberalism is important, it is only one of many processes shaping cities, particularly in the Global South. Unlike Harvey's focus on class or Peck, Theodore, and Brenner's emphasis on variegated neoliberalism, Parnell and Robinson stress that neoliberalism may be partial, absent, or even irrelevant in some contexts. Overall, together, these scholars move from understanding neoliberalism as a global project, to a variegated and flexible process, whose dominance must be questioned to better capture the diversity of urban realities. This nuanced understanding of neoliberal logic resonates with Kitchin's (2015) argument noted previously in this chapter about how often neoliberal theoretical framings underpinning the smart city concept (e.g., Hollands 2008; Townsend 2013; Söderström, Paasche, and Klauser 2014; Vanolo 2014; see Greenfield 2013) overlook a variety of drivers and logics (histories, cultures, political economies, etc.) shaping urban development in diverse settings. The following section critically assesses some of the literature engaging with smart cities and neoliberalism, particularly in the context of smart cities in India.

2.3.1 Technology and neoliberal rationality

Harvey (2005) also pointed out that private enterprise and entrepreneurial activities are treated as the keys to innovation and wealth creation within neoliberalism. This emphasis on competition and entrepreneurship underpins neoliberal approaches to technological change. Harvey asserts that neoliberalism drives technological change through competitive pressure, making innovation in products, production methods, and organization a constant imperative. Such a competitive environment becomes embedded as a "fetish belief: that there is a technological fix for each and every problem," shaping both corporations and state institutions (68). As a result, technological development can become autonomous and destabilizing, generating innovations

without clear social need or market demand and even reshaping problems to fit available technologies.

Such a neoliberal rationality aligns with the technology-centric and driven buzz in the plans and policies of smart cities around the world. Scholarship on smart cities provides a variety of engagement with the neoliberal logic. Cardullo and Kitchin (2019b) explore how the smart city policies and initiatives particularly under the European Innovation Partnership for Smart Cities and Communities (EIP-SCC) of the European Commission "actively (re)produce a neoliberal conception of citizenship and participation" through various mechanisms of "funding allocation, the application of scaling and replication techniques, and mobile policy formation" (814). They discuss neoliberalism as a "more or less coherent ideology, rationality, policy agenda, and structural process" operating across urban, neighbourhood, individual scales, and intra-city scale collaboration at European and national levels. In their work, a focus on the "actually existing" implementation of such policies on ground remains lacking (816).

Cardullo and Kitchin assess the discourse of the policy documents and project descriptions along with interviews with stakeholders working on citizen engagement, targeted city officials, and corporate stakeholders. Through their analysis, the authors contend that citizen-focused smart city projects in practice reproduce active forms of (a) "marketization" of citizens into consumers in a marketplace, users of privatized utility, and/or data-products producing valuable data for the companies (821) and (b) paternalistic citizen participation as the "objectives and solutions were set before problems" to take suggestions from citizens (819). Participation is thus largely instrumental and paternalistic, with power retained by corporations and state actors rather than redistributed. This perspective presents neoliberalism as a relatively coherent and dominant structuring force shaping both governance and subjectivities within smart cities. In contrast,

Chang, Jou, and Chung (2021) complicate this dominant framing by arguing that the prevailing association between smart cities and neoliberal, corporate-led urbanism, is largely derived from Global North experiences, obscuring the diversity of political rationalities and power dynamics in other contexts. Through the case of Taipei, Taiwan, the authors show that smart urbanism cannot be reduced to neoliberal economic logic alone. Instead, it operates as a political strategy embedded in local regime transitions, where technological agendas are mobilized to reorganize governance structures, form new coalitions, and bolster legitimacy.

Some of the literature on Indian smart cities further extends and reworks these debates by framing smart cities within postcolonial and neoliberal transformations. Datta (2015a) critiques smart cities in India by conceptualizing them as "urban utopias" rooted in entrepreneurial urbanization (4). Smart city is framed as a business model, reinforcing existing inequalities and often bypassing the challenges of existing cities. At the same time, her account also showcases how resistance and local protests delay the speeding development of such a business model, showing that smart utopia often requires active dispossession of marginalized citizens.

In her detailed study of discourses and narratives, Basu (2019) shows how an elite discourse coalition frames the SCM program, arguing that it represents an advanced stage of neoliberal urbanism characterized by financialization, privatization, and the erosion of local democracy. She contends that Modi's technocratic nationalism, the technological utopia of IT and consulting firms, and middle-class urban citizenship together shift urban policy from inclusive rights to exclusive privilege, privatize governance in place of local democracy, and turn structural inequalities into technological problems. In this account, urban landscape is organized into pockets of exclusive urban zones, governance unfolds via elite-led arrangements and Special Purpose Vehicles (SPVs), and urban citizenship with values of ownership, aesthetics, efficiency, and

property rather than rights and entitlements of the urban poor. Basu argues that smart cities promote an elite-led neoliberal governmentality that bypasses local politics while legitimizing privatization, exclusion, and technological fixes for urban inequality.

Across the above discussed body of work on smart cities, what remains lacking is understanding of how implementation of neoliberal logics within smart city plans and policies often face resistance and friction in an everyday life and how urban dwellers apply their practical knowledge and *jugaad* to navigate and survive amidst technological and infrastructural changes emerging from smart city plans and policies. The above literature also misses taking into account that neoliberal logic is not the only reasoning behind the discourse and narratives and in the decision-making of smart city initiatives. Again, neoliberal logic usage and centrality is context-specific and often varies, such as in this study of New Delhi smart city. This dissertation aligns with Roy and Ong (2011), Parnell and Robinson (2012), and Kitchin (2015) and claims that neoliberal logic is one of multiple drivers behind the plans and narratives of smart cities.

Complementing Kitchin's (2015) critique of one-size-fits-all narratives such as neoliberal logic is the persistent lack of engagement with smart cities context outside the Global North. More importantly, the local contextualities, complexities, contradictions, and uneven outcomes of smart cities in the Global South remain underexplored and insufficiently theorized in the mainstream smart city literature (Luque-Ayala and Marvin 2015; Burns et al. 2021). This has led to a surge in Southern urban theory engagements with the smart city concept. The section below explores this body of scholarship for its relevance to study New Delhi as a Global South city. The section begins with discussing what is Southern urban theory and describing its utility for understanding smart cities.

2.4 Southern urban theory

At its core, Southern urban theory, also known as Southern urban critique, asserts that the dominant theories, concepts, and tools, such as modernity, derived from prominent cities or so-called world cities in the Global North are limited in their ability to fully explain the Global South (Robinson 2006; Roy 2009a; Sheppard, Leitner, and Maringanti 2013). This call challenges the claims of universal applicability of Northern theories, concepts, and tools to study cities elsewhere – often those in the Global South. Scholars of Southern urban theory argue that dominant theorizations and conceptualizations emerge from experiences of cities in the Global North – North American (e.g., LA, Chicago) and Western Europe (e.g., London, Paris), and are, thereby, limited in analyzing varying experiences of cities in the Global South (e.g., Shanghai, Cairo, Mumbai, Mexico City, Rio de Janeiro, Johannesburg). Diverse experiences and practices evident in cities of the Global South are not included or given little attention by theories developed in the Global North. Scholars argue for new or revised theoretical perspectives to study diverse urbanization processes across the world (Robinson 2006; Leitner and Sheppard 2016).

Instances of varied and context-specific experiences are particularly evident in the studies of Indian cities such as Delhi, where urbanization is shaped not only by global capital but also by postcolonial state practices, such as Bhagidari scheme "a program launched to increase 'citizen–government partnership' through RWAs [residents welfare associations]" (Ghertner 2011a, 506), middle-class environmental politics, and conflicts over formal versus informal use of space (Baviskar 2003; Ghertner 2012). Scholarly research on Delhi demonstrates how urban transformations are produced through conflicts over land (Baviskar 2003), discourse of legal/illegal surpassing the formal processes and planning criteria (Ghertner 2012), aesthetic norms of clean/dirty, beautiful/ugly, and order/disorder (Baviskar 2003; Ghertner 2011b), and "a form of

propertied citizenship" (Ghertner 2012) rather than through universal logics of modernization or neoliberalism alone.

These dynamics are also illustrated in Baviskar's (2006) account of slum demolitions in Delhi. She shows how preparations for global spectacles such as the 2010 Commonwealth Games intensified large-scale evictions of working-class settlements in order to make way for malls, infrastructure projects, and beautification schemes. She notes that the demolition of Banuwal Nagar in 2006 razed 1,500 homes to create space for commercial redevelopment, while many displaced residents were either pushed to distant resettlement colonies with little access to employment or left with no compensation at all (90-91). Baviskar demonstrates that such demolitions are justified through middle-class claims that slums are "dirty, congested and dangerous," (91) enabling the transformation of urban land in the name of creating a "clean and green Delhi." (95). She further argues that these processes represent new forms of enclosure in which lands informally occupied by the urban poor are reabsorbed into profitable real-estate markets, reflecting a vision of a *world-class city* that has little place for low-income residents.

Proponents of Southern urban theory do not seek to dismiss or invalidate theories or concepts from the Global North. Instead, they focus on critically examining how diverse urbanisms can be explained, studied, and interpreted. This body of scholarship emphasizes the need to understand cities as the starting point of research and not studying cities through a predefined framework or lens and trying to fit a particular urban context into it. It is also crucial to note that Southern urban theory is not an independent emergence. Instead, it is shaped by and builds upon key bodies of scholarship that inform its foundations. Postcolonial and feminist theories are foundational tenets to critical geographic thought, of which Southern urban theory is a part. Southern urban theory is known to be associated with theoretical approach of postcolonial urban

theory (Robinson 2003; Roy 2009a) and also with a variety of overlapping and complementary conceptual lenses of comparative urbanism (Robinson 2006), ordinary cities (Amin and Graham 1997; Robinson 2002, 2006), worlding (Roy and Ong 2011), and provincializing (Leitner and Sheppard 2016).

In the Indian context, postcolonial urban studies show that the critiques of presumed universality of Northern theories and concepts and few experiences counting towards knowledge production are closely linked to concrete, everyday politics. For instance, Baviskar's (2003) analysis of Delhi shows how elite and middle-class environmental politics have reshaped urban space through aesthetic ideals of cleanliness and order, leading to removal of informal settlements and the remaking of the city in the image of a "clean and green" (95) capital. Her account of conflicts over parks and neighborhoods in Delhi further illustrates how such visions of cleanliness authorize coercive actions against unplanned residential settlements, framing their displacement as necessary for urban improvement. Similarly, Ghertner (2012) demonstrates how slums in Delhi have been discursively constructed as "nuisances" (1162) by private property-owning RWAs, framing their demolitions as acts of environmental and civic improvement. He shows that this "nuisance talk" (1162) proves slums as illegal environments solely on the basis of aesthetics, thereby legitimizing their removal as part of projects to beautify the city.

2.4.1 Conceptual lenses

One of the key postcolonial works central to all the preceding conceptual lenses is Chakrabarty's (2000) *provincializing.* He offers a historical critique of dominant European thought that challenges the epistemological dominance of Europe in knowledge production. In his critique, Chakrabarty makes a call to provincialize – both to situate and decenter – Europe by challenging the assumption that ideas of political modernity are universally applicable (4). Histories,

categories, concepts, and theories from Europe (such as capitalism, modernity, citizenship, democracy, equality) are assumed to be applicable to all societies. These universal histories and concepts are an important and unavoidable part of the modern history and Chakrabarty calls them "history one" (71). This histography frames non-Western ways of life as inadequate, rejecting their historical difference. He calls this "history two" (ibid), emphasizing its existence regardless of Europe's version of history. European modernity does not fully explain non-Western experiences.

Chakrabarty argues that all histories or concepts are located in specific contexts, including European history or modernity. European thought is one among many intellectual traditions; it is not the only universal tradition standard against which other traditions are measured and regarded as incomplete or inadequate. For him, to provincialize is to situate and contextualize ideas and theories. Since all knowledge is located, through provincialization, he calls on scholars to historize knowledge, i.e., to trace where the knowledge comes from and what social, cultural, economic, and political roots shape that knowledge (Chakrabarty 2000, 6).

In his book, Chakrabarty (2000) does so through an in-depth engagement with historical studies of cultural and social practices of Hindu, educated, middle-class, and upper-caste Bengalis (people from West Bengal state) in India and with studies of the subaltern groups in India. He clarifies that to situate Indian Bengali history is to recognize how European intellectual traditions are both essential and yet limiting or inadequate for explaining the diverse, situated practices constituting the complexities of political and historical contexts in India (6). Euro-American intellectual traditions may not be universal, but they are essential because they have shaped global, entangled knowledge systems and completely rejecting them is neither be productive nor possible (4). These traditions are rooted in specific historical and cultural contexts; thus, we acknowledge their limitations and critically engage with them. The call to provincialize is neither to reject or

ignore European thought, history, or representations nor is a call for "cultural relativism" and uncritical acceptance of all cultures or returning to ancient, exclusive "nativist histories" (45). Instead, to provincialize is to rethink and renew European thought from the margins – those places existing outside the historical centers of power and knowledge in Europe – and for the margins – by including excluded, plural, and diverse narratives to understand the world (16).

Drawing from Chakrabarty's (2000) call to *provincialize* and emphasizing the value of postcolonial critique, Robinson (2003) calls for a postcolonial critique of knowledge production in the field of urban geography. It is more than just adding more "case studies" of other places "to diversify the "voices" and "contexts"" in academic research (278). Robinson argues that case studies from outside the West are often considered as "simply empirical evidence of different places" that focus on documentation of "their inassimilable differences or confirming their similarities" (285). Thus, postcolonial critique of knowledge proposes use of different contexts to "transform" theoretical accounts and to change core conceptual analyses; it is also about a deep transformation of various scholarly practices of teaching, publishing, and recognizing the imbalances of power while conducting fieldwork (278). Recognizing that the task of provincializing knowledge is not an easy or direct process, Robinson notes that to conduct postcolonial attentive research, one needs to acknowledge "locatedness" (277), that is, the specificity of argument being made – is it located in Western context or Southern, in Chinese context or Indian?

In a similar vein, Parnell and Robinson (2012) call for neoliberalism to be *provincialized* in order to make space for alternative frameworks grounded in the experiences of Southern cities. They emphasize that urban processes such as poverty, informality, developmental state interventions, and diverse political arrangements cannot always be reduced to neoliberalization

and thus, one needs to pay attention to the local context. Within the literature of smart cities, Chang, Jou, and Chung (2021) also emphasize that while neoliberal narratives circulate globally, their local enactments are shaped by context-specific histories, political economies, and institutional arrangements. Thereby, they challenge universalist interpretations of smart urbanism that are mainly dominated by neoliberal logics. In the case of Dholera smart city in Gujarat, Datta (2015a) demonstrates how globally circulating smart city models are provincialized through local histories, politics, and laws, but remain aligned with neoliberal priorities of competitiveness, privatization, and capital-driven development.

Compared to Robinson (2003), Roy (2009a) makes a more radical call to *dislocate* the Euro-American centers of knowledge production and "articulate new geographies of urban theory" (820). In other words, the centers of knowledge production must move to the Global South. Similar to Robinson, Roy argues that it is not enough to research cities of the Global South as "interesting, anomalous, different, and esoteric empirical cases" (820) or simply adding urban experiences of the Global South into existing urban theories. To support her arguments, Roy (2009a) discusses examples from diverse world-regions and their different postcolonial traditions of scholarship. She notes that different traditions of scholarship show how urban theorizations emerging from local histories can inform broader discussions on urbanization, inequality, and citizenship. Roy expands on Latin American dependency theory and scholarship on urban citizenship, South Asian postcolonial theory (of subjectivity and power) and subaltern studies, and East Asian urban theory emerging from strategic mediations and negotiations of "economic globalization and cultural cosmopolitanism" (823).

Drawing from Chakrabarty's (2000) call for provincializing but seeking to go beyond the need for a (T)heory or a postcolonial urban theory, Leitner and Sheppard (2016) advocate for a

provincialization of critical urban theory. The authors seek to move beyond current "polarizations" and "disputes" over the foundations of urban theory and provincialize critical urban theory (228). In other words, provincializing is understanding that knowledge is shaped by its local origins, it is *situated* (Haraway 1988), that is, "all knowledge is initially local, shaped by the context through which it is produced" (Leitner and Sheppard 2016, 230). The authors assert that "no single theory" is enough to account for the variegated nature of urbanization and cities across the world and it is not necessary to have "distinct theories for different contexts" (230).

Leitner and Sheppard (2016) highlight how this call to provincialize aims to "transcend dualisms" of political-economic/identity-representation (230) existing in the heterogenous stances among critical urban theorists. For one set of scholars, the specificities of postcolonial cities simply reflect their local contexts, Euro-American urban models are universally applicable, and the specificities of local contexts do not disrupt the core and Euro-American theoretical claims and policy implications (229). For another set of scholars, emerging from the postcolonial urban theory, new theories are needed to account for and engage with specificities of urbanization in postcolonial cities, and thereby, challenging the universal applicability of Euro-American urban theorizations. The authors argue that provincialization of critical urban theory seeks to discontinue such divisions between the *core* or central urban theory with dominant, all-encompassing theories and concepts and *peripheral*, subaltern, or indigenous theories emerging from postcolonial urban studies.

Leitner and Sheppard (2016) emphasize that since all knowledge is initially local, certain theories become more dominant and powerful, advancing to be seen as universal truths or accepted as "monist knowledge" – "a knowledge claim that becomes accepted as the only plausible account of a phenomenon" (230). This process is not simple but rather "politicized" as certain "local

epistemologies may gain hegemonic status for reasons that have little to do with their universal validity" (230). After theories gain a monist status, it becomes difficult to challenge monist knowledge due to their "taken-for-grantedness" (230). Thus, a call to provincialize is about scrutinizing "what we think we know" – both our knowledge and its lenses, that is, challenging monist knowledge and situating our lenses with their local, contextual origins. Since all theories tend to exceed their origins and can be found elsewhere, even in postcolonial cities, the focus needs to be conducting ongoing engagement to assess how well those theories and concepts travel and if they misinterpret urbanization in the other contexts.

Offering alternative analytical lenses, Amin and Graham (1997) and Robinson (2002, 2006) extend the approach of *ordinary cities*. Aligned in their critiques of dominant urban theories, these scholars offer approaches to reframe how cities are theorized in urban theory and policy debates. They argue that urban theory must move beyond the analysis of a few cities (predominantly Western) located at the top of global urban hierarchy and specific hierarchical economic processes. Instead, urban theory needs to direct attention to a wider range of processes and overlapping networks of interaction within the city.

Amin and Graham (1997) critically analyze the dominant perspectives and approaches about the city in the contemporary urban theory and policy debates, with specific focus on urban research and commentary supporting a renewed emphasis on the importance of cities on both global and national levels "as the powerhouse of the globalized economy" (411). The authors argue that one of the fundamental problems with such an understanding of the city is the tendency to elevate a small number of cities, such as Los Angeles, London, New York, Tokyo, and Barcelona, as "paradigmatic," treating their specific characteristics and trajectories as representative of urban transformation for all other urban areas. This leads to overgeneralization from specific cities,

where “the exception, by a process of reduction or totalizing, becomes the norm, applicable to the vast majority of what might be called ‘unexceptional’ cities” (417) that do not exhibit features (such as centrality in global networks, creative transformation) associated with paradigmatic cities. As a result, analysis shifts from recognizing urban diversity and specificity to assuming a degree of “interurban homogeneity” or uniformity either in the nature of the sectors leading urban transformation or in the processes of urban change (417).

While making similar argument to Amin and Graham’s (1997) about many accounts of cities focus only on certain aspects of city based on a small number of cities or parts of the city, Robinson (2002) analyzes and critiques two dominant urban theoretical frameworks – world and global city approaches and the mega-cities and developmentalist approaches – in the field of urban studies. She critiques the persistent geographical division within the field of urban studies, where urban theory is broadly focused on the Western cities and while the places previously known as the third-world cities are interpreted through the lens of developmentalism. She argues that this persistent alignment of “theory/development dualism” with the “West/third world division” results in a narrower understanding of cities, which is particularly based on the experiences of a small group of predominantly Western cities (531).

Similar to Amin and Graham’s (1997) above argument, Robinson (2002) notes that what is primarily problematic with world cities approach is the categorization of cities as certain important cities are “identified, labelled, processed and placed in a hierarchy,” often “at the top of the tree of influence,” without attention to “diverse experiences of that city, or even to extant literature about that place” (534). This ranking approach “has shaped the ways in which cities around the world have been represented — or not represented at all — within the world cities literature” (534). Robinson underscores how the world cities approach has been heavily influenced

by the hierarchical logic of the world-systems theory, which places countries across the world into a hierarchy (core, semi-periphery, and periphery) based on economic dominance. Robinson argues that adopting a criterion same as world and global city approaches, where the characteristics specific to only certain parts of cities are ascribed to the whole city through the process of categorization, the mega-city and developmentalist approaches "extend" the imagination of those parts of the city that are "lacking in all sorts of facilities and services" to the "entire city" (540). The focus of mega-city and developmentalist approaches is on the cities outside the West – the poorest cities in the world that are characterized by their distinctive features as 'third-world cities'" – and these cities are seen as lacking the qualities of "city-ness" (531).

Like Chakrabarty (2000), Robinson (2002) aims to suggest restructuring the "terrain" (532) or the intellectual foundations of urban studies on which different kinds of cities are theorized and studied. She does not imply that cities elsewhere "belong in a different category," rather the argument is that existing theory is "located elsewhere," and theory is "not developed in relation to the experiences and trajectories of diverse cities" (533). Here, similar to other postcolonial studies previously discussed, Robinson (2002) also makes a methodological suggestion that urban scholars should rethink where they often theorize from, encouraging them to reflect on "the contrast between the restricted spatialities" of their theories and "the diverse cosmopolitanisms of the cities" they write about (532). She understands that restructuring how (methodologically) and from where (geographically) we build theory "could enhance the understanding of cities everywhere" (532).

Developing a similar argument to Chakrabarty (2000), Robinson (2002) also acknowledges that mainstream accounts (such as world and global city approaches in urban studies studying the certain sectors of the economy such as financial and banking, corporate services, global business

networks) are valuable. She argues that these accounts offer great insights into "the limited part of the world and economy that they study" (532). Even though cities left off the map of mainstream urban theories actively engage in a range of diverse global political, economic and cultural connections, mainstream urban theories often overlook them and do not explore these cities. Robinson suggests that the insights from the mainstream accounts "could be incorporated in a broader and less ambitious approach to cities around the world," an approach that does not divide cities into fixed categories and is more inclusive of the diverse experiences in different cities. Therefore, she proposes a cosmopolitan approach to urban studies with two alternative approaches – comparative studies and ordinary cities – to understanding different cities, particularly from the perspective of those cities excluded by dominant world and global city theories, those "off their maps" (532).

Supporting Amin and Graham's (1997) proposal of ordinary cities approach – cities as layered, interconnected, and relational, Robinson (2002; 2006) calls for research to be based on ordinary cities. This approach stresses "the importance of acknowledging overlapping networks of interaction within the city – networks which stretch beyond the physical form of the city and place it within a range of connections to other places in the world" (Robinson 2002, 545). Here, the range of potential (transnational) connections is vast including "cultural, political, urban design, urban planning, informal trading, religious influences, financial, institutional, intergovernmental and so on" (545). Robinson (2002) also calls for one productive approach to theorizing about cities and moving "towards cities without categories" – *comparative research* (542).

Drawing from debates of comparative urbanism between 1940s and the late 1960s that discussed "diverse urban ways of life in cities across the world" (41), Robinson (2006) argues for a "post-colonial urban studies," which "sees all cities as ordinary, rather than as defined by a-priori

categories" (42) – categories such as Western and colonial or developed and underdeveloped. Placing two different understandings of urban modernity or ways of life next to each other, one based on mid-20th century research on Copperbelt in Zambia and other based on experiences of late 19th and early 20th century European (Berlin and Paris) and American (Chicago) cities, Robinson suggests how comparative methodologies that explore "diversity of ways of urban life" (59) can support the development of a postcolonial urban theory; one that strives to "reimagine the city" by attending to a "diversity of urban experiences" (56). Robinson calls for a comparative approach of post-colonial urbanism that will engage with the differences amongst cities and their experiences to build a theoretical account, and thereby, avoiding the two major pitfalls of "assuming its [theory's] universal applicability or segmenting the world of cities into categories" (60). Thus, according to Robinson, comparative studies aim for a "cosmopolitan and curious theoretical endeavour" that is inclusive of all kinds of cities – ordinary cities – and can "stimulate and transform the divided form of urban studies" (63).

Across the conceptual approaches of ordinary cities, comparative urbanism, provincializing and worlding (which I will explain in detail in the following section), their synonymity lies in challenging dominant, universalizing forms of urban theory that have historically emerged from a limited set of Euro-American cities and have been presented as unlocated, generalizable knowledge. They are synonymous in their epistemological stance that urban theory needs to recognize its own situatedness (historical, spatial, political, etc.) and needs to question its claim to universality. They focus different analytical levels of urban theory, addressing hierarchical categorization of cities (Amin and Graham 1997; Robinson 2002, 2006; Roy and Ong 2011), dominant world and global city frameworks (Robinson 2002, 2006; Roy and

Ong 2011) and hegemonic status of certain local epistemologies in urban theory (Leitner and Sheppard 2016; Roy and Ong 2011).

Ordinary cities (Amin and Graham 1997; Robinson 2002, 2006) functions as an analytical stance that rejects hierarchical categorization of cities. Comparative urbanism (Robinson 2002, 2006) provides a methodological approach for relating cities without presupposing universal categories and thus, complements the ordinary cities stance, lens of worlding, and provincializing. Provincializing (Leitner and Sheppard 2016) offers an epistemological framework for scrutinizing how certain theories acquires hegemonic status, alongside a "comparative analytic" (233) of provincialization that outlines how to conduct research differently, thereby, complementing the analytical orientation of ordinary cities.

Worlding offers a conceptual lens for understanding how cities actively produce urban imaginaries and carry out them through situated practices and experiments. It complements provincializing by situating urban aspirations in locally specific contexts. I address this complementary relation between worlding and provincializing in detail in section 2.4. I now discuss the conceptual lens of *worlding* central to this dissertation.

2.4.2 Worlding

Worlding is a process through which cities seek global recognition amidst inter-city competition and navigating uncertain global dynamics (Roy and Ong 2011). It consists of ongoing situated practices that bring together aspirations and visions of disparate actors such as "the state, capitalists, NGOs, foreign experts, and ordinary people" (10) with techniques of planning, policies, and strategies to reimagine cities and create new possibilities for urban futures. Worlding is not a single action or outcome but an ongoing, deliberate effort to strategically assert global relevance. It is "inherently unstable… and always incomplete" (xv). Roy and Ong (2011) critically examine

how cities of the Global South, particularly Asia, engage in worlding through practices of modelling, inter-referencing, and associations.

Roy and Ong (2011) argue that dominant frameworks and methodologies in global metropolitan studies do not capture the "diversity of urban dreams, projects, and practices" (xv) shaping cities in emerging world regions. In response, they articulate a new ethnographic approach centered on worlding, urging research to move away from dominant structural explanations rooted in political economy and postcolonial theory and instead trace the situated practices of aspiration and experimentation. This approach study cities as constantly in formation, emphasizing their instability. The authors identify worlding as both "an object of analysis" (314) – practices, initiatives, experiments through which cities seek to "instantiate some vision of the world in formation" (11) – and "a method of critical deconstruction" that marks a shift away from "concepts of world cities and world-systems to that of worlding practices" (314).

Roy and Ong (2011) describe the worlding city as a "milieu of intervention, a source of ambitious visions, and of speculative experiments that have different possibilities of success and failure" (xv). In this formulation, the worlding city is understood (A) as a site of active intervention (by planners, policymakers, developers, citizens) where urban futures are not simply imposed from the outside, rather actively reshaped from within; (B) as a source that generates visions of imagining the city, highlighting that worlding involves dreams projecting and shaping the future of cities; and (C) as a source of speculative experiments (uncertain but ambitious) that tests and launches new urban models, policies, or technologies carrying different possibilities of success and failure. Worlding is inherently experimental and risky.

A worlding city actively engages in the process of worlding and is in constant formation, trying to position itself as globally relevant through a variety of urban experimentations and

practices. For Roy and Ong (2011), the speculative experiments, ambitious visions, and interventions "cannot be conceptually reduced to instantiations of universal logics of capitalism or postcolonialism" (xv). Instead, they must be understood as *worlding practices*, as local, specific and situated acts of worlding that seek to gain world recognition in the midst of inter-city competition and globalized contingency. Although worlding is "inherently unstable, inevitably subject to intense contestation, and always incomplete," it nonetheless represents "the art of being global" (xv) as cities imagine and create their own global future from within the city.

2.4.2.1 The concept of worlding in relation to world and global cities

Worlding offers an alternative perspective to the dominant global or world cities framework commonly deployed in urban theory (Roy 2011a). Global or world cities, such as New York, London, and Tokyo, are often portrayed as the hubs of global economy, exemplifying successful urban entrepreneurialism that ensures their prominence in global investment, development, and economic growth (Robinson 2002; Roy 2011a). Robinson (2002) describes this depiction of world and global cities as a "regulating fiction" that offers "an authorized image" of city success (546). This powerful and constructed narrative of world and global cities not only regulates how cities think about the future of cities and shape policymakers' vision of adopting this image of success, but it also "establishes an end point of development for ambitious cities" (546). In other words, the regulating fiction of world and global cities establishes a fixed standard of development – become world cities and attain development – toward which cities are expected to strive, often at the cost of ignoring diversity of cities, leading to devastating consequences for most people in the city.

Despite recent classifications in the world cities approach that include cities in the Global South, such as Singapore, Shanghai, or São Paulo, Roy (2011a) stays in agreement with Robinson

(2002) observing that world and global cities frameworks exclude much of the world's urban diversities. Most "cities are dropped off the map of much research in urban studies" (Robinson 2002, 535) because they are considered insignificant compared to the dominant global economic structures. Worlding challenges this notion, moving beyond the dominant frameworks of world cities and world systems that rank cities based on their economic and political importance in the global capitalism. Worlding resists rigid hierarchies where cities of the Global North hold top ranking and that of Global South are ranked behind or regarded as structurally irrelevant to the field of urban studies (Robinson 2002; Roy 2009).

Worlding seeks to "recover and restore" the wide variety of global strategies and urban experiments that are taking shape in cites around the world (Roy 2011a, 10). Worlding shifts the focus of urban theory away from dominating frameworks such as world cities and world systems to worlding practices, as these concepts dominate "how cities are worlded in geographies of knowledge" (Roy and Ong 2011, xv). For instance, Roy and Ong (2011) intervene in the ways in which Asia is worlded in global metropolitan studies by critically deconstructing dominant frameworks of political economy and postcolonial and shifting analysis away from world-city hierarchies towards worlding practices, thereby highlighting the limitations in studying and explaining Asian cities. The idea of worlding generates an urban theory attentive to the urbanism in the Global South (Roy 2011a).

2.4.2.2 Worlding as a lens to study cities

Roy and Ong (2011) argue that cities are deeply shaped by intersecting "vectors of particular histories, national aspirations, and flows of cultures" (1). Cities also serve as principal sites for initiating "world-conjuring projects" (ibid), projects that craft city's global image and relevance to claim position on the world stage. Today, these projects are both imaginative (urban

dreams) and strategic (urban schemes), actively shaping the future of cities in diverse ways. Cities (such as Dubai, Shanghai, Hong Kong) in emerging nations compete intensively in inter-city competitions to position them on a world stage and their "regional aspirations are superseded by new horizons of the global" (ibid).

Thus, it becomes necessary to further inquire into how cities in the emerging nations are actively shaping their own futures. What does it mean to study the city through the lens of worlding? To study the city through worlding entails a situated investigation of urban phenomena in highly dynamic circumstances. First, it involves viewing the "city as a field of intervention" (3) for solving a variety of problems associated with modern life and national interests. Specific urban issues such as "city infrastructure, investments, sustainable standards, political life, or aesthetic value" (ibid) are problematized and become objects of action. Here, cities are framing their own local issues as problems to which diverse solutions are possible and through this act of framing and taking an action – a process central to worlding – to solve local issues, cities imagine their future visions of global relevance.

In second analytical dimension, the city is viewed "not as a fixed locality but as a particular nexus of situated and transnational ideas, institutions, actors, and practices" that are drawn together and framed for solving particular problems (4). Here, the analysis shifts from city as a "structure" to city as an "assemblage" (i.e., relational, multiple flows) where the methodological focus is on "practices" of urban actors (4) who define what is "problematic, uncertain, or in need of mediation," and then, through experimentations, aim to solve "these now-identified problems" (10). In this process, the urban actors are not simply adopting global ideas and objects; rather, they "rearticulate and reassemble" various "material, technical, and discursive elements" involved in urban change that are brought together and reconfigured "in the process of remaking particular

contexts" (4). As cities are understood as an assemblage and analysis focuses on the practices of urban actors, urban interventions (such as smart cities) at different scales "promiscuously draw upon ideas [such as walkability, governance] and objects [such as technologies, policies, infrastructure]" and align with multiple sources such as institutions, experts, and other cities that are "recontextualized" for resolving particular urban problems (ibid). This approach of making global aspirations local through recontextualization is central to worlding, which emphasizes situated experimentation over direct adoption.

In a third analytical dimension, a city's ambitions are often "reimagined" in relation to shifting "forms and norms" (Rabinow 1991, quoted in Roy and Ong 2011, 4) or practices of being global. This means that cities craft their own urban future in conversation with other cities. Roy and Ong (2011) identify three practices cities draw on and respond to shared urban forms and norms – "modeling, inter-referencing, and association" (14) and emphasize that these "discursive and non-discursive activities are spatializing practices" constitute worlding, shaping both how urban space is imagined and experienced (4). By viewing a city as a "problem-space," spatializing practices involve "gathering" and "dispersing" of various "circulating ideas, forms, and techniques" that shape emerging globalized spaces (10). The authors also notes that the starting point of analysis is "not how singular principles [such as of globalization – capitalism and postcolonialism] define a city environment" but rather "the array of problem-solving and spatializing practices" shaping urban spaces (10). Using spatializing practices that "mix and match" different components (12), worlding projects or urban interventions reflect attempts that aim to either "establish or break established horizons of urban standards in and beyond a particular city" (4).

2.4.2.3 Theoretical approaches to worlding

Roy and Ong (2011) highlight two different theoretical approaches to the common question of the worlding city, emphasizing the productive nature of the concept of worlding. On one hand, they provide a theoretical critique of dominant globalization frameworks of political economy and postcolonial theory in urban geography and urban studies. Urban theorizations focusing narrowly on capitalist or postcolonial approaches tend to overlook unexpected effects of "historical shifts, events, and crises" (3), such as shifting political ambitions, environmental crises, or economic crises that can drastically reshape cities and "variously exert influences on the roles, rankings, and achievements of particular metropolises" (ibid).

On the other hand, they are also interested in how the study of cities can be enhanced through "a renewed engagement with postcolonial studies" (307). The authors argue that diverse postcolonial conditions give rise to different kinds of "performative and speculative" urban projects or actions or experiments that reference specific geographies, which are "provincial as much as they are global" (311). These are global in ambitions and aspirations but situated in local, specific contexts. The authors clarify that although the geographic referents and circulations cannot be reduced to a "unified and universal colonial history," this does not mean that they "do not carry within them forms of coloniality" (ibid). Those geographic referents still carry and reproduce elements of colonial power structures and relations.

2.4.2.4 Other framings of worlding

Roy and Ong (2011) distinguish the way they use worlding compared to the framing in universalizing theories of global development, particularly the Marxist and Heideggerian conceptualizations. The authors clarify that their use of worlding is different from Spivak's (1999, quoted in Roy and Ong 2011, 11) articulation of "worlding and reworlding" where Spivak reworks

the Heideggerian concept of "being in the world" in her postcolonial critique (11). The authors also clarify that their use of worlding is not an alignment with a unified "world-historical logic" of "world-making" as seen in Marx's conception of a "stagist historical development" (ibid). Their use of worlding does not align with the notion that worlds are created through a unified historical logic in which societies develop overtime by passing through defined stages of development.

The authors discuss works of Hardt and Negri (2000, quoted in Roy and Ong 2011, 11) and Rob Wilson (2004, quoted in Roy and Ong 2011, 11) who provide a Marxist view of world transformation. These Marxist conceptualizations of worlding define a "unified logic (class wars), set of agents (subalterns, working-class subjects, multitudes), and target (global capitalism)" (ibid) to explain how the world is transforming and developing. These views assume that sooner or later, the everyday struggles of "special categories of historical actors" – subalterns, working-class subjects, and multitudes – will come together into a "single counter-worlding movement against capital's Empire" (ibid). Roy and Ong (2011) resist using such universalizing views and singular laws centered on the "inevitable worlding" of cities on a "planetary scale" (ibid), determined by the assumption that cities will inevitably follow a unified trajectory (that is unfolding everywhere in the same way) towards global significance.

Alternatively, Roy and Ong (2011) assert that their framing of worlding centers on the "heterogeneous" and "situated everyday" practices of worlding that "do not fall tidily into opposite sides of class, political, or cultural divides" as seen in the case of Marxist ideological conceptualizations (12). Their framing of worlding identifies "ambitious practices" that "creatively imagine and shape alternative social visions and configurations" of urban life, governance, identity, or aspirations generated from within the cities (ibid). The authors refer to the alternative social visions and configurations as "worlds" or new and different imagined and enacted urban

alternatives to "what already exists in a given context" (ibid). Thus, worlding is linked to an "emergence," an ongoing and constantly evolving process as the "global" is "always in formation".

2.4.2.5 Worlding practices

Roy and Ong (2011) explain worlding practices as "constitutive, spatializing, and signifying gestures" (13) that imagine and produce worlds beyond the present urban living conditions. Worlding practices combine different material, technical, and discursive elements from different geographies and scale; and "symbolically re-situate the city in the world" (13), reconfiguring how the city is viewed globally and how the city imagines itself. Not exclusive to Asia and for the sake of argument and organization, Roy and Ong (2011) identify three practices of how cities are worlding themselves or features of worlding cities – modeling, inter-referencing, and association – that appear to be distinctive in the context of Asian metropolitan transformation.

First, modelling is a practice where an urban model serves as a blueprint for others, a "replicable model" of urban future that promotes successful urban conditions and lifestyles (Roy and Ong 2011, 14). For instance, urban models of "subsidized housing, industrial estates, upscale residential enclaves, and even water resource management" are packaged in ways that "can be detached" from its city origins and "exported" to other aspiring cities (14). These urban models are not emerging from the cities of the West (New York, London, or Paris), but from the non-Western cities (Singapore, Shanghai, or Hong Kong) that have become exemplary sites of new urban ideals. A prominent example is the "the Singapore model." It is not a single idea, but rather a set of urban planning norms (such as sustainability discourse) and technical urban plans (such as garden city, subsidized housing, etc.) that inspire city innovation projects in Asia and beyond.

Consisting of both discursive and material activities, modelling refers to actual urban projects – dubbed "'garden,' 'sustainable,' 'livable' or 'world-class'" – that planners aim to

"reproduce elsewhere in a bid to rebrand their home cities" (14). Roy and Ong clarify that the use of blueprints, plans, or built forms as a guide "does not mean that modeling is a faithful copy of the original;" rather, modelling is a practice that "tries to capture some aspect, style, or essence of that original" (15). Modelling also raises the question of whether a city "can truly replicate a particular "model" of say, […] sustainable infrastructure" because this model has to be inserted into a "different set of material and political conditions elsewhere" resulting in complex political implications (15). In this sense, modelling can become a "political tool" for changing both the built form (such as infrastructure, aesthetic logics) and everyday life (such as change of governance of both the city and its residents, encouraging or enforcing certain modes of citizenship) of another city.

Second, inter-referencing is a practice where cities reference – aspire, compare, and contrast – other cities. Compared to urban modelling, which is a "concrete instantiation" (in plans, infrastructure, etc.) of recognizing the achievements of another city (such as Singapore's success in residential planning, as a garden city), inter-refencing refers to practices of "citation, allusion, aspiration, comparison, and competition" (Roy and Ong 2011, 17). It is a practice of citing other cities, to measure one city's urban innovations against other cities', often serving as an "endorsement of another city" (18). Inter-refencing practices stimulate "urban aspirations and sentiments of inter-city rivalry" and also provide a justification for particular projects and initiatives, locally (17). Through inter-refencing, actors and institutions position their own projects "in a language of explicit comparison and ranking" and thereby, "vicariously" participate in the symbolic values of particular cities. (18).

In terms of the impacts on city dwellers, inter-referencing practices generate "speculations on a city's future" where even the residents and citizens become involved "in a kind of disciplinary

inter-city rivalry," whereby the practice also shapes and influences the behavior and perspective of the citizens (18). In other words, by invoking another city as "ahead" or more successful or world-class, planners and developers "can persuade people to accept potentially controversial projects in the name of the greater metropolitan good" (18). Importantly, the increasing use of urban comparison and contrast shapes the "intercity consciousness," i.e., a kind of awareness informed by comparisons and contrasts between cities that impacts "the reflexive self-knowledge of citizens, residents, and migrants as they locate and see themselves in and through particular cities" (18). Through inter-referencing, city dwellers with diverse identities not only understand or see their own identities as citizens or migrants in particular cities; they also see themselves through their city's status and identity in comparison and contrast to other cities.

The third practice or style is associations that refers to urban practices that form "new urban solidarities" between diverse groups of interest (subaltern, elites, non-government organizations, state institutions, private… etc.) and "straddle class, city, and national divisions" (Roy and Ong 2011, 21). These new solidarities lead to "multiple motivations, coalitions and borrowings" that both "destabilize" and "form new" configurations of urban society and governance (21). Such associations emerge in contexts, particularly Indian, where the state presence is weak or effective government is relatively absent. This lack of state presence "by default opens up a space for community activism" and particular urban projects are shaped by "novel combinations of entrepreneurial and civic elements" (21) such as "private-public partnerships," "cross-class appropriations" (20), and "community-initiated activism and [non-government] organizations" (21). For instance, in South Asian urban politics, often the "frequent use of "world-class city" as a talisman" is deployed to endorse "varied kinds of partnerships, justify mega-projects, and denote the necessity of dislocating inconveniently sited poor residents" (22).

Lastly, Roy and Ong also emphasize that worlding practices cannot always neatly fit into "verticality of power" often suggested by "worlding from above," which is "pitched against" a "worlding from below" (2011, 316). For instance, they discuss Shenzhen's "self-worlding" practice of speed that allows the city to be positioned as the "world's workshop, a place where the future of the world is made" such as our iPhones and iPods (314). Speed, a worlding practice, is designated as a "temporal imagination" (318) that has become a defining feature of Shenzhen global identity. It emphasizes the rapid rise of factory production and fast-paced infrastructure development in the city. It connotes a rapid economic growth suggesting that "no other place or time has experienced the transformations that have characterized this city" (Cartier 2002, quoted in Roy and Ong 2011, 316). Speed matters because it puts Shenzhen in comparison to other cities as the site of global relevance and a city of the future that is not limited to its assembly and production lines of iPhones.

Shenzhen's speed not only reflects on the pace of making of the city but also how Shenzhen is worlded by the city itself. As Roy notes "everywhere there is construction; everywhere the new becomes old; […] everywhere fast-speed infrastructure inhabits the city" and how a new rail link project is introduced as "'high-speeding' of Hong Kong" (317). In another example of Dubai, the authors discuss both popular and academic discourses of hysteria, a worlding practice that signals "anxieties about Arab wealth and power" mainly surrounding hysteria of debt (314). The authors note that Dubai's development of "residential islands carved out in the sea, each serviced by a private helicopter, to some of the world's largest shopping malls" is often referred to as "unreasonable hyper-development" or "a monstrous caricature of development" and not as simply development (321).

According to Roy and Ong, the viewing of the city from top of a mountain where "Chinese tourists come to view the city," the panorama of the city, is also a worlding practice (316). Such an activity dictates how the city is being viewed, discussed, staged, and how it is being worlded. These various instances showing different worlding practices emphasize the idea that worlding practices are situated, provincial as much as they are global. Furthermore, the above sites and practices reveal the making of cities and of subject power; importantly, they reveal the ways in which "these cities are worlded" – how the cities are positioned and recognized in the world (314). Neoliberal rationalities are often packaged with these worlding practices of urban modelling, inter-referencing, etc. and function as a broader logic of entrepreneurialism in worlding cities. Roy and Ong note how contemporary experimentation to remedy urban situations assessed as problems, such as "aging infrastructure, underinvestment, neglect of the urban poor, lack of international profile," draws on global forms that are "recontextualized in the city matrix, and then dispersed to other places seeking solutions" (4). According to Roy and Ong, neoliberal functions as a kind of global form that shapes cities' "situated experimentations." Therefore, neoliberal rationalities play a key role in worlding as cities are framed as sites of intervention, investment, innovation, and technological solutions. Neoliberal is also recontextualized to advance certain kinds of experimentations.

2.4.2.6 Agential role of urban dwellers

Roy and Ong emphasize that worlding practices are not only the domain of "the state and corporate actors" (2011, 312). For instance, Ghertner (2011b) highlights how urban residents in their everyday lives experience, interact with, and take up the "world-class aesthetic discourse" desiring a new future (300). Roy and Ong also note Simone's (2001) work on worlding of African cities that describes cities as places of "experimentation for engagement," reaching the "larger

world" through practices of worlding – "circuits of migration, resource evacuation, and commodity exchange" (22). According to Simone, such practices of worlding emerge from the "state of being "cast out" in the world," so that urban dwellers are forced to operate and engage with the world, not through a sense of being rather through a "totalizing sense of exteriority" (17). A totalizing sense of exteriority refers to a condition in which various religious networks, global economies, and political forces operate in cities without clear boundaries. Due to overlapping jurisdictions, authorities, and global networks operating in the cities, there are no clear boundaries of where the urban dwellers belong. This instability forces urban dwellers to engage, not by choice, with the world at multiple scales. Simone calls this state of being cast out – "worlding from below" not limited to control of global economic functions; it also entails the transactions of those "most marginal from these new economic capacities," who engage with the world "on [their] own terms" (16). Roy (2011b) also describes "blockade" – a term that describes the repeated policy failures, resistance, limits, and frictions that accompany neoliberalism and are particularly evident in cities (274). These acts of resistance show where the neoliberal worlding logics encounters limits and failures in postcolonial urban contexts.

Ghertner (2011b) discusses how slum dwellers actively engage with world-class aesthetic discourse and imagine a future for themselves, as they negotiate between displacement and a desire for an improved life. Simone (2001) highlights how urban dwellers interact with the global systems and create connections on their own terms, not by choice but by being forced. In Roy's (2011b) blockade, the resistance is often a collective action and a visible and direct challenge to the state actions. However, what remains underexplored in these worlding practices is the everyday improvisation and engagement by urban dwellers as they locate themselves within worlding

projects, such as smart cities. Rohan Kalyan's (2017) discussion on *urban métis* helps to illustrate such active and agential role of urban dwellers.

In his ethnographic study in Delhi, particularly in Kathputli Colony, Kalyan discusses the term urban *métis*. While above scholars demonstrate that worlding involves a wide range of actors beyond planners and developers, the notion of urban *métis* supports the way such participation takes in everyday urban life. Urban *métis* conceptualizes *the practical knowledge* that "diverse social types employ to flourish or survive in the face of procedures and structures of surveillance and control" (Shapiro 2010, quoted in Kalyan 2017, 90). It is an "informed skepticism" (96) and resistance – an urban *métis* – of impending demolition and ambiguous futures based on memories of displacement through which residents navigate uncertainty of redevelopment pressures. In Kathputli Colony, residents – puppeteers and artists – display continuous skepticism, calculation, and strategies to maneuver when confronted with demolition and in-situ rehabilitation schemes. The film *Tomorrow We Disappear* illustrates this clearly, as the main characters of the film – Puran, Maya, and Rehman – exhibit an urban *métis* "regarding their impending removal from Shadipur" that is "hard earned through life experience" (ibid).

The practices described as urban *métis* closely resemble Amit S. Rai's (2019) detailed discussion of an everyday, "essentially Indian," (5) life practice called *jugaad*, a Punjabi (relating to the state of Punjab in India) term that refers to "workaround, hack, trick, or make do." (x). Rai conceptualizes *jugaad* as the everyday "makeshift way" (2) through which people navigate technological and infrastructural obstacles in contemporary Indian cities. Like urban *métis*, *jugaad* is grounded in practical engagement with material environments and in the capacity to workaround existing systems. Rai's ethnographic analysis of mobile phone repair markets, value-added service companies, and informal economies from Mumbai, New Delhi, Noida (Uttar Pradesh), Seore, and

Bhopal (Madhya Pradesh) provides a broader conceptual vocabulary for understanding the kinds of everyday adaptations and situated practices and knowledge that *métis* captures in the context of Kathputli Colony.

Urban *métis*, therefore, strengthens the concept of worlding by grounding it in the everyday practices of those who must inhabit these global urban transformations. Whereas worlding describes the process of new urban futures through plans, visions, and aspirational projects, *métis* reveals how such projects are lived, interpreted, and navigated on the ground. It shows that worlding is also continually mediated by the improvisations of urban dwellers – much like the practices of *jugaad*, where residents and workers adapt technologies, infrastructures, and bureaucratic systems to make them function in precarious conditions. This engagement is distinct from *blockade*. Blockade interrupts worlding through collective and confrontational action, while *métis* operates within worlding as a continuous mode of survival. In this sense, urban *métis* represents the everyday practices through which urban dwellers participate in and adapt to the worlding projects on their own terms, it is their worlding practice.

2.4.2.7 Worlding smart city: National symbolism and the politics of urban aspiration

Robinson's (2002) discussion of how cities seek to become world cities through various (not very progressive or helpful to the cities off the map, more broadly, and their policymakers, local governments, and residents) processes is also relevant to the latest buzz around becoming a smart city for policymakers across the world. Nowadays, cities wish to adopt a "smart" label to push a technology-centric urban development agenda promising to solve various urban challenges, such as congestion, pollution, slums, deteriorating infrastructure, etc. (Watson 2014; Datta 2015; Mouton 2021). Scholars argue that this widely circulating technology-centric smart city discourse is mainly driven by a marketing rhetoric promoted by big private tech corporations (Hollands

2008; Söderström, Paasche, and Klauser 2014) and adopted and promoted by policymakers across the world as a latest model of urban development (Shelton, Zook, and Wiig 2015; Jirón et al. 2021; Prasad, Alizadeh, and Dowling 2024).

In addition to Robinson's (2002) discussion of policy imperatives, what I also found relevant to my research is her discussion about understanding cities from "off the (world cities) map," the ones excluded from the world and global cities theoretical framework. She highlights how initial versions of world cities approach discussed by scholars suggest a variety of criteria to evaluate the role and functions of different cities and not solely based on a limited range of economic activities. These criteria include assessing different cities based on whether they function as "centres of decision-making and authority" within the domains of "economic, cultural and political information." These criteria emphasize how the "distinctive role" of a wide variety of cities "can be brought into view" using this initial version of world cities approach (538). For instance, Robinson notes that the criteria for global significance could appear very different if the map-makers relocate and assess the transnational networks in places like Jakarta, or Kuala Lumpur, where the "ties to Islamic forms of global economic and political activity might result in a very different list of powerful cities" (539).

Importantly, Robinson (2002) believes there is scope for thinking about cities from the varying "spatial reach" of a city's influence that has "more to do with their hinterland and nation, than with the global economy" (538). Thinking about cities by moving beyond the limitations of the global scale of transnational activities can bring many more cities into the view as "significant provincial centres, political or symbolic centres, or perhaps as important transport and production hubs in national and regional economies" (538). Here, Robinson (2002) raises a crucial point about cities whose influence might lie in how they function as national centers of influence and

contribute politically or symbolically to their countries. Under this broader view of cities moving beyond the limitations of mainstream world and global cities framework, cities might be recognized for roles such as political or symbolic centers, even if they are not dominant on a global scale or central to the spaces of global capitalism. Worlding further supports the study of cities that serve as political or symbolic centers within the nation and also aspire for world recognition through worlding.

Drawing from Robinson's (2002) argument regarding how some cities might function as political or symbolic centers, I demonstrate how some cities hold symbolic significance, embodying a national identity central to a nation's narratives, values, and political imagination. The city of New Delhi shows how often a city's influence is not limited to global capital. For instance, the city and nearby areas of the National Capital Region (NCR) are only now emerging as prominent hub in India (after cities of Bengaluru and Mumbai) for global financial services attracting international banks, insurance companies, and conglomerates (Singh 2025). In New Delhi, compared to the influence of its economic activities, the influence of the city has more to do with the nation's identity, which positions the city and nation on the "map of a historical 'first world'" (Höffken and Limmer 2019, 647). The argument is not that cities such as New Delhi do not aspire to influencing global economy, but more importantly, they aim to position themselves on the world stage, through worlding – "situated practice and experimentation" (Roy and Ong 2011, xvi).

2.5 Smart city critiques emerging from Southern urban theory

The previously discussed calls to recognize the Global South as a site of knowledge production resonate with and inform recent critiques of the smart city, where scholars highlight how Northern frameworks and experiences have come to dominate the discourse. A key argument

in the recent critical smart city scholarship is that the dominant conceptions of smart cities, largely derived from Global North experiences, "usually make certain assumptions of processes and goals central to smart city formation" (Miller et al. 2021, 658). Some of the underlying assumptions derived from Global North experiences include technology as the main force shaping smart city development, improved efficiency as a key goal of smart city development, and smart city as the optimal solution of every urban problem. These dominant assumptions also reflect how information collected through smart city development is meant to help managerial decision-makers and hold them accountable through institutions of democratic governance that ensure responsibility towards citizens. The assumptions further focus on how smart city systems operate within formal structures and support formal institutions and how municipalities are seen as the key players involved in smart city development (Miller et al. 2021).

While such assumptions may serve as logical starting points for studies of Global North smart city initiatives, these assumptions "may be considerably less reasonable when considering other locations around the world" (Miller et al. 2021, 658). For instance, cities in the Global South are often marked by prevalence of informality (in housing, basic services, etc.) and the governance institutions also vary widely, ranging from democratic to authoritarian regimes. Furthermore, cities in the Global South reflect the diversity in the ways states are structured and how power is distributed across different levels of government. Such variations can result in some cities having substantial capacity and autonomy while others primarily implementing directives from national governments. Furthermore, what it means to be a citizen (Datta 2018a), how smart city initiatives frame citizen participation and define roles for citizens (Cardullo and Kitchin 2019a; Cardullo and Kitchin 2019b), how marginalized communities participate, navigate, and negotiate their roles in smart city governance, highlighting the situated and emergent forms of agency and citizenship

(Mullick and Patnaik 2024), and the capacity of citizens to act politically or socially differ widely depending on national and local conditions within the Global South (Miller et al. 2021).

As evidenced above, recent critical smart city literature argues that mainstream smart city narratives fail to understand the diverse local contexts in which smart city initiatives unfold and often overlook the diverse, contextualized practices and realities of smart cities, particularly in the Global South. Such critiques align with key epistemological critiques in urban studies and urban geography more broadly, where scholars resist universalizing theorizations and frameworks in urban theory that are limited to the "Western, industrialised and wealthy urban centres of global capital" (Burns et al. 2021, 462). Their critique of mainstream smart city literature is "not a mere quantitative concern of representation and inclusion" of the diverse contexts; rather, they fundamentally question the epistemic "norms" that define what counts as smart and as smart urbanism on the basis of "exceptional" cities whose experiences and processes are treated as the default (ibid).

It is important to highlight that conceptual lenses of smart city analysis emerging from the Global South are often rooted in postcolonial theorization. Datta (2015a) critiques "grand narratives" (6) of postcolonial urbanism and argues for provincializing smart city, which means "identifying and empowering a new loci of enunciation" (Sheppard, Leitner, and Maringanti 2013, 895). Drawing from Chakrabarty's (2000) call for provincializing, Datta (2015a) critically assesses Dholera smart city development in the regional state of Gujarat by "unpacking and making visible" the rhetorics and representations to discern appropriations of the term smart city "into a westernized discourse of the 'modern'" (6) to describe and promote smart city development in India. She contextualizes these narratives with postcolonial histories of the regional state of Gujarat and exclusions of those on the margins.

Provincializing the smart city allows Datta to identify how alternative knowledges about the smart city are produced not through grand narratives of postcolonial urbanism but rather produced "from the margins" (2015a, 6). She argues that alternative knowledges about the smart city are produced from the experiences of those historically excluded and marginalized in Gujarat region, which is deeply rooted in historic inequalities in India. Datta acknowledges that Dholera smart city in Gujarat region, "at face value" (2015a, 5), appears to fit the various arguments emerging from postcolonial urbanism such as worlding of cities (Roy and Ong 2011), assemblage urbanism (McFarlane 2011, quoted in Datta 2015, 5), and many critical concepts such as policy mobility (Peck 2002, quoted in Datta 2015, 5) and premium networked spaces (Graham 2000, quoted in Datta 2015, 5), to name a few. According to Datta's close examination of Dholera smart city, these conceptual critiques from the Global North offer little insight into the "underlying sociopolitical and historical contexts" of Dholera and Gujarat (5).

In another study, Datta (2018a) critiques postcolonial urban theory, arguing it has largely failed to engage with the digital transformation in the Global South. She aims to address this significant gap in the scholarship by examining what constitutes smart citizenship in a postcolonial city, studying India's national Smart Cities Mission programme. She argues that studying smart cities in India allows us to reframe postcolonial urban theory and its core concerns, related to tracing the "genealogies of power, knowledge and politics" (407), in substantially different ways. She asserts that such a conceptualization of postcolonial urbanism – of how smart cities and its digital technologies are reshaping urban life and citizenship – "tests the limits" (407) of existing conceptualizations such as worlding cities (Roy & Ong 2011) or homegrown neoliberalism (Roy & Ong 2011) or the propriety of property (Ghertner 2012). The conceptualization of postcolonial urbanism tests the limits of existing conceptualizations by critically examining the "heterogeneous

and uneven reach of algorithmic governmentality" (Datta 2018a, 407) over various urban territories and populations.

While Datta's (2015a; 2018a) research situates within a postcolonial framework emphasizing historical inequality, marginalization, and knowledge from the periphery, there are some studies that draws from conceptual lenses with postcolonial foundations, however, their work is not primarily centered on postcolonial questions of subjectivity, power, and marginalization. For instance - Jirón et al. (2021) engage with the conceptual lens of provincializing, focusing on situated practices, local discourses, and the reproduction of neoliberal urbanism through superficial smart city interventions. Their use of concepts such as provincializing (Leitner & Sheppard 2016), worlding (Roy and Ong 2011), and situated knowledges (Haraway 1988) aligns with broader critical urban traditions that challenge universal or monist knowledge frameworks. Breslow (2021) analyzes Smart Dubai as a worlding project where technological infrastructure functions as a tool for surveillance and for minimizing informality in the older parts of the city and Irazábal and Jirón (2021) conceptualize Latin American smart cities as oscillating between "worlding infatuation" and "crawling provincialising," treating these lenses primarily as tools for planning critique. These scholars do not place postcolonial subjectivity and marginalization at the center of their analysis. While Curran and Smart (2021) do not employ worlding or provincializing as explicit core analytical lenses, their reference to Chakrabarty's provincializing frame their analysis of data-driven governance in Chinese cities highlighting shifting knowledge hierarchies where "they no longer lag behind the West in developing these cutting edge technologies, and are farther ahead in actually deploying them in urban management." (492).

In comparison to the above scholars, Chang, Jou, and Chung (2021) and Mouton (2021) do situate their work within postcolonial debates. Chang, Jou, and Chung (2021) advance

provincializing to understand the diverse processes of smart urbanism, arguing that mainstream accounts remain shaped by limited Northern experiences and technological imaginaries. Through their study of Taipei, they demonstrate how smart urbanism is produced through historically specific state-society relations and local political regimes, thereby challenging universalizing conceptions of the smart city. Mouton (2021) approaches the Philippine project of New Clark City as an effort in "worlding infrastructure," interpreting it through the lens of postcolonial development politics. By tracing the circulation of technologies, expertise, and capital in the project, Mouton shows how global smart city aspirations are reworked through national agendas and uneven infrastructural conditions in the Global South.

While worlding and provincializing share postcolonial genealogies, neither Roy and Ong (2011) nor Leitner and Sheppard (2016) insist that urban studies be confined to a postcolonial frame. Rather, they call for situated and empirically grounded analyses that move beyond singular explanatory logics of whether capitalist or postcolonial and that treat cities as dynamic sites of experimentation and intervention. These approaches therefore enable, but do not require, explicitly postcolonial analyses. Thus, they provide analytical approaches that can be used within, but also beyond, explicitly postcolonial frameworks.

Across these studies, worlding and provincializing function as complementary. Worlding highlights how cities pursue global recognition and experimentation, while provincializing reveals how such projects are negotiated and contested in specific contexts. In the smart city studies reviewed above, worlding frequently appears as state-led or technocratic projects, which explains why provincializing is used to contextualize their local power relations and uneven effects. It is evident that worlding and provincializing are complementary and together they produce a richer account, however, they can be used independently. This dissertation deploys worlding as its

primary lens while acknowledging, in line with above cited literature, that provincializing is essential for situating worlding processes in their local political and social contexts.

In terms of methodology, these studies often use a combination of primary and secondary data sources. Jirón et al. (2021) focuses on critiquing neoliberal urbanism and emphasizing the value of locally situated knowledges in shaping urban interventions in Santiago using a more detailed ethnographic approach to study smart cities and their implementation and actual outcomes of their initiatives on ground. Whereas Datta (2015a) acknowledges that the tools of analysis, such as political economy, policy mobility, and postcolonial urbanism she engages with in her study, "need to be complemented by ethnographic details on the everyday struggles faced by those at risk of being excluded from India's urban future" (18). She analyzes smart city related discourse and rhetoric in official policies, master plans, promotional visuals, videos of events such as TEDx lecture, phone and email conversations with local farmers' cooperatives, and analyze local politics of Dholera, histories, and laws of urban planning and land acquisitions in India. Irazábal and Jirón (2021) also analyze both the discourses and practices of smart cities adoption and implementation in Latin American context by drawing from primary observations conducted in three cities (Rio de Janeiro, Santiago, Medellín) and their analysis of multiple secondary sources.

One of the key smart city critiques emerging from scholars engaging with various lenses of Southern urban theory is that smart city initiatives fail to address and rather reinforce and exacerbate existing urban inequalities, highlighting a disconnect between aspirational visions of smart city plans and policies and on-ground urban realities (Watson 2014; Datta 2015; Shelton, Zook, and Wiig 2015; Irazábal and Jirón 2021; Jirón et al. 2021; Prasad, Alizadeh, and Dowling 2024). Building upon this concern with inequality, other scholars shift the focus to the political and economic dimensions of smart city governance, emphasizing that smart cities are neither

neutral nor purely technological. Instead, smart cities are deeply political projects that are shaped by political agendas (Höffken and Limmer 2019; Chang, Jou, and Chung 2021; Charnock, March, and Ribera-Fumaz 2021), governance practices (Cowley et al. 2019), and economic goals, leading to new forms of inequality, governance, and control (Breslow 2021; Curran and Smart 2021). Adding yet another layer to these critiques, scholars grounded in Southern urban perspectives question the Western epistemological foundations of smart urbanism, arguing that such urban development models are based on Western ideals that fail to consider the contextual realities in the Global South (Mouton 2021; Odendaal 2021; Guma and Wiig 2022). These scholars contend that various context-based specificities shape smart city realities in diverse places, and those places can broaden our understanding of smart cities.

In relation to the existing debates and critiques, this dissertation expands the critiques of disjuncture between smart city discourse and on-ground realities. This dissertation illustrates how New Delhi's capital status, political and administrative proximity, and purely symbolic role shapes New Delhi's smart city policies and plans, its priorities, and how its smart city plans unfold on ground. This dissertation complements the critiques of how smart cities are neither neutral nor purely technological, instead deeply political projects that are shaped by national branding agendas and practices, often reinforcing existing inequalities. This dissertation also adds to the existing debates of how, in particular contexts, smart city initiatives function as broader worlding strategies supporting specific local agendas (Höffken and Limmer 2019; Breslow 2021; Chang, Jou, and Chung 2021; Irazábal and Jirón 2021; Jirón et al. 2021; Mouton 2021).

2.6 Studies of smart cities in India

Despite big and bold claims of India's Smart Cities Mission, mainly by the central government and participating local governments, it is widely critiqued by scholars for enabling a

mode of collaboration between local governments and other stakeholders that mainly allows global organizations, private sector entities, and elite citizen groups to dominate India's smart city discourse and urban governance (Hoelscher 2016; Basu 2019; Prasad, Alizadeh, and Dowling 2021; Purandare 2021). Such a collaboration often occurs at the expense of excluding already marginalized populations and deepening infrastructural and participatory inequalities (Datta 2015; Ghosh and Arora 2022; Parida 2022; Van Gils and Bailey 2023; Prasad, Alizadeh, and Dowling 2024). Scholars also explore how smart city initiatives in a postcolonial Indian context shape and are shaped by on-ground enactments and negotiations of citizenship, examining how smart city urbanism gives rise to new and diverse forms of citizenship (Datta 2018a; Mullick and Patnaik 2024). I discuss these critiques below.

Hoelscher (2016) provides an early assessment of the policy discourse of India's SCM program, analyzing the evolution of the smart cities agenda in India. He argues that various experts in policy and research arenas utilize smart city discourse to promote diverse agendas, primarily fulfilling elite interests. He also contends that the program lacks a clear framework and innovative approaches to tackle urban governance challenges, despite India's aspiring desire to "'escape'" (29) urban informality. Prasad, Alizadeh, and Dowling (2024) dig deeper and present a critical examination of informality in relation to smart city planning and implementation, to provide a richer understanding of equity and inequity. Engaging with the critical debates of informality, the authors critique the gaps in the ongoing implementation of India's SCM program in three cities – Bhubaneshwar, Chennai, and Pune, and more importantly, critique the Mission's failure to integrate informality in smart city planning.

Augmenting Hoelscher's (2016) policy discourse analysis through an extensive analysis of the language and narratives of the elites, Basu (2019) analyzes how an elite discourse coalition

collectively frames the priorities and institutional arrangements of the SCM program in India. Basu examines Modi government's political discourse of "technocratic nationalism" (81), IT sector's discourse of "technological utopia" (82), and discourse of "urban citizenship regime" (83) that draws from the embedded values of "property ownership, an aesthetic rationality of cleanliness and access to digital technology" (83) that sets the middle classes apart from rest of the citizens. Furthering Basu's analysis of elite's influence in shaping smart city agenda, Ghosh and Arora's (2022) in-depth assessment of citizen participation in the smart city development fills in the missing understanding of this key element of the SCM program. Ghosh and Arora use their novel conceptual approach of "(un)democratic imaginaries" to understand smart cities that combines the "envisioned distribution" of benefits in the vision of smart city with whether there is "articulation of diverse voices" (2022, 319) in shaping the vision and decision-making of the smart city.

Ghosh and Arora argue that the smart city imaginary in the New Kolkata Town case "failed to be distributive" and "rarely accounted for the specific needs of poorer and vulnerable citizens" (2022, 333). The citizen participation was governed by top-down design and practice of participation, dominated influence of middle- and upper-classes, emphasized "quantity" than "quality" of participation (ibid), and focused on identifying citizens' needs and concerns "rather than any innovative solutions and initiatives based on the citizens' own knowledge and experience" (2022, 332). Furthering these insights, Prasad, Alizadeh, and Dowling (2024) found that SCM's citizen engagement "was rushed and not comprehensive" and "more importantly, it overlooked informality and promoted the elites' view of a smart city" (397). Although smaller cities such as Bhubaneswar adopted relatively inclusive engagement approaches, such as combining low-tech methods like household surveys and street plays with digital platforms, the short duration of these initiatives limited participation from informal communities. In contrast,

larger cities such as Pune primarily engaged mainstream stakeholders, including elected representatives, planners, technology providers, and selected community representatives, while neglecting informal populations. The authors also noted a clear administrative reluctance to include informal communities, with officials describing such engagement as difficult, counterproductive to project progress, and often with "fractured and fragmented" opinions (399). Moreover, the increasing reliance on digital engagement platforms systematically excluded the urban poor due to disparities in digital access, low mobile phone ownership, and educational barriers, disproportionately increasing the voices of middle-class, educated, and professional groups while further marginalizing informal and largely illiterate urban populations. In addition to online platforms, education played a crucial role as "middle-class, educated urban India (e.g., those employed in the IT sector) are privileged to use the smart citizen engagement platforms," raising concerns of "further marginalisation of the primarily illiterate urban poor" (399).

Van Gils and Bailey (2023) also argue that often digital citizen participation process in city's smart city development, serves to legitimize bureaucratic governance, particularly through digital platforms and middle-class civil society institutions. This process reinforces an exclusive mode of planning that weakens the electoral governance and privileges middle-class interests, ultimately disadvantaging marginalized urban populations. For instance, they highlight how Bengaluru's smart city projects are implemented through SPVs that operate autonomously from elected governments and "can thus not be held accountable for its actions by elected politicians" (41). Such a setup leads to citizen participation – largely conducted through digital platforms such as Bengaluru's smart city development deciding the budget utilization through participatory budgeting processes using an online citizen application – as a key mechanism for legitimizing

bureaucratic decision-making "backed by a limited array of politically active citizens who are in the position to digitally participate" (ibid).

The voices of the urban poor are often dismissed in the citizen engagement processes, particularly in relation to the access to urban spaces and infrastructure, deepening the divide between the elite and middle class and the urban poor (Prasad, Alizadeh, and Dowling 2024, 399). Despite the emphasis of the SCM on developing affordable housing, especially for the poor, Prasad, Alizadeh, and Dowling (2024) found that in all the three cities of Bhubaneshwar, Pune, and Chennai affordable housing was "mostly an alternative term for 'slum clearance'" leading to the "displacement of informal housing to cater to the middle/elite income residents" (392). The displacement was not only limited to housing since many street vendors were also displaced and relocated for projects such as the development of bike lanes and footpaths in Bhubaneswar, street redevelopment project in Pune, and a multistorey shopping complex and footpaths with sitting facilities in Chennai (395). Van Gils and Bailey (2023) emphasize that the impacts of the SCM program are not only limited to the city centers, rather they carry implications on urban peripheries as well. They highlight that that a recurring practice of "spatial prioritization" (32) of state infrastructure facilities such as running water, sewerage and street lighting for the city's core areas over peripheral areas has led to "fragmentation and marginalization" (30) of state infrastructure in peripheral areas. They also argue that the "institutionalization" (32) (meaning cooperative relations between the bureaucrats in the city administration and the influential middle-class civil society groups) of citizen participation and civil society "legitimizes decision-making by bureaucratic governance actors that bypasses the authority of elected representatives," benefitting middle-class citizens at the cost of the urban poor (33).

Discussing smart cities and citizenship in the context of India, Datta (2018a) notes that there remains limited understanding of how postcolonial urban transformations and emergent forms of citizenship unfold in practice among marginalized populations. Addressing this gap in postcolonial urbanism, Mullick and Patnaik (2024, 3) contribute to this discourse on postcolonial urban transformations by examining marginalized citizens' participation and their challenges within smart cities. Empirically, the authors explore one section of the marginalized citizens living in the informal settlements of Bhubaneshwar city. Their aim is to understand how marginalized citizens "negotiate with their immediate urban entities and engage with governance" (3).

Mullick and Patnaik (2024) acknowledge that critical smart city scholars have established how smart cities, across the Global North and Global South, often limit the scope for marginalized citizens' participation. This limited participation is due to digital illiteracy, lack of skills, resources, and knowledge, particularly among the elderly, poor, disabled, and other historically marginalized populations, while also leading to their displacement and exploitation (Cardullo and Kitchin 2019a; see Shelton and Lodato 2019). However, Mullick and Patnaik (2024) note that scholars, including Datta (2018a), in the Global South have highlighted a scarcely discussed dimension of emergent citizenship among marginalized groups. In this aspect of emergent citizenship, "bottom-up collaborations" (Mullick and Patnaik 2024, 2) exists "along with predominant top-down approaches" (3) through local communities and innovative projects supporting community participation, particularly within the context of Indian smart cities (Prasad, Alizadeh, and Dowling 2021; Datta 2018b; see Mullick and Patnaik 2022).

Taking a deeper analytical approach to study the governance of smart city development at different spatial scales in the Global South, Prasad, Alizadeh, and Dowling (2021) assess scalar aspects of the governance structures (national and state committees, SPVs), mechanisms (national

and state funding, coordination tools), and processes (decision-making, accountability issues, conflicts), showing how these scales interact and often conflict and further explore the role of public-private actors in implementing smart cities at the local scale through semi-structured interviews with diverse stakeholders and review of policy documents. They find that although the SCM program was initiated at a national scale, the national government has a limiting role – provides part of the funding, SCM policy development, and initial stages of city selection – in smart city governance at the city scale due to the multiscalar governance system of the SCM, thereby, less of a top-down action since SPVs carry out the implementation on ground at the city level. At a state scale, smart city governance is focused on financing smart city projects and coordinating implementation but there is an overlap of smart city governance at the state scale due to siloed functioning of government departments, resulting in duplication of tasks and inconsistency in the development of smart city projects. At a city scale, local governments are primarily responsible for supervising the smart city projects, yet they often "lack expertise relating to smart city governance" (177). This leads to inability to manage large budgets under SCM effectively and limited capacity to build partnerships and attract funds from the private sectors.

In conclusion, one of the key critiques consistently present across all the studies discussed above, with variations in emphasis and scale of the study, is the exclusionary, elite-driven, and technocratic nature of India's SCM program. The interactions between different levels of governance further complicates the processes of SCM program. Overall, detailed empirical research is still limited on smart cities development in India as most of the 100 Indian smart cities remain unexamined (Prasad, Alizadeh, and Dowling 2021). This dissertation seeks to address this gap by providing an empirically rich account of New Delhi smart city, which remains

underexplored in the literature, particularly the influence of New Delhi's position as the national capital.

Much of the smart cities literature has examined capital cities and large cities as some of the key sites of smart cities development. For instance, Nairobi (Kenya), Santiago (Chile), Taipei (Taiwan), Manila (Philippines), other large cities such as Dubai (UAE), Rio de Janeiro (Brazil), Medellín (Colombia), and large cities in India such as Bhubaneshwar, Chennai, Pune, Kolkata, and Bengaluru, to name a few. Despite these analyses, the literature lacks examination of how a city's status and position as a national capital influences and shapes its smart city agenda. This dissertation seeks to fill this gap by arguing that a city's status and position as a national capital make national capitals an important context for analyzing how smart city development is shaped by both national and local political agendas and by the purely symbolic role and position of national capitals. In the following section, I discuss my research questions and arguments

2.7 Worlding of New Delhi

Drawing from Roy and Ong's (2011) conceptual analysis of worlding, I seek to situate New Delhi as a city prioritizing smartness as a tool for global recognition. This does not relegate its colonial history nor assume that the legacies of colonial history are absent from especially the planning and implementation of idealistic urban models like smart cities. However, the timing, application, and implementation of a smart city in this city cannot be solely tied to the legacy of its colonial history. To analyze India's SCM program through postcolonial theory risks missing the multi-facets of India's struggle to define and place itself as a major global player. And this struggle is rightly so for India being the world's most populous country and whose urbanization rate is high and chaotic (Jha 2023) presenting unique challenges to which technology and

algorithms seem an appealing solution similar to those of cities where the smart cities concept came from, the Global North.

Additionally, the economic bloc BRICS (Brazil, Russia, India, China, and South Africa), with which India has aligned itself, may have a fundamental influence shaped by China's accelerated technological advancement in the area of urban development. Although technological advancement is not a prerequisite for being a member of BRICS, as this can be observed from the rapid infrastructure development and smart city indicators in other BRICS countries including South Africa, Russia, and Brazil (Watson 2014; Irazábal and Jirón 2021; Yuloskov et al. 2021), it remains a strategic priority for India to gain global recognition. While the study does not outrightly downplay the complex colonial dynamics of each country allied under BRICS, neighbors China and India have shared demographic and environmental characteristics, diplomatic relations as well as economic ties in the form of manufacturing and computerized industries with many multinational companies from Europe and the U.S. that make technology an absolute necessity. In the race of smartness, they are cojoined. In the globalization of things, one can't fail to observe that India will follow suit in many aspects such as smart cities, which is not necessarily a colonial legacy.

The key argument put forth in this dissertation is that New Delhi's status and strategic location as the capital of India shaped its smart city agenda. Despite being selected based on a two-stage competition of Smart Cities Challenge under India's SCM program launched by the national government, New Delhi's importance both nationally and on a global level are the key driving factors behind New Delhi's participation to become a smart city. This dissertation analyzes smart city development in India's capital city of New Delhi, conducting a policy analysis. This dissertation examines how smart city development in New Delhi is constructed in its policy

discourse, how New Delhi smart city's initiatives are selected and related decision-making processes, and what challenges arise in the course of implementation of the initiatives.

This dissertation also draws on Ananya Roy's (2009b) critical conceptualization of planning in India as an analytical tool. While critiquing the narratives of failed planning, Roy (2009b) argues that Indian urban planning operates through a distinct "idiom of urbanization," informality. Informality is not a failure or absence of planning; rather, it is an integral logic of planning "peculiar and particular to the Indian political economy and yet can be detected in many other contexts" (80). She asserts that informality is "a deregulated rather than unregulated system" (83), emphasizing that informality is not a complete absence of rules and regulation. Instead, deregulation indicates a "calculated informality," which involves "purposive action and planning" (83). This purposive planning allows the state with flexibility in planning decisions such as serving particular interests, needs, and aspirations and marginalizing others or selecting a specific location for smart city development over others, which might be in the need of the resources and funds. Thus, the state appears to withdraw regulatory powers but is actually creating a logic of restructuring how resources and authority are distributed. Roy (2009b) stresses that informality, though framed as deregulation, functions as a form of regulated system and this approach is fundamentally different from the narratives of failure of planning or the absence of the state. She further challenges the dominant viewpoint about informality as "unplanned" (84) as informality is often defined as an unregulated system. She argues that the state itself is "informalized entity, or informality from above" (84). She claims that informality needs to be understood not as "a grassroots phenomenon," but rather as "a feature of structures of power" (84), a tool of state power and regulation.

Smart city planning in India, as analyzed by Prasad, Alizadeh, and Dowling (2024), operates not as a coherent or inclusive process, but through fragmented and informalized practices that contribute to socio-spatial division. Drawing on Roy's (2009b) concept of the "informal state," Prasad, Alizadeh, and Dowling (2024) show smart city planning is often disconnected from existing formal frameworks and disproportionately affects informal settlements and informal economies. This dissertation contributes to this debate on informal practices in smart city planning and processes in India by assessing the decision-making processes shaping New Delhi smart city's initiatives. Prasad, Alizadeh, and Dowling (2024) explore informality in smart city planning processes, practices, and mechanisms; but they provide limited engagement with Roy's (2009b) arguments. The authors do not account for the symbolic or discursive power of planning processes and practices. They also overlook how smart city planning is deeply entangled with local worlding strategies, which can help explain why and where purposive planning and implementation occurs in smart city initiatives. This dissertation aims to complement and nuance Prasad, Alizadeh, and Dowling's (2024) argument that the state itself is an informal state.

To illustrate the symbolic or discursive power in smart city development in New Delhi, this dissertation draws from Roy's (2009b) reflections on a discursive aspect of planning. She uses the term "idiom" to describe the peculiar and politically embedded ways in which planning is practiced in India and legitimizes state actions for urbanization projects. She cites Webster dictionary's definition of the term idiom, presenting the rich semantic layers (e.g., meanings, interpretations, contexts) that are associated with the term, to emphasize the particular logic of urban governance rooted in India's political economy. Rather than presenting planning as rule-bound and rational, she shows how the Indian state operates as a deeply informalized entity,

selectively applying or suspending planning regulations to enable elite development and exclude the urban poor.

> Idiom, a peculiarity, from idiousthai, to make one's own, private, peculiar.
>
> 1. the language or dialect of a people, region, class, etc.
>
> 2. the usual way in which the words of a language are joined together to express thought.
>
> 3. an accepted phrase, construction, or expression contrary to the usual patterns of the language or having a meaning different from the literal.
>
> 4. a characteristic style (Roy 2009b, 79).

While she does not explicitly describe planning as a language, her use of idiom points to a distinctive, context-specific logic that shapes urban development in the Global South. By calling planning an idiom of urbanization, Roy (2009a) highlights planning as a language, a locally rooted language of planning practice. For instance, she highlights how the rhetoric of "public purpose" (78) is deployed by the state to rationalize and justify its decisions (of acquisition of land) for various private development projects. She uses idiom to describe how planning in India communicates and legitimizes state actions, even when those actions are arbitrary or violent. Planning is not a neutral or rational response to urban problems in India. It is a socio-political discourse that produces, justifies, and institutionalize social and spatial inequalities. Roy (2009b) argues that the relationship between legal and illegal, legitimate and illegitimate, authorized and unauthorized is "both arbitrary and fickle and yet is the site of considerable state power and violence" (80). Her argument emphasizes how planning constructs what is formal/informal or legal/illegal. Planning is not neutral; it is a calculated, selective, and an arbitrary process that reinforces existing inequalities. She calls this differentiation between formal and informal "a fundamental axis of inequality in urban India today" (80).

Drawing from Roy (2009b), this dissertation argues that New Delhi smart city policy analysis reveals purposive and calculative decision-making that exclude certain populations and

places in New Delhi, even though its policy discourse promotes inclusive development. Although this dissertation does not take an urban planning lens per se, it draws on Roy (2009b) critical work on urban planning in India to help illuminate the disconnect between Delhi's smart city discourse and its implementation realities. In conclusion, this dissertation deploys the lens of worlding to put forth a key argument that New Delhi's smart city is largely shaped by its strategic location as the capital of India. The following chapter will discuss the context of New Delhi and the dissertation's methodology.

CHAPTER 3: CONTEXT OF NEW DELHI AND RESEARCH METHODOLOGY

This chapter outlines the research methodology, provides the rationale for the chosen approaches, and describes the strategies employed to address potential challenges. The chapter begins with an overview of the study area and the rationale for site selection. The following sections discuss my research approach and document my data collection methods and tools. The next section details my data analysis process, and the last section discusses my positionality and research ethics.

3.1 Study area

Delhi is a metropolitan region/city, state, and a union territory (UT) of India – officially known as the National Capital Territory (NCT) of Delhi – making Delhi a distinctive union territory of India comprising features of both a state and a city (Kaur 2025). According to the 2011 census of India, the population of the NCT of Delhi is 16.75 million with a population density of 11,297 persons per square kilometer (Census 2011). This population figure also represents the existing heterogeneity in such a vast territory with 97.50% population living in urban areas, 2.50% in rural villages, 1.78 million people living in slums, demographics distributed in all the major religious faiths (Hinduism, Islam, Sikhism, Jainism, Christianity, Buddhism), and 2.8 million individuals belonging to scheduled caste (SC, which constitutes the lowest castes in India and also the most disadvantaged socio-economic population group in India) (Census 2011). The NCT of Delhi (Figure 1) is collaboratively governed and managed by the central government, elected state government of NCT, and the three municipal corporations or urban local bodies (ULBs). As a UT, Delhi's constitutional head is the Lieutenant Governor (or LG) of Delhi, who is appointed by the

President of India. “Delhi is the only state with an LG, a post otherwise reserved for union territories” (Centre for Policy Research 2015, 3). The state government of NCT of Delhi is officially known as the Government of the National Capital Territory of Delhi (GNCTD). However, Delhi is not a full state.

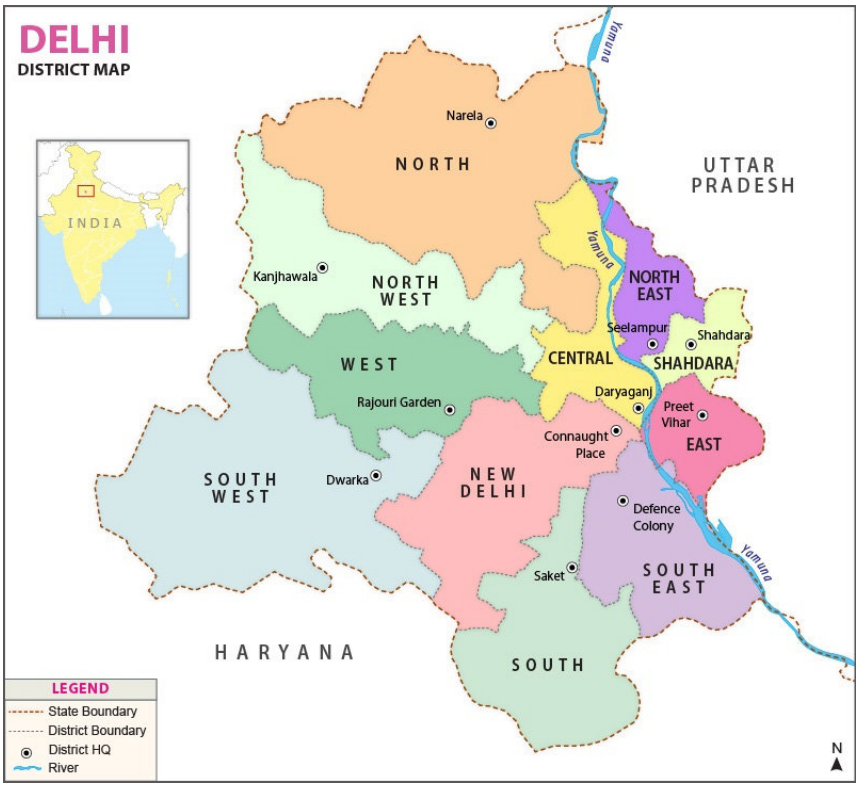


Figure 1: Geographical and district map of NCT of Delhi, India. (Source: Official website of Government of National Capital Territory of Delhi, India).

Although Delhi has its own Legislative Assembly and a Chief Minister, similar to that of a state, its “legislature is more limited than other state governments” (Centre for Policy Research 2015, 2). The public order, police, and land administration areas are controlled by the central government because Delhi is a UT. In other words, the GNCTD “is not responsible for physical planning, development of land, or law and order” as these functions “are overseen by bodies that are directly accountable the Government of India [central government], leading to a governance structure often described as limited statehood” (ibid). This contributes to a fragmented governance

structure in Delhi, as the state government has limited autonomy in shaping Delhi's urban development.

At a local or city level, NCT's government comprises of three ULBs – New Delhi Municipal Council (NDMC), Delhi Cantonment Board, and Municipal Corporation of Delhi (MCD). NCT of Delhi is divided into 11 districts and 33 subdivisions (Gupta 2012). Note, the boundaries of municipal corporations differ from the district boundaries. New Delhi district (Figure 2) is one of the 11 districts of NCT of Delhi. It comprises of three subdivisions, namely Chanakyapuri, Delhi Cantonment, and Vasant Vihar. All three municipal corporations administer the New Delhi district – New Delhi Municipal Council (NDMC), Delhi Cantonment Board, and some parts by the Municipal Corporation of Delhi (MCD). New Delhi, the capital city area, lies in the New Delhi District. With a population of 1.1 million people, New Delhi District comprises "8% of entire Delhi's population" and it has a "population density of 10,000 per square kilometer" as per the census-2011 (New Delhi District, n.d.).

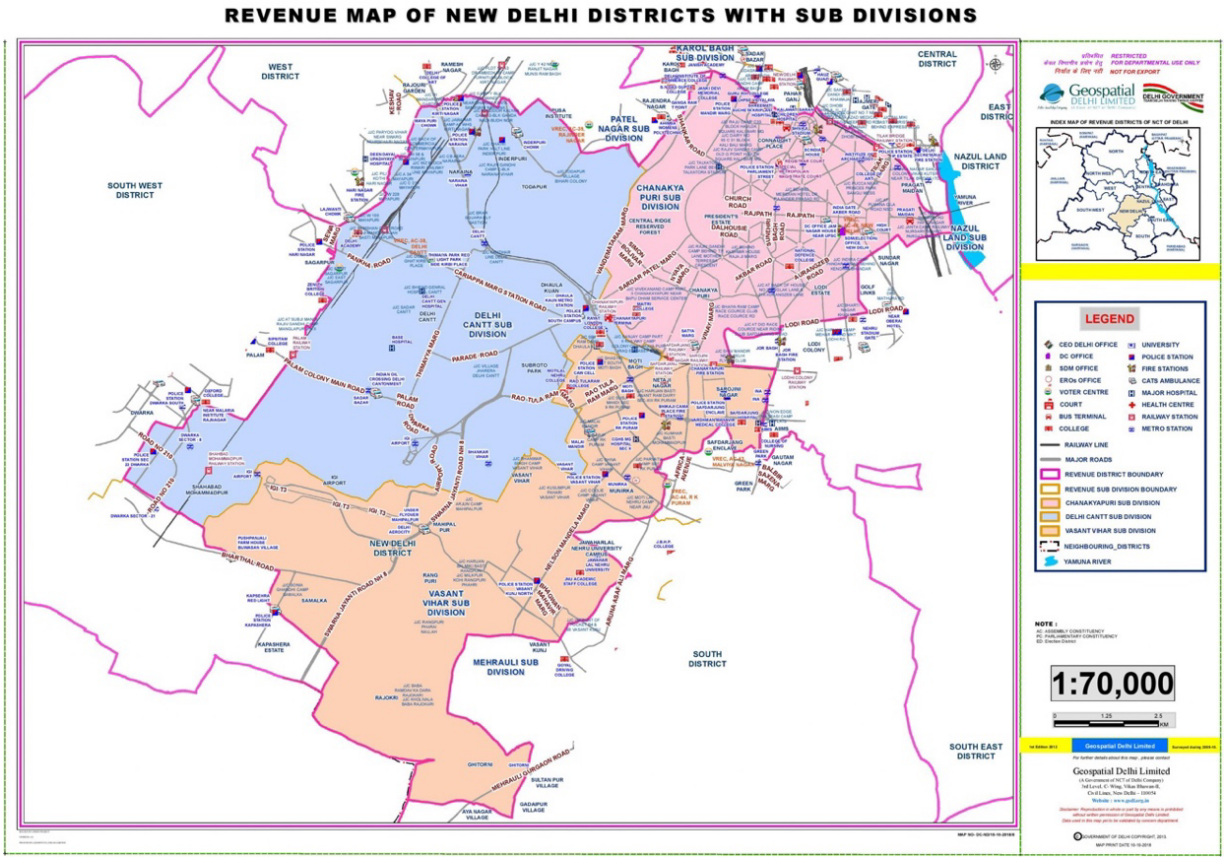


Figure 2: New Delhi District's map with three subdivisions, India (Source: New Delhi District Website).

New Delhi is the capital of India and capital of NCT of Delhi. It covers an area of 42.7 sq.km, which is 3 percent of the total NCT of Delhi's area. The New Delhi Municipal Council (NDMC) administers New Delhi. NDMC is a non-elected body whose chairman and members are nominated by the central government, and it comes under the administration of the central government. My research location is New Delhi. The following figure 3 shows the boundary of New Delhi that also represents New Delhi smart city area. The selected location of New Delhi smart city comprises the core areas of Delhi. It is home to the central government's offices and ministries, offices of NDMC and NDMC Smart City Limited (NDMC SCL), Rashtrapati Bhavan (the official residence of the President of India), the official residence of the Prime Minister of India, Parliament House, the famous central vista, diplomatic enclave, and other prominent public

buildings (Ravindra 2020). New Delhi capital city has a population of 257,803 as per the census-2011 (Census 2011).

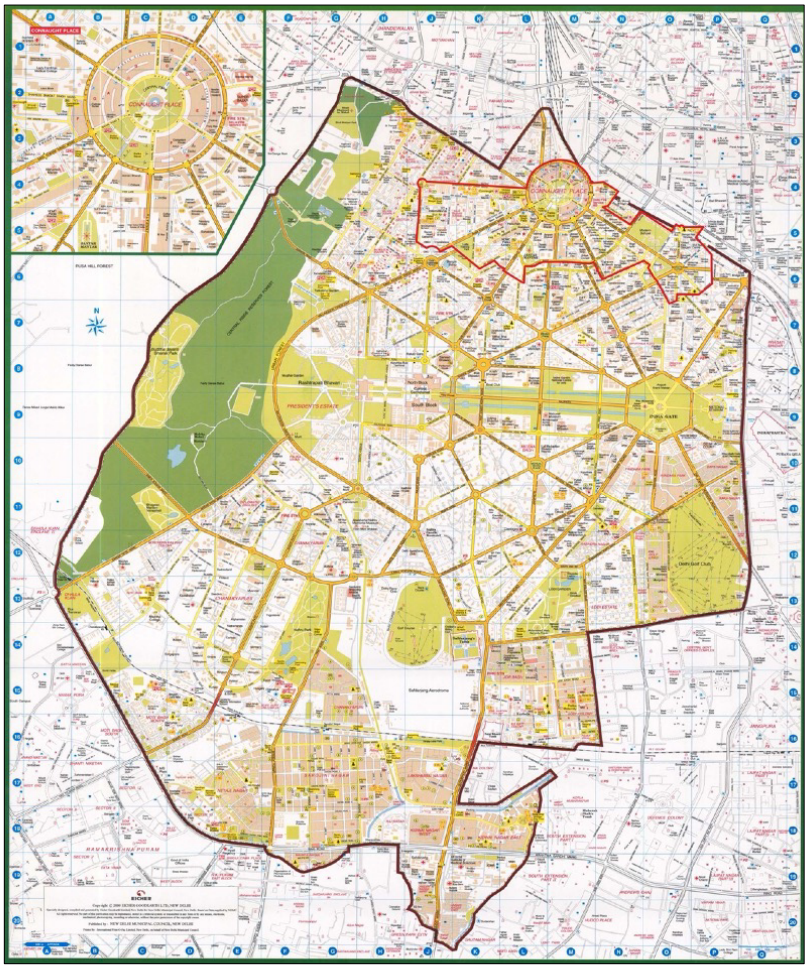


Figure 3: New Delhi smart city area, India (Source: NDMC SCL Website).

3.1.1 Delhi's spatial and political complexities

Many of the challenges and complexities of governance in Delhi are due to the presence of multiple governing bodies, working at the intersection of local, state, and national jurisdictions (Centre for Policy Research 2015). As described above, despite being a UT, the NCT of Delhi runs under a state administrative model consisting of an executive council of ministers headed by the Chief Minister (CM) of Delhi, along with its own legislature and a high court. In addition to being

both a UT and a state, the NCT of Delhi comes under the central planning region of the National Capital Region Delhi (NCR Delhi or Delhi-NCR). NCR Delhi comprises the NCT of Delhi along with districts from the adjacent states of Haryana (8 districts), Rajasthan (1 district), and Uttar Pradesh (5 districts), adding further involvement of the central government in its planning and development (Negi and Srigyan 2021). Apart from Delhi, some of the prominent cities of the NCR Delhi region are Ghaziabad, Faridabad, Gurgaon, Noida, and Greater Noida; all often referred to as satellite cities.

As per the NCR Planning Board Act of 1985 (India 1985), the development of the NCR was "for evolving harmonized policies for the control of land-uses and development of infrastructure in the National Capital Region so as to avoid any haphazard development of that region and for matters connected therewith or incidental thereto" (1). Interestingly, the NCR has shown much more rapid growth over time, and this metropolis of Delhi-NCR has been unable to provide for its bursting population growth, estimates ranging from 30 to 60 million (Bansal 2022). Even to define the boundaries of this sprawling region has been a monumental task for scholars. On top of this rapid growth, the goal of following a linear and conventional path while planning this region, which has an embedded history of the informal sector, remains a challenge on the ground (ibid). It is not surprising that this spatial confusion is a result of Delhi's complex political and administrative hierarchy (Figure 4).

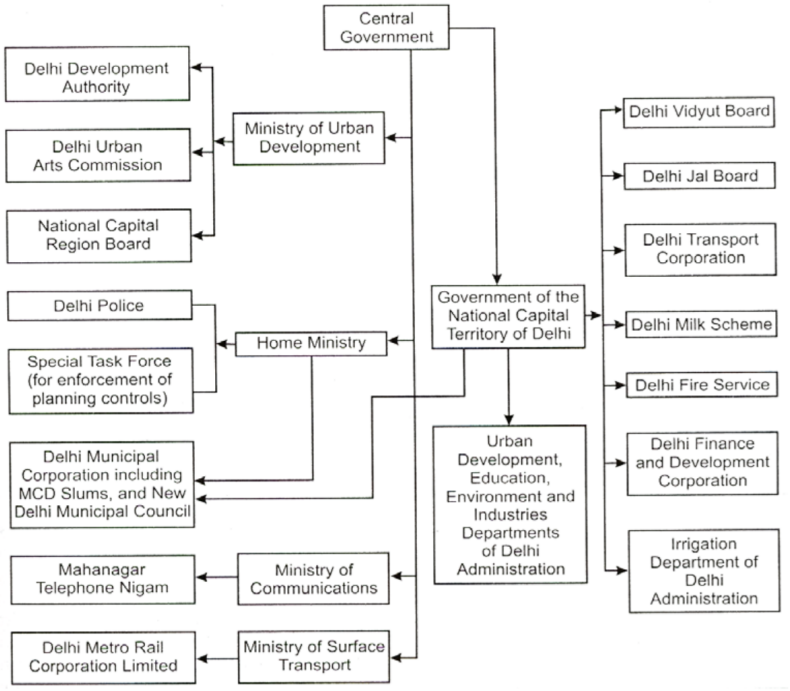


Figure 4: Institutional linkages in the NCT of Delhi, India (Source: Srigyan and Negi 2020).

3.1.2 "Why are you risking your research on Delhi?"

I was asked this question throughout my data collection period. I was cautioned multiple times to not research on Delhi. Starting from a preliminary discussion with a fellow from a research organization based in Delhi to meeting another graduate student studying on Indian smart cities and a researcher from a policy think tank at a conference in Sweden, everyone was a bit skeptical about my research on Delhi. They all gave me the same response – "Why are you researching on Delhi? Nobody will talk to you." They expressed concerns that it is impossible to get officials to respond to emails, especially officials in New Delhi.

To be able to access government officials is not an easy task, especially because the nature of their job is extremely demanding. It gets further complicated when it comes to locations like Delhi – the seat of the central government – where one enters a more complex political ground. Some of my research participants mentioned that many research organizations and think tanks

deliberately chose not to work or research in Delhi. One reiterated that this was the reason for not conducting in-depth research on New Delhi's smart city as well. The reasons listed were that there is central government's intervention at the state level. I was alerted multiple times that I will not get data on New Delhi smart city.

For me, the reason for selecting Delhi as my area of research was two-fold. Firstly, a personal interest. I lived in Delhi for over nine years and my lived experience of the area was extensive. In addition, it is roughly one-and-a-half-hour travel distance from where my family lives in Greater Noida (one of the satellite cities of Delhi). I have seen Delhi grow into the city that it is today, and this urban landscape and its geography always intrigued me in many ways. As one of the fastest growing cities in the world, Delhi grapples with a variety of critical socio-economic and environmental challenges. For instance, being world's most polluted capital based on air quality index (AQI) reporting (Gupta 2023), experiencing rapid biodiversity loss (Agarwal 2023), home to one of the most polluted rivers in the world – Yamuna River (longest tributary of India) that provides drinking water to many downstream (Mogul 2023), and three towering mountains of waste dump in heavily populated areas (NDTV 2023).

My exposure to these pressing challenges motivated me to explore cities and understand their geography using an interdisciplinary lens. It reflects my genuine interest and a never-ending zeal to learn about Delhi's urban development. And as I wrote in my statement of interest while applying for this Ph.D. program at OU, I believe that cities in the Global South present an opportunity for the development of a more just and sustainable future by utilizing the inherent advantages of population density to achieve efficient use of natural resources. Secondly, as previously discussed in previous chapters, New Delhi smart city has not received enough scholarly

attention despite New Delhi being the national capital and the scholarship lacks comprehensive research on the national capital.

3.2 Research approach

This dissertation adopts a qualitative research approach. Qualitative research focuses on exploring "human environments and human experiences," assessing variety of interconnected social processes and individuals and their experiences (Winchester and Rofe 2016, 5). More importantly, qualitative research aims to explore "multiple meanings and interpretations" rather than seeking to enforce a single "dominant or correct" one (8). This makes qualitative research a suitable approach for this dissertation, as this study seeks to understand the different interpretation of a smart city within a particular social, political, and spatial context using the concept of *worlding*. By doing so, this study provides deeper insights into the discourses, narratives, and experiences of individuals, while also discussing how these aspects shape and are shaped by the broader processes of smart city-making in New Delhi.

3.2.1 Rationale for a single-case study

Following Robert K. Yin's (2003) rationale framework for case study research, this dissertation adopts a single-case design. Yin specifies that single-case studies are methodologically justified under five possible rationales: when the case represents "(a) a critical test of existing theory, (b) a rare of unique circumstance, or (c) a representative or typical case or when the case serves a (d) revelatory [observe and analyze a phenomenon previously inaccessible to investigation] or (e) longitudinal purpose [same single case at two or more different points in time]." (Yin 2003, 45-46). These criteria provide the primary basis for selecting a single-case design in my study. New Delhi smart city serves as a unique case within the SCM because of its

dual role as the national capital and as a city governed through an atypical institutional arrangement of involving overlapping central, state, and municipal governance structures. One valid rationale for a single case is when it represents an "*extreme* case or a *unique* case" noting that some contexts are "may be so rare that any single case is worth documenting and analyzing." (2003, 40). Having said that, my study adopts Yin's specification of *unique* for New Delhi rather than using *extreme* or *so rare*, to avoid assuming that no comparable governance arrangements exist in other national capitals in the world. This caution reflects Yin's emphasis on careful case justification and on avoiding any generalizations beyond the available evidence, resulting into misrepresentation.

It could also be argued that New Delhi also showcase what Yin terms a *representative or typical* case. A representative case is appropriate when the case captures "the circumstances and conditions of an everyday or commonplace situation" such as "a manufacturing firm believed to be typical of many other manufacturing firms in the same industry, a typical urban neighborhood, or a representative school." (Yin 2003, 41). New Delhi shares program guidelines and institutional structures (such as SPV) with other Indian smart cities, and in this sense may capture broader national patterns. Nevertheless, my study treats New Delhi primarily as a *unique* case rather than a typical one because of its distinctive spatial and political-administrative setup and its national status. A multi-case design involving other national capitals could be of value, potentially exploring similarities and differences more systematically. However, given the constraints of time and resources, a single-case design was considered most feasible and appropriate for my study.

In addition to Yin's rationales, the selection of a single case is further supported by methodological arguments advanced by Flyvbjerg (2006). Flyvbjerg challenges the common misunderstanding that single cases "cannot contribute to scientific knowledge." (228). He argues that "one can often generalize on the basis of a single case," particularly when the case is

strategically chosen for its potential in information richness. From this perspective, New Delhi smart city offers for understanding the interaction of smart city policy, governance complexity, and urban development practices, particularly when the national capital status and position overpower city's participation in SCM and shapes its smart city agenda.

My study also employs an "embedded case study design." (Yin 2003, 43). Yin distinguishes between "holistic" (with single unit of analysis) and "embedded" case studies, which attends to multiple units of analysis within the same case (42). When "attention is also given to a subunit or subunits," (ibid) the study becomes an embedded one. My study examines several embedded units, including national policy frameworks, municipal planning processes, decision-making practices, stakeholder perspectives, and specific projects such as smart bikes and water ATMs, while maintaining New Delhi smart city as the primary case. This approach enables detailed analysis without losing focus on larger context of the case – smart cities – or paying to "too much attention […] to these subunits." (46).

The choice of an embedded design also aligns with methodological insights from Gerring and McDermott (2007), who argue that case study design can be understood as "quasi-experimental." (689). They contend that causal inference for case studies become possible when they "exploit both temporal and spatial variation," similar as the structure of an experiment while maintaining ceteris paribus assumptions (688-689). By analyzing multiple embedded units over the course of the SCM policy drafting, planning, and implementation processes along with stakeholders perspective, this study approximates a "dynamic comparison" type of design (692). It draws on both temporal and spatial variation to strengthen causal inference while maintaining the coherence of a single-case, New Delhi.

3.3 Data collection: Methods, tools, sampling, and timeline

This dissertation uses both primary and secondary data. Primary data was collected using methods of semi-structured interviews, online survey questionnaire, and participant observation. Secondary data, referring to the data that is not produced during the course of this research but is used in the research (Martin and Pavlovskaya 2010), were collected from various online sources, including websites of the governments (central and ULB), non-governmental organizations, policy think tanks, and from media outlets such as newspapers, television news channels, and magazines. In the following sub-sections, I describe each of the primary data collection methods, the details of secondary data, and my data collection timeline.

3.3.1 Primary data

3.3.1.1 Online survey questionnaire

Questionnaires are structured and standardized tools to collect both qualitative and quantitative data. They facilitate a standard question format to collect information about individuals' attributes, values, beliefs, experiences, and interpretations of various aspects of society (McGuirk and O'Neill 2016). Using such information, one can acquire in-depth knowledge that can aid in developing other methods such as interview questions (ibid). For this dissertation, I developed an online questionnaire that was distributed via email, making the survey process both cost and time efficient. The questionnaire was prepared and administered using the *Qualtrics* survey platform provided by OU. The *Qualtrics* survey platform enabled me to potentially reach a large number of participants remotely due to COVID-19 restrictions (refer to section 3.3.3 for timeline of my data collection), while also corroborating my interview data.

The potential participants were identified by *purposive* sampling. Out of different forms of purposive sampling (Stratford and Bradshaw 2016, 124), I employed *snowball* sampling

(recruiting additional participants through referrals from initial respondents) and *criterion* sampling (selecting participants who specifically meet the criterion of being involved in the New Delhi smart city). The participant pool was comprised of representatives from the central government, NDMC, New Delhi smart city, private sector, consultancy, multinational agency, research organization, policy think tank, NGO, and civil society organizations. I emailed participants with an attached *recruitment letter* containing information about the research, myself, and a hyperlink to the online survey questionnaire. In addition, I requested that the participants to forward the survey link to their relevant connections.

The questionnaire contained close-ended questions in a standardized format, and the responses included a mix of open-ended, close-ended, multiple choices, Likert scale, and ranking options. I developed different sets of questions, with some overlapping questions, based on the pre-identified participants' employment categories – National OR State OR City Government; Private Sector OR Consultancies; Multinational Agency OR Research Organization OR Policy Think Tank; NGO OR Civil Society Organization; and Others (with a text response option). At the end of the survey, I requested basic demographic information of the participants (name, age group, gender, and education qualification) and informed them that I may contact them for a follow-up interview. I narrowed to the above employment categories based on my preliminary research on New Delhi smart city. To reach a wider range of participants beyond these categories, I included an *others* category.

The survey questionnaire included questions aimed at understanding stakeholders opinion on the planning and implementation phases of the New Delhi smart city. It sought to gather views on citizen engagement processes and the extent to which different sections of the urban population participated in decision-making processes. Respondents were also asked about the specific role

played by KPMG Advisory Services in drafting the smart city proposal and in facilitating interactions between authorities and citizens. In addition, the questionnaire explored the challenges faced by NDMC and KPMG during engagement efforts, as well as the contribution of any other organizations involved in the planning and implementation stages.

I emailed my online survey questionnaire to 102 potential participants and received 11 responses. Out of 11 responses that were recorded, five were complete and six were incomplete. Four respondents belonged to the category of "Multinational Agency OR Research Organization OR Policy Think Tank," one belonged to "Private Sector OR Consultancies," and six belonged to "National OR State OR City Government." Other basic demographic information of the five respondents who completed the survey questionnaire represented age ranging from 25 to 35, including four females and one male.

I understand that an online survey questionnaire provides a convenient and private platform for participants to share their perspectives, which they might be uncomfortable to share in an interview (especially since I repeatedly experienced the lack of response from government officials). Importantly, I ensured that participants could opt out of the questionnaire at any time to respect their time and energy, and yet, ensured the recording of all the data that was filled in by that time. The purpose of the online survey questionnaire was to understand the opinions and perspectives of diverse stakeholders on planning and implementation of New Delhi smart city, involvement of private sector, citizens' engagement in the development of New Delhi smart city proposal, to assess the sections of urban population recruited in the citizen consultation process of the New Delhi smart city, how they were recruited, how they were selected for consultation recruitment, impacts on the identified vulnerable population of the city, etc.

A lack of response to my online survey questionnaire was a critical concern during my data collection. I struggled to get people's attention to take the survey through my emails. I sent out my first set of emails with the attached recruitment letter. In a month after sending out approximately a hundred emails, only one person attempted the survey. While seeking participants' attention in follow-up reminder emails, I created and included a short video of 34 seconds. In the video, I introduced myself, asking if the participants have any questions about my research on New Delhi smart city or if they have any suggestions about my survey then they can reach out to me. Lastly, I asked if they were unable to take the survey for some reason, we could schedule a short interview instead. I kept my reminder emails short and added the video link showing preview of the video in the email. As four people watched my video (based on YouTube's *views* information), I saw a small spike and surveys *in progress* increased from three to five. I recognized that adding a face to an email made my emails a bit more interpersonal. Nonetheless, I could not gather enough responses that could have help me to draw some deeper conclusions based on the online survey questionnaire.

3.3.1.2 Semi-structured interviews

Interviewing method is central to the human geography research community as it provides crucial access to the perspectives and experiences of the research participants (Dunn 2016). Research interviews provide the opportunity to learn conduct thorough conversations that can help bridge the knowledge gap due to limitations in the inherent structure of methods such as survey questionnaires or relying on secondary data. I used semi-structured interviews to support my online survey questionnaires, participants observations, and use of secondary data. Interviews facilitated uncovering the diversity and depth of perceptions that remained hidden due to the rigid structure of survey questionnaires. I provided open-ended answer options in my online survey questionnaire

as it might not be of value for everyone to invest extra time in writing their opinions. Semi-structured interviews provided a pre-determined order to conduct conversations, a separate time window dedicated only to converse, a one-on-one focus, and flexibility to introduce new questions based on the responses from the informant (Dunn, 2016).

For interviews, the potential participants were selected using *purposive* sampling, using *snowball* and *criterion* sampling, similar to my online survey questionnaires. I made initial contacts with the potential participants through emails. I faced similar complications in recruiting participants for my interviews through emails as I did for my online survey questionnaire. After a lack of interest and response for interviews, I started contacting potential research participants through LinkedIn, a professional social media platform where I was able to connect with multiple potential participants.

LinkedIn appeared to be an appropriate social media platform to connect with people professionally and provided a viable alternative to connect from distance. I sent out requests to connect along with a personal note introducing myself, my research, my interest in connecting with them regarding the same, and also suggesting a preliminary meeting (to build an initial rapport) before conducting the research interview with consent and audio recording. A few responded and took an interest in interviewing and taking the survey. It was exciting to see some improvement in using this strategy for recruiting participants. Through this, I learned how social media platforms can prove beneficial in not only the data collection process but also in recruiting participants. I understand the ethical challenges related to privacy and confidentiality of online research and made sure to minimize issues by keeping their identifiers confidential in this research.

I reached out to a total of 34 potential participants and conducted a total of 12 semi-structured interviews with 11 participants. With one of the participants, I requested a follow-up

interview since we were unable to finish the interview in one sitting due to participant's limited availability. 10 out of 12 interviews were conducted online using Zoom video-conferencing application and audio recorded using my mobile phone. I conducted the remaining two interviews in-person and took notes, as the interviewees did not consent to audio recording. All the interviews were conducted in English language with some exchanges in Hindi language. The exchanges in Hindi were translated into English while transcribing.

To justify the small size of interview, I draw from Ritchie, Lewis, and Elam's (2003) criterion of purposive sampling. The authors emphasize that qualitative samples are chosen purposively so that the researcher can ensure that all "key constituencies of relevance to the subject matter are covered." (79). In my study, this includes participants from the NDMC, New Delhi smart city, private sector, non-government organizations, and think tanks. Participants are selected because they hold particular characteristics that enable detailed exploration of the research questions, such as questions of planning, decision-making, and implementation. This means that the adequacy of a qualitative sample is judged by the diversity and richness rather than by its size (85). More broadly, qualitative sampling is described as "non-probability" sampling, in which participants are "deliberately selected to reflect particular features of or groups within the sampled population." (Ritchie, Lewis, and Elam 2003, 78). This sampling logic supports the use of a small number of carefully chosen interviews in my study. The aim is not statistical representation but the in-depth exploration of specific experiences and perspectives.

The semi-structured interview questions were designed to explore participants' overall understanding of the concept of smart cities, the national SCM program, and the specific context of the New Delhi smart city. Several questions focused on the planning phase, particularly the decision-making processes and the extent to which key stakeholders were involved in shaping

project priorities. Interviewees were also asked to reflect on how far the initiative addressed issues of urban sustainability and inclusive citizen engagement, and to share their perceptions of the main successes and challenges experienced. In addition, the discussions included questions on specific components such as solar energy and smart bikes projects, along with the roles played by various institutions and the SPV of New Delhi in implementing the smart city vision.

The participants comprised of seven interviewees who are officials and professionals working on/previously associated with New Delhi smart city or Indian smart cities more broadly, one from private sector, one from India-based non-profit organization, one from public policy think tank, and two internationally based researchers. Some of these participants previously worked on smart cities and are now (at the time when interviews were being conducted in 2022) working in similar or different sectors. I noted this overlap while recording their responses to understand if and how their existing or previous positions affected their narrative on the policies of SCM program. Other basic demographic information of the participants represented age ranging from 25 to 35, including seven females and four males.

3.3.1.3 Participant observations

I conducted participant observations in my study area to collect "*complementary* evidence" (Kearns 2016, 314). Being physically present in the study area, where real-life applications of the New Delhi smart city are materializing, complemented my controlled and formalized data collection methods of semi-structured interviews and online survey questionnaires. I travelled to my study area and composed fieldnotes regarding both my observations and any conversations that took place. During my six weeks of fieldwork, I observed locations two to four times per week and visited each location two to three times throughout the period of my fieldwork. The goal was not to observe whatever I came across. My observations were a planned activity. I chose *what* to

see (smart city infrastructure, people using any of the infrastructure, other activities happening in the surroundings of those infrastructures, etc.), *how* to see (as a researcher or by asking someone else's viewpoint), *where* to see (location), and *when* to see (during what part of the day and what day of the week). My observations were an "outcome of active choice, rather than mere exposure" (Kearns 2016, 314).

In addition to observing what was happening in my study area, I engaged in conversations with the participants from the public and one official. The participants from the public were randomly selected to participate in the study. As I was visiting NDMC and NDMC SCL offices to meet officials and request interviews with them during my fieldwork, I spoke with an official. When I requested to conduct a proper interview after our conversation, I was informed that I "need to come via an official chain, we can't do this like that" (conversation on 18 October 2022). Afterwards, I wrote a letter addressing the Secretary of NDMC, who was also serving as the CEO of the NDMC SCL, requesting permission to conduct interviews with officials. I attached my fieldwork documents from the university along with the letter and submitted the same at the reception office. Despite reaching out to the office multiple times, I never heard back from the office regarding my above request.

All the conversations conducted during participant observations were neither planned nor had a formalized structure like an interview; there was no audio recording and no formal consent process. Before starting the conversations, I introduced myself, the research topic, and requested to have a conversation with them. The questions focused on understanding participants' perspective on New Delhi smart city, smart city infrastructure, and drawing from my own observations of the area. I only conversed up until the moment I felt participants were comfortably engaging. I neither asked for their personal information nor took notes while conversing with them.

I finished the conversation, exited the area, and then took notes. Broadly, the participants consisted of students, shop owners, auto-rickshaw drivers, security guards, etc.

I applied *purposive* sampling for selecting participants and used *convenience* (based on access) sampling (Stratford and Bradshaw 2016, 124). Given there was a lack of time for me to establish deeper conversational relations with the participants, I pursued those whom I spotted and with those who were welcoming of this interaction instantly. In case I felt a lack of interest in responses, I ensured to respect participant privacy and did not continue the conversation for long. Lastly, all the conversations were conducted in a mix of English and Hindi language, but I approached the participants almost always using Hindi language and transcribed them into English while notetaking. Overall, the goal of conducting observations in my study area was to gather complementary data and take photographs to strengthen my arguments throughout this dissertation.

3.3.2 Secondary data

The secondary data sources include (A) policy documents on the SCM program and on New Delhi smart city, published by the central government and NDMC and NDMC SCL respectively, (B) online news reports by television news channel and articles from online newspapers and magazines, and (C) reports and papers published by public policy think tanks and non-governmental organizations (NGOs). The central government and NDMC and NDMC SCL documents were published online between 2014 to early 2020. I chose the period of 2014 – 2020 to focus on the first five years (2014 – 2019), a period during which the Mission was conceptualized, launched, and its core governance and discursive frameworks were established. I corroborated my secondary data with my fieldwork in New Delhi in 2022.

3.3.3 Timeline

The data collection was conducted in two phases. During the first phase from July 2021 to December 2021, I conducted preliminary research by (A) studying policy documents downloaded from the NDMC SCL website, the central government's smart city website, and running a Google search, (B) conducting online conversations with potential research participants, (C) preparing online survey questionnaires and interview questions, and (D) receiving IRB approval. The second phase, from January 2022 to November 2022, I conducted semi-structured interviews online and in-person in New Delhi, field observations in New Delhi, and distributed online survey questionnaires via email.

From January 2022 to September 2022, I conducted online and distance-based data collection from the research location in Norman, Oklahoma. During October 2022 to November 2022, I conducted fieldwork for six weeks in New Delhi. My decision to travel to India was finalized in August 2022 in order to support my data collection up until that period. The goal was to collect observational data at various project locations of the New Delhi smart city and also visit the offices of NDMC SCL and NDMC to connect with and potentially interview officials. During the fieldwork, I divided my days into collecting observation data (visiting different smart city project locations and conversing with the public to get their perception of the smart city projects) and visiting different offices to get an appointment with the officials. Obtaining everyday experiences, perceptions, and on-ground visuals of New Delhi smart city provided a strong case for my research and ensured comprehensive methods approach.

3.4 Data analysis

3.4.1 Online survey questionnaire

Out of 11 responses, six were recorded as incomplete and five as complete. I analyzed seven responses that ranged from answering more than one question (two responses) up to answering the complete questionnaire (five responses) (Table 1). I also noted if the participants previously worked or are currently working (at the time of my data collection period) on New Delhi smart city. The goal was to assess how many of the officials associated with the New Delhi smart city attempted the survey questionnaire, giving particular attention to their experiences and perspectives since it is valuable for my research in understanding the planning processes of New Delhi smart city for my second research question.

Total responses = 11; **Complete** = 5; **Incomplete** = 6; **Analyzed** = 7			
Questions attempted	**Out of 11**	**Currently working (New Delhi smart city)**	**Previously worked (New Delhi smart city)**
0 to 1 question attempted	4	3	1
>1 and < all questions attempted	2	0	0
100% attempted	5	1	2

Table 1: Online survey questionnaire data

To analyze the questionnaire responses, I organized and coded the data in different sheets of an Excel document based on the themes of the questions, such as citizen, NDMC, planning and implementation, and private sector. I understand that the number of completed questionnaires is small to draw specific generalizations about New Delhi smart city. I present the findings of my questionnaires in the form of relevant open ended responses of the participants, and I identify their responses by codes (e.g., SQR1, SQR2) to ensure confidentiality.

3.4.2 Semi-structured interviews

To transcribe my interviews, I used the GoTranscript transcription service, a trusted third-party service that keeps both the transcription recordings and data confidential. Since GoTranscript is an international company, it became an ideal choice for transcribing my recorded interviews due to different accents of the interviewees. To ensure exactness in transcription, I double-checked the provided transcriptions with original audio recordings. Before sharing the original audio recordings on GoTranscript website, I edited and removed certain parts of the recordings (e.g., name, location, designation, or any other parts where interviewees directed me not to quote them or asked me to remove specific part of the recordings) to ensure confidentiality of my interviewees.

I created *descriptive* and *analytical* codes for organizing and analyzing my data (Cope 2016). From the interview data, I created descriptive themes (e.g., NDMC, smart city vision, planning, inclusion, solar panel, participation, world-class New Delhi). From these themes, I identified key analytic themes, such as inherent exclusion, limited state government role, etc. For presenting the findings from my interview data, I identify interviewees by codes (e.g. Int. #1, Int. #5) to ensure confidentiality.

3.4.3 Discourse analysis

I conducted a discourse analysis of selected secondary data to answer my first research question. Language plays a crucial role in what is being communicated and more importantly, the context of it. I understand that in human geography, making sense of the world is incomplete without analyzing the validity of language. In other words, what is being said, how it being said, what is considered as *truth*, what is taken for granted as *common sense*, and what is missed out or *silenced*; all signals towards an order of thought process (Fairclough 2003; Waitt 2016). This order of thought process used to construct meanings and contexts represents the core of a discourse. A

discourse perpetuates a kind of *knowledge system* by following a "rhetorical organization" of the statements (Rose 2016, 205). More precisely, a discourse produces and circulates a kind of *convincing* knowledge system that creates lasting impacts on society (Waitt 2016). As Ahl and Nelson (2015) rightly state that "the more people draw on the same discourse, whether knowingly or unknowingly, the more institutionalized it becomes and the more powerful it is" (277).

Michael Foucault, a French philosopher, laid out an interpretive approach known as discourse analysis to "identify the sets of ideas, or discourse, used to make sense of the world within particular social and temporal contexts" (Waitt 2016, 288). Foucauldian discourse analysis focuses on the influence of language on people and situations through thinking, practices, emotions, and structures. In addition to Foucault's focus on the relationship between power and knowledge, a critical discourse analysis examines the status quo, asks how social inequalities are constructed, maintained, and reproduced through statements. It seeks to discern who is silenced and marginalized.

In this dissertation, I utilized lessons primarily offered by Gillian Rose (2016). I draw from her lessons of how to select data sources, coding, understanding the rhetorical organization of discourse, complexities and contradictions within discourses, and silences (what is not being said or remains invisible) (Rose 2016). For coding, I used NVivo software. I first created descriptive codes for organizing and analyzing my data, similar to my semi-structured interviews. Some of the descriptive codes included aspirations, inclusive of citizens, beautification, slums, world-class, capital city, benchmark, air quality, etc. Drawing from such descriptives codes, I created "interpretive themes" (Waitt, 2016, p. 303) of global and internationally competitive, global positioning of India, NDMC's aspirations, urbanization and infrastructure as the key challenges, etc. Based on these interpretive themes, I wrote my findings and analysis under broad,

comprehensive themes. In writing the discourse analysis findings, I drew inspiration from Stock (2021) and Roy (2011b), particularly in adopting their narrative approach to presenting critical interpretations. Instead of separating the data and analysis, I weave empirical excerpts into interpretation. This approach enables the findings to be presented as coherent interpretive narratives, guiding the reader through discursive processes while maintaining engagement with the empirical material. The findings are written as interpretive narratives in which themes are developed through story-like analyses that connect discourse, context, and effect, allowing the analysis to demonstrate not only what is said, but how specific meanings are produced and mobilized in a way that shape practice and limit contestation.

I conducted a discourse analysis of 14 policy documents related to the SCM program and New Delhi smart city (Table 2), assessing both central government and ULB policy discourses respectively. I selected the documents listed in Table 2 because they provide (a) the initial conceptualization of smart cities, (b) describe SCM, (c) all the documents published on New Delhi smart city, and (d) convenient accessibility of the documents online. In addition to the government documents, I also conducted a discourse analysis of an online news report from an Indian television news channel published in the context of New Delhi smart city. In the news report, I specifically analyzed the excerpts of speech delivered by M. Venkaiah Naidu, the minister who headed the MoUD from 2014 to 2017 during the development and launch of the SCM program in 2015. The reason for this analysis is that I analyzed excerpts of Naidu's foreword published in one of the central government documents about the SCM program and this speech in the news report is specifically about Delhi and New Delhi smart city. This analysis of both Naidu's foreword and speech strengthen my main argument that New Delhi smart city discourse is dominated by its

status as a national capital that functions as a broader worlding strategy, supporting both national and local political agendas.

Briefly, I want to acknowledge that by conducting a discourse analysis I am also contributing to the circulation of a kind of discourse. Furthermore, my analysis will be subjective, and I understand that others might interpret the same text differently. This can lead to the circulation of multiple discourses presenting different meanings of the same text and drawing different conclusions. This reflexive acknowledgement emphasizes the interpretive nature of discourse analysis and the situated position – shaped by conceptual lens, research questions, methodological choices, and as a scholar – from which the findings are produced.

I also aim to emphasize that the discourse analysis represents an interpretive approach that I adopted to write and analyze my research data. Rose (2016) argues that "since discourse analyses cannot argue that they are the only, true analysis of the materials discussed, discourse analysis aims to be persuasive rather than truthful" (216). Reiterating Rose's argument, I highlight that my analysis of the language is "constructing an interpretation rather than revealing the truth" (Phillips and Hardy 2002, quoted in Rose 2016, 216) about smart city development in the city of New Delhi. Drawing from a mix of analytical lessons from Rose (2016) and Fairclough (2003), I critically analyze each utterance within the discourses to reflect on *what* is being said, *who* is saying, and *how* it is being said to answer my research question.

Table 2: List of documents analyzed using discourse analysis

No.	Institution	Institution Type	Year	Document Title	Document Type	Misc. Details
1.	Ministry of Urban Development (MoUD)	Central government	2014	Draft Concept Note on Smart City Scheme September	National Policy Draft	*Draft Concept*
2.	Ministry of Urban Development (MoUD)	Central government	2014	Draft Concept Note on Smart City Scheme December	National Policy Draft	*Draft Concept*
3.	Ministry of Urban Development (MoUD)	Central government	2015	Smart Cities: Mission Statement and Guidelines	National Policy	*Policy Guidelines*
4.	Ministry of Urban Development (MoUD)	Central government	2016	Citizen Engagement In The Smart Cities: Challenge Stories From The First 20 Winning Cities	Coffee Table Book	*Winning City Stories*
5.	New Delhi Municipal Council (NDMC)	Municipal Council	2015	The Smart City Challenge - Stage 2: Smart City Proposal	NDMC Smart City Proposal (NDMC SCP)	*City Proposal*
6.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Annexure 2 Self-Assessment	NDMC SCP	*City Proposal Annexure*
7.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Annexure 3	NDMC SCP	*City Proposal Annexure*
8.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Annexure 4	NDMC SCP	*City Proposal Annexure*
9.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Annexure 4, Section 4.6	NDMC SCP	*City Proposal Annexure*
10.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Annexure 4, Section 4.7	NDMC SCP	*City Proposal Annexure*
11.	New Delhi Municipal Council (NDMC)	Municipal Council	2016	Reso. No. 07(W-02)-26.04.16	NDMC SCP	*SPV Creation*
12.	New Delhi Municipal Council Smart City Limited (NDMC SCL)	Special Purpose Vehicle (SPV)	2017	First Annual Report 2016-2017	NDMC SCL Report	*Annual Report*
13.	New Delhi Municipal Council Smart City Limited (NDMC SCL)	Special Purpose Vehicle (SPV)	2018	Second Annual Report 2017-2018	NDMC SCL Report	*Annual Report*
14.	New Delhi Municipal Council Smart City Limited (NDMC SCL)	Special Purpose Vehicle (SPV)	2019	Third Annual Report 2018-2019	NDMC SCL Report	*Annual Report*

3.5 Summary of methodology

In chapter four, I answer the two research questions:

a. How is the smart city concept discursively constructed within the plans and policies of the central government and New Delhi smart city?
b. How do the on-ground realities and stakeholder narratives of the New Delhi Smart City differ from or contest the discourse constructed in plans and policies?

To answer the first research question, I conducted a discourse analysis of selected policy documents that includes SCM policy documents, New Delhi's smart city proposal and its annexure documents, New Delhi smart city's annual reports, and an online media report. To answer the second research question, I provide findings from themes emerging from semi-structured interviews, online survey questionnaire, and participant observations conducted in New Delhi during the year of 2022. I also used papers published by policy think tanks and NGOs on India's SCM program and the New Delhi smart city as secondary sources to substantiate and triangulate the primary data.

In chapter five, I answer a third research question,

c. How do decision-making processes shape both the planning and implementation of New Delhi smart city's initiatives?

I draw from semi-structured interviews conducted both online and in-person, online survey questionnaire, and conversations and on-ground observations conducted in New Delhi. I also used New Delhi smart city documents, NDMC's website, online media – including reports and articles from news websites, online newspapers, and magazines to corroborate my primary data and strengthen my analysis.

3.6 Positionality and research ethics

3.6.1 Positionality

I see myself both as an *insider* and an *outsider* in my research due to the inherent characteristics of my ethnic background. On one hand, I see myself as an *insider* because of my ethnic background – I am of Indian origin, and my native language is Hindi, which is one of the official languages of the country along with English. I blend in easily based on my skin color. My identity is easily labelled as an *Indian* because of my *brown* skin color. (This skin color reference became more evident after I exited India and entered USA. That said, skin color, or more specifically colorism, is a separate topic of discussion that I do not intend to discuss because in the Indian culture, people often differentiate and discriminate based on skin color and brown skin does not always imply that someone is of Indian origin).

On the other hand, I see myself as an *outsider* because I introduce myself as a research scholar from a university based in the USA. As someone who is not residing in their country of origin, I differ from some of my research participants. My affiliation with the USA made only a slight difference in making connections with some of the potential research participants, but it could not overcome my situated ethnic background similar to my participants, resembling Nagar's (1997) experience. A couple of times some of the interviewees asked about "what is city life like in the USA?" Even though I was not directly exploring "intricate social and cultural relations" through an ethnographic study such as Nagar's, this still "did not preclude people from labeling me and putting me into categories to which they directly or indirectly related" (Nagar 1997, 209).

3.6.2 Ethics

3.6.2.1 Consent

For my data collection, I acquired consent from 18 years and above. During the semi-structured interviews, the consent was taken verbally. For interviews conducted through video conferencing, I shared the consent document via email with the participants who wanted to keep a copy for their records. In the case of in-person interviews, I handed over the consent form whenever requested along with the fieldwork letter that included the information of my research, university, and department. Although I requested consent of the participants to audio record the semi-structured interviews, I did not record the two in-person interviews because the participants were not comfortable and declined for the interviews to be recorded. In that case, I took written notes. I read the consent form to one of the participants and handed the consent form to the other as they did not want me to read it out to them.

In the case of online survey questionnaires, the informed consent was shared on the first page of the survey's web link. If the participants consented to participate in the study, they were prompted to the next page of the survey, and if they did not consent to participate, participants were directed to the end of the survey. At the end of the survey, basic demographic information was also requested (name, age group, occupation). While conducting participant observations in the study area, no informed consent was obtained for impromptu conversations. I introduced myself and my research context to the participants. I did not take notes in front of my participants to ensure they were comfortable during our conversations. I took notes after the conversation has ended, and I had left the place.

3.6.2.2 Privacy and confidentiality

To ensure confidentiality of the participants of semi-structured interviews and the online survey questionnaires, their private details (name, age) and details of their employment (name of the organization and designations) are not disclosed in my research. I refer to the interviewees as Int.#1, Int.#2, and so on. I only refer to the organizational designations of the participants associated with New Delhi smart city, referring to them as *officials*. Keeping their identity confidential, the term *officials* can refer to personnel either from the urban local body (ULB) of NDMC or the Special Purpose Vehicle (SPV) of New Delhi smart city – New Delhi Municipal Council Smart City Limited (NDMC SCL).

Identity confidentiality was a constant worry for my research participants, and they didn't want to be named or quoted directly. I had to reduce their information to the bare minimum. This does not affect or compromise my data in any sense. Instead, this highlights the nervousness and alarmed attitude of different stakeholders while talking about New Delhi or about Modi's administration with a fear of being misquoted or getting into trouble with the government.

In support of my preceding argument, some of the research participants shared a common sentiment that "nobody wants to badmouth the government given this smart city project will end next year" (referring to the year 2023. The smart city program came to end in March 2025 after multiple extensions). This sentiment also reflects how the identity of a research scholar is often misunderstood as someone working against the government or closely associated with the mainstream media. During participant observation, I did not ask for participants' basic demographic information, except for information on their occupation such as a student, auto-rickshaw driver, private shop owner, etc. to ensure their anonymity as much as possible.

3.6.2.3 Photographs

During my fieldwork in New Delhi, I took photographs of the study area, smart city project locations, and related infrastructure. The photographs were used to support my data collection from documents, interviews, and observations, and to assess the current visuals of New Delhi smart city. I used my mobile phone camera to click photographs.

3.6.2.4 Harm

During my fieldwork in New Delhi, there were instances where I had to move away from the study area due to concerns for my own safety. For instance, once, I was constantly being watched by some stranger while I was conducting observations in the study area. Despite it being a busy and crowded area, I decided to move from the location and that man followed me. I had to stop walking and confront him out loud, in case I face any danger the people walking nearby would hear me. Afterwards, I went into a nearby coffee shop for the next couple of hours. I decided to both end my data collection for that day and avoid visiting that area until the following week, given I felt insecure and at risk for my own safety. To avoid impact on my data collection to some extent, I explored other areas in the meantime.

3.7 Conclusion

In this chapter, I discuss my data collection process for this dissertation. Using a range of methods including online survey questionnaire, participant observations, semi-structured interviews to collect qualitative data, and incorporating secondary sources contributes to the robustness of the data. This chapter provides readers with an outline of the context for my research decisions and the reasoning behind them. The dissertation proceeds to subsequent chapters, which both present and discuss the findings.

CHAPTER 4: THE DISCURSIVE CONSTRUCTION OF THE SMART CITY CONCEPT WITHIN THE PLANS AND POLICIES OF NEW DELHI SMART CITY

This chapter aims to answer the following research questions: (a) *how is the smart city concept discursively constructed within the plans and policies of the central government and New Delhi smart city?* (b) *how do the on-ground realities and stakeholder narratives of the New Delhi Smart City differ from or contest the discourse constructed in plans and policies?* The aim is to examine how the central government and New Delhi discursively constructs and justifies New Delhi smart city agenda in its policy documents and what are the actual realities and narratives emerging from on-ground realities. This chapter proceeds as follows: I discuss the context of the documents for discourse analysis, followed by my findings along with discussing those findings in the context of relevant literature.

4.1 Context of the documents analyzed using discourse analysis

At a national level, I analyzed central government documents, including the draft concept notes, national policy guidelines, official memorandums, and a coffee table book. The Ministry of Urban Development (MoUD) published the national documents on and related to the SCM program. The two draft concept notes, titled – *Draft concept note on Smart City Scheme September* (MoUD 2014a), and *Draft concept note on Smart City Scheme December* (MoUD 2014b), were the first smart city related documents published by the central government after Narendra Modi was sworn in as the 14th Prime Minister of India in May 2014. These documents provide India's evolving smart city conceptualization, particularly Modi's vision of "developing 'one hundred Smart Cities', as satellite towns of larger cities and by modernising the existing mid-sized cities"

(MoUD 2014b, 2). These documents consist of initial drafts on: what is a smart city, the pillars constituting a smart city – institutional (including Governance), physical, social, and economic infrastructure (MoUD 2014b, 5), criteria for selection of smart cities, operational procedures, financing of smart city, a list of definition of smart cities, benchmarks for smart cities (in areas such as transport, education, etc.), and a smart city reference framework (MoUD 2014a, 31).

In 2015, Modi led-central government announced development of 100 smart cities and launched the SCM program. Following the launch of SCM, the central government released an official national policy document titled – *Smart city: Mission statement & guidelines* (MoUD 2015a). This SCM policy document discusses detailed guidelines of developing smart cities in India. The document explains the two main components of a smart city development – an Area-Based development (ABD) and Pan-city development. ABD includes three models – Retrofitting (city improvement that includes planning in an existing built-up area of the city consisting of more than 500 acres), Redevelopment (city renewal that includes a replacement of the existing built-up environment of the city in an area of more than 50 acres), and Greenfield development (an extension, where smart city is introduced in a previously vacant area of more than 250 acres). The cities are expected to adopt either one of the above models or a mix, along with a compulsory Pan-city area feature. The Pan-city feature focuses on application of smart solutions to improve the existing city-wide infrastructure in one or more sectors, such as transport, wastewater recycling, smart metering, etc. (MoUD 2015a, 8).

The SCM policy document also describes the roles of the governments (at national, state, and city level) and the private sector, the different mechanisms and vehicles used to finance and implement the Mission, and the procedures for selection and management of various smart city projects to be developed at the local or city level (MoUD 2015a). The implementation of the SCM

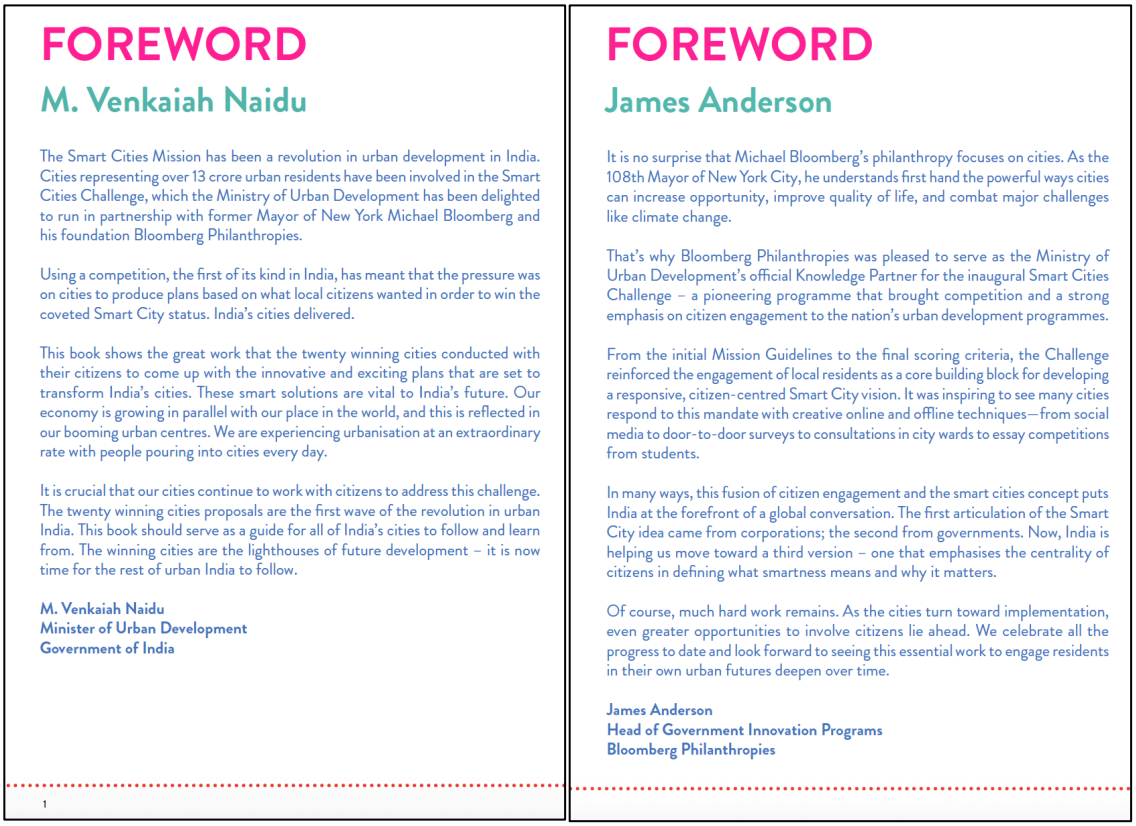
program is monitored at three levels – national, state, and city, and the implementation unfolds at city level. At the city level, the SCM program is implemented under a new form of institutional governance featuring an organization, known as a Special Purpose Vehicle (SPV), proposed within the SCM program. SPVs are "limited company incorporated under the Companies Act, 2013" (MoUD 2015a, 12). SPVs are headed by a full time CEO along with nominees of central government, state government, and ULBs as its board members.

Another document, a coffee table book, was published in 2016 titled *Citizen engagement in the smart cities: Challenge stories from the first 20 winning cities* (MoUD 2016). This document outlines the details of the citizen engagement process conducted by top 20 winning cities of round one of the City Challenge, where cities developed their smart city proposals (SCPs) by engaging citizens in the proposal-drafting phase. The cities sought input from residents and stakeholders through consultations "to ensure that proposed projects reflected citizen needs" (MoUD 2016, 10). In the evaluation categories of the SCPs, *citizen engagement* contributed 16% of the total score. This score had the "third highest weightage" after f*easibility and cost-effectiveness of proposals* with 30% and *result orientation* with 20% weightage (Datta 2018a, 410).

The citizens were engaged through face-to-face processes, such as essay writing contest in the schools and in the city addressing three questions "(1) issues/needs brought out by the citizens of the city, (2) citizen solutions to address these, and (3) citizen priorities" and polling on potential solutions prepared by consulting agencies (MoUD 2015b, 2). The engagement process also took place by deploying ICT tools, such as central government's platform of *MyGov* (www.mygov.in) offering various "public interaction tools, including discussions, polls, blogs, talks, tasks, etc." or any other platform of choice (MoUD 2015b, 0). Some other ways of citizen engagement and dissemination of information about SCM program also included "social media tools (e.g. Twitter,

Facebook), Local Papers, Radio Spots, Local TVs, bulk s.m.s, pictoral forms etc." (ibid). Importantly, the use of digital tools was one of the crucial criteria of assessing citizen participation in SCPs (Datta 2018a).

The coffee table book also celebrates the success of the SCM program a year into its launch by sharing the stories of the first 20 winners of the Smart Cities Challenge and their citizen engagement strategies (MoUD 2016). It includes a foreword from MoUD minister, M. Venkaiah Naidu, and a foreword contributed by James Anderson, Head of Government Innovation Programs at Bloomberg Philanthropies, USA. Below are the pictures of the forewords from the document.



FOREWORD

M. Venkaiah Naidu

The Smart Cities Mission has been a revolution in urban development in India. Cities representing over 13 crore urban residents have been involved in the Smart Cities Challenge, which the Ministry of Urban Development has been delighted to run in partnership with former Mayor of New York Michael Bloomberg and his foundation Bloomberg Philanthropies.

Using a competition, the first of its kind in India, has meant that the pressure was on cities to produce plans based on what local citizens wanted in order to win the coveted Smart City status. India's cities delivered.

This book shows the great work that the twenty winning cities conducted with their citizens to come up with the innovative and exciting plans that are set to transform India's cities. These smart solutions are vital to India's future. Our economy is growing in parallel with our place in the world, and this is reflected in our booming urban centres. We are experiencing urbanisation at an extraordinary rate with people pouring into cities every day.

It is crucial that our cities continue to work with citizens to address this challenge. The twenty winning cities proposals are the first wave of the revolution in urban India. This book should serve as a guide for all of India's cities to follow and learn from. The winning cities are the lighthouses of future development – it is now time for the rest of urban India to follow.

M. Venkaiah Naidu
Minister of Urban Development
Government of India

1

FOREWORD

James Anderson

It is no surprise that Michael Bloomberg's philanthropy focuses on cities. As the 108th Mayor of New York City, he understands first hand the powerful ways cities can increase opportunity, improve quality of life, and combat major challenges like climate change.

That's why Bloomberg Philanthropies was pleased to serve as the Ministry of Urban Development's official Knowledge Partner for the inaugural Smart Cities Challenge – a pioneering programme that brought competition and a strong emphasis on citizen engagement to the nation's urban development programmes.

From the initial Mission Guidelines to the final scoring criteria, the Challenge reinforced the engagement of local residents as a core building block for developing a responsive, citizen-centred Smart City vision. It was inspiring to see many cities respond to this mandate with creative online and offline techniques—from social media to door-to-door surveys to consultations in city wards to essay competitions from students.

In many ways, this fusion of citizen engagement and the smart cities concept puts India at the forefront of a global conversation. The first articulation of the Smart City idea came from corporations; the second from governments. Now, India is helping us move toward a third version – one that emphasises the centrality of citizens in defining what smartness means and why it matters.

Of course, much hard work remains. As the cities turn toward implementation, even greater opportunities to involve citizens lie ahead. We celebrate all the progress to date and look forward to seeing this essential work to engage residents in their own urban futures deepen over time.

James Anderson
Head of Government Innovation Programs
Bloomberg Philanthropies

Figure 5: Forewords by MoUD minister, M. Venkaiah Naidu and James Anderson, Head of Government Innovation Programs at Bloomberg Philanthropies, USA (MoUD 2016).

Ten out of the 14 government documents are published at a city level. They consist of New Delhi smart city proposal (SCP), SCP annexures, resolutions, and annual reports. Since NDMC is the ULB undertaking the development of New Delhi smart city, *New Delhi Smart City Proposal*

(SCP): *The Smart City Challenge - Stage 2* (NDMC 2015) was the first document published at a city level. New Delhi smart city proposal consists of the details about city profile, the ABD proposal, the Pan-city proposal, smart city implementation plan, financial plan, and annexures. New Delhi smart city opted for a retrofitting model of development under ABD that includes the New Delhi City Centre (NDCC) area of approximately 550 acres and Pan-city area included the whole city of New Delhi (NDMC 2015), which is approximately 10,550 acres. The proposal document consists of questions that are answered by the city preparing the proposal about what is being proposed for the development of a smart city, the vision of the city, details of citizen consultation process conducted during the preparation of the proposal document, list of projects proposed, financial components, etc. The questions for the proposal were prepared by the MoUD.

New Delhi smart city proposal also consists of multiple annexure documents. The *Annexure 2 Self-Assessment* (NDMC 2016a) answers two questions from the New Delhi smart city proposal. One of the questions discuss the baseline of the city or its current status based on the 24 smart city parameters such as citizen participation, identity and culture, transport, walkable, sanitation, etc. and the basis for assessment and/or qualitative indicators show the extent and nature of progress the city has made under each parameter. The second question discusses where the city wants to be regarding each parameter and what initiatives will help the city to achieve its desire status (NDMC 2016a). The *Annexure 3* (NDMC 2016b) includes extended details of the New Delhi smart city proposal that were added in additional sheets, given limited writing space in the format of proposal. The *Annexure 4* (NDMC 2016c) provides supporting documents of meeting minutes, proposal for SPV formation, council resolutions, etc. The *Annexure 4, Section 4.6* (NDMC 2016d) and *Annexure 4, Section 4.7* (NDMC 2016e) consist of meeting minutes of the review process of the proposed revisions made in New Delhi smart city proposal and its proposal

of the SPV formation. The *Reso. No. 07(W-02)-26.04.16* (NDMC 2016f) is the document about establishment of the SPV. All these eight documents were published by the NDMC. Some of these documents provided detailed background information on New Delhi smart city and not all of them are analyzed for the discourse analysis.

The final three documents included the annual reports published by the SPV of New Delhi smart city – New Delhi Municipal Council Smart City Limited (NDMC SCL), which implements New Delhi's smart city initiatives. All the initial planning, decision-making, and other functions of New Delhi smart city were performed by the NDMC till the SPV company of NDMC SCL was established in 2016 under the parent organization, NDMC. New Delhi's smart city proposal and other related documents up until 2016 were published by the NDMC, and the annual reports were published by the NDMC SCL from 2017 onwards. In this dissertation, New Delhi smart city refers to both forms of institutional governance – NDMC and NDMC SCL. The *First Annual Report 2016-2017* (NDMC SCL 2017), the *Second Annual Report 2017-2018* (NDMC SCL 2018), and the *Third Annual Report 2018-2019* (NDMC SCL 2019) include the information about organizational structure, director's report including the progress of the implementation of smart city initiatives under New Delhi smart city, management analysis report, financial statements, etc.

All the government documents are listed in the Table 1 under the section 3.2.2 of chapter three. This research found that only the primary official document of *Smart city: Mission statement & guidelines* (MoUD 2015a) is available in another language of Hindi. All the other documents are only available in English language. This is particularly of concern since publishing only in one language can limit understanding and participation of all, highlighting that the intended audience is not wider public and thereby, privileging those who can understand English (technocrats, international actors, limited public) while excluding many others. It also emphasizes the silencing

of other perspectives, knowledges, and the multilingual population of the country. Publishing only in English language also raise questions about if policy planning and implementation is inclusive and transparent at every step of the process and whose voices count later in the process as well.

4.2 Findings and discussion

Drawing from Roy and Ong (2011), this chapter argues that India's Smart Cities Mission (SCM) program is a worlding project that seeks to position both the nation and its cities within the global discourse of smart cities through *situated* strategies and practices. The following section analyzes how the central government discourse frames Indian cities as a "problem space" (10); in other words, cities as sites where developmental issues such as infrastructure, basic services of water supply, electricity, and transport, etc. are defined and solutions are created through creation of smart cities. Such a discursive framing of cities showcases how problems are framed as "non-ideological and non-political issues that need technical solutions to maximize intended outcomes," highlighting an underlying neoliberal rationality that is adapted by governing institutions as and when needed (Roy and Ong 2011, 4). Since SCM is a national program implemented at a city level in 100 smart cities, this chapter will later explore how smart city development unfolds in a specific urban context, in the city of New Delhi. I also argue that New Delhi smart city furthers India's worlding aspirations, its desire of being global, as being the national capital. I believe a key argument that will connect this and other discourse analysis studies on smart cities is how social inequalities and asymmetrical power relations are often perpetuated and deepened through texts and language.

4.2.1 Central government discourse

4.2.1.1 Problematizing urbanization and infrastructure to propose smart cities

Addressing a variety of problems associated with cities, Indian smart city discourse views cities as a "field of intervention" (Roy and Ong 2011, 11). The main challenge as per the central government's SCM national policy document is "increasing urbanization" as cities are "expected to house 40% of India's population and contribute 75% of India's GDP by 2030" (MoUD 2015a, 5). The language of the document further indicates that the central government's smart city discourse does not frame Indian cities as a problem in itself; rather, cities are viewed as "engines of growth" (MoUD 2015a, 5) that are "critical to the economic growth of the country" as also noted in the central government's 2016 coffee table book (MoUD 2016, 5). Their potential can be realized by addressing identified challenges. The rapid urbanization in Indian cities is constructed both as a positive indicator of national economic growth and global competitiveness and as an indicator of challenges facing the nation.

This discursive formation of urbanization is reflected in MoUD minister's, M. Venkaiah Naidu, foreword in the central government's 2016 coffee table book. Naidu states that India's economy is rapidly growing "in parallel with our place in the world, and this is reflected in our booming urban centres" (MoUD 2016, 1). The language used in Naidu's preceding quote would imply that the central government discursively constructs cities as symbols of India's rising global relevance in the world. And yet, the extraordinary rate of urbanization in cities is framed within the discourse both as booming, signaling contribution of urbanization towards rapid economic growth, and as a "challenge" that needs to be addressed because Indian cities are "experiencing urbanisation at an extraordinary rate with people pouring into cities every day" (1).

Similarly, the language of the foreword in the same document contributed by James Anderson, Head of Government Innovation Programs at Bloomberg Philanthropies, also articulates the rising global relevance of India. Anderson states that "in many ways, this fusion of citizen engagement and the smart city concept puts India at the forefront of a global conversation" (MoUD 2016, 2). The language of Anderson's statement suggests that India is increasingly seen as an emerging key player in global discussions about the future of cities, particularly in shaping and leading participatory approaches to smart city conceptualization. After tracing the evolution of smart city articulation that came first from corporations and second from governments, Anderson further adds that "now, India is helping us to move forward toward a third version" where citizens play a key role central in defining smartness and its importance (MoUD 2016, 2). Anderson discursively frames India as a leader in developing participatory approaches that will support other countries across the world in how to design, govern, and manage smart cities. Such a discursive framing of India by disparate urban actors – the central government and a foreign expert – strengthens the discourse of India's rising global relevance in the conversations of smart cities. Overall, the central government's smart city discourse highlights a "reflexive dimension" of India's SCM and its smart city-making efforts that "go beyond local improvements [in cities or broadly within the country] to participate, however implicitly, in a bigger game of winning some kind of world recognition" (Roy and Ong 2011, 13).

Since the challenge as per the central government's smart city discourse is rising urbanization in Indian cities, the central government's SCM national policy document states under its "what is a smart city" section that cities require a "comprehensive development of physical, institutional, social and economic infrastructure" (MoUD 2015a, 5) to become smart cities. In the Indian context, the comprehensive development of infrastructure is viewed as crucial in

"improving the quality of life and attracting people and investments to the City" and creation of smart cities is a "step in that direction" (5). The preceding language indicates that the central government's smart city discourse frames the creation of smart cities as the solution for cities' need for new infrastructure that can support the rapid urbanization of Indian cities. The discourse shows how the central government views and frames Indian cities as "national space of problem solving" that "relies on methods both irrepressibly global and resolutely situated" (Roy and Ong 2011, 11). In other words, the central government policies are unavoidably influenced by global methods to urban challenges such as smart cities, but these methods are adapted, rearticulated, and recontextualized to fit the infrastructure requirements of Indian cities. This approach of making global ideas local through recontextualization is a process that constitutes worlding, which emphasizes situated practices over direct adoption (Roy and Ong 2011).

India's focus on infrastructure development in the SCM program also substantiates Mouton's (2021) argument that infrastructure is both a "medium of development" and an "indicator of development" (625) for the cities in the Global South, and is central to their smart city initiatives. Analyzing an under-construction smart city development known as the New Clark City (NCC) in the context of Philippine, Mouton (2021) asserts that the rhetoric of smart cities in the Global South is closely tied to development agendas that aim to improve urban living and economic conditions through better infrastructure and technology. In the Indian context, the objective of the SCM program is "to promote cities that provide core infrastructure" with the purpose "to drive economic growth and improve the quality of life of people by […] harnessing technology, especially technology that leads to Smart outcomes" (MoUD 2015a, 5-6). As evidenced in the preceding excerpts and earlier discussions in this section, infrastructure constitutes a "powerful driver" (Mouton 2021, 625) for India's SCM, where smart initiatives will

resolve infrastructure need of the cities while also enhancing cities' global image and economic prospects.

4.2.1.2 Defining smart city in the Indian context

After framing smart cities development as the answer to cities' infrastructure needs, the central government's smart city discourse further rearticulates and recontextualizes the smart city concept. For instance, the SCM national policy document states, "there is no universally accepted definition of a Smart City" (MoUD 2015a, 5). Furthermore, a smart city

> …means different things to different people. The conceptualization of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents. A Smart City would have a different connotation in India than, say, Europe. (MoUD 2015a, 5).

The emphasis on the diverse conceptualizations of smart city in the language of the SCM national policy document indicates how, from the outset, central government's smart city discourse rearticulates the notion of a smart city in conversation with imaginaries and interpretations of what constitutes a smart city elsewhere, for instance, Europe. However, this reference to Europe remains vague. The language arbitrarily classifies various smart city conceptualizations emerging from diverse cities and countries in Europe, assuming the reader will understand and perceive Europe in a particular way. Hoelscher (2016) similarly argues that Indian cities and European consulting agencies applied "same templates and best practice examples" in the early development of the smart city proposals "with little appreciation of both positive and negative experiences of various European smart cities" (37).

Despite recognizing no one way of defining a smart city, the SCM national policy document claims that "some definitional boundaries are required to guide cities in the Mission" (MoUD 2015a, 5). Such statements reflect a "discursive […] spatializing practice" within worlding that shapes how urban space is narrated and positioned within global urban aspirations (Roy and

Ong 2011, 4) through policy discourse. While acknowledging that smart city carries different conceptualizations, the central government's smart city discourse constructs how cities should imagine themselves as smart cities in relation to global smart city conceptualizations, without a direct adoption of a smart city model.

The SCM national policy document further states that the central government is "not prescribing any particular model" to adopt because the overall approach of the government is "not 'one-size-fits-all'" (MoUD 2015a, 9). The document also emphasizes that "each city has to formulate its own concept, vision, mission and plan (proposal) for a Smart City that is appropriate to its local context, resources and levels of ambition" (MoUD 2015a, 9). Indian cities are neither prescribed nor expected to adopt a one-size-fits-all smart city model. Instead, cities are expected to formulate their own version of a smart city tailored to their context, resources, and ambitions. This discursive framing of smart city in the Indian context suggests that from the start, India's global aspiration of creating smart cities has been recontextualized, which is central to worlding, within both national and city contexts. The SCM national policy document inform the cities to "choose their model" of smart city and answer the question "what kind of Smart City do they want?" (MoUD 2015a, 9). Setting this task for cities to envision their version of a smart city also constitutes a discursive spatializing practice of worlding that shapes how urban space is imagined and positioned within global smart city aspirations through policy discourse.

"Even though a particular model is not being prescribed" by the central government, the SCM national policy document states that cities are provided with a list of "expected […] infrastructure services and smart solutions" that "must form part" of cities' smart city proposals (MoUD 2015a, 9). This language indicates that while cities are free (and yet) to design their own model of a smart city, required solutions are prescribed, which means that the outcomes are

standardized for all cities to a great extent. The list of infrastructure services and smart solutions that must be a part of cities' smart city proposals are the following:

> Assured electricity supply with at least 10% of the Smart City's energy requirement coming from solar, adequate water supply including waste water recycling and storm water reuse, sanitation including solid waste management, rain water harvesting, smart metering, robust IT connectivity and digitalization, pedestrian friendly pathways, encouragement to non-motorised transport (e.g. walking and cycling), intelligent traffic management, non-vehicle streets/zones, smart parking, energy efficient street lighting, innovative use of open spaces, visible improvement in the Area (e.g. replacing overhead electric wiring with underground wiring, encroachment-free public areas, and ensuring safety of citizens especially children, women and elderly) (MoUD 2015a, 9).

Initial insights regarding the origins of these solutions can be found in the first smart city related documents, titled "draft concept notes" that were published in September and December 2014 by the central government before the launch of the SCM program in 2015 (MoUD 2014a; MoUD 2014b). Both these documents discuss the involvement of "professional agencies" that presented "different aspects of what constitutes a smart city" and "a wide range of features that are the hallmark of a smart city" (MoUD 2014b, 20). These agencies included global consulting companies – McKinsey, KPMG, PWC, ILFS, Accenture, etc. – and both global and national IT companies – Microsoft, IBM, CISCO, WIPRO, TCS, INFOSYS, and Mahindra Tech (MoUD 2014b, 20). Furthermore, a smart city reference framework included in the draft concept notes drew on suggestions from "KPMG and others" (MoUD 2014a, 31). Private tech corporations significantly influenced development of the SCM program and its aspects even before it was launched, potentially standardizing infrastructure services and smart solutions. This influence of private tech corporations on India's SCM program raises questions about what local aspects of cities are considered in developing solutions pertaining to specific contexts in later stages. As Datta (2018a) rightly articulates that "despite its locally situated rhetoric, India's smart cities challenge [referring to the second stage of the City Challenge when cities worked with private corporations such as KPMG to develop their smart city proposals] encompassed a neoliberal logic that made

private sector involvement obligatory" (410), making corporate-led urbanism a part of Indian smart cities.

In a related observation of the above list of expected infrastructure services and smart solutions, the central government's smart city discourse highlights a contradiction within India's SCM program, also noted by scholars. On one hand, cities are encouraged to "define their own parameters for "smart" and design their interventions accordingly" (Purandare 2021, 84), suggesting a decentralized approach and local context-specific planning of smart city development. On the other hand, the SCM national policy document provides "detailed checklists of interventions that each city has to introduce and sectors that the city has to develop" (Purandare 2021, 84). This signals a contradiction between the rhetoric of local governance empowerment and the centralized and standardized prescription of solutions. This contradiction also highlights a broader critique of decentralization in Indian smart cities as they "claim to delink and decentralise the production of smart cities by locating knowledge at the scale of the city and citizen, and yet do not build in possibilities of transgression or subversion within it" (Datta 2018a, 416-417). Instead, the SCM program develops a new scalar governance model in the form of SPVs that "impinge the functions of the elected authorities and, as a result, take away the power of the local government" (Prasad, Alizadeh, and Dowling 2021, 179), leading to advanced form neoliberal urbanism where privatize governance moves in place of the local democracy (Basu 2019). Furthermore, despite SCM's goal towards a broader participation of stakeholders, corporate stakeholders remain the main addresses (Höffken and Limmer 2019).

While these scholars have made the highlighted arguments, my argument brings them together in a conversation and also adds to them. For instance, adding to the above argument of Prasad, Alizadeh, and Dowling (2021), my research argues that in some cases, such as mine of

New Delhi, it is not necessary that SPV obstructs the functioning of the local government. Instead, the local government is not as involved as the municipality (NDMC) and the central government in the decision-making and to an extent, the influence of the central government is much stronger than the SPV itself. I discuss this in detail in chapter 5. Regarding the argument made by Höffken and Limmer (2019), my discourse analysis in the preceding paragraphs provides stronger evidence of the involvement of corporate stakeholders and my results in chapter 5 argues that to a greater extent, the corporate stakeholders steer the decision-making wheel of the SCM along with the central government.

Roy and Ong (2011) argue that worlding projects "remap relationships of power at different scales and localities, but they seem to form a critical mass in urban centers" (12) and this makes cities both "critical sites in which to inquire into worlding projects, as well as the ongoing result and target of specific worldings" (12). Digging deeper involves examining how worlding is constituted through situated practices in a specific urban context. I did so by using discourse analysis, stakeholders interview, and observations to understand different phases of policy planning and implementation and assess how smart city aspirations and projects are articulated and enacted. This dissertation focuses on smart city development in the city of New Delhi, the national capital of India. India's SCM program involves development of 100 smart cities across India, including its national capital – New Delhi. In the following section, I study how India's SCM program unfolds within and positions New Delhi as both the site and target of worlding.

4.2.2 NDMC and NDMC SCL discourse

4.2.2.1 Worlding Smart New Delhi

Delhi has frequently served as a strategic launchpad for various national urban development interventions including many international events (e.g., G20 Summit 2023,

Commonwealth Games 2010), underscoring its significance in shaping the nation's identity as the "heart of India" (M. Venkaiah Naidu, quoted in India TV 2015). Naidu states that "we want to make Delhi a truly global city,"

> having all latest and modern amenities and facilities that any other global city like London or San Francisco has. We want to have world-class entertainment venues like Disneyland or Universal Studios here (India TV 2015).

"We want" reflects central government's desire as the minister was speaking at an event organized by Delhi Development Authority (DDA) at its headquarters. Under the central government's MoUD, DDA is the statutory body that drafts and implements Delhi's Master Plan covering residential, commercial, industrial, horticulture, institutional or recreational projects (DDA, n.d.). This desire to make Delhi a global city indicates how Delhi plays a distinctive political and symbolic role for the nation, particularly in supporting the national aspirations to be "on the world map" (Robinson 2002).

Naidu's statement reflects still an on-going desire of the central government for its cities to have urban features like Western models of *global city* such as London or San Francisco and have *world class* monuments like Disneyland or Universal Studios. Despite Robinson's (2002; 2006) critical suggestion that "policy-makers need to be offered alternative ways of imagining cities their differences and their possible futures" so that policymakers are "neither seeking a global status nor simply reducing the problem of improving city life to the promotion of 'development'" (Robinson 2002 545), it appears that Indian central government still aspires for a global city status. A Western global city model still thrives as a "regulation fiction" (Robinson 2002, 546) and the demand to become global remains embedded in the narratives of the central government. In her analysis of the discourses and practices that constitutes Indian world-class city, Roy (2011b) also notes that such forms of inter-referencing are common worlding practices of "authorization in the

production of urban space" and are not new (264). Such inter-references are no longer limited to Western models or direct adoption of models, as we will see in the following discussions.

This desire for global city status also evokes concerning implications that have been prevalent in Delhi's history, where efforts to create a *slum-free city* and *clean city* have prompted demolition of homes and forced evictions in the pursuit of a *world-class city* status (see Bhan 2009; Dupont 2011; Ghertner 2015). This history of demolition of homes was recently repeated during the G-20 Summit 2023, held at New Delhi's Bharat Mandapam International Exhibition-Convention Centre in Pragati Maidan. In preparation for the arrival of foreign dignitaries, a slum cluster known as Janta Camp, located roughly 500 meters from the venue in the capital city of New Delhi, was demolished (Arranz et al. 2023).

Through a worlding lens, my analysis focuses on situated ways in which a smart city– an urban intervention – is attempting to either "establish or break established horizons of urban standards in and beyond" (Roy and Ong 2011, 4) Delhi. In his speech, Naidu continues that "the first smart city would come up here" in Delhi and "the city of Barcelona in Spain has also promised technological support to us in our effort in this direction" (India TV 2015). The word "first" discursively frames Delhi as a symbolic site of national ambition, as a privileged space, and as a potential benchmark for smart city status. Naidu's statement about first smart city also signals that India's national smart city intervention aims to establish new standards or break the established standards of urban model in and beyond Delhi, and that Delhi carries a symbolic and political significance within the broader Indian smart city discourse.

Furthermore, Naidu's reference to technological support from Barcelona reflects both Delhi's and India's aspirations for world recognition through the development of a smart city benchmark in Delhi. The reference to Barcelona represents *modelling* worlding practice. It is a

"concrete instantiation" of acknowledging the achievements of another city (Roy and Ong 2011, 17) that is often packaged with neoliberal rationalities, such as marketization in which cities operate as a marketplace for smart services and technological solutions, and citizens are reframed as consumers, users, and data producers within such systems (Cardullo and Kitchin (2019b). Naidu highlights an adaptation of technologies developed in Barcelona as they are seen as exemplary, inspiring, and worth incorporating to develop India's first smart city in Delhi. The discourse also underscores how "the tendency is no longer simply to turn to Western prototypes, but rather to develop from homegrown solutions" to Delhi's challenges, informed by its "distinctive urban profiles, political styles, and aesthetic forms" (Roy and Ong 2011, 13). Within Delhi, it is the capital city area – New Delhi – receiving the privilege of a smart city development and is considered as emblematic of entire Delhi and by extension, of the nation itself. New Delhi covers an area of 42.7 sq km, which is three percent of the total area of the NCT of Delhi.

4.2.2.2 New Delhi: "World's benchmark capital city"

New Delhi smart city discourse centers on the "aspiration" to become "global benchmark for capital cities" (NDMC 2015, 16). "Being the administrative capital of India," the focus for the city of New Delhi "is to be the best-in-class Capital City" that provide "the highest quality of life to all its citizens and visitors, and to be the most economically competitive business ecosystem, while being sensitive towards the environment" (NDMC 2015, 14). "India is poised to become a major economic power" and in this context, New Delhi offers "already best-in-class in many parameters" (14). All the above excerpts from New Delhi smart city proposal document exhibit how New Delhi as the capital city serves as a symbol of national status and global competitiveness. Becoming the best-in-class capital city is seen as necessary for New Delhi to reflect and reinforce the nation's global aspirations and growing status on the world stage. As New Delhi is the

administrative capital, the discourse leverages the symbolic status of the city to justify and legitimize New Delhi's prioritization to become smart city. The language also discursively frames New Delhi as inherently entitled to best-in-class status because it is the national capital. New Delhi's current urban achievements, reflected in its already best in class parameters, justify and logically qualify it to become a smart city.

In order to become the global benchmark for capital cities, New Delhi smart city's "sub-goals are benchmarked against the Smart City indicators of ISO 37120:2014 of top 20 cities" (NDMC 2015, 15). The preceding statement from New Delhi smart city proposal highlights that New Delhi smart city is comparing its own performance and capabilities against the ISO (International Organization for Standardization) recognized standards and indicators of a smart city based on top 20 cities. New Delhi's benchmarking shows that the city aims to follow an internationally recognized framework to ensure that the city meets internationally recognized standards in its city development agenda. New Delhi smart city is measuring how well New Delhi is going to perform compared to other, well-established ideals or parameters of smart city development. New Delhi smart city proposal stresses that New Delhi smart city's targeted values for the ISO indicators "are higher than those of the 20 top global cities against which it has been benchmarked" (15). The language in the above statement reflects a "self-congratulatory tendency" (Hollands 2008, 304) that New Delhi is targeting higher values than those it is comparing itself against, implying that New Delhi is emerging as the new global benchmark for capital cities.

In the analysis of these excerpts, worlding practice of *inter-referencing* indicated by Roy and Ong (2011) is particularly relevant. Inter-refencing refers to practices of "citation, allusion, aspiration, comparison, and competition" (17). It is a practice of citing other cities, to measure city's urban innovations against other cities', and even an "endorsement of another city" (18).

Inter-refencing practices serve as a justification for particular projects and initiatives, locally, as actors and institutions position their own projects "in a language of explicit comparison and ranking" and thereby, "vicariously" participate in the symbolic values of particular cities (18). New Delhi smart city proposal lists a total of 36 smart city indicators of ISO, including education indicators, social indicators, air pollution, solid waste management, open spaces, and transportation indicators, to name a few. For example –

> 1. Percentage of female school-aged population enrolled in schools […] 2. Percentage of students completing primary education: survival rate […] 7. Fine particulate matter (PM2.5) annual mean concentration […] 9. Greenhouse gas emissions measured in tonnes per capita […] 12. Percentage of women employed in the city government workforce […] 15. Square meters of public indoor recreation space per capita […] 17. Percentage of city population living in slums […] 21. Percentage of the city's solid waste that is recycled […] 24. Kilometres of high capacity public transport system per 100000 population […] (NDMC 2015, 17).

New Delhi smart city proposal cites the "best case (city)" (NDMC 2015, 17) for each indicator that consists of capital cities, large cities, and financial hubs from across the Global North (e.g., Toronto, Melbourne, Boston, Helsinki, Amsterdam, Barcelona) and the Global South (e.g., Amman, Dubai, Minna, Haiphong, Makati, Bogotá, Guadalajara). By making references to other cities and comparing their achievements with New Delhi smart city vision, the language of the proposal is "effectively marketing" New Delhi smart city "as a 'global' space" (Mouton 2021, 634) emerging as the benchmark for capital cities across the world and highlights embedded neoliberal rationalities that frames above indicators as requiring technological interventions.

In addition to citing, alluding, and comparing to these cities from across the world, New Delhi smart city proposal also provides some "best practices" from other cities that the "NDMC plans to adapt" (NDMC 2015, 55), reflecting the worlding practice of *modelling* (Roy and Ong 2011). Urban modelling is a "concrete instantiation" of acknowledging the achievements of another city (17). New Delhi smart city proposal cites best practices of "Smart Grid Implementation" from Queensland, Australia that also includes "Smart Metering" from Sao Paulo,

Brazil, from USA the "Smart Sewage Treatment Plants" in California, and "Smart Education" from East China Normal University (ECNU) (NDMC 2015, 55). It also cities best practices from India, including "Smart Water Management" from Jamshedpur and "Smart Waste Management" from Kalimpong (15).

Roy and Ong (2011) clarify that in the use of blueprints, plans, or built forms as a guide "does not mean that modeling is a faithful copy of the original," rather modelling is a practice that "tries to capture some aspect, style, or essence of that original" (15). In the language of New Delhi smart city proposal, New Delhi smart city is strategically *adapting* some elements from *best practices* rather than *adopting* them as complete or pre-packaged *models*. The proposal cites specific aspects of the above mentioned best practices that New Delhi smart city aims to adapt, such as "use of sensors and analytics to reduce cost of water treatment and improve quality" (NDMC 2015, 55) from California's smart sewage treatment plants. As Shatkin (2011) also argues, the inter-referencing of models "reflects the shrewd employment of certain images and ideals to promote a very specific development agenda […] that indicate the possibility of success" (93).

As indicated in the beginning of this sub-section, New Delhi smart city discourse constructs its vision and desire of becoming global benchmark for capital cities through a rhetoric of *aspirations*. The question arises whose aspirations? Participatory approach is an important aspect central to India's SCM program that promotes "involving citizens in decision-making processes" (MoUD 2014b, 7). The SCM national policy document calls for extensive citizen and stakeholder consultation, particularly a "collaborative" development of the smart city proposal at city level that involves "government departments, parastatals, private agencies, and the citizens" (MoUD 2015a). New Delhi smart city conducted a citizen consultation process while developing its smart city proposal that involved face to face interactions, social media, online polls, questionnaires, street

plays, etc. (NDMC 2015). In addition to citizen consultations, according to the SCM national policy document, the task of preparing the smart city proposals is "quite challenging" and "States/ULBs will require assistance of experts" that involves "technical" support from "consulting firms and handholding agencies" (MoUD 2015a, 9). To assist in preparing New Delhi smart city proposal document, NDMC had hired KPMG Advisory Services Private Limited consulting firm (Kumar 2017). As noted by a respondent of my online survey questionnaire, The Energy and Resources Institute (TERI), a New Delhi-based not-for-profit policy research organization, was also part of the citizen consultation process (SQR5).

Scholars have extensively discussed SCM's promotion of citizens' active participation (Datta 2018a), arguing that the Mission enables a mode of collaboration between local governments and other stakeholders that mainly allows global organizations, private sector entities, and elite citizen groups to dominate India's smart city discourse and urban governance (Hoelscher 2016; Basu 2019; Prasad, Alizadeh, and Dowling 2021; Purandare 2021), often at the expense of excluding already marginalized populations and deepening infrastructural and participatory inequalities (Datta 2015; Ghosh and Arora 2022; Parida 2022; Van Gils and Bailey 2023; Prasad, Alizadeh, and Dowling 2024). Purandare (2021) particularly explores how the experts of consulting firms are playing an increasingly prominent role in shaping smart city policy in India, where corporate influence over urban governance is leading to rise of a "consultocracy" (80) as consulting firms design and administer smart city policies at the city level. She argues that by pushing cities to employ the services of consulting firms and to follow a list infrastructure services and smart solutions, the central government has "contributed to the entrenchment of private firms in urban governance, weakening local governments, and undermining locally-based decision-making" (88).

I add to the above arguments by demonstrating that using a rhetoric of *aspirations* and its elite location, New Delhi smart city primarily serves to support municipality's and central government's aspirations "to be the Global Benchmark for a Capital City" (NDMC 2015, 16) rather than addressing needs of diverse citizens. My analysis illustrates how New Delhi smart city has reinforced exclusivity, producing a smart city that caters primarily to the elite. I add to above arguments that smart city conceptualization in the Indian context also reveals a worlding aspiration, a desire of being global driven by disparate actors of central government, NDMC, private sector, elite groups, that strategically obscures the exclusions of diverse citizens and their needs.

4.2.2.3 Whose aspirations?

Rhetoric of *aspirations* is central to New Delhi's smart city discourse and whose aspirations are shaping the vision of New Delhi smart city remains ambiguous. The vision of New Delhi smart city is to become global benchmark for capital cities. While discussing this vision in New Delhi smart city proposal document, sometimes the city is referred to as NDMC and sometimes as New Delhi, which particularly produces ambiguity as to whether the vision reflects the aspirations of municipal body (NDMC) or of the citizens of New Delhi. For instance, while discussing the strategic focus of the city, in one sentence, the document states that the "aspiration of New Delhi to become the global benchmark for capital cities" and in the following sentence it states "NDMC's aspiration to be a Global Benchmark for a Capital City" (NDMC 2015, 15). It remains ambiguous if the aspirations are that of the municipal body's or of the citizens of the city.

The document itself refers to NDMC as both "a municipal body" and as a "planned city" (NDMC 2015, 11) because New Delhi is under the jurisdiction of NDMC. Similar to the document, the area of New Delhi city within Delhi is often referred to as NDMC area in everyday

conversations and media (see Singh 2025). Drawing on Rose's (2016) understanding of discourse as organized through "strategies of persuasion" (193), I argue that an ambiguous framing of *aspirations* in official documents and an inconsistent deployment of the term NDMC is a discursive strategy of persuasion. This strategy puts the onus on the audience or the reader to makes sense of what is being referred to – the municipality or the city. This discursive strategy functions to mask the exclusion of diverse needs (such as affordable housing access, informal livelihoods, etc.) emerging from complex socio-economic differences (such as income differences between daily wage earners such as cycle or electric rickshaw pullers/drivers and full time employees such as security guards and accountants with fixed incomes, possible job securities, health insurance, etc.) amongst citizens. Such differences produce different realities (such as unequal access to infrastructure, health facilities, digital services, etc.) and may result in both different smart city planning priorities and needs (such as pay electricity bill via mobile app or delivery of electricity 24x7) that vary according to the degree of marginalization. The ones marginalized are often households with various and even intersecting socio-economic vulnerabilities such as low-income, informal settlements, and migrants for whom data-driven priorities might not provide for the immediate needs.

The rhetoric of *aspirations* is repeated in multiple documents. For instance, either one or both the above statements about aspirations are repeated multiple times with exact same phrasing within the smart city proposal (NDMC 2015) and across other documents, including the first annual report (NDMC SCL 2017), the second annual report (NDMC SCL 2018), and the third annual report (NDMC SCL 2019). This repetition of the rhetoric of *aspirations* across multiple documents signals that the vision of becoming a global benchmark for capital cities is rather central to New Delhi's smart city conceptualization, shaping the understanding about what New Delhi

smart city should be or become. The repetition also naturalizes the vision of NDMC as the vision of all.

In another instance of rhetoric of *aspirations*, New Delhi smart city proposal document discusses aspirations while answering a question about city vision and goals. In the first statement, "the vision for NDMC Smart City" is described as based on "the needs and aspirations articulated through the stakeholder consultations" (NDMC 2015, 16). The following statement states "NDMC vision for Smart City is thus: "To be the Global Benchmark for a Capital City"" (16). Again, the ambiguity persists about aspirations of whom – the municipality, the citizens, or that of the central government. That said, in the following paragraph, the language constructs the aspiration of becoming the best capital city in the world, reflecting and reinforcing country's global and economic ambitions. The paragraph is noted below.

> NDMC's key profile is that of housing the administrative setup of the country within the capital city of a fast growing economy with one of the largest populations in the world. NDMC thus has the responsibility to provide a city to its citizens that will allow the nation to achieve its aspirations. Thus, for a country with the second largest population and poised to become one of the largest economies, nothing short of being the best capital city in the world would do justice (NDMC 2015, 16).

In the above paragraph, New Delhi smart city proposal positions New Delhi as a symbol of the nation and its aspirations for global prominence. The paragraph discursively frames NDMC (referring to the area governed by NDMC – New Delhi) as playing a central role in shaping the national identity because it houses the administrative core within the capital city (New Delhi) of a fast-growing economy (India) with one of the largest populations in the world. New Delhi being the face of the nation, NDMC (as a municipal body) is responsible for not only the functioning or governance of the capital city and its citizens, but also for representing and supporting the nation to achieve its aspirations.

Given nation's large population and its growing economy, becoming a best capital city in the world is seen as the only way to achieve nation's global and economic aspirations. The capital

city needs to match country's global aspirations, and anything less would not do justice to the country's emerging status as a major global player. The statement about NDMC's responsibility to provide a city to its citizens was also repeated in all the three annual reports and also in a supporting document of Annexure 4 (NDMC 2016c) attached with New Delhi smart city proposal. As seen in all of the above excerpts, New Delhi smart city discourse is deeply constructed around the national capital status of New Delhi and the role of NDMC (as a municipal body) in representing and enabling both local and national aspiration of becoming the global benchmark for capital cities. Overall, the discourse shifts smoothly and persuasively from the needs and aspirations of citizens to NDMC's and nation's ambitions.

In another example of rhetoric of *aspirations*, New Delhi smart city proposal discusses smart city goals that emerge from the city vision of becoming the global benchmark for capital cities. One of the goals is becoming "World's capital – Setting global standards to meet citizen aspirations" (NDMC 2015, 16). The phrase of "world's capital" implies a desire to position New Delhi as a global leader, a benchmark of a capital city for others, and a city of global significance and prestige. This phrase reflects a symbolic act, a "signifying gesture" (Roy and Ong 2011, 13) of worlding New Delhi. The other part of the statement – setting global standards to meet citizen aspirations – indicates that New Delhi will set the global standards for others to follow and these global standards are presented as a means of fulfilling citizen aspirations and desires. This other part of the statement also signals an embedded assumption that citizens' aspirations align with these global standards, naturalizing NDMC's aspiration as the aspiration of all citizens. This statement was also repeated in all the three annual reports (NDMC SCL 2017; NDMC SCL 2018; NDMC SCL 2019), strengthening the discourse.

Now the question arises, who are these citizens behind these aspirations and what are their aspirations and needs? Datta (2018a) notes that in Navi Mumbai smart city, a large part of online citizen suggestions reflected popular middle-class demands of a "sanitised city," including "elimination of open defecation, removal of hawkers and street markets, provision of green spaces, prohibiting spitting, beautification of neighbourhoods, planting trees, jogging and cycling tracks, enforcing parking provisions, traffic rules" (413). Datta highlights that similar views reflecting exclusionary discourse and practices were supported in most urban municipalities, such as Chandigarh, and presented through technocratic rationality of smart apps, deepening the gap between the "smart citizen and subaltern citizen" (413).

New Delhi smart city proposal lists the categories of stakeholders that were consulted during citizen consultation process for seeking inputs on ABD and Pan-city smart solutions. The combined list includes Hotel & Traders association, Diplomats/Embassies and High Commissions, Economically Weaker Sections (EWS)/slum dwellers/JJ Cluster (Jhuggi-Jhopri), Resident Welfare Associations (RWAs), women, students, government employees, vendors, elected representatives, eminent citizens, and public at large (NDMC 2015). The proposal also states that one of its goals is to become an "inclusive city" that addresses "the needs of the most vulnerable citizens including women, children, disabled and trans-gender individuals" (NDMC 2015,16). From such a categorization of citizens, it is evident how the city's enormous diversity is reduced to a checklist of selectively recognized citizen categories based largely on occupation, gender, and age, homogenizing more complex socio-economic differences amongst city's population. This categorization focuses less on the intersecting differences not only shaped by occupation, gender, and age but also through caste, religion, locality (a homeless shelter in New Delhi area or around the periphery of Delhi with differences in access to work location, resources, local services, etc.),

to name a few. Such categorization of citizens not only mutes the differences in needs and aspirations, but also forces the aspiration of becoming a global benchmark upon all.

4.2.3 Narratives beyond the policy discourse and realities on ground

4.2.3.1 New Delhi smart city reinforcing exclusivity

While conducting interviews, I found that the narratives often emphasized the elite location and rich population of New Delhi, referring to it as "elite Delhi, surrounded by elite powerhouse, power corridors" (Int.#8) or "Bunglow zone" (Int.#6). While discussing New Delhi smart city proposal, one of the interviewees emphasized that "they [economically weaker sections] were not the people or the kind of crowd they [NDMC] were trying to plan for or propose anything for" and the New Delhi smart city location "was selected in a safer manner" (Int.#3). Another interviewee shared their own experience of being a part of citizen consultation process conducted by NDMC, noting that the challenge was "to get citizens to actually engage" and those who participated are the citizens getting directly affected by New Delhi smart city development – the rich and investors.

> Major challenge the council is facing is to get citizens to actually engage with them. The show-up rate, whenever they call for some meeting or some discussion, is very less. Probably 1% to 2%, and majorly those are the people who, again, if I talk in terms of income generation and the money they are earning, they are either HIG [High-income Group] people or some industrialists who are actually getting very affected by that decision. That's it (Int.#6).

The interviewee also emphasized that one of the reasons for lack of citizen engagement was "all of this is happening on a working day. Majority of the population has to provide their attendance at work […] It is not feasible for everybody to take a leave," particularly "daily wage earners" (Int.#6). Discussing the example of New Delhi smart city's smart bike initiative (example in photograph 2 below), another interviewee highlighted that such initiatives are not targeting the true user groups, for whom "the primary mode of transport is bicycles," and rather the initiative is targeting "middle-class, upper-class people" who are "hardly going to use those bikes" (Int.#7).

> One thing where this kind of projects would really work is around industrial area, because industrial area have a lot of workers who live nearby and who travel by cycles to reach the factories. If you want to put bike lanes, put there, but we see where they're being put, they are being put in city cores. These are for the elites, in some sense (Int.#7).

Another interviewee reiterated that "the population it [smart bike initiative] is targeting are not using bikes. They are using their BMWs and government vehicles, four-wheelers [cars], and they are not the one who are going to use the cycles" (Int.#6). Some residents, with whom I conducted conversations during my field observations and interviewees, critiqued the smart bike initiative pointing that New Delhi's roads infrastructure, traffic, and city's weather is not equipped for such mode of transport. I did observe use of smart bikes in many parts of New Delhi, mostly by college going students and those making a delivery. I observed that majority are riding the bikes on the main road along with heavy car traffic due to lack of dedicated bike lane infrastructure. One time, I noticed that two students paid for the bike on the mobile application and even the money was deducted from their account, but they said they still could not operate the bike and eventually left without being able to use the bike. Some city dwellers also mentioned that they want to try smart bikes, but they do not know how to operate the bike using the mobile application.

My online survey questionnaire asked respondents about the impact of chosen location for New Delhi smart city on city's vulnerable population. The respondents indicated their perception according to the following 5-point Likert scale 1 = Very negative, 2 = Negative, 3 = Neutral, 4 = Positive, 5 = Very positive. Six out of seven respondents selected a "neutral" to "negative" impact of New Delhi smart city. These results highlight that the development of New Delhi smart city has not been widely perceived as beneficial to vulnerable populations and may not adequately address their needs. During my field observations, I also came across homeless population that are residing in temporary shelters (Figure 6) within less than a mile radius of New Delhi smart city location of

NDCC. This helps showcase that despite the smart city development, vulnerable populations continue to experience exclusion rather than tangible benefits that cater to their immediate needs.



Figure 6: Homeless shelters and Smart bike stand, respectively. Photographs by Aditi Singh, 2022.

The lack of initiatives for the slum dwellers in New Delhi smart city proposal has been reported in various media sources, questioning proposal's inclusivity criteria as some citizens continue to struggle to meet their basic needs of electricity, housing, water, and sanitation. Singh and Kumar (2022) notes that the selected area for the smart city in Delhi, which is the "second most populated city in the world at 19 million," represents only "1.3% (2,57,803) of the total population of the city and only 2.9% of the total area." This area of New Delhi has no neighborhood as such that houses the urban poor. They further cite the Economic Report of Delhi 2021-2022 to highlight the lack of inclusivity, stating "about one-third of Delhi's population lives in sub-standard housing, which includes 675 slum and jhuggi-jhopri [JJ] clusters, 1,797 unauthorized colonies, old dilapidated areas, and 362 villages. Most of these habitations lack basic services." Similarly, Suraksha (2016)

reports that during consultations in four JJ clusters in October 2015, "the NDMC recorded 158 responses from slum-dwellers on questions related to 24/7 electricity, water supply, sanitary and sewage conditions, pavements and healthcare facilities. But, no project for the same was announced in the proposal."

In a paper published by The Center for Asian Studies (CAS), a regional center under a think tank based in Paris, France – The Institut français des relations internationales (Ifri)[1], Aijaz (2016) notes that despite "about 20,000 people, or 8 per cent of the total population of NDMC, live in slums," NDMC's smart city plan "does not provide sufficient information on how the living and livelihood condition of slum dwellers, beggars, and poor people with disabilities would be improved" along with "informal sector workers" (26). A working paper of Housing and Land Rights Network (HLRN), a non-profit organization and an independent charitable trust, indicates that low-income settlements were never consulted for in New Delhi smart city's proposal development.

> […] street plays were reported as a means of engagement with residents of low-income settlements. While this is contested by residents in Delhi, street plays offer limited scope for feedback and audience participation. A survey by HLRN of 24 low-income settlements in the NDMC area revealed that the residents were not consulted in the development of NDMC's Smart City Proposal by either NDMC or KPMG – the consulting firm responsible for preparing the Proposal (HRLN 2017, 20).

In its final report, HRLN particularly critiqued the NDMC's chosen international benchmarks under smart city development, as noted in the excerpt below. HRLN argues that there have been evictions of street vendors in the process of transforming NDCC area of New Delhi smart city into a *World Class Urban Area*.

> It has adopted Dubai's standard of five homeless persons for every 100,000 people in the NDMC area, by 2025. However, its proposal does not specify how people will be brought out of homelessness and provided housing; neither does it discuss the fate of its homeless population while the 'smart city' develops. Instead, it proposes to create a 'World Class Urban Area' with 'Happiness Areas.' In doing so, it has initiated a process of evicting street vendors from the proposal area, costing hundreds of urban poor residents their livelihood (HRLN 2018, 24).

[1] English translation - The French Institute of International Relations

These narratives show a clear disconnect between New Delhi's smart city discourse of an inclusive future and the on-ground realities. These narratives also indicate an evident contradiction between the claims about aspirations emerging from citizen consultations and on-ground picture of how the needs of many are excluded, many citizens are not consulted, and how the plans reflect an elite New Delhi in making.

During my field observations, an autorickshaw driver noted the cleanliness and beautification of New Delhi but emphasized the lack of any smart city initiative that directly caters to the poor, except maybe streetlights.

> they [government] have done things to beautify this place but there is nothing as such of use for a common-poor man under this smart initiative. They have installed streetlights so that's good. But when the rain will come, this whole area gets heavily clogged with water reaching up to this level [by pointing to the area of the shin bone on his leg]. It gets really bad but haven't done anything for that. It is the story of every year (conversation on October 18, 2022).

To some extent, I see the above response from the autorickshaw driver as urban *métis* (Kalyan 2017) in action. He is skeptical of the promises made by the government based on his previous experiences that resulted into broken promises due to conventional bureaucracy. He is also uncertain of the future, indicating that there is limited hope things will improve. Despite big and promising smart city visions of the government, municipality, and corporates, the emotionally dejected response of the autorickshaw drive showcase lack of trust given his knowledge and experience of everyday life. The driver's response implies that beautification does not solve basic, everyday problems that are the real issues. He recognizes the small benefits of beautification and streetlights and yet there is doubt on the claims of policy, showcasing an informed skepticism.

While discussing New Delhi smart city, another autorickshaw driver praised that New Delhi was "always cleaner and continue to look cleaner and the government is, thus, working for the benefits of the people" (conversation on November 09, 2022). These narratives present how often citizens assess the city's development and its citizen-centric governance through the visual

appearance of the city and such an appearance, for them, is in itself enough to confirm that New Delhi is or becoming a smart city. These observations align with Ghertner's (2011b) discussion about how Delhi's slum residents are trained "to see the city through the lens of world-class aesthetics" (290) and how slum residents' often express "the desire for Delhi to become "neat and clean,"" (292).

I also visited one of the smart city initiatives implemented under New Delhi smart city – The Charkha Museum (Figure 7). The initiative aims to "promote a distinctive cultural identity in the city, economically empower the weavers associated with the khadi (handwoven cloth) industry, and to popularise khadi's use" (Aijaz 2020, 16). A security guard working in that area of the city expressed deep disappointment with the New Delhi smart city saying, "but nothing has changed, everything is the same" and while pointing to the smog in that area, continued "Madam, *Dilli jal rahi hai* [Delhi is burning], everything is bad. No one does anything" (conversation on November 08, 2022). This response from the security guard resembles the skepticism of the autorickshaw driver discussed above and emphasize the distrust in new policies such as smart cities. This particular observation about air pollution in Delhi also stands in stark contrast with how New Delhi smart city proposes to tackle city's air quality.



Figure 7: Charkha Museum, New Delhi. Photographs by Aditi Singh, 2022.

One of the proposal annexure documents, *Annexure 2*, describes the current status of city's air quality by stating that the "city does not have plans, policies or programs to improve the air quality" and that the "systems to monitor air quality are absent." (NDMC 2016a, 6). It also notes that according to the Mercer's 2015 annual survey on the quality of living, New Delhi ranks 154 out of 230 cities due to city's bad air quality and pollution. While projecting "where the city wants to be," the document states that "the city has clean air by international standards" and there is "live air quality monitoring" covering the whole city along with "data of air quality are mapped" (6). Also, in listing what initiatives would move the city or area "from its current status to Advanced status," the document lists solutions such as "air quality tweet of pollution level, […] discouraging or restricting access of motorized vehicles in designated areas" and providing a platform for "changing people's behaviour and sensitizing them towards environmental issues" (6). New Delhi smart city proposal document also states multiple solutions of citizen application providing live data on air quality, reduction of greenhouse gas emissions from vehicles, air quality tweet of

pollution level, smart poles with air quality sensors, cycling infrastructure, and dissemination of information on specific air pollutants through public display boards (NDMC 2015).

The preceding excerpts clearly highlight that the focus is more on live monitoring and data mapping of air quality than introducing any substantial *smart* or technological solutions that would contribute towards actual reduction in pollution, except cycling. This shows how New Delhi smart city discourse constructs smart technological solutions as both simple, quick, and inherently sustainable that will lead to improved air quality. It negates both socio-economic differences amongst citizens and the varying impacts on diverse citizens. As discussed above about smart bikes, they are an important initiative in the direction of curbing air pollution, however, their contribution will be nullified by smart parking initiative under New Delhi smart city promoting car use and offering better car parking facilities in the city.

Thinking about what that security guard said and based on my own experience of smog in Delhi at the time of field observations, it appears that air quality solutions are not able to deliver as per the level of expectations of the officials and corporate stakeholders. All the above narratives show an evident disconnect between the discursive aspirations and the on-ground realities. Importantly, these narratives reveal the differences in aspirations and needs of citizens that do not align with the list of initiatives under New Delhi smart city. Certainly, New Delhi smart city's elite location is meant to cater some exclusive aspirations that are strategically obscuring the exclusion of diverse citizens and their needs.

New Delhi smart city proposal also reveals whose desires might be getting reflected in the aspiration of becoming global benchmark of capital cities – "elected representatives." While discussing about consultations with various elected representatives about which smart city initiatives should be undertaken for the city-wide smart city development in New Delhi city, New

Delhi smart city proposal states "aspiration to become the world's best capital city" (NDMC 2015, 48) as one of the initiatives. The other initiatives include need for "public safety & security […] renewable energy integration through Smart Energy Management […] uninterrupted water supply to the citizen […] e-governance and information & communication technology (ICT) based solutions" (48). New Delhi's smart city proposal lists some of the "esteemed elected representatives interacted with for this purpose" that includes the member of parliament from New Delhi Constituency, NDMC officials, and top government officials (48). The above excerpts reveal that the New Delhi smart city vision of becoming the global benchmark of capital cities is the vision and aspiration of the NDMC and government officials, and not necessarily of the citizens of New Delhi. Even the list of initiatives proposed and implemented under New Delhi smart city matches well with solutions emerging from "discussion with suppliers and partners" offering ideas that are "implemented in various parts of India and globally as well" (NDMC 2015, 26). New Delhi smart city proposal further adds that these solutions will "improve the livability of the city and help benchmark to best practices in other parts of the world" (26). The following solutions are listed, matching with the initiatives listed before in this chapter.

> Smart Governance within NDCC, Improvement in urban mobility through smart solutions, Sensor based parking management, Electric Vehicle charging, e-surveillance management, LED screen based advertisements. In addition to this, the significant innovation projects that emerged from the discussion with respect to NDCC are as below:
>
> - Delhi International Festival
> - Smart Public Amenities Centres (transformation of public toilets)
> - Air quality tweet of pollution level
> - Happiness areas/ Wellness Areas
> - Smart Parking
> - Carpooling application (NDMC 2015, 26).

In the case of New Delhi smart city, the disparate actors behind the aspiration of becoming global benchmark are the central government and NDMC, supported by private companies and vendors, and city's elite population. I assert that New Delhi smart city's rhetoric of *aspirations* and its elite location primarily serve to support municipality's and central government's aspirations "to be the

Global Benchmark for a Capital City" (NDMC 2015, 16) rather than addressing the needs of diverse citizens. Thereby, reinforcing exclusivity and producing a smart city that caters primarily to the elite. Yet, some observations also narrate a different story, about attempts of resistance and worlding from below.

4.2.3.2 Blockade or worlding from below?

One of the initiatives under New Delhi smart city is water ATMs. Water ATMs were not a part of New Delhi smart city proposal in 2015 and were introduced later in 2018 by the SPV of New Delhi smart city. Water ATM is water vending machine "that provides clean drinking water 24 hours a day […] powered by solar energy, integrated with reverse osmosis (RO) and ultra-filtration units with reduced operational costs" (Vashisth 2018). A social enterprise, Jana Jal, has installed many water ATMs in New Delhi city along with another company called Swajal (Vashisth 2018; Aijaz 2020). While I was trying to locate a water ATM in the Connaught place area of New Delhi smart city during my field observations, I asked many people. Most looked puzzled and did not know to what I referred, and some took wild guesses about where one could possibly locate a water ATM.

I also noticed that at some locations water ATMs were working (Figure 12), and at some they were locked (Figure 8 and 9). When I asked a bank ATM security guard nearby one of the water ATMs locations, he informed that this one has always been locked and was never operated. While exploring the reason behind the same, one of the officials pointed that the water ATM initiative was unable to run on multiple locations in New Delhi because of "misuse" of the facility as people were putting "pellets/stones" in it due to which the water ATMs were closed down and locked (Int.#11). The official further explained that "we had a vision of providing free water to the poor. But we found there was public misuse of it. They consider it like 'yeah, it's a government

property'." The official also noted that they decided to shut other water ATMs at multiple locations because otherwise "we have to make a guard sit there and then it is an added cost of paying to the security guard" (Int.#11).

These narratives resonate with what Roy (2011b) calls the *blockade* that accompany neoliberalism and are particularly evident in cities. Such acts of resistance highlight where the neoliberal worlding logics encounters limits and how such acts cannot be described solely using a neoliberal framework. One needs to understand these acts from a contextual point of view. I view the described misuse of water ATMs as acts of resistance by the citizens to the smart city experimentations, infrastructure, and investments. It is unclear if such acts of resistance are "heroic subaltern action" (Roy 2011b, 274) or examples of an anticipated weakness of "lack of discipline […] including high occurrence of vandalism of public infrastructure" that can become "constraints for future developments of NDMC" or an anticipated threat of "unwillingness to adapt to the change by the city and the citizen" where "NDMC has limited control and therefore collaboration is required" (NDMC 2015, 11-12). The preceding excerpts are from New Delhi smart city proposal document, discussing results of a SWOT analysis of New Delhi city.

The above narrative also highlights that often vandalism of public property is blamed on the urban poor. In other words, it is the urban poor not acting as a *responsible* citizen and therefore, this smart technology has failed. This indicates a limitation of smart technology as it requires the government to maintain a system to oversee such projects; hire security personnel to oversee locations of water ATMs. In some sense, this reveals that *smart* does not automatically imply efficiency, but only for technological innovation and sophistication that is still unable to address deeper social inequalities.



Figure 8: Closed and a working water ATM in New Delhi:
Photographs by Aditi Singh, 2022.

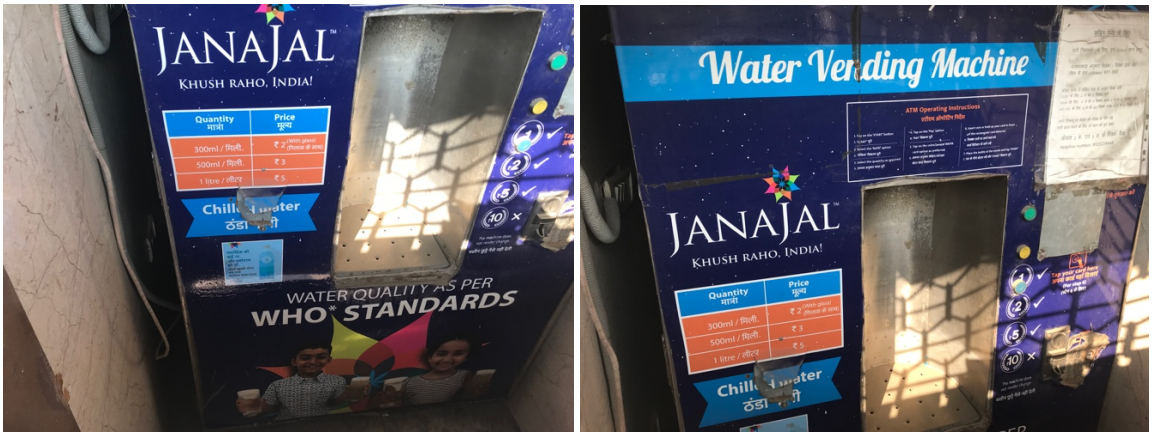


Figure 9: Inside of the closed water ATM from figure 8, in New Delhi:
Photographs by Aditi Singh, 2022.

Another finding that questions the value of these high-tech water ATMs relates to when one interviewee highlighted how such technological solutions are "not prominent to the culture of India" and therefore "useless" (Int.#2). Emphasizing the importance of cultural and behavioral

context of the people and the country, the interviewee highlighted how the use of clay pots, locally known as *matkas*, and keeping them on a bamboo bench would work well because they keep water cool and a local solution to provide easy access to water. This finding particularly highlights the excessive shift towards *high-tech* solutions that characterize the smart city policy discourse. Are these technological solutions preventing simple, existing solutions, such as clay pots, based on lived realities from being implemented? I think such aspects are worth exploring and highlight the neoliberal logic that often underpins solutions such as the water ATMs.



Figure 10: Smart bike stands in New Delhi and smart cycle stand in the NCT region of Delhi. Photographs by Aditi Singh, 2022.

As discussed before in this chapter, smart bike is another initiative under New Delhi smart city, where users can rent a bike by paying on a mobile application. During my field observations, I observed that many a times, those riding private bikes parked their bikes at a smart bike stand (Figure 10). I also observed such instances in other parts of Delhi (Figure 10). I think of such adoption and appropriation of smart city spaces as indicating towards the actual needs and

aspirations of citizens, what is actually smart according to them and how they find a *jugaad*, a hack, to make it work.

These practices of using smart bike stands for parking private bikes also correspond to what Simone (2001) calls *worlding from below*, which emphasizes how citizens engage with the world "on own terms" (16). I view these actions of citizens as where they take up the discourse of smart city making but desiring a different (smart) future. Using smart bikes stand to park their private bikes is where they "step into [smart city's] vision and take up the aspirations it sets before them" and importantly, "how they might mobilize that [meaning of smart] for different ends" (Ghertner 2011b, 282). These urban dwellers aspire of having a bike stand, where they can park their bikes with ease, on a dedicated place. It is their vision of a smart city; it is their urban *métis*, a practical engagement with the infrastructure and improvising it; it is their "*jugaad*" (Rai 2019), a workaround the obstacle of lacking, dedicated infrastructure for them to park their bikes. My observations also resonate with Ghertner's (2011b) as he describes how slum residents both adopt and appropriate world-class aesthetics. They "world from below" as they "step inside the discourse of world-class city making, but to seize its categories and turn them in another direction" (301). Through smart bikes, they seize this notion of *smart*; they step inside this discourse of smart and world-class and turn it into a direction of what they understand it as, aspire as, and defines as smart.

4.3 Conclusion

In this chapter, I discussed the ways in which smart city is conceptualized and discursively constructed on a national and city level in the Indian context. I presented how the central government discourse frames smart cities as a solution for the requirement of infrastructure, which is needed to support the rapid urbanization in Indian cities. Through a discourse analysis, I argue that India's Smart Cities Mission is a worlding project. In this chapter, I also argue that New Delhi

smart city furthers India's worlding aspirations, its desire of being global, as being the national capital. New Delhi smart city conceptualizes a smart city that aim to position New Delhi as a world-class city and as the global benchmark of capital cities, supporting both national and local political agendas. New Delhi smart city discourse also shows how the narrative using a rhetoric of *aspirations* seamlessly shifts from the needs and aspirations of citizens to NDMC's and nation's ambitions. Importantly, New Delhi smart city discourse reflects that New Delhi smart city is neither neutral nor purely technological. Instead, it is a deeply political project, representing the aspirations of the central government, the NDMC, and the corporate stakeholders, that is shaped by worlding strategies and practices, aiming at worlding New Delhi and India through different technological adaptations that are focused more on revenue generation than prioritizing basic needs of many urban dwellers. The following chapter examine the decision-making behind such revenue generating projects. In conclusion, my observations reiterate Ghertner's (2011b) query of if New Delhi's "worlding strategy headed for a collective refusal, a blockade" or "will new urban visions emerge in response to [citizens'] efforts to "world from below"?" (301).

CHAPTER 5: DECISION-MAKING IN PLANNING AND IMPLEMENTATION OF NEW DELHI SMART CITY'S INITIATIVES

This chapter aims to answer the following research question: *how do decision-making processes shape both the planning and implementation of New Delhi smart city initiatives?* In the following sections, I present and analyze my findings along with discussing those findings in the context of relevant literature. I present my findings as themes that emerged from my data analysis process.

5.1 Findings and discussion

5.1.1 Inherent exclusion in planning and implementation

I found that in its smart city proposal and annual reports, New Delhi smart city describes one of its goals as developing an "inclusive city" that addresses "the needs of the most vulnerable citizens including women, children, disabled and trans-gender individuals" (NDMC 2015, 16). Furthermore, it states that the "entire vision of NDMC has been formulated based on citizen inputs" (21). Despite repetition of these statements across a variety of its documents about inclusive citizen engagement in the smart city development and focus on the needs of most vulnerable citizens, New Delhi smart city planning and implementation reveals rather contradictory and exclusionary decision-making processes in the development of an inclusive, smart New Delhi. One of the interviewees repeatedly mentioned that the goal for New Delhi smart city has been to focus upon "revenue generating projects such as smart parking, smart biking" (Int.#10) (Figure 11 showing

smart bikes). Another interviewee reiterated that often smart city initiatives are "just a way to generate funds, just a way to mobilize resource" (Int.#6). Together, these narratives highlight how smart city initiatives were more focused on generating revenue rather than on the needs of most vulnerable.



Figure 11: Smart bikes stand in New Delhi. Photograph by Aditi Singh, 2022.

When I inquired about the kind of initiatives proposed in New Delhi's smart city proposal document (see excerpt below that provides a list of key components and initiatives) and if they reflect inclusion of needs of diverse citizens as emphasized in various documents of New Delhi smart city, I found that the narratives often focused on describing the complexities of the process of decision-making from planning to implementation phase of smart city initiatives. The narratives gestured toward how the processes of planning and implementation lead to an exclusionary development, often sidelining the concerns and priorities of diverse citizens.

(A)PHYSICAL INFRASTRUCTURE (1) Urban Mobility & Smart Parking: (ii) Electric Vehicles (EV's) based last mile connectivity to Metro/Bus Transport System/park and ride facility […] (iv) Construction of mobile application integrated cycle tracks in identified routes (v) Citizen application for car-pooling/cycling/traffic conditions/CCTV videos/air quality/e-challan etc. […] (viii) Smart bus-stops-providing interactive bus information system/ATM/wi-fi/ vending machine […] (x) Converting existing parking into Sensor based Smart Parking Management System linked to a centralized mobile application, (3) Transformation of electric-Poles into Smart Poles with […] air-quality sensors, noise-pollution sensors, […] (5) Happiness area [Figure 12] for the cultural and social needs of citizens (i) renovation of Gole Market, adding Interactive Museum on History of Indian Civilization (6) Transforming sub-ways into vibrant spaces ATM/pet adoption centre/Advt. etc. (7) Signature Giant Smart Digital Screen: Traffic Info/Social Messaging/Alerts/Cricket/Advt., […] [Figure 13]
(B) SOCIAL INFRASTRUCTURE (10) Transforming Public Toilets into Smart Public Amenities Centres: Adding ATM's/ Pathology Labs/ e-Commerce Centres/Rooftop renewable energy […]
(C) VALUE INFRASTRUCTURE (12) Introducing signature initiative to the city's Identity and Culture (a) Annual Delhi International Art and Culture Festival (b) Awards to Global Capital Cities based on City Benchmarks (c) Gateway to the World: On-street Live Video Conferencing between people of Delhi and multiple Global Cities, (13) Behavioural transformation through (a) instilling appropriate values through mass & social media, (b) children through social messaging in Smart education systems (c) Creating volunteer ecosystem (NDMC 2015, 26).



A green area is a safety valve, where people can find breathing space. NDMC has developed roundabouts, parks and gardens, public places in NDMC area as 'places' and planned around major public destinations, which act as civic pride, social connection and human happiness, all precious commodities in an increasingly congested urban landscape. These has become happiness areas for visitors and residents where they feel connected to nature.

As a part of development of happiness area under the Smart City Projects, NDMC has developed the happiness areas at Yashwant Place, Kautilya Marg and Nyay Marg junction, Ambedkar Vatika at Janpath, Bharat-ASEAN Maitri Park at Tughlak Road, Kautilya Park at Kautilya Marg, Entry Point at Minto Bridge and Jalebi Chowk in front of North Block Avenue and these places are visited by public in large number.

Following is proposed in the action plan for further development of happiness areas in 2019-20:

Further beautify about 52 roundabouts by adding ornamental heritage type street light poles with landscaping and water bodies as per availability of spaces.
Fencing of Haifa Chowk will be replaced by cast iron heritage designed railing to give it a grand heritage look.
Redevelop the Rajpath into world-class boulevard, which includes development of cycle/pedestrian pathway, parking space for 1000 cars, toilets/utilities, drinking water, water body, development of vending zones and lake. The development also includes rejuvenation of water channel and installation of fountain in it. Being the center of New Delhi, NDMC will develop it into a World Class Boulevard in concurrence with theGovernment of India.
Around 15 figures of animals and birds, all made of flowers, have been installed at various roundabouts. The horticulturists have artistically created camels, butterflies, elephants and birds. There are 19 floral fountains. 72 floral boards have been put up, each with different images of Mahatma Gandhi across the Central Delhi. Apart from flower decorations shaped as animals, there are four flower fountains and two special flower arrangements outside the Hyderabad House.Over a month after finalizing the plan to dismantle the iconic steel 'sprouts' at the All Indian Institute of Medical Science (AIIMS) intersection, the NDMC has initiated the tendering process for replacing them with multi-layered water fountain.The civic agency floated the tender for constructing a 30 metre-wide and 15-meter-high cascade fountain in the middle of green patch facing Kidwai Nagar Redevelopment Project.

Figure 12: Photo and description of happiness areas taken from the official website of New Delhi Smart City Ltd.


BLACKBERRYS
FIT FOR THE BIG DAY
WEDDING COLLECTION 2022
AT A BLOCK & E BLOCK
signpost
INDIA


भारत की बेटियों के लिए बढ़ते अवसर
3.1 करोड़ से अधिक सुकन्या समृद्धि खाते
मुद्रा योजना की 68% लाभार्थी महिलाएं
सैनिक स्कूलों के द्वार बेटियों के लिए खुले
signpost
INDIA


सतर्कता जागरूकता सप्ताह - 2022
VIGILANCE AWARENESS WEEK - 2022
31st October to 06th November 2022
"Corruption Free India for a developed Nation"
"भ्रष्टाचार मुक्त भारत – विकसित भारत"
signpost
INDIA


भारत आयुष्मान भव:
signpost
INDIA



Figure 13: Example of physical infrastructure from the quote above - Signature Giant Smart Digital Screen – showing some of the multiple advertisements running on the screen. Photographs by Aditi Singh, 2022.

For instance, one interviewee described process of decision-making as a "progression," expressing that during planning, "when a [smart city] project is actually developed at a proposal level […] is built thinking about everybody, but it might not be entirely true that it is given to everybody" (Int.#4). This response reveals an intent of inclusive planning on documents but exclusive implementation in reality. The interviewee further emphasized the "mutual disconnect in writing a policy or a proposal and implementing it" (Int.#4). During the process from planning to implementation, the focus for NDMC is on following a "a set guideline and a framework so […] tries to fit into that framework" provided by the central government and KPMG consulting firm or "PMU" (Project Management Unit) that was hired to "do the surveys and write out the proposal." In this "hierarchy of people who are working," there is lack of clarity because "the people actually going on ground are entirely different" whereas the instruction "comes from upwards" (Int.#4). These narratives evidently indicates that the guidelines are top-down and in this maneuvering

during planning and execution, there is very limited understanding of on-ground needs, particularly of the vulnerable and marginalized population.

Many interviewees often pointed that there has been a constant gap between what planners and policymakers perceive is the need or requirement on ground as compared to the deeper contextual understanding of the city. Int.#7 stated that smart city "the solutions are already predefined and then we try to define the problems around those solutions." The response further highlighted how planning processes are less about understanding and assessing the urban issues on a city level and more about applying the "expert knowledges," calling it an "expert syndrome" (Int.#7) mostly driven by private tech companies and consultancies. In addition to these technology experts, the middle-class and upper-class citizens are also driving and shaping local smart city discourse, who look at different cities, better cities (Int.#7).

> There's no assessment of problems at the local level […] there is a lot of emphasis in giving solutions, but very less emphasis on understanding the problems. I call it expert syndrome. You think you are an expert – you have done your studies, you have attained your degrees, and then you think that you are an expert. A lot of people come with these expert knowledges, and they already have solutions in their minds because how do we become experts? We learn these solutions. [For example] transport congestion, we have to improve the congestion problems. When we try to see any city in India, we start seeing those cities from these kinds of lenses. Also, not just the experts, even a lot of citizens, a lot of publics, especially the publics who drives the discourse in the cities. When I say that, it's mostly middle-class, upper-class people who do that […] looking at different cities, better cities, which we think are better and trying to being them […] a lot of it, of course is driven by public, plus the people who bring in the technology or the expertise (Int. #7).

These narratives indicate that it is not only the governments, municipalities, or experts who are *inter-referencing* other cities – aspiring and comparing – to define what solutions should be adopted or what is defined as smart, but also the middle-class and upper-class citizens. This observation echoes how "through the favorable mention, allusion, and even endorsement of another city," the worlding practice of inter-referencing is deployed by disparate actors and institutions who "vicariously participate in the symbolic values of particular cities" (Roy and Ong 2011, 18).

As highlighted in the above excerpt from the interview, the response further stressed how often the so-called experts view the city through specific lens, such as congestion, and are often an expert of a particular aspect of urban service delivery. They carry a limited understanding of the particular city's issues. They are not the experts in understanding the comprehensive local context of a city. While they might have an expert knowledge of a city, very few of those experts are located in the cities where the solutions are being provided. In this way, their vision of what is smart is inherently biased based on their limited contextual understanding of different cities. This narrative reflects that the nature of smart city planning and decision-making is inherently and strategically exclusionary, due to embedded disconnect between planning and the understanding urban issues on ground.

While responding to how the process of citizen consultations accounted for the needs of most vulnerable citizens, another interviewee described the multiple stages from planning to implementation. The interviewee pointed out that some elements of proposed initiatives, which were included during citizen consultations, often get "omitted" in the implementation phase (Int.#3). As the Smart Cities Mission is about to end, the interviewee also suggested that there is little institutional attention paid to these discrepancies, as the focus is more on completing a checklist of initiatives rather than ensuring that implementation aligns with the details of what was initially proposed.

> […] during the implementation, when the proposal gets converted into a project, that is implementable, there are many stages. There is a DPR [Detailed Project Report] stage and the tender stage, and tender is being awarded to somebody, then the contractor comes in and start the work. There are many stages to it, so the project keeps on changing. They may have elements that were added in the proposal, in a particular project that they named, but by the time it got implemented, there were some, some, some issues and things got omitted. […] There is nobody in the whole ecosystem who's sitting and finding the gaps […] We do a tick mark on the project. We don't do a tick mark inside what is there in the project […] (Int. #3).

Particularly referring to the challenges associated with citizen consultation process, one of the respondents of my online survey questionnaire noted that during citizen consultations "the

consultation happens on the drafts of the proposed plan rather on identifying the plan favourable for citizen" (SQR1). Another respondent stated that in New Delhi smart city "only a few citizen groups were consulted in the process and due to the nature of the campaigns, eg. social media initiatives, only those who had technological literacy were able to meaningfully contribute to the process" (SQR5). Int.#7 reiterated that during the citizen consultation processes, there is extensive use of online polls, advertisement on walls, or asking citizens to rate their city on mobile applications so that the city can win award. Referring to the preceding practices as "token participatory practices," the interviewee emphasized that such participation keeps citizens engaged and engaged in aspirations that do not reflect the needs of the citizens (Int.#7). This reference to token participation, as well as the earlier point about predefined solutions, strongly echoes what Cardullo and Kitchin (2019b) describe as paternalistic practices, where the "objectives and solutions were set *before* problems and suggestions from citizens could be taken into account," leaving power in the hands of corporations and state actors rather than shifting it to citizens (819). Such practices illustrate how neoliberalism continues to function as a key structuring force shaping governance and subjectivities within smart cities (ibid).

The challenge to engage people during New Delhi smart city's citizen consultation process was also noted by few other interviewees. One noted that citizen "does not provide the feedback because citizen actually doesn't go to the municipality" and "particularly NDMC, is full of high-profile people […] those influentials are limited in terms of getting feedback (Int.#4). Int.#6 emphasized the lack of consideration of diverse working population, especially daily wage earners, and their needs while arranging consultation day and timing during the citizen consultation process of New Delhi smart city.

> Consider about those who are daily wages, if I quote in Hindi, woh apni dihaadi kyu chod denge [why would they leave their daily wage] just because they have to attend a meeting where their view might or might not be heard. It's very difficult for them to participate that way (Int.#6).

All the above narratives expose a policy-practice gap where *inclusive* and *participatory* rhetoric in variety of official documents is used instrumentally "to present achievements and plans in the best possible light" (Cowley et al. 2019, 55). Inevitably, there is an exclusive implementation on ground as the needs of some citizens are bypassed in the processes of decision-making, reflecting a broader tendency toward a procedural compliance during different stages smart city development over giving emphasis to the needs of diverse citizens. Overall, the responses indicated that despite emphasis on developing citizen-centric initiatives and adoption of extensive citizen consultation processes as per the guidelines of the central government, the contextual planning and implementation in New Delhi smart city reflects exclusionary practices that reinforces exclusivity and produces a smart city that caters to only few. As also noted by an official that "New Delhi has [more] floating population than static population. Clearly, there is no structure [in selecting this location for smart city]. […] Well, you see for yourself, office people come here, people with money live here" (Int.#11). In the next sub-section, I argue that planning and implementation processes also include some messy realities and politics that reflect on conflicting governance practices and certain decision-making that automatically favors certain parts of Delhi, particularly New Delhi, further reinforcing exclusion of some population.

5.1.2 Dominance of central government in smart city decision-making

5.1.2.1 Limited state involvement in decision-making

Prasad, Alizadeh, and Dowling (2021) discuss that in Smart Cities Mission (SCM) program state governments played "a prominent role" (177) in the selection of cities for stage one of the City Challenge competition and also in funding the shortlisted cities. This was not the case in New Delhi smart city. Delhi state was allocated only one city slot under the SCM program, unlike many other states. This allocation was determined based on each state's urban population and number of

statutory towns (MoUD 2015a). Despite MoUD allocated, only one slot, Delhi had still sent out two names for the SCM program to MoUD – "NDMC area and IP Extension in East Delhi" (Business Standard 2015).

The NDMC area or New Delhi was selected primarily for its "feasibility," given its reputation of a relatively "congestion-free zone" making it "easier to develop" (Business Standard 2015). During an interviewee, an official also remarked that New Delhi was selected as per the SCM program criteria by MoUD and it emerged as the "best choice" compared to the other areas of Delhi (Int.#10). Together, these responses indicate that the selection of New Delhi under the SCM program, Delhi's state government had limited to, probably, no role in shortlisting areas of Delhi for the first round of intra-state competition under the SCM program. Instead, the selection of New Delhi was directly influenced and decided by the central government, since New Delhi city comes under the jurisdiction of NDMC, which itself answers directly and is accountable to the MoUHA under the central government (Centre for Policy Research 2015).

The official further explained that the smart city selection in Delhi is "a different case" due to multiple governing structures (Int.#10). Even after New Delhi's selection under the SCM program, Delhi's state government at that time, Aam Aadmi Party (AAP), "didn't contribute, and don't want to contribute" any funds for New Delhi smart city initiatives (Int.#10). Another official also stated that "the state government of Delhi never helped with any funds" and NDMC managed New Delhi smart city development on its own, using its own funds apart from receiving funding from the central government (conversation on 18 October 2022). It has been reported that Delhi's state government has its own smart plans and aiming to adopt solutions such as Wi-Fi for whole Delhi (Business Standard 2015) and a common mobility card where the smart metro card will also work in Delhi's DTC (Delhi Transport Corporation) buses (India Today 2018; The Hindu 2018).

In terms of funding under the SCM program, the central government provides funds of up to a total of nearly $100 million per city per year for over a five-year period (MoUD 2015a; Das 2020). This funding by the central government is to be matched by funding from the state government and municipalities or ULBs (urban local bodies). In the case of New Delhi smart city, NDMC is the primary source of funding apart from the funds provided by the central government with no contribution from the state government. This lack of financial support from the state government appears not to be an issue for New Delhi smart city, as one official noted and remarked that NDMC is one of the "richest municipalities in India" (Int.#10).

The above findings evidently suggest that the central government and the NDMC were the main actors shaping and influencing the development of New Delhi smart city, with no prominent role of the state government. Such a dominant role of the central government reveals that despite the well-designed and formally planned criteria of selection of smart cities where the state government had a key role, in some contexts, this was not the case. In New Delhi's context, the governmental authority acts as an "informalized entity, one that is a state of deregulation, ambiguity, and exception" (Roy 2009b, 76). In other words, in New Delhi's context, planning and decision-making exception served specific interests and location – the national capital, demonstrating "purposive action and planning" (Roy 2009b, 83). The above findings also support how New Delhi's national capital status influences decision-making in Delhi, the prominent role of central government in decision-making for the national capital areas with no role of the state government, and how certain areas of Delhi are prioritized solely based on ease and their symbolic role while others are excluded.

5.1.2.2 Governance dependencies and constraints

After the selection of New Delhi smart city, the decision-making processes were not as smooth as might be expected given the shared interests of the central government and the NDMC of worlding New Delhi. For New Delhi smart city, a Special Vehicle Purpose (SPV) – NDMC Smart City Limited (NDMC SCL) – was created in 2016 under the parent organization of NDMC. An SPV is responsible for the implementation of the Smart Cities Mission at the city level, and it is headed by a full time CEO, along with have nominees of the central government, state government and ULB on its board, and other members of the staff (MoUD 2015a). Although the SPV of New Delhi smart city have had dedicated CEO before, at the time of my research in 2022, NDMC Secretary was appointed on an additional charge as the CEO of the SPV of New Delhi smart city.

One of the officials emphasized on how this additional charge of CEO has led to added responsibilities on the NDMC Secretary who was "already handling a lot" (Int.#10). Furthermore, due to lack of manpower in the SPV of New Delhi smart city, the SPV is receiving expertise and skilled manpower from the NDMC. This lack of manpower has been reported before due to hardly any dedicated staff within the SPV of New Delhi smart city and a majority of the officials leading New Delhi smart city initiatives "were sent temporarily from NDMC" (Sharma 2019). This dependence on NDMC for expertise and skilled manpower has led to delays in funding and in the implementation of New Delhi smart city initiatives (Int.#10). Furthermore, this reliance on NDMC has put an additional cost on the SPV for the paying "7% to NDMC for executing projects," increasing financial burdens on the SPV (Int.#10). The official highlighted that "other smart cities have proper funding and proper manpower" which is not the case for New Delhi smart city, further emphasizing the need for New Delhi smart city to have an independent CEO. These findings reveal

how the SPV of New Delhi smart city is not able to work as an independent body and rather remains dependent on NDMC. This lack of independence signals potential internal conflicts between the NDMC and New Delhi smart city as the latter seeks more autonomy in its working, both in terms of resources and decision-making. These findings align with the observations of Prasad, Alizadeh, and Dowling (2021) about how different SPVs often have different organizational structures. The authors also observed the lack of "workforce and administration power" in the context of the SPV of smart city of Chennai (capital city of Tamil Nadu state of India), where the "state and the city scale have a distinguished political history" and the SPV works "under the municipal corporation" (178).

Overall, my observations show how smart city planning and implementation often unfold in contextual "messy realities and politics of implementation and contestation" (Kitchin 2015, 134). The analysis reveals how "the state is an informalized entity, or informality from above (Roy 2009b, 84). In the case of New Delhi smart city, the status of New Delhi as the national capital served as the primary factor for its selection to develop as a smart city and even the role of state government was bypassed, despite the formal policy guidelines from the central government. Such a decision-making process represents a state of deregulation, indicating a "calculated informality" involving intentional actions and planning (83). This intentional planning in the context of New Delhi also reveals how smart city planning is deeply entangled with worlding strategies that aim to position New Delhi, and by extension, India, on a world stage through smart city. This further reveal why and in which parts of the city there is purposive planning and implementation of smart city, and others are excluded. In the context of New Delhi smart city, this entanglement of planning with worlding strategies becomes more evident in the following section.

5.1.3 Why New Delhi? Is New Delhi a location to world?

Thinking about M. Venkaiah Naidu's speech at an event organized by Delhi Development Authority (DDA) at its headquarters, where he stated that "we want to make Delhi a truly global city" (India TV 2015), an inevitable question arises – why New Delhi location within Delhi? Under the central government's nodal ministry – MoUD, DDA is the statutory body that drafts and implements Delhi's Master Plan covering residential, commercial, industrial, horticulture, institutional or recreational projects (DDA, n.d.). When I asked about why New Delhi, one of the interviewees emphasized that New Delhi's "prime location" serves as the key factor "so the program [Smart Cities Mission] wouldn't fail" (Int.#5). The response further highlighted how it is important for the central government that citizens view Smart Cities Mission as a success and that New Delhi serves as an exemplary location for averting any potential failures of the Mission as it is "already developed […] world-class area […] up to the mark of various developed countries as well" (Int.#5). Another interviewee also emphasized that New Delhi gets "a lot of political attention" and particularly "in terms of India at global level, it is important to have your capital into huge mission like Smart City Mission" (Int. #4).

In the excerpt below, one of the interviewees highlighted how New Delhi's centralized location serves as an "impressionist smart city" deploying "demonstrative technologies," which are symbolic of being smart. And whenever tourists visit, they can carry an impression of a *smart* New Delhi through the technologies that indicative of being smart "beyond the geography of India." I argue that this creation of an impressionist smart city using demonstrative innovations is a worlding practice too, a way to world a *smart* New Delhi.

> […] being very centralized and smaller area, they wanted to use and deploy these technologies to showcase the so-called smart technology used in relation to Delhi. That's where you see demonstrative technologies which is basically the smart pole with air and all kinds of things […] Then you see traffic system management, smart bikes. […]. Whenever a tourist, and that's obviously demonstrative as well

> as certain kind of impressionist smart city, that it creates an impression that "Wow, Delhi is becoming smart", and they are using this as well […] masses goes beyond the geography of India. (Int.#8).

In New Delhi, tourism is not only driven by those from outside of the country. Instead, smart technologies also impact tourists visiting from within the country. My interaction with a couple of students who were studying in Delhi at the time of my fieldwork provided some reflections on this. They came from the state of Jammu and Kashmir and were studying in Delhi University or the University of Delhi, which is a collegiate central university in Delhi, one of the largest universities in India that draws students and faculty from across India and abroad (DU, n.d.). They expressed that they see no substantial difference in New Delhi of the SCM program and noted that this part of Delhi (referring to New Delhi) is anyway *cleaner*. They shared some of their experiences of the Jammu smart city in the city of Jammu (in the state of Jammu and Kashmir, India). They told me about the area's electric matadors (minibus mode of transportation) and noted their pleasant experience of the same since the diesel ones tend to make a lot of noise and uncomfortable vibrations for passengers. Since I spent two years completing my high school education in Jammu, I understood what those students were referring to. The students also noted how Jammu city has become more aesthetically beautiful and cleaner under the SCM program. These impressions of visual aesthetics and cleanliness, along with their opinions about technological changes to the public mode of transportation, suggest how smart cities tend to create a good impression both visually and in everyday lives of the local people in India.

New Delhi's demonstrative effect is also explicitly emphasized in the New Delhi smart city proposal that view "willingness of industry to invest / implement their product or services in the capital city for country wide demonstration effect / branding etc." (NDMC 2015, 12) as an opportunity through which "NDMC could potentially become world class" (11). An official also noted that New Delhi was chosen "obviously because this was a good area to *experiment* with

smart projects and then we can take them to other parts of Delhi" (conversation on 18 October 2022; emphasis added). Overall, these narratives significantly highlight the symbolic status of New Delhi, valuable at various scales of state, country, and globally. Importantly, these narratives exhibit how New Delhi, as a location for smart city, itself is a worlding strategy pushed by the central government. This designation of New Delhi as the symbol of India is also a worlding practice.

In the excerpt below, another interviewee particularly remarked on how the NDMC's New Delhi smart city proposal sets a potential benchmark of designing a proposal as its elements have been duplicated in other smart city proposals.

> […] NDMC is one of first-round city and they have done pretty good while drafting the proposal itself. There is merit in the proposal itself because later on when you see round two, round three fast track proposals, you will see if you compare […] a lot of duplication of what NDMC has proposed with other cities. NDMC has given a lot of thought while even writing the proposal because it's in the first round of Smart City Mission selection and it was new Mission and somebody who has tried to understand what should be in the proposal for longer sustainability of city mission is coming from NDMC (Int. #4).

Giving an example of NDMC's smart city application, the response further emphasized the achievements of NDMC and how it has "set a bar to actually implement better services" (Int.#4).

> NDMC is first SPV of Smart City's Missions, first smart city who has come with one single app for all services. There are now apps getting developed in each and every city for one app – one service, which is a vision now going forward. It is initiated in smart cities mission and NDMC has taken a lead and made this app way, way back. It has been like six years […] these kinds of initiatives are taken by NDMC which are great initiatives (Int. #4).

The above narratives about NDMC's achievement in New Delhi smart city are consistent with a pattern noted by Wiig (2015) in his study of Philadelphia that "the particulars of the initiative were important, but not as important as the ability of the initiative to signal the city as a 'smart city'" (270). In New Delhi smart city, the narratives are less about how a specific mobile application are making an actual difference to the lives of citizens, and more about yes, New Delhi is a smart city.

Other interviewees also gave examples of initiatives from solid waste management, solar panels on streetlights, and security cameras on smart poles that are being replicated other parts of

the Delhi, but the emphasis was less about the particulars of the initiative and more on branding New Delhi because they happened *first* in New Delhi. It was also noted that not all of the New Delhi smart city's initiatives can be replicated in other parts of Delhi by other municipalities as they are specific to the context of New Delhi. This specific aspect refers to the cost associated with some of the initiatives possible for NDMC and also because New Delhi is the capital of India.

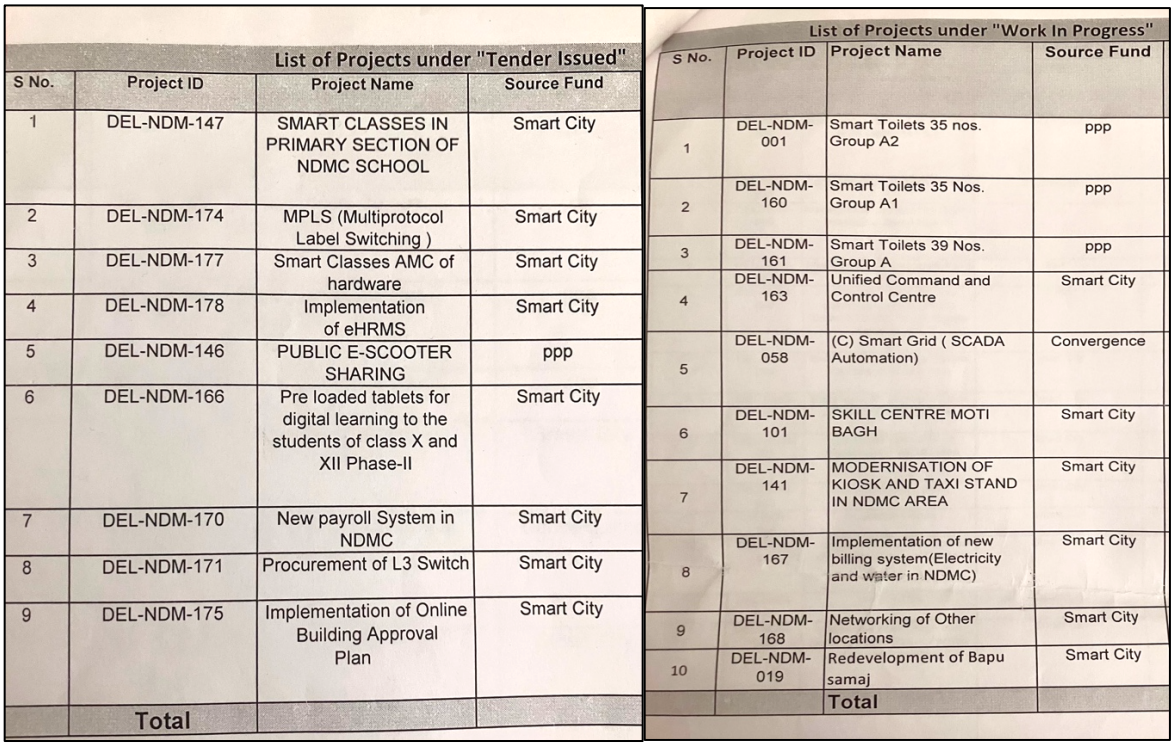
> NDMC has built huge structures, huge infrastructure. I don't personally think is replicable for all the ULBs because takes a lot of cost. At the same point of time, NDMC needs to show those big infrastructure because it's the center of India. Those kinds of projects might not be implemented everywhere, which are very case specific (Int. #4).



Figure 14: Solar Tree. Photograph by Aditi Singh, 2022.

One of the recent infrastructures built under New Delhi smart city initiative that comes to mind is a *solar tree selfie point* (Figure 14). It is the first solar tree installed in Delhi by the NDMC in 2018 (Singh 2023). It is a streetlight that has nine petals, and its each petal is made up of flexible solar panels (NDMC, n.d.). It includes sitting area of 16 individuals, equipped with IP67 digital

interactive panel, LED lights, and has mobile charging points (NDMC, n.d.). I could not access it during my field visits, always found it locked, and never saw any public accessing it during the time of my research. Nowadays, the solar tree is being replicated in other parts of Delhi by different municipal corporations, as the trees "serve the dual role of beautifying public space while generating clean energy while also functioning as street lights" (an official, quoted in Singh 2023). During an interview, an official handed me a document containing list of initiatives (Figure 15) that are implemented, in progress, and ones for which a tender has been issued for implementation. The list describes the solar tree as "Smart Road – World class street furniture."

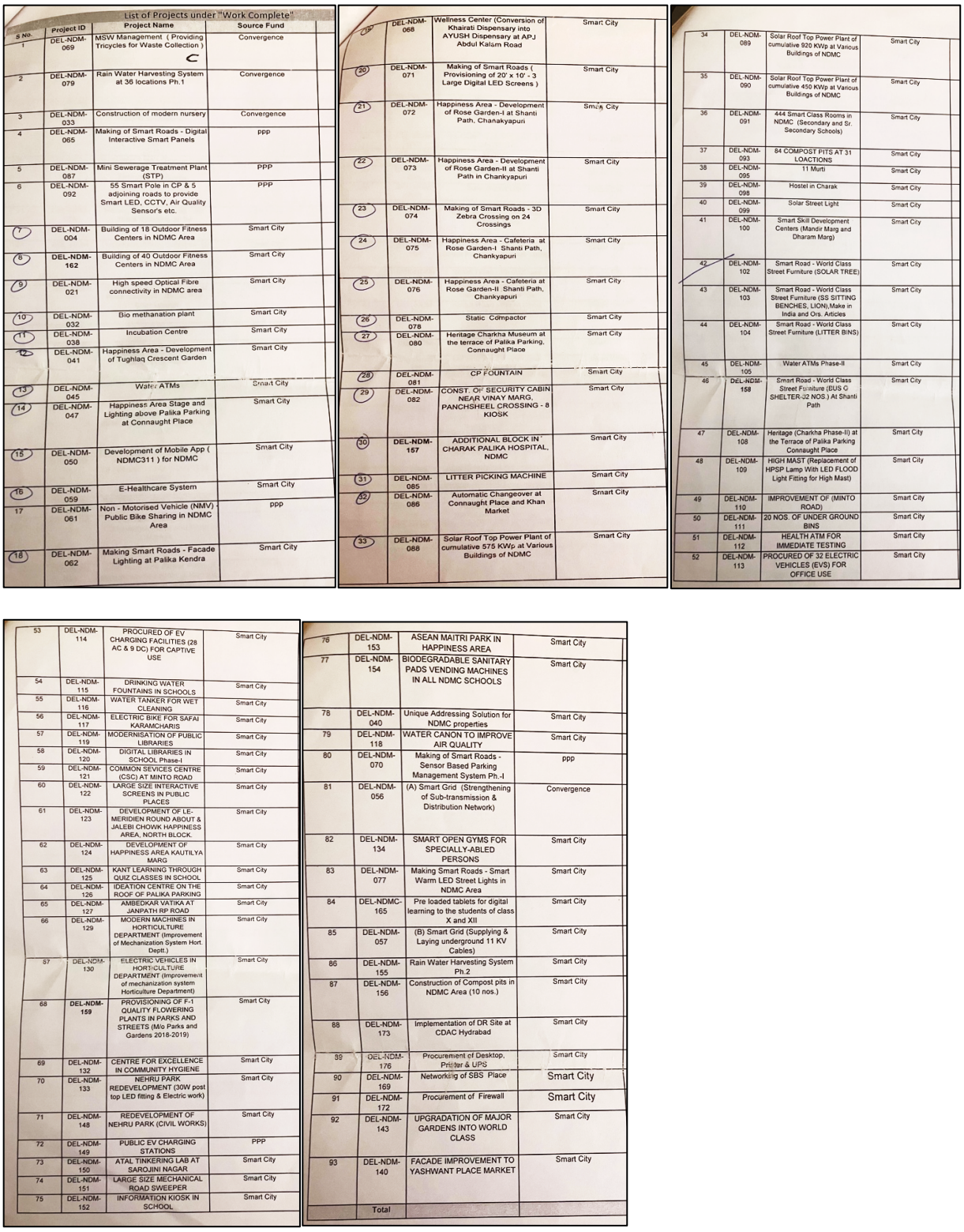


List of Projects under "Tender Issued"

S No.	Project ID	Project Name	Source Fund
1	DEL-NDM-147	SMART CLASSES IN PRIMARY SECTION OF NDMC SCHOOL	Smart City
2	DEL-NDM-174	MPLS (Multiprotocol Label Switching)	Smart City
3	DEL-NDM-177	Smart Classes AMC of hardware	Smart City
4	DEL-NDM-178	Implementation of eHRMS	Smart City
5	DEL-NDM-146	PUBLIC E-SCOOTER SHARING	ppp
6	DEL-NDM-166	Pre loaded tablets for digital learning to the students of class X and XII Phase-II	Smart City
7	DEL-NDM-170	New payroll System in NDMC	Smart City
8	DEL-NDM-171	Procurement of L3 Switch	Smart City
9	DEL-NDM-175	Implementation of Online Building Approval Plan	Smart City
	Total		

List of Projects under "Work In Progress"

S No.	Project ID	Project Name	Source Fund
1	DEL-NDM-001	Smart Toilets 35 nos. Group A2	ppp
2	DEL-NDM-160	Smart Toilets 35 Nos. Group A1	ppp
3	DEL-NDM-161	Smart Toilets 39 Nos. Group A	ppp
4	DEL-NDM-163	Unified Command and Control Centre	Smart City
5	DEL-NDM-058	(C) Smart Grid (SCADA Automation)	Convergence
6	DEL-NDM-101	SKILL CENTRE MOTI BAGH	Smart City
7	DEL-NDM-141	MODERNISATION OF KIOSK AND TAXI STAND IN NDMC AREA	Smart City
8	DEL-NDM-167	Implementation of new billing system(Electricity and water in NDMC)	Smart City
9	DEL-NDM-168	Networking of Other locations	Smart City
10	DEL-NDM-019	Redevelopment of Bapu samaj	Smart City
		Total	



List of Projects under "Work Complete"

S No.	Project ID	Project Name	Source Fund
1	DEL-NDM-069	MSW Management (Providing Tricycles for Waste Collection)	Convergence
2	DEL-NDM-079	Rain Water Harvesting System at 36 locations Ph.1	Convergence
3	DEL-NDM-033	Construction of modern nursery	Convergence
4	DEL-NDM-065	Making of Smart Roads - Digital Interactive Smart Panels	ppp
5	DEL-NDM-087	Mini Sewerage Treatment Plant (STP)	PPP
6	DEL-NDM-092	55 Smart Pole in CP & 5 adjoining roads to provide Smart LED, CCTV, Air Quality Sensor's etc.	PPP
7	DEL-NDM-004	Building of 18 Outdoor Fitness Centers in NDMC Area	Smart City
8	DEL-NDM-162	Building of 40 Outdoor Fitness Centers in NDMC Area	Smart City
9	DEL-NDM-021	High speed Optical Fibre connectivity in NDMC area	Smart City
10	DEL-NDM-032	Bio methanation plant	Smart City
11	DEL-NDM-038	Incubation Centre	Smart City
12	DEL-NDM-041	Happiness Area - Development of Tughlaq Crescent Garden	Smart City
13	DEL-NDM-045	Water ATMs	Smart City
14	DEL-NDM-047	Happiness Area Stage and Lighting above Palika Parking at Connaught Place	Smart City
15	DEL-NDM-050	Development of Mobile App (NDMC311) for NDMC	Smart City
16	DEL-NDM-059	E-Healthcare System	Smart City
17	DEL-NDM-061	Non - Motorised Vehicle (NMV) - Public Bike Sharing in NDMC Area	ppp
18	DEL-NDM-062	Making Smart Roads - Facade Lighting at Palika Kendra	Smart City
19	DEL-NDM-068	Wellness Center (Conversion of Khairati Dispensary into AYUSH Dispensary at APJ Abdul Kalam Road	Smart City
20	DEL-NDM-071	Making of Smart Roads (Provisioning of 20' x 10' - 3 Large Digital LED Screens)	Smart City
21	DEL-NDM-072	Happiness Area - Development of Rose Garden-I at Shanti Path, Chanakyapuri	Smart City
22	DEL-NDM-073	Happiness Area - Development of Rose Garden-II at Shanti Path in Chankyapuri	Smart City
23	DEL-NDM-074	Making of Smart Roads - 3D Zebra Crossing on 24 Crossings	Smart City
24	DEL-NDM-075	Happiness Area - Cafeteria at Rose Garden-I Shanti Path, Chankyapuri	Smart City
25	DEL-NDM-076	Happiness Area - Cafeteria at Rose Garden-II Shanti Path, Chankyapuri	Smart City
26	DEL-NDM-078	Static Compactor	Smart City
27	DEL-NDM-080	Heritage Charkha Museum at the terrace of Palika Parking, Connaught Place	Smart City
28	DEL-NDM-081	CP FOUNTAIN	Smart City
29	DEL-NDM-082	CONST. OF SECURITY CABIN NEAR VINAY MARG, PANCHSHEEL CROSSING - 8 KIOSK	Smart City
30	DEL-NDM-157	ADDITIONAL BLOCK IN CHARAK PALIKA HOSPITAL, NDMC	Smart City
31	DEL-NDM-085	LITTER PICKING MACHINE	Smart City
32	DEL-NDM-086	Automatic Changeover at Connaught Place and Khan Market	Smart City
33	DEL-NDM-088	Solar Roof Top Power Plant of cumulative 575 KWp at Various Buildings of NDMC	Smart City
34	DEL-NDM-089	Solar Roof Top Power Plant of cumulative 920 KWp at Various Buildings of NDMC	Smart City
35	DEL-NDM-090	Solar Roof Top Power Plant of cumulative 450 KWp at Various Buildings of NDMC	Smart City
36	DEL-NDM-091	444 Smart Class Rooms in NDMC (Secondary and Sr. Secondary Schools)	Smart City
37	DEL-NDM-093	84 COMPOST PITS AT 31 LOACTIONS	Smart City
38	DEL-NDM-095	11 Murti	Smart City
39	DEL-NDM-098	Hostel in Charak	Smart City
40	DEL-NDM-099	Solar Street Light	Smart City
41	DEL-NDM-100	Smart Skill Development Centers (Mandir Marg and Dharam Marg)	Smart City
42	DEL-NDM-102	Smart Road - World Class Street Furniture (SOLAR TREE)	Smart City
43	DEL-NDM-103	Smart Road - World Class Street Furniture (SS SITTING BENCHES, LION),Make in India and Ors. Articles	Smart City
44	DEL-NDM-104	Smart Road - World Class Street Furniture (LITTER BINS)	Smart City
45	DEL-NDM-105	Water ATMs Phase-II	Smart City
46	DEL-NDM-158	Smart Road - World Class Street Furniture (BUS C SHELTER-02 NOS.) At Shanti Path	Smart City
47	DEL-NDM-108	Heritage (Charkha Phase-II) at the Terrace of Palika Parking Connaught Place	Smart City
48	DEL-NDM-109	HIGH MAST (Replacement of HPSP Lamp With LED FLOOD Light Fitting for High Mast)	Smart City
49	DEL-NDM-110	IMPROVEMENT OF (MINTO ROAD)	Smart City
50	DEL-NDM-111	20 NOS. OF UNDER GROUND BINS	Smart City
51	DEL-NDM-112	HEALTH ATM FOR IMMEDIATE TESTING	Smart City
52	DEL-NDM-113	PROCURED OF 32 ELECTRIC VEHICLES (EVS) FOR OFFICE USE	Smart City
53	DEL-NDM-114	PROCURED OF EV CHARGING FACILITIES (28 AC & 9 DC) FOR CAPTIVE USE	Smart City
54	DEL-NDM-115	DRINKING WATER FOUNTAINS IN SCHOOLS	Smart City
55	DEL-NDM-116	WATER TANKER FOR WET CLEANING	Smart City
56	DEL-NDM-117	ELECTRIC BIKE FOR SAFAI KARAMCHARIS	Smart City
57	DEL-NDM-119	MODERNISATION OF FUBLIC LIBRARIES	Smart City
58	DEL-NDM-120	DIGITAL LIBRARIES IN SCHOOL Phase-I	Smart City
59	DEL-NDM-121	COMMON SEVICES CENTRE (CSC) AT MINTO ROAD	Smart City
60	DEL-NDM-122	LARGE SIZE INTERACTIVE SCREENS IN PUBLIC PLACES	Smart City
61	DEL-NDM-123	DEVELOPMENT OF LE-MERIDIEN ROUND ABOUT & JALEBI CHOWK HAPPINESS AREA, NORTH BLOCK.	Smart City
62	DEL-NDM-124	DEVELOPMENT OF HAPPINESS AREA KAUTILYA MARG	Smart City
63	DEL-NDM-125	KANT LEARNING THROUGH QUIZ CLASSES IN SCHOOL	Smart City
64	DEL-NDM-126	IDEATION CENTRE ON THE ROOF OF PALIKA PARKING	Smart City
65	DEL-NDM-127	AMBEDKAR VATIKA AT JANPATH RP ROAD	Smart City
66	DEL-NDM-129	MODERN MACHINES IN HORTICULTURE DEPARTMENT (Improvement of Mechanization System Hort. Deptt.)	Smart City
67	DEL-NDM-130	ELECTRIC VEHICLES IN HORTICULTURE DEPARTMENT (Improvement of mechanization system Horticulture Department)	Smart City
68	DEL-NDM-159	PROVISIONING OF F-1 QUALITY FLOWERING PLANTS IN PARKS AND STREETS (M/o Parks and Gardens 2018-2019)	Smart City
69	DEL-NDM-132	CENTRE FOR EXCELLENCE IN COMMUNITY HYGIENE	Smart City
70	DEL-NDM-133	NEHRU PARK REDEVELOPMENT (30W post top LED fitting & Electric work)	Smart City
71	DEL-NDM-148	REDEVELOPMENT OF NEHRU PARK (CIVIL WORKS)	Smart City
72	DEL-NDM-149	PUBLIC EV CHARGING STATIONS	PPP
73	DEL-NDM-150	ATAL TINKERING LAB AT SAROJINI NAGAR	Smart City
74	DEL-NDM-151	LARGE SIZE MECHANICAL ROAD SWEEPER	Smart City
75	DEL-NDM-152	INFORMATION KIOSK IN SCHOOL	Smart City
76	DEL-NDM-153	ASEAN MAITRI PARK IN HAPPINESS AREA	Smart City
77	DEL-NDM-154	BIODEGRADABLE SANITARY PADS VENDING MACHINES IN ALL NDMC SCHOOLS	Smart City
78	DEL-NDM-040	Unique Addressing Solution for NDMC properties	Smart City
79	DEL-NDM-118	WATER CANON TO IMPROVE AIR QUALITY	Smart City
80	DEL-NDM-070	Making of Smart Roads - Sensor Based Parking Management System Ph.-I	ppp
81	DEL-NDM-056	(A) Smart Grid (Strengthening of Sub-transmission & Distribution Network)	Convergence
82	DEL-NDM-134	SMART OPEN GYMS FOR SPECIALLY-ABLED PERSONS	Smart City
83	DEL-NDM-077	Making Smart Roads - Smart Warm LED Street Lights in NDMC Area	Smart City
84	DEL-NDMC-165	Pre loaded tablets for digital learning to the students of class X and XII	Smart City
85	DEL-NDM-057	(B) Smart Grid (Supplying & Laying underground 11 KV Cables)	Smart City
86	DEL-NDM-155	Rain Water Harvesting System Ph.2	Smart City
87	DEL-NDM-156	Construction of Compost pits in NDMC Area (10 nos.)	Smart City
88	DEL-NDM-173	Implementation of DR Site at CDAC Hydrabad	Smart City
89	DEL-NDM-176	Procurement of Desktop, Printer & UPS	Smart City
90	DEL-NDM-169	Networking of SBS Place	Smart City
91	DEL-NDM-172	Procurement of Firewall	Smart City
92	DEL-NDM-143	UPGRADATION OF MAJOR GARDENS INTO WORLD CLASS	Smart City
93	DEL-NDM-140	FACADE IMPROVEMENT TO YASHWANT PLACE MARKET	Smart City
	Total		

Figure 15: List of smart city initiatives in New Delhi.

During my three daytime visits to this solar tree selfie point, which is located right outside one of the busiest metro stations in Delhi – Connaught Place, and next to busiest round-about in the area, I always found its entrance gate locked. Once I noticed a person sleeping inside the locked gate, another time a person was inside talking on the phone, and no one was inside the gate the third time. Mostly people passed by this point, and I almost never saw people taking selfies. The people taking selfies could have been tourists, young crowd, or social media influencers. Perhaps those passing by and not taking selfies around this spot cross this spot daily to go to work, work in that area (as shopkeepers, auto-rickshaw drivers, beggars, small vendors on the streets selling beverages, clothes, toys, etc.), or live nearby.

These observations provide grounds for wondering whether the buzz and thrill of New Delhi smart city and such symbols of a new age technology have withered away. This trendy notion of taking selfies promotes a location, a place. And yet, the diminishing ability of such places to draw continuous attention hint how quickly trends get outdated; they are ephemeral and gets replaced by potentially some other latest tech fantasies. These observations illustrate how everyday practices challenge worlding visions, imaginaries, and discourse within smart city policy discourse. The notion that *world-class means desirable* and that New Delhi is the benchmark of capital cities gets questioned. For some people, the place is mundane and any desirability easily fades away from quotidian lives. This corroborates Roy and Ong (2011) stating that there is no one definition of world-class. My research adds that diverse world-class projects and their infrastructure are short lived and worlding dreams require questioning through consideration of everyday engagement and lived realities. Despite the symbolic status of the nation's capital, New Delhi smart city could not make a lasting impression with the selfie trend.

The solar tree echoes what Jirón et al. (2021) describe in their study of Santiago's smart city model as an "urban placebo…a means of disguising a broader intention or simply presenting a very basic intervention as more than it effectively is" (608). The solar tree is exactly what it purports to be – a selfie point, a place to click photos of oneself – and it constructs a specific narrative about aesthetics of the city that has *world class street furniture* for clicking selfies. This worlding practice declares that New Delhi, and by extension India, is of global relevance and circulates a world-class smart city image through social media "whilst, in reality, very little is being improved or effectively addressed in the city" (601). The discourse frames the solar tree as an infrastructure that generates clean energy, thereby contributing to reducing city's air pollution and benefitting all citizens. This shifts the focus away from and masks complex socio-economic realities of the city by constituting a narrative of "modern, sustainable and technologically advanced urban planning" (606). All the above narratives indicate how New Delhi smart city aims to be considered successful by becoming the global benchmark for capital cities. This echoes Wathne and Haarstad (2020, 132), who observe that when

> considered successful in adopting popular [smart] urban developments, certain cities tend to acquire a paradigmatic status. Consequently, they become destinations for policymakers and professionals in planning and architecture seeking to discover the secrets of their success.

5.2 Conclusion

In this chapter, I answered the second research question. New Delhi smart city decision-making processes reflect worlding strategies driven by New Delhi's status of national capital. New Delhi smart city decision-making processes reflect inherently exclusionary planning and implementation processes unfolding "in the messy realities and politics of implementation and contestation" (Kitchin 2015, 134). Close examination reveals a striking disconnect between discourse and on-ground realities.

CHAPTER 6: CONCLUSION

This chapter highlights the major takeaways of the study discussed in the summary section, the challenges posed to the study, and how these were navigated as well as scholarly and policy recommendations based on the findings and analysis.

6.1 Summary

There are many ways to conclude this dissertation. I offer one that weaves together various aspects of my research. To begin, one key lesson for me from this dissertation project lies in how I had to unlearn a dominant research practice: trying to fit my data in an already existing framework. This practice is exactly what the Southern urban scholars aim to resist and transform into practices that begin with the location of the study, with the local context. Initially, my approach was calibrated by the lens of what a smart city ought to be and how *I* wanted to view my data. This was a major part of my unlearning project.

By practicing keeping my theoretical assumptions aside while viewing my data and asking what my data reveals, I adapted a contextual lens for approaching my research. I had to learn to not reject my knowledge of the existing literature and theories and instead seek to understand my study site while also fostering an in-depth understanding of the scholarship. Only then can I speak about my research's context in relation to the existing literature and augment it. Based on the kind of discourses and narratives that emerged from my data, I adapted the conceptual lenses of worlding, urban *métis*, *jugaad*, and neoliberal rationality to better describe, support the analysis, and assist in sharing a nuanced understanding of a smart city, New Delhi smart city.

This dissertation analyzes New Delhi smart city and argues that the India's SCM program and New Delhi smart city leveraged the national capital status of the city and deployed it as a

vantage point for attaining command in global affairs. Existing smart city research tends to focus on practices of e-democracy in selected NDMC areas (see Kumar 2017), Delhi as the larger metropolitan area where New Delhi is located (see Saha and Singh 2017), or assesses smart tech initiatives without explicitly situating their analyses within the SCM policy framework (see Sarkar 2019). There have been studies published by non-profits focusing on a human rights lens to analyze all the 100 smart cities including New Delhi (see HRLN 2017; HRLN 2018) and by think tanks providing an empirical status of the progress of New Delhi smart city along with some of the projects' assessment (see Aijaz 2020). Nonetheless, a thorough assessment of the discourse of policy documents and supporting it with stakeholders' narratives along with examining city residents' engagement with the New Delhi smart city initiatives remains largely missing. This dissertation attempts to fill this gap.

In chapter two, I discussed smart cities and the variety of scholarly critiques on smart cities. Many scholars point to the persistent ambiguity around its conceptualization (Hollands 2008), calling it a corporate "storytelling activity" and a marketing rhetoric (Söderström, Paasche, and Klauser 2014, 309). Others highlight how software-driven infrastructures produces system vulnerabilities, making the system prone to viruses, glitches, and security hacks, which raises ethical concerns about privacy and confidentiality related to surveillance (Kitchin 2014). Some scholars also highlight a tendency to apply theoretical framings to all smart city initiatives, failing to account for the diversity of contexts (Datta 2015a; Cowley et al. 2019; Breslow 2021; Jirón et al. 2021; Miller et al. 2021; Mouton 2021) and thus, representing *actually existing smart cities* (Shelton, Zook, and Wiig 2015) in overly generalized ways (Kitchin 2015). This takes me to another critique that points to the persistent lack of engagement with smart cities context outside the Global North (Datta 2018a; Burns et al. 2021). More importantly, the local contextualities and

diverse outcomes of smart cities in the Global South remain underexplored in the literature. This has led to a surge in Southern urban critique engagements with the smart city concept.

Building on the literature on smart cities and Southern urban critique, my dissertation deploys a conceptual framework featuring different lenses. One concept central to this dissertation is worlding, developed by Ananya Roy and Aihwa Ong (2011). Worlding is a process through which cities seek to position themselves on the global stage. It involves ongoing situated worlding practices that bring together aspirations and visions of a variety of actors along with techniques of planning, policies, and strategies to reimagine urban futures (Roy and Ong 2011). My research employed Roy and Ong's framework of worlding practices such as modeling and inter-referencing, to demonstrate the role that New Delhi's status as a capital play in India's larger vision of global command. Worlding is not a single action or outcome but a continuous and intentional effort that is also inevitably subject to intense contestation. This takes me to two other notions that I also mobilize in some capacity – urban *métis* by Rohan Kalyan (2017) and *jugaad* by Amit Rai (2019).

What remains underexplored often in worlding practices is the active engagement by urban dwellers as they locate themselves and survive and exhibit strategies to maneuver within worlding projects, such as smart cities. Kalyan's (2017) discussion on urban *métis* – an "informed skepticism" (96) and resistance that is deployed by urban dwellers to survive the procedures and structures of control and surveillance – helps to illustrate the agential role that urban dwellers play in navigating the skepticism arising from the distrust in new policies such as smart cities. The practices described as urban *métis* closely resemble Rai's (2019) description of an everyday, "essentially Indian," (5) life practice called *jugaad*, a term that refers to a workaround or hack through which people navigate technological and infrastructural obstacles and improvise in contemporary Indian cities.

It is also evident in the literature on smart cities that neoliberal logics and rationalities are part of plan and policies of smart cities around the world. Neoliberal rationalities prioritize market-led and technological solutions in smart cities, and therefore, it is of no surprise that some of the strongest advocates for smart city development are big businesses (e.g., IBM, CISCO, Microsoft, Intel, Siemens, Oracle). My research contributes to the literature complicating this dominant framing that neoliberal logic is the central reasoning behind smart cities. Instead, it is only one of multiple drivers behind the aspirational policies and narratives of smart cities. I examined New Delhi smart city through qualitative research methods including semi-structured interviews, online survey questionnaire, participant observations, and a discourse analysis of key smart city policy documents by the central government, the ULB and the SPV to answer three research questions.

The first research question pertains to the discursive construction of the smart city concept within the plans and policies. My analysis demonstrates how the central government discourse is rhetorically organized around the idea that urbanization and infrastructure challenges can only be solved through development of smart cities. At the same time, the smart city concept is recontextualized across national and local contexts, allowing cities to choose their own smart city vision. Nonetheless, this recontextualization is standardized at a city level as cities are presented a list of required solutions that needs to be a part of their smart city proposals. My discourse analysis highlights a rhetoric of local governance empowerment that appears to support local context-specific planning. The New Delhi smart city discourse reveals that the central government desires a world-class global city status for New Delhi and becoming a smart city is a step in that direction. For instance, references to Barcelona represent a *modelling* worlding practice (Roy and Ong 2011) where adaptation of technologies developed in Barcelona comprises efforts to make New Delhi a world capital benchmark. Lastly, policy and planning discourses deploy a rhetoric of citizens'

aspirations that shifts smoothly and persuasively from the needs and aspirations of citizens to NDMC's and nation's ambitions.

Responding to my second research question, my analysis reveals that the vision and aspirations driving the New Delhi smart city are shaped more by central government officials, NDMC, and private partners than by the diverse needs of ordinary citizens, reinforcing exclusivity and elite interests. There is a significant disconnect between the New Delhi smart city discourse of inclusivity and the on-ground realities as vulnerable populations were largely excluded from citizen consultation processes. Many smart city initiatives, such as beautification projects and technological solutions for air quality, are seen as symbolic or superficial, failing to address deeper infrastructural or social needs. My findings further highlight an urban *métis*, the skepticism around the promises made by the government under New Delhi smart city and its initiatives. Based on previous experiences, urban dwellers noted the broken promises due to conventional bureaucracy and indicated limited hope of things improving from smart city policies. Beautification of the city to improve its aesthetics is central to many smart city initiatives in New Delhi; however, amenities such as the *solar tree selfie point* do not solve basic, everyday problems that are the real issues for many urban dwellers. Lastly, smart bike stands are often used for parking private bikes rather than for the intended shared bike system, indicating a mismatch between planning and actual needs and the lived hacks of citizens, their *jugaad*. I interpret these patterns as forms of everyday resistance or adaptation. They are evidence of citizens' *worlding from below* as they repurpose smart city infrastructure to fit their own needs, rather than those envisioned by planners.

Findings related to the third research question emphasize an intention toward inclusive planning on documents but exclusive implementation. With decision-making driven by central government guidelines and consultants, there was little adaptation to local needs and contexts.

Unlike other states, Delhi's state government played little to no role in the selection or funding of the New Delhi smart city. Instead, the central government and the NDMC were the main actors, with NDMC managing the initiative and funding, while the state government pursued its own smart city plans. This case illustrates how New Delhi's status as the national capital led to exceptional governance arrangements and prioritization, with certain areas favored for their feasibility and symbolic importance. Although an SPV, NDMC SCL, was created to implement the smart city, it struggled with limited manpower and resources, relying heavily on the parent municipal body (NDMC) for staff and expertise. This dependence led to delays, increased costs, and a lack of autonomy for the SPV. The situation reflects broader issues of governance, where formal guidelines are bypassed or adapted due to the city's unique status as the national capital. As a result, planning and implementation are shaped by intentional, top-down strategies that prioritize certain areas and interests. Similarly, some projects, like the solar tree selfie point, serve more as symbols of global relevance than as substantive improvements for all residents with potential to showcase "smart" technologies to both citizens and international visitors.

Conceptually, this dissertation contributes to the literature on worlding, specifically in the Indian context as research on Indian smart cities still lack engagement with various conceptual lenses, particularly worlding. Worlding not only allows the possibility of moving beyond postcoloniality but also allows for understanding and studying cities and their practices without following a standardized framework. Urban *métis* strengthens the concept of worlding by grounding it in the everyday practices of those who must inhabit these global urban transformations. Whereas worlding describes the process of new urban futures through plans, visions, and aspirational projects, urban *métis* reveals how such projects are lived, interpreted, and navigated on the ground. It shows that worlding is also continually mediated by the improvisations

of urban dwellers – much like the practices of *jugaad*, where residents and workers adapt technologies, infrastructures, and bureaucratic systems to make them function in precarious conditions. Empirically, this dissertation deployed a variety of methods to ensure a rich understanding of smart cities in Indian context. Despite facing challenges while data collection, this dissertation presents an example of both the kinds of challenges often arise during data collection and how new opportunities also arises, such as my use of LinkedIn platform.

6.2 Limitations

One of the biggest limitations during my research was that my data collection was heavily impacted by the Covid-19 pandemic outbreak in 2020, especially given that India faced its worst pandemic hit in mid-2021. My research design was built to support data collection processes from distance using online resources. However, later, I was able to visit India for six weeks in late 2022. Another limitation that further impacted my data collection was the lack of responses from potential participants of my study. I was frequently advised by some of the participants that I should try to visit Delhi to obtain data from officials. Based on their own experiences, some participants emphasized that it is hard to reach officials through emails, and they do not respond to emails most of the time. I had to constantly pivot my research strategy due to a lack of response from the officials of both the NDMC and NDMC SCL. Lastly, I could conduct my participant observations during specific hours of the daylight, keeping my own safety in mind as well as ease of access to a variety of public transportation. I acknowledge that my time limitation led to only specific kind of data being gathered.

6.2 Recommendations

Since my work had limited interactions with the local public due to Covid-19, future studies can conduct ethnographic research to study worlding. The research over a longer time would provide in-depth understanding of how differently situated urban population views, interprets, engages, and contest or challenge smart city initiatives, thereby, contributing with their own vision of what constitutes smart and presents worlding from below. My engagement particularly with conceptual lenses of urban *métis* and *jugaad* along with notions of worlding from below and blockade attempts to describe the everyday engagements with smart city initiatives and improvisations in everyday life. Further and more extensive ethnographic research can further strengthen these concepts and potentially, add new ones. This would enable researchers and policy makers to better understand the constraints and opportunities faced by diverse urban population regarding decision-making about their needs and aspirations.

A specific example would be conducting participant observations at different locations within the city while observing specific initiatives such as smart bikes, water ATMs, smart poles with air quality sensors security cameras, electricity supply via the smart grids, or the solar tree selfie points. A deeper examination of these sites can reveal, for instance, the extent and kind of usage of smart bikes and their infrastructure. It would also afford the chance to observe and assess lived 'hacks' and practical ways of living in exclusionary places such as a smart city that include energy infrastructure such as smart poles and electricity poles. Ethnographic research can provide more in-depth understanding of how urban dwellers may find a workaround energy infrastructure. Examples might include pirating electrical wires from electric poles and creating a *jugaad* for an electrical connection to serve their own immediate needs or stealing the security cameras and

reusing its parts such as cameras, cables, or video recorders and selling them in a repair market as parts and accessories.

One of my findings focused on an autorickshaw driver explaining his distrust in government policies such as smart cities because they rarely resolve everyday issues of rainwater clogging, despite the adoption of high-tech solutions of rainwater harvesting. A deeper engagement with urban *métis* would result from observing how urban dwellers deploy practical hacks, displaying their skepticism, calculation, and strategies to maneuver when confronted with infrastructural obstacles. A variety of such observations might also reveal diverse meanings of smart and smart urbanism, providing further evidence for contrasting policy discourse and on-ground everyday practices.

Some avenues of future research can also speak to how issues such as lack of access to clean water or 24x7 electricity supply are framed as technological problems. These issues are instead social and political ones and investing in technologies as quick fixes without considering on the ground, lived realities often lead to more harm than good, particularly to the disadvantaged population. Julie Gutham (2024) could provide guidance on these issues. While her book focuses on food systems, Guthman's arguments about technology as the solution characterized by a lack of engagement with local communities and on ground realities provides a valuable framing for many topics, including smart cities.

To address methodological challenges such as the limited response rate from potential participants, another avenue for future research could consider adopting more proactive recruitment strategies, such as extended engagement periods with participants, multiple follow-up attempts, or collaborations with local organizations and officials to build trust and improve participation. This would support more in-depth research on governance and institutions. Since the

SCM program officially ended on March 31, 2025, future studies can investigate the post-Mission period to evaluate its long-term governance implications, sustainability (sustained, adapted, or discontinued) of various initiatives, and the ways in which cities have institutionalized, or struggled to institutionalize, the smart city agenda. For instance, do the SPVs established under the Mission remain active or eventually dissolve? Are the incomplete projects completed, adapted, or left unfinished?

Lastly, future studies can also explore comparative analyses across cities to evaluate differing implementation trajectories and draw lessons for future urban development programs in India. With regard to smart cities in India, it would be interesting to compare two or more smart cities or New Delhi smart city with another state capital smart city in India. One can also explore New Delhi smart city with another national capital and its focus on smart city. Each of these potential studies would contribute valuable understanding of more than one smart city. For conducting a comparative study, I align with Robinson (2002; 2006) who pushes for a comparative analysis that emphasizes the diversity of life instead of comparing with an intention to find presence or absence of features in one or the other.

Robinson critiques a comparative approach that relies on pre-defined categories and comparisons, often with a few, Western cities becoming the benchmark to evaluate other cities. This was the argument against dominant global cities or world cities framework commonly deployed in urban theory (Roy 2011a). The focus in urban theory becomes evaluation rather than explaining the urban diversities, it becomes categorization of cities, and instead of paying attention to contextualities the focus remains on what theory says as compared to what context is trying to highlight. The aim is not a comparison that assumes hierarchy (reference point being the Western cities) or rule either the Global South or the Global North as lacking. Robinson is not only

concerned with misrepresentation but how such approaches of comparison restrict the understanding of cities, their different trajectories, and diverse forms of urbanism. In my dissertation, New Delhi is a national capital distinguished by complex governance. It would be valuable to do a comparative study of New Delhi with say, Bhopal smart city (state capital of Madhya Pradesh), to highlight what is present and what is different in each locale as per their local contexts. The goal would be to highlight the diversity, not to categorize one based on the other.

REFERENCES

Agarwal, P. 2023. Delhi fares poorly on protected areas, but scores well on diversity of species. *The Times of India*, February 28, 2023. https://timesofindia.indiatimes.com/city/delhi/delhi-fares-poorly-on-protected-areas-but-scores-well-on-diversity-of-species/articleshow/98290477.cms.

Ahl, H., and T. Nelson. 2015. How policy positions women entrepreneurs: A comparative analysis of state discourse in Sweden and the United States. *Journal of Business Venturing* 30 (2):273–291. doi: 10.1016/j.jbusvent.2014.08.002.

Aijaz, R. 2016. *Challenges for making smart cities in India*. New Delhi: Center for Asian Studies, Institut français des relations internationals.

Aijaz, R. 2020. *The Smart Cities Mission in Delhi, 2015-2019: An evaluation*. New Delhi: Observer Research Foundation.

Albino, V., U. Berardi, and R. M. Dangelico. 2015. Smart cities: Definitions, dimensions, performance, and initiatives. *Journal of Urban Technology* 22 (1):3–21. doi: 10.1080/10630732.2014.942092.

Amin, A., and S. Graham. 1997. The ordinary city. *Transactions of the Institute of British Geographers* 22 (4):411–429. doi: 10.1111/j.0020-2754.1997.00411.x.

Arranz. A., A. Abidi, A. Katakam, S. Kiyada, and S. Dayal. 2023. Rubble and ruin: How Delhi homes were turned to rubble before the G20. *Reuters*, September 05, 2023. https://www.reuters.com/graphics/G20-SUMMIT/SLUM/zdpxrxoaypx/.

Bansal, S. 2022. The plans for the world's next largest city are incomplete. *New York Times*, January 20, 2022. https://www.nytimes.com/2022/01/20/world/asia/delhi-worlds-largest-city.html.

Basu, I. 2019. Elite discourse coalitions and the governance of "smart spaces": Politics, power and privilege in India's Smart Cities Mission. *Political Geography* 68:77–85. doi: 10.1016/j.polgeo.2018.11.002.

Baviskar, A. 2003. Between violence and desire: Space, power, and identity in the making of metropolitan Delhi. *International Social Science Journal* 55 (175):89–98. doi: 10.1111/1468-2451.5501009.

Baviskar, A. 2006. Demolishing Delhi: World class city in the making. *Mute* 2 (3):88–95.

Bhan, G. 2009. 'This is no longer the city I once knew': Evictions, the urban poor and the right to the city in millennial Delhi. *Environment and Urbanization* 21 (1):127–142. doi: 10.1177/0956247809103009.

Breslow, H. 2021. The smart city and the containment of informality: The case of Dubai. *Urban Studies* 58 (3):471–486. doi: 10.1177/0042098020903233.

Business Standard. 2015. Why some cities were kept out of the smart city list. *Business Standard*, August 31, 2015. https://www.business-standard.com/article/economy-policy/why-some-cities-were-kept-out-of-the-smart-city-list-115083000835_1.html.

Burns, R., V. Fast, A. Levenda, and B. Miller. 2021. Smart cities: Between worlding and provincialising. *Urban Studies* 58 (3):461–470. doi: 10.1177/0042098020975982.

Calzada, I., and C. Cobo. 2015. Unplugging: Deconstructing the smart city. *Journal of Urban Technology* 22 (1):23–43. doi: 10.1080/10630732.2014.971535.

Caragliu, A., and C. F. Del Bo. 2016. Do smart cities invest in smarter policies? Learning from the past, planning for the future. *Social Science Computer Review* 34 (6):657–672. doi: 10.1177/0894439315610843.

Cardullo, P., and R. Kitchin. 2019a. Being a 'citizen' in the smart city: Up and down the scaffold of smart city participation in Dublin, Ireland. *GeoJournal* 84 (1):1–13. doi: 10.1007/s10708-018-9845-8.

Cardullo, P., and R. Kitchin. 2019b. Smart urbanism and smart citizenship: The neoliberal logic of "citizen-focused" smart cities in Europe. *Environment and Planning C: Politics and Space* 37 (5):813–830. doi:10.1177/0263774X18806508.

Centre for Policy Research. 2015. *The intersections of governments in Delhi*. New Delhi: Centre for Policy Research.

Census, 2011. NDMC population 2026. Accessed on April 22, 2026. https://www.census2011.co.in/census/city/50-ndmc.html.

Chakrabarty, D. 2000. *Provincializing Europe: Postcolonial thought and historical difference*. Princeton, NJ: Princeton University Press.

Chang, I.-C. C., S.-C. Jou, and M.-K. Chung. 2021. Provincialising smart urbanism in Taipei: The smart city as a strategy for urban regime transition. *Urban Studies* 58 (3):559–580. doi: 10.1177/0042098020947908.

Charnock, G., H. March, and R. Ribera-Fumaz. 2021. From smart to rebel city? Worlding, provincialising and the Barcelona model. *Urban Studies* 58 (3):581–600. doi: 10.1177/0042098019872119.

Cope, M. 2016. Organizing and analyzing qualitative data. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 373–392. Ontario: Oxford University Press.

Cowley, R., F. Caprotti, M. Ferretti, and C. Zhong. 2019. Ordinary Chinese smart cities. In *Inside smart cities*: *Place, politics and urban innovation,* ed. A. Karvonen, F. Cugurullo, and F. Caprotti, 45–64. New York and London: Routledge.

Curran, D., and A. Smart. 2021. Data-driven governance, smart urbanism and risk-class inequalities: Security and social credit in China. *Urban Studies* 58 (3):487–506. doi: 10.1177/0042098020927855.

Das, D. 2020. In pursuit of being smart? A critical analysis of India's smart cities endeavor. *Urban Geography* 41 (1):55–78. doi: 10.1080/02723638.2019.1646049.

Datta, A. 2015a. New urban utopias of postcolonial India: Entrepreneurial urbanization in Dholera smart city, Gujarat. *Dialogues in Human Geography* 5 (1):3–22. doi: 10.1177/2043820614565748.

Datta, A. 2018a. The digital turn in postcolonial urbanism: Smart citizenship in the making of India's 100 smart cities. *Transactions of the Institute of British Geographers* 43 (3):405–419. doi: 10.1111/tran.12225.

Datta, A. 2018b. 'Cityzens become netizens': Hashtag citizenships in the making of India's 100 smart cities. In *Creating smart cities*, ed. C. Coletta, L. Evans, L. Heaphy, and R. Kitchin, 131–143. New York: Routledge.

Delhi Development Authority. n.d. DDA at a glance. Delhi Development Authority. Accessed on June 15, 2025. http://164.100.63.104/dda-glance.

Delhi gets its common mobility card. *The Hindu*, January 09, 2018. https://www.thehindu.com/news/cities/Delhi/delhi-gets-its-common-mobility-card/article22400193.ece.

Dunn, K. 2016. Interviewing. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 149–188. Ontario: Oxford University Press.

Dupont, V. D. N. 2011. The dream of Delhi as a global city. *International Journal of Urban and Regional Research* 35 (3):533–554. doi: 10.1111/j.1468-2427.2010.01027.x.

Fairclough, N. 2003. *Analysing discourse: Textual analysis for social research*. London and New York: Routledge.

Flyvbjerg, B. 2006. Five misunderstandings about case-study research. *Qualitative Inquiry* 12 (2):219–245. doi: 10.1177/1077800405284363.

Gerring, J., and R. McDermott. 2007. An experimental template for case study research. *American Journal of Political Science* 51 (3):688–701. doi: 10.1111/j.1540-5907.2007.00275.x.

Ghertner, D. A. 2011a. Gentrifying the state, gentrifying participation: Elite governance programs in Delhi. *International Journal of Urban and Regional Research* 35 (3):504–532. doi: 10.1111/j.1468-2427.2011.01043.x.

Ghertner, A. 2011b. Rule by aesthetics: World-class city making in Delhi. In *Worlding cities: Asian experiments and the art of being global*, ed. A. Roy and A. Ong, 279–306. Oxford: Wiley-Blackwell.

Ghertner, D. A. 2012. Nuisance talk and the propriety of property: Middle class discourses of a slum-free Delhi. *Antipode* 44 (4):1161–1187. doi: 10.1111/j.1467-8330.2011.00956.x.

Ghertner, A. 2015. *Rule by aesthetics: World-class city making in Delhi*. New York: Oxford University Press.

Ghosh, B., and S. Arora. 2022. Smart as (un)democratic? The making of a smart city imaginary in Kolkata, India. *Environment and Planning C: Politics and Space* 40 (1):318–339. doi: 10.1177/23996544211027583.

Government of National Capital Territory of Delhi. n.d. Delhi map. Accessed on January 04, 2026. https://audit-delhi.aksamity.com/page/delhi-map.

Greenfield, A. 2013. *Against the smart city*. New York: Do Publications.

Guma, P. K., and A. Wiig. 2022. Smartness beyond the network: Water ATMs and disruptions from below in Mathare Valley, Nairobi. *Journal of Urban Technology* 29 (4):41–61. doi: 10.1080/10630732.2022.2037180.

Gupta, G. 2012. Delhi gets two more revenue districts: Southeast, Shahdara. *The Indian Express*, September 12, 2012. https://indianexpress.com/article/cities/delhi/delhi-gets-two-more-revenue-districts-southeast-shahdara/.

Gupta, R. 2023. When Delhi's air pollution gets worse: a photographic comparison. *The Guardian*, November 16, 2023. https://www.theguardian.com/world/2023/nov/16/when-delhis-air-pollution-gets-worse-a-photographic-comparison.

Guthman, J. 2024. *The problem with solutions: Why Silicon Valley can't hack the future of food*. California: University of California Press.

Haraway, D. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies* 14 (3):575–599. doi: 10.2307/3178066.

Harvey, D. A. 2005. *A brief history of neoliberalism*. Oxford: Oxford University Press.

Herrschel, T. 2013. Competitiveness and sustainability: Can "smart city regionalism" square the circle? *Urban Studies* 50 (11):2332–2348. doi: 10.1177/0042098013478240.

Hoelscher, K. 2016. The evolution of the smart cities agenda in India. *International Area Studies Review* 19 (1):28–44. doi: 10.1177/2233865916632089.

Höffken, J. I., and A. Limmer. 2019. Smart and eco-cities in India and China. *Local Environment* 24 (7):646–661. doi: 10.1080/13549839.2019.1628730.

Hollands, R. G. 2008. Will the real smart city please stand up? Intelligent, progressive or entrepreneurial? *City* 12 (3):303–320. doi: 10.1080/13604810802479126.

HRLN. 2017. *India's Smart Cities Mission: Smart for whom? Cities for whom? A human rights and social justice analysis of Smart City Proposals*. New Delhi: Housing and Land Rights Network.

HRLN. 2018. *India's Smart Cities Mission: Smart for whom? Cities for whom?* [Update 2018]. New Delhi: Housing and Land Rights Network.

India. 1985. The National Capital Region Planning Board Act. Act No. 2 of 1985. https://ncrpb.nic.in/pdf_files/Act%201985.pdf.

India TV. 2015. Delhi will have country's first 'smart city'. *India* TV, March 31, 2024. https://www.indiatvnews.com/politics/national/delhi-will-have-country-first-smart-city-naidu-24503.html.

India Today. 2018. Use metro cards to travel in DTC buses: Check how it works and list of countries where common mobility card is used. *India Today*, August 25, 2018. https://www.indiatoday.in/education-today/gk-current-affairs/story/use-metro-cards-to-travel-in-dtc-buses-check-how-it-works-and-list-of-countries-where-common-mobility-card-is-used-1322908-2018-08-25.

Irazábal, C., and P. Jirón. 2021. Latin American smart cities: Between worlding infatuation and crawling provincialising. *Urban Studies* 58 (3):507–534. doi: 10.1177/0042098020945201.

Jha, Ramanath. 2023. India's rising population and urbanization. *Observer Research Foundation*, July 11, 2023. https://www.orfonline.org/expert-speak/indias-rising-population-and-urbanisation.

Jirón, P., W. A. Imilán, C. Lange, and P. Mansilla. 2021. Placebo urban interventions: Observing smart city narratives in Santiago de Chile. *Urban Studies* 58 (3):601–620. doi: 10.1177/0042098020943426.

Joss, S., M. Cook, and Y. Dayot. 2017. Smart cities: Towards a new citizenship regime? A discourse analysis of the British smart city standard. *Journal of Urban Technology* 24 (4):29–49. doi: 10.1080/10630732.2017.1336027.

Kalyan, R. 2017. *Neo Delhi and the politics of postcolonial urbanism*. London: Routledge.

Kaur, J. 2025. Is Delhi a city or state? *Jagran* Josh, September 24, 2025. https://www.jagranjosh.com/general-knowledge/is-delhi-a-city-or-state-1820002861-1.

Kearns, R. A. 2016. Placing observation in the research toolkit. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 313–333. Ontario: Oxford University Press.

Kitchin, R. 2014. The real-time city? Big data and smart urbanism. *GeoJournal* 79 (1):1–14. doi: 10.1007/s10708-013-9516-8.

Kitchin, R. 2015. Making sense of smart cities: Addressing present shortcomings. *Cambridge Journal of Regions, Economy and Society* 8 (1):131–136. doi: 10.1093/cjres/rsu027.

Kumar, A. 2017. E-Democracy in New Delhi Municipal Council: A case of smart city planning processes. In *E-Democracy for Smart Cities*, ed. T. M. Vinod Kumar, 121–142. Singapore: Springer Nature.

Lawhon, M., and Y. Truelove. 2020. Disambiguating the southern urban critique: Propositions, pathways and possibilities for a more global urban studies. *Urban Studies* 57 (1):3–20. doi: 10.1177/0042098019829412.

Levenda, A. M., N. Keough, M. Rock, and B. Miller. 2020. Rethinking Public Participation in the Smart City. *Canadian Geographies / Géographies Canadiennes* 64 (3):344–358. doi: 10.1111/cag.12601.

Leitner, H., and E. Sheppard. 2016. Provincializing critical urban theory: Extending the ecosystem of possibilities. *International Journal of Urban and Regional Research* 40 (1):228–235. doi: 10.1111/1468-2427.12277.

Luque-Ayala, A., and S. Marvin. 2015. Developing a critical understanding of smart urbanism? *Urban Studies* 52 (12):2105–2116. doi: 10.1177/0042098015577319.

Martin, K. St., and M. Pavlovskaya. 2010. Secondary data. In *Research methods in geography: A critical introduction*, ed. B. Gomez and J. P. Jones III, 173–193. West Sussex, UK: Wiley-Blackwell.

McGuirk, P. M., and P. O'Neill. 2016. Using questionnaires in qualitative human geography. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 246–272. Ontario: Oxford University Press.

Miller, B., K. Ward, R. Burns, V. Fast, and A. Levenda. 2021. Worlding and provincialising smart cities: From individual case studies to a global comparative research agenda. *Urban Studies* 58 (3):655–673. doi: 10.1177/0042098020976086.

Mogul, R. 2023. Toxic foam coats sacred river near New Delhi as Indian capital battles hazardous pollution. *CNN*, November 9, 2023. https://edition.cnn.com/2023/11/09/india/india-delhi-toxic-foam-pollution-yamuna-intl-hnk/index.html.

MoUD. 2014a. *Draft concept note on smart city scheme (as on 10.09.2014)*. New Delhi: Ministry of Urban Development, Government of India.

MoUD. 2014b. *Draft concept note on smart city scheme (Revised as on 03.12.2014: Work under progress)*. New Delhi: Ministry of Urban Development, Government of India.

MoUD. 2015a. *Smart cities: Mission statement and guidelines*. New Delhi: Ministry of Urban Development, Government of India.

MoUD. 2015b. *Office memorandum: Citizen consultations to prepare Smart Cities Proposal (SCP)*. New Delhi: Ministry of Urban Development, Government of India.

MoUD. 2016. *Citizen engagement in the Smart Cities Challenge: Stories from the first 20 winning cities*. New Delhi: Ministry of Urban Development, Government of India.

Mouton, M. 2021. Worlding infrastructure in the global south: Philippine experiments and the art of being 'smart'. *Urban Studies* 58 (3):621–638. doi: 10.1177/0042098019891011.

Mullick, M., and A. Patnaik. 2022. Pandemic management, citizens, and the Indian Smart cities: Reflections from the right to the smart city and the digital divide. *City, Culture and Society* 30:1–10. doi: 10.1016/j.ccs.2022.100474.

Mullick, M., and A. Patnaik. 2024. Negotiating urban entities: Marginalized citizens, participation, and the Indian smart city. *International Journal of Urban Sciences* May:1–21. doi: 10.1080/12265934.2024.2358102.

Nagar, R. 1997. Exploring methodological borderlands through oral narratives. In *Thresholds in feminist geography*, ed. J. P. Jones III, H. J. Nast, and S. M. Roberts, 203–224. Maryland: Rowman and Littlefield.

Negi, R., and P. Srigyan. 2021. *Atmosphere of collaboration: Air pollution science, politics and ecopreneurship in Delhi*. New York: Routledge.

Neirotti, P., A. De Marco, A. C. Cagliano, G. Mangano, and F. Scorrano. 2014 Current trends in smart city initiatives: Some stylised facts. *Cities* 38:25– 36. doi: 10.1016/j.cities.2013.12.010.

New Delhi District, n.d. Demography. Accessed on April 22, 2026. https://dmnewdelhi.delhi.gov.in/demography/.

NDMC. n.d. Accessed on April 10, 2021. https://smartcity.ndmc.gov.in/content/projects/project-details/solar-power-projects.

NDMC. 2015. *New Delhi Smart City Proposal*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016a. *New Delhi Smart City Proposal (Annexure 2 self-assessment)*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016b. *New Delhi Smart City Proposal (Annexure 3)*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016c. *New Delhi Smart City Proposal (Annexure 4)*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016d. *New Delhi Smart City Proposal (Annexure 4 Section 4.6)*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016e. *New Delhi Smart City Proposal (Annexure 4 Section 4.7)*. Smart City Challenge stage 2, India Smart Cities Mission. New Delhi: New Delhi Municipal Council.

NDMC. 2016f. *Resolution No. 07(W-02)-26.04.16 (Special Purpose Vehicle)*. New Delhi: New Delhi Municipal Council.

NDMC SCL. 2017. *First annual report 2016-2017*. New Delhi: New Delhi Municipal Council Smart City Limited.

NDMC SCL. 2018. *Second annual report 2017-2018*. New Delhi: New Delhi Municipal Council Smart City Limited.

NDMC SCL. 2019. *Third annual report 2018-2019*. New Delhi: New Delhi Municipal Council Smart City Limited.

NDTV. 2023. Progress of waste removal at Ghazipur landfill not satisfactory: Delhi Chief Minister. *NDTV*, November 13, 2023. https://swachhindia.ndtv.com/progress-of-waste-removal-at-ghazipur-landfill-not-satisfactory-delhi-chief-minister-83972/.

Odendaal, N. 2021. Everyday urbanisms and the importance of place: Exploring the elements of the emancipatory smart city. *Urban Studies* 58 (3):639–654. doi: 10.1177/0042098020970970.

Parida, D. 2022. Fantasy visions, informal urbanization, and local conflict: An evolutionary perspective on smart city governance in India. *GeoJournal* 87 (6):4707–4718. doi: 10.1007/s10708-021-10521-3.

Parnell, S., and J. Robinson. 2012. (Re)theorizing cities from the Global South: Looking beyond neoliberalism. *Urban Geography* 33 (4):593–617. doi:10.2747/0272-3638.33.4.593.

Peck, J., N. Theodore, and N. Brenner. 2009. Neoliberal urbanism: Models, moments, mutations. *SAIS Review of International Affairs* 29 (1):49–66. doi:10.1353/sais.0.0028.

Praharaj, S., and H. Han. 2019. Cutting through the clutter of smart city definitions: A reading into the smart city perceptions in India. *City, Culture and Society* 18:1–10. doi: 10.1016/j.ccs.2019.05.005.

Prasad, D., and T. Alizadeh. 2020. What makes Indian cities smart? A policy analysis of Smart Cities Mission. *Telematics and Informatics* 55:1–15. doi: 10.1016/j.tele.2020.101466.

Prasad, D., T. Alizadeh, and R. Dowling. 2021. Multiscalar smart city governance in India. *Geoforum* 121:173–180. doi: 10.1016/j.geoforum.2021.03.001.

Prasad, D., T. Alizadeh, and R. Dowling. 2024. Smart city planning and the challenges of informality in India. *Dialogues in Human Geography* 14 (3):385–402. doi: 10.1177/20438206231156655.

Purandare, U. 2021. Who drives India's smart cities? Understanding the role of consulting firms in the Smart Cities Mission. In *Professional service firms and politics in a global era*, ed. C. Hurl and A. Vogelpohl, 79–96. Cham: Springer International Publishing

Purandare, U. 2023. The language of smart cities: Using discourse analysis to study India's Smart Cities Mission. *South Asia Multidisciplinary Academic Journal* 30:1–23 doi: 10.4000/samaj.8706.

Rai, A. S. 2019. *Jugaad times: Ecologies of everyday hacking in India.* Durham: Duke University Press.

Ravindra, A. 2020. Who governs Delhi? *Deccan Herald*, June 18, 2020. https://www.deccanherald.com/opinion/who-governs-delhi-851154.html.

Ritchie, J., J. Lewis, and G. Elam. 2003. Designing and selecting samples. In *Qualitative research practice: A guide for social science students and researchers*, ed. J. Ritchie and J. Lewis, 77–108. Thousand Oaks, CA: Sage.

Robinson, J. 2002. Global and world cities: A view from off the map. *International Journal of Urban and Regional Research* 26 (3):531–554. doi: 10.1111/1468-2427.00397.

Robinson, J. 2003. Postcolonialising geography: Tactics and pitfalls. *Singapore Journal of Tropical Geography* 24 (3):273–289. doi: 10.1111/1467-9493.00159.

Robinson, J. 2006. *Ordinary cities: Between modernity and development.* London: Routledge.

Rose, G. 2016. *Visual methodologies: An introduction to the interpretation of visual materials*. 4th ed. London: SAGE.

Roy, A. 2009a. The 21st-century metropolis: New geographies of theory. *Regional Studies* 43 (6):819–830. doi: 10.1080/00343400701809665.

Roy, A. 2009b. Why India cannot plan its cities: Informality, insurgence and the idiom of urbanization. *Planning Theory* 8 (1):76–87. doi: 10.1177/1473095208099299.

Roy, A. 2011a. Urbanisms, worlding practices and the theory of planning. *Planning Theory* 10 (1):6–15. doi: 10.1177/1473095210386065.

Roy, A. 2011b. The blockade of the world-class city: Dialectical images of Indian urbanism. In *Worlding cities: Asian experiments and the art of being global*, ed. A. Roy and A. Ong, 259–278. Oxford: Wiley-Blackwell.

Roy, A., and A. Ong, eds. 2011. *Worlding cities: Asian experiments and the art of being global*. Oxford: Wiley-Blackwell.

Saha, A. R., and N. Singh. 2017. Smart city for a sustainable future: Is Delhi ready? *Journal of Innovation for Inclusive Development* 2 (1):13–23.

Sarkar, A. 2019. The role of new "smart technology" to provide water to the urban poor: A case study of water ATMs in Delhi, India. *Energy, Ecology and Environment* 4 (4):166–174. doi: 10.1007/s40974-019-00119-4.

Sarkar, A. 2022. How "smart" are we with smart technology: Comparison of water ATMs in Nairobi and Delhi. *Water Practice and Technology* 17 (10):2160–2170. doi: 10.2166/wpt.2022.117.

Schmidt, J. J. 2020. Pop-up infrastructure: Water ATMs and new delivery networks in India. *Water Alternatives* 13 (1):119–140.

Scott, J. W. 2007. Smart growth as urban reform: A pragmatic "recoding" of the new regionalism. *Urban Studies* 44 (1):15–35. doi: 10.1080/00420980601074284.

Sharma, N. 2019. 3 years after launch, New Delhi Municipal Council smart city work in progress. *The Economic Times*, March 22, 2019. https://economictimes.indiatimes.com/news/economy/infrastructure/3-years-after-launch-new-delhi-municipal-council-smart-city-work-in-progress/articleshow/68506918.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.

Shatkin, G. 2011. Planning privatopolis: Representation and contestation in the development of urban integrated mega-projects. In *Worlding cities: Asian experiments and the art of being global*, ed. A. Roy and A. Ong, 77–97. Oxford: Wiley-Blackwell.

Shelton, T., M. Zook, and A. Wiig. 2015. The 'actually existing smart city'. *Cambridge Journal of Regions, Economy and Society* 8 (1):13–25. doi: 10.1093/cjres/rsu026.

Shelton, T., and T. Lodato. 2019. Actually existing smart citizens: Expertise and (non)participation in the making of the smart city. *City* 23 (1):35–52. doi: 10.1080/13604813.2019.1575115.

Sheppard, E., H. Leitner and A. Maringanti. 2013. Provincializing global urbanism: A manifesto. *Urban Geography* 34 (7):893–900. doi: 10.1080/02723638.2013.807977.

Simone, A.M. 2001. On the worlding of African cities. *African Studies Review* 44 (2):15–41. doi: 10.2307/525573.

Singh, K., and V. Kumar. 2022. Delhi's smart city plans ignore the urban poor, focus only on elite areas. *Citizen Matters*, May 25, 2023. https://citizenmatters.in/new-delhi-ndmc-smart-city-projects-and-urban-poor/.

Singh, P. 2023. Solar trees to be installed in South Delhi's Sheikh Sarai. *Hindustan Times*, April 24, 2023. https://www.hindustantimes.com/cities/delhi-news/pwd-to-install-solar-trees-in-delhi-s-sheikh-sarai-to-generate-clean-energy-beautify-area-project-worth-62-lakh-sustainable-solar-delhi-101682360771160.html.

Singh, S. 2025. What's tech-ing in Delhi-NCR! Powering global financial services. *The Times of India*, June 04, 2024. https://timesofindia.indiatimes.com/city/delhi/whats-tech-ing-in-delhi-ncr-powering-global-financial-services/articleshow/121611264.cms.

Smith, R. M., P. A. Pathak, and G. Agrawal. 2019. India's "Smart" Cities Mission: A preliminary examination into India's newest urban development policy. *Journal of Urban Affairs* 41 (4):518–534. doi: 10.1080/07352166.2018.1468221.

Söderström, O., T. Paasche, and F. Klauser. 2014. Smart cities as corporate storytelling. *City* 18 (3):307–320. doi: 10.1080/13604813.2014.906716.

Spicer, Z., N. Goodman, and N. Olmstead. 2021. The frontier of digital opportunity: Smart city implementation in small, rural and remote communities in Canada. *Urban Studies* 58 (3):535–558. doi: 10.1177/0042098019863666.

Srigyan, P. and R. Negi. 2020. 6+ Cities Delhi: Archives. In *6+ Cities: Delhi*. In *Air Pollution Governance in India*, edited by Aalok Khandekar. *Air Pollution Governance in Six+ Cities*, edited by Kim Fortun and Mike Fortun. https://theasthmafiles.org/curate/pece-essay/6-cities-delhi-archives.

Stock, R. 2021. *Deus ex mitigata*: Denaturalizing the discursive power of solar India. *Environment and Planning E: Nature and Space* 4 (2):354–382. doi: 10.1177/2514848620908166.

Stratford, E., and M. Bradshaw. 2016. Qualitative research design and rigour. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 117–129. Ontario: Oxford University Press.

Suraksha, P. 2016. NDMC focuses on smart city, JJ cluster lack basic needs. *Times of India*, February 17, 2016. https://timesofindia.indiatimes.com/city/delhi/ndmc-focuses-on-smart-city-jj-cluster-lack-basicneeds/articleshow/51011256.cms.

Townsend, A.M. 2013. *Smart cities: Big data, civic hackers, and the quest for a new utopia*. New York: W.W. Norton & Co.

United Nations. 2015. *Smart Cities*. New York, USA: Habitat III Issue Papers 21.

University of Delhi, n.d. About DU: Overview. Accessed on April 22, 2026. https://www.du.ac.in/index.php?page=about-du-2.

Van Gils, B. A. M., and A. Bailey. 2023. Revisiting inclusion in smart cities: Infrastructural hybridization and the institutionalization of citizen participation in Bengaluru's peripheries. *International Journal of Urban Sciences* 27:29–49. doi: 10.1080/12265934.2021.1938640.

Vanolo, A. 2014. Smartmentality: The smart city as disciplinary strategy. *Urban Studies* 51 (5):883–898. doi: 10.1177/0042098013494427.

Vashisth, N. 2018. Clean, cheap drinking water: How water ATMs in Delhi are bringing this precious resource to citizens. *Citizen Matters*. Accessed on June 01, 2025. https://citizenmatters.in/delhi-drinking-water-atm-jal-board-tata-piramal-jana-jal/.

Waitt, G. 2016. Doing Foucauldian discourse analysis – revealing social realities. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 217–240. Ontario: Oxford University Press.

Wathne, M. W., and H. Haarstad. 2020. The smart city as mobile policy: Insights on contemporary urbanism. *Geoforum* 108:130–138. doi: 10.1016/j.geoforum.2019.12.003.

Watson, V. (2014) African urban fantasies: Dreams or nightmares? *Environment and Urbanization* 26 (1):215–231. doi: 10.1177/0956247813513705.

Wiig, A. 2015. IBM's smart city as techno-utopian policy mobility. *City* 19:258–273. doi: 10.1080/13604813.2015.1016275.

Winchester, H. P. M., and M. V. Rofe. 2016. Qualitative research and its place in human geography. In *Qualitative research methods in human geography*, ed. I. Hay, 4th ed., 3–28. Ontario: Oxford University Press.

Yin, R. K. 2003. *Case study research: Design and methods.* 3rd ed. California: SAGE.

Yuloskov, A., M. R. Bahrami, M. Mazzara, and I. Kotorov. 2021. Smart cities in Russia: Current situation and insights for future development. *Future Internet* 13 (10):1–10. doi: 10.3390/fi13100252.

APPENDIX 1: ONLINE SURVEY QUESTIONNAIRE

Q1. Consent to Participate in Research

EMPLOYMENT CATEGORY

Q1. Employment Category:
(Select the one that applies to you)

- National OR State OR City Government
- Private Sector OR Consultancies
- Multinational Agency OR Research Organization OR Policy Think Tank
- NGO OR Civil Society Organization
- Others, please specify

SURVEY

- ***National OR State OR City Government***

Q1. Are you currently working on or associated with New Delhi's smart city project?

- Yes
- No

Q2. Please briefly explain your role/position in the New Delhi's smart city project.

Q3. Have you previously worked on New Delhi's smart city project?

- Yes
- No

Q4. Please briefly describe your role/position and experience of New Delhi's smart city project.

Q5. Do most of New Delhi's citizens benefit from New Delhi's smart city project?

- Yes
- No
- I do not know

Q6. If yes, who are those citizens benefitting from New Delhi's smart city project? Please list/describe here.

Q7. If no, why do you have this opinion?

Q8. How important is the citizens' engagement in New Delhi's smart city project planning?

- Not important
- Slightly important
- Moderately important
- Important
- Very important

Q9. Which sections of the urban population were recruited in the citizen consultation process of New Delhi's smart city project? Please select all that apply.

- Women
- Children
- Disabled
- Senior citizens
- Trangender
- Other Backward Castes (OBC)
- Scheduled Castes (SC)
- Scheduled Tribes (ST)
- Different religions
- Different ethnicities
- Slums/Jhuggi-Jhopri (JJ) clusters
- Vendors
- Resident Welfare Associations (RWAs)
- Economically Weaker Sections (EWSs)
- Hotel and Traders Association
- Diplomats – Embassies and High Commissions
- Elected representatives
- Students – schools and colleges
- If additional, please list below
- I do not know

Q10. Which sections of the urban population engaged in the citizen consultation process of New Delhi's smart city project? Please select all that apply.

- Women
- Children
- Disabled
- Senior citizens
- Trangender
- Other Backward Castes (OBC)
- Scheduled Castes (SC)
- Scheduled Tribes (ST)
- Different religions
- Different ethnicities
- Slums/Jhuggi-Jhopri (JJ) clusters
- Vendors
- Resident Welfare Associations (RWAs)
- Economically Weaker Sections (EWSs)

- Hotel and Traders Association
- Diplomats – Embassies and High Commissions
- Elected representatives
- Students – schools and colleges
- If additional, please list below
- I do not know

Q11. Assess the impact of chosen New Delhi Municipal Council (NDMC) location for New Delhi's smart city project on vulnerable population of the city.

- Very negative
- Negative
- Neutral
- Positive
- Very positive

Q12. How were citizens recruited for citizen engagement and consultation in New Delhi's smart city project? Please select all that apply.

- Social media (Twitter/Facebook)
- Public announcements in local gathering
- Face-to-face recruitment
- Invitation letter/pamphlet
- Telephonic recruitment
- Advertising (posters/flyers/videos)
- Resident Welfare Associations (RWAs)
- Hotel and Traders Association
- If additional, please list below
- I do not know

Q13. What were the key factors in citizen's selection process for the consultation process? Please select all that apply.

- Employment qualification
- Education
- Caste
- Religion
- Ethnicity
- Gender
- Age
- Access to cell phone
- Access to smart phone and internet
- User of Information and Communication Technology (ICT)
- Eminent citizen
- If additional, please list below
- I do not know

Q14. Were any sections of urban population excluded from citizen engagement or not consulted in the citizen consultation process?

- Yes
- No
- I do not know

Q15. If yes, please list who are those excluded sections of urban population and why have they been missing/excluded?

Q16. If not, please describe briefly what efforts were made by New Delhi Municipal Council (NDMC) to ensure engagement of every section of urban population?

Q17. Overall, how equitable (fair and impartial) do you think New Delhi's smart city project is for the following vulnerable populations? Please write a number in the box below the listed options using the following scale:
1= Not equitable 2= less equitable 3= Neutral 4= Somewhat equitable 5= Very equitable

- Women
- Children
- Disabled
- Senior citizens
- Transgender
- Other Backward Castes (OBC)
- Scheduled Castes (SC)
- Scheduled Tribes (ST)
- Different ethnicities
- Slums/Jhuggi-Jhopri (JJ) clusters
- Economically Weaker Sections (EWSs)

Q18. Was New Delhi Municipal Council (NDMC) part of the citizen consultation process in New Delhi's smart city project?

- Yes
- No
- I do not know

Q19. If yes, what role has NDMC played during the citizen consultation processes?

Q20. If no, why NDMC wasn't part of citizen consultation processes?

Q21. Did KPMG Advisory Services Pvt. Ltd participate in the citizen consultation process of New Delhi's smart city project?

- Yes
- No
- I do not know

Q22. Did New Delhi Municipal Council (NDMC) work with other organizations and/or companies during the citizen consultation process.

- Yes
- No
- I do not know

Q23. If yes, please list the names of those organizations and/or companies.

Q24. What is your opinion of the New Delhi Municipal Council's (NDMC) smart city project in New Delhi?

- Very unfavorable
- Unfavorable
- Neutral
- Favorable
- Very favorable

Q25. Please briefly discuss why do you have this opinion?

Q26. What is your opinion about the role of citizens in the successful planning of New Delhi's smart city project?

- Very unfavorable
- Unfavorable
- Neutral
- Favorable
- Very favorable

Q27. Please briefly discuss why do you have this opinion?

Q28. What is your opinion about the role of citizens in the successful implementation of New Delhi's smart city project?

- Very unfavorable
- Unfavorable
- Neutral
- Favorable
- Very unfavorable

Q29. Please briefly discuss why do you have this opinion?

Q30. What is your opinion about the experience of working with New Delhi Municipal Council (NDMC) in the citizen consultation process?

- Very unfavorable
- Unfavorable
- Neutral

- Favorable
- Very favorable

Q31. Please briefly discuss why do you have this opinion?

Q32. What is your opinion about the experience of working with KPMG Advisory Services Pvt. Ltd in the citizen consultation process?

- Very unfavorable
- Unfavorable
- Neutral
- Favorable
- Very favorable

Q33. Please briefly discuss why do you have this opinion?

Q34. Did government face any challenges during the citizen consultation process in New Delhi's smart city project?

- Yes
- No
- I do not know

Q35. If yes, please briefly list here some of the challenges faced by the government.

Q36. Has the KPMG Advisory Services Pvt. Ltd encountered any struggles during the citizen consultancy process?

- Yes
- No
- I do not know

Q37. If yes, please briefly discuss what were some of the struggles faced by the KPMG Advisory Services Pvt. Ltd?

Q38. Has New Delhi Municipal Council (NDMC) faced any struggles during the citizen consultancy process?

- Yes
- No
- I do not know

Q39. If yes, please briefly discuss what were some of the struggles faced by the NDMC?

Q40. Has the New Delhi Municipal Council (NDMC) been offering suggestions to the KPMG Advisory Services Pvt. Ltd during the citizen consultancy process?

- Yes
- No

- I do not know

Q41. If yes, what are some of the suggestions offered by the NDMC to the KPMG Advisory Services Pvt. Ltd?

Q42. Did New Delhi Municipal Council (NDMC) face any challenges in ensuring the engagement of vulnerable population in the citizen consultation process?
- Yes
- No
- I do not know

Q43. Did New Delhi Municipal Council (NDMC) take any steps to resolve those challenges?
- Yes
- No
- I do not know

Q44. If yes, please briefly discuss the challenges and how has the NDMC endeavored to resolve those challenges?

- ***Private Sector OR Consultancies s***

Questions in addition to *Q1 To Q44*:

Q45. Did your organization participate in the citizen consultation process of New Delhi's smart city project?
- Yes
- No
- I do not know

Q46. If yes, please briefly discuss the role of your organization in the citizen consultation process of New Delhi's smart city project.

Q47. Were any sections of urban population excluded from citizen engagement or not consulted in the citizen consultation process?
- Yes
- No
- I do not know

Q48. If yes, please list who are those excluded sections of urban population and why have they been missing/excluded?

Q49. If not, please describe briefly what efforts were made by KPMG Advisory Services Pvt. Ltd to ensure engagement of every section of urban population?

Q50. Did KPMG Advisory Services Pvt. Ltd participate in the citizen consultation process of New Delhi's smart city project?

- Yes
- No
- I do not know

Q51. If yes, please briefly describe the role of KPMG Advisory Services Pvt. Ltd in citizen consultation process?

Q52. If no, please briefly describe why KPMG Advisory Services Pvt. Ltd wasn't a part of citizen consultation process?

Question in-lieu of Q42, Q43, and Q44:

Q53. Did KPMG Advisory Services Pvt. Ltd face any challenges in ensuring the engagement of vulnerable population in the citizen consultation process?
- Yes
- No
- I do not know

Q54. Did KPMG Advisory Services Pvt. Ltd take any steps to resolve those challenges?
- Yes
- No
- I do not know

Q55. If yes, please briefly discuss the challenges and how has the KPMG Advisory Services Pvt. Ltd endeavored to resolve those challenges?

- ***Multinational Agency OR Research Organization OR Policy Think Tank OR NGO OR Civil Society Organization OR Others, please specify***

Questions in addition to *National OR State OR City Government*:

Q56. Did your organization participate in the citizen consultation process of New Delhi's smart city project?
- Yes
- No
- I do not know

Q57. If yes, please briefly discuss the role of your organization in the citizen consultation process of New Delhi's smart city project.

Q58. Were any sections of urban population excluded from citizen engagement or not consulted in the citizen consultation process?

- Yes
- No
- I do not know

Q59. If yes, please list who are those excluded sections of urban population and why have they been missing/excluded?

Q60. If not, please describe briefly what efforts were made by New Delhi Municipal Council (NDMC) and KPMG Advisory Services Pvt. Ltd to ensure engagement of every section of the urban population?

Q61. Has your organization encountered any struggles in ensuring the engagement of vulnerable population in the citizen consultation process?

- Yes
- No
- I do not know

Q62. If yes, please briefly discuss what were some of the struggles faced by your organization?

Q63. Has your organization been offering suggestions to the KPMG Advisory Services Pvt. Ltd and to the New Delhi Municipal Council (NDMC) during the citizen consultancy process?

- Yes
- No
- I do not know

Q64. If yes, what are some of the suggestions your organization has offered to the KPMG Advisory Services Pvt. Ltd and/or to the New Delhi Municipal Council (NDMC)?

Q65. Did your organization’s suggestions incorporate into the citizen consultancy process?

- Yes
- No
- I do not know

Q66. If no, what were the reasons for not incorporating your organization's suggestions?

Q67. Did you/your organization engage with KPMG Advisory Services Pvt. Ltd during the citizen consultation process?

- Yes
- No
- I do not know

Q68. If yes, please briefly describe your experience(s) of engaging/working with KPMG Advisory Services Pvt. Ltd.

Q69. Did you/your organization engage with New Delhi Municipal Council (NDMC) during the citizen consultation process?

- Yes
- No
- I do not know

Q70. If yes, please briefly describe your experience(s) of engaging/working with the NDMC.

APPENDIX 2: SEMI-STRUCTURED INTERVIEW GUIDE

Guide A

- **<u>If government official:</u>**

1. First, what is your current position? Can you discuss your responsibilities? What was your previous job/role before this position/job?
2. Could you please tell me about your role in the 'Smart Grid & Energy Management' project of the NDMC SCL?
3. What were your roles during both the designing and implementation phases?
4. With which of the following agencies have you been working?
5. What were some of the reasons to shortlist 'Smart Grid & Energy Management' project of the NDMC SCL?
6. What has the 'energy management' part of the project entailed? Can you elaborate on the decision-making and implementation of the same?
7. What sorts of projects have been planned and implemented under the solar projects? What are their locations, their capacity size and for what purposes they have been designed and implemented?
8. Who would you say are the major actors or institutions in the planning and implementation of the solar projects in the New Delhi smart city?
9. Which organizations or companies participated in the solar projects decision-making processes?
    How have different organizations been participating in the decision-making?
    What has it been like to work with these different entities?
10. What is your opinion about your experience of working with different ministries and departments, different private sector companies, and multiple civil society organizations? Could you please elaborate in what capacity and on what projects you have worked with them?
11. How were the solar projects planned and implemented for the area-based development (ABD)?
12. How were the solar projects planned and implemented for the pan-city development (PCD)?
13. Were you involved/participated in the process of selection of locations for the solar projects in both area-based development (ABD) and pan-city development in New Delhi?
    What was the process of selection of the locations?
    In addition, which actors and/or institutions were involved in this process?
    Which locations/areas were not selected?
14. Do you know why these locations were selected for the solar projects in both ABD and pan-city development?
    What could be some of the future locations for solar projects in the city?
15. What are some of the successes while selecting and finalizing the locations?
16. Are you aware of any struggles associated with selecting and finalizing the locations?
    If so, what were they?
    How were the struggle(s) and conflict(s) resolved?

17. Can you describe the implementation process for the solar projects?
18. What was the process of funds allocation, types of funds allocated, and the institutions involved for the solar projects in both ABD and pan-city development?
19. What was the process of communicating and consulting the solar projects with the citizens?
    Who were communicated with and consulted for the solar projects?
20. What kinds of need are being addressed by the solar projects?
21. How are the solar projects addressing the diversity of the citizens?
22. How are the solar projects aiming to address the existing social differences in the city/society?
23. What are some of the specific aspects of this project that will benefit the following?
    a. government officials,
    b. residents,
    c. tourists,
    d. business owners,
    e. informal settlement dwellers
24. How does the solar projects connect with the specific goals of the previous urban schemes and projects on infrastructure and services?
25. What do you think are the most important achievements of this project?
26. How do these solar projects connect with NDMC's overall goal in the smart city project of 'sustainability' or 'sustainable environment' or 'sustainable development'?
    Can you tell me how the state defines each of these three concepts? How are they measured?
    How does the state aim to achieve these goals via smart city mission in New Delhi?
27. Were any existing solar projects from a different city/country inspired the planning and implementing of solar projects in New Delhi smart city?
    If yes, can you provide examples of existing solar projects that were referred to while planning and implementing in New Delhi smart city?
    If no, can you describe the thought process while planning and institutional involvement of these projects and later implementation?
28. According to you/your ministry/department, what could be some future directions towards solar projects in the city?
    In your opinion, where are the gaps and shortfalls of the current solar projects under NDMC smart city?
29. Is there anything else you would like to mention?
30. Who else do you think I should talk to?
31. Can you provide me with their contact information or put me in touch with them?
32. Do you have any questions for me before we conclude?

- **<u>If a private sector employee:</u>**

1. First, what is your current position? Can you discuss your responsibilities? What was your previous job/role before this position/job?
2. Could you please tell me about your/your organization's role in the 'Smart Grid & Energy Management' project of the NDMC SCL?

3. What were your roles during both the designing and implementation phases?
4. What are the different projects planned and implemented under the solar projects in collaboration with your company?
5. Who would you say are the major actors or institutions in the planning of the solar projects in the New Delhi smart city?
6. What is your opinion of experience of working with (if) different ministries and departments, (if) different private sector companies, and (if) multiple civil society organizations? Could you please elaborate in what capacity and on what projects you have worked with them?
7. How were the solar projects planned and implemented for the area-based development (ABD)?
8. How were the solar projects planned and implemented for the pan-city development (PCD)?
9. Were you involved/participated in the process of selection of locations for the solar projects in both area-based development (ABD) and pan-city development in New Delhi?
    - What was the process of selection of the locations?
    - In addition, which actors and/or institutions were involved in this process?
    - Which locations/areas were not selected?
10. What was the process of selection of locations for the solar projects in both area-based development (ABD) and pan-city development in New Delhi?
11. What were the reasons for selected locations for the solar projects in both ABD and pan-city development?
    - What could be some of the future locations in the city?
12. What are some of the successes while selecting and finalizing the locations?
13. Were there any struggles faced while selecting and finalizing the locations?
    If so, what were they?
    How were the struggle(s) and conflict(s) resolved?
14. Can you describe the implementation process for the solar projects?
    - What was your company's role in the implementation process?
15. What was the process of funds allocation, types of funds allocated, and the institutions involved for the solar projects in both ABD and pan-city development?
16. Were any existing solar projects from a different city/country inspired the planning and implementing of solar projects in New Delhi smart city?
    - If yes, can you provide examples of existing solar projects that were referred to while planning and implementing in New Delhi smart city?
    - If no, can you describe the thought process while planning and institutional involvement of these projects and later implementation?
    - Can you describe the planning of these projects build from scratch and your company's role in the processes?
17. Did your company participate during the citizen consultation processes of New Delhi smart city?
    - What was your company's role in citizen consultation processes of New Delhi smart city?
    - What was your role in the process?
18. What was the process of communicating and consulting the solar projects with the citizens?
    - Who were communicated with and consulted for the solar projects?

19. What kinds of need are being addressed by the solar projects?
20. How are the solar projects addressing the diversity of the citizens?
21. How are the solar projects aiming to address the existing social differences in the city/society?
22. Did you/your company face any challenges during the citizen consultation process?
    If so, how were they resolved?
    In addition, did you face any challenges from any other institutions involved? If so, what were some of the possible reasons for the same?
23. Do you see opportunities for this project to be replicated in other parts of the city? Where and how?
    Is NDMC looking to expand the solar components of the smart city project? If so, are those locations inside or outside of the NDMC jurisdiction?
24. What is the connection between smart energy technologies and other environmental initiatives in the city?
25. Can you elaborate on the financial investment process and budget for these projects?
26. How does this project benefit the city or its diverse consumers?
27. What are some of the specific aspects of this project that will benefit the following?
    a. government officials,
    b. residents,
    c. tourists,
    d. business owners,
    e. informal settlement dwellers
28. How do you see the project playing a role in changing the way in which the city approaches issues of energy and environment?
29. What barriers are yet to be overcome to further promote the use of smart technology and solar projects?
    a. Institutional barriers?
    b. Economic barriers?
    c. Social barriers?
    d. Ecological barriers?
30. What do you think are the most important achievements of this project?
31. How does these solar projects connect with NDMC's overall goal in the smart city project of 'sustainability' or 'sustainable environment' or 'sustainable development'?
    Can you elaborate? How does the state define each of these? How are they measured?
    How does the company aim to achieve these goals via smart city mission in New Delhi and working with NDMC?
32. According to you/your ministry/department, what could be some future directions towards solar projects in the city?
    In your opinion, where are the gaps and shortfalls of the current solar projects under NDMC smart city?
33. Is there anything else you would like to mention?
34. Who else do you think I should talk to?
35. Can you provide me with their contact information or put me in touch with them?
36. Do you have any questions for me before we conclude?

- **<u>If in non-governmental workforce:</u>**

1. First, what is your current position? Can you discuss your responsibilities? What was your previous job/role before this position/job?
2. Could you please tell me about your/your organization's role in the 'Smart Grid & Energy Management' project of the NDMC SCL?
3. Who would you say are the major actors or institutions in the project?
4. What were your roles during both the designing and implementation phases?
5. What is your opinion of experience of working with (if) different ministries and departments, (if) multiple private sector companies, and (if) multiple civil society organizations? Could you please elaborate in what capacity and on what projects you have worked with them?
6. Do you think solar energy projects are beneficial for New Delhi? Why/why not?
7. Do you think such projects implementation will benefit the differently situated urban populations? Why/why not?
8. Were you/your organization invited or involved in the planning or implementation stages of solar projects under ABD and/or pan-city development?
    If yes, what was your level of involvement (discussions, suggestions or only informed about) in those stages and processes? How many meetings you/your organization had attended?
9. What was the selection criteria while selecting diverse sections of urban population during the citizen consultation process?
    Were citizens from vulnerable populations invited or only their representative organizations were invited?
    Were the vulnerable populations involved the same groups listed in the NDMC smart city document? Who were those?
    How many attended those meetings?
    What was level of their involvement? Did their perspectives and opinions (from participating in the consultation process) taken into consideration and/or influence the planning, decision-making and/or implementation of the project?
10. What are some of the concerns of differently situated urban populations that can be resolved via solar projects?
    a. Government officials,
    b. Residents,
    c. Tourists,
    d. Business owners,
    e. Informal settlement dwellers.
11. What new problems or challenges may these solar projects bring to certain groups?
12. What are some of the specific aspects of this project that will benefit the following?
    a. government officials,
    b. residents,
    c. tourists,
    d. business owners,
    e. informal settlement dwellers

13. On what scale was there involvement of civil society organization in the planning and implementation stages of the solar projects?
    Also, what is your opinion of the overall role of civil society organizations in New Delhi smart city planning and implementation?
14. What are some of the infrastructure redevelopment projects focus of the NDMC?
15. What are your thoughts on the kind of infrastructure redevelopment projects resulting from solar projects?
    What are some of the impacts on ground?
    a. Social
    b. Economic
    c. Institutional
    d. Ecological
16. What are your thoughts on the citizen consultation and engagements in the ABD and pan-city development projects? Did they follow FPIC (Free, Prior and Informed Consent)?
17. What was the process of communicating and consulting the solar projects with the citizens?
    Who were communicated with and consulted for the solar projects?
18. Does everyone and all institutions benefit equally from the solar projects under the ABD and pan-city developments?
    If not, who benefits the most and who benefits the least? Why so?
19. What kinds of need are being addressed by the solar projects?
20. How are the solar projects addressing the diversity of the citizens?
21. How are the solar projects aiming to address the existing social differences in the city/society?
22. What were some of the concerns raised by your organization or other civil society organizations during the consultation processes?
    Did you/your organization raise concerns regarding the solar project's planning and implementation? If so, what were they?
    Were your suggestions incorporated later on?
    If your organization were to design and implement a solar project for NDMC, how would you do/plan and design it?
23. According to you/your ministry/department, what could be some future directions towards solar projects in the city?
24. In your opinion, where are the gaps and shortfalls of the current solar projects under NDMC smart city?
25. Is there anything else you would like to mention?
26. Who else do you think I should talk to?
27. Can you provide me with their contact information or put me in touch with them?
28. Do you have any questions for me before we conclude?

Guide B

1. Can you discuss the professional and educational path you traveled to reach your current position?

2. What is your current position? Can you discuss your responsibilities and daily duties? What was your previous job/role before this position/job?
3. Can you discuss about your department/ministry/organization? Their relationship with the government? Are you working closely with the government or separate body?
4. According to you, what is a smart city? How will you define it? What is the imaginary behind Indian smart cities?
5. Why smart cities are a good platform/initiative for countries/cities in the Global South?
6. What are some of the challenges faced by India's smart city mission program?
7. Can you discuss some of successes of the Indian Smart Cities?
8. What are some of the challenges faced by India's smart city mission program?
9. What are your thoughts on the smart city mission program guidelines document?
10. What are your thoughts on the smart city proposals?
    Can you discuss any specific case study?
    Can you discuss or share your thoughts on smart city proposal of New Delhi/ NDMC?
11. What are your thoughts about the location of the NDMC smart city project? "Why this part of Delhi as smart city?" How can it be a great location for New Delhi smart city?
12. What are your thoughts about the projects under Smart city project in Delhi?
13. What are some of the strategies, according to you, helped NDMC SCL to achieve their smart city mission goals?
14. What are some of the challenges, according to you, are faced by the NDMC SCL while achieving their smart city mission goals?
15. How inclusive and citizen-centric are the New Delhi smart city projects in planning and implementation?
16. How does the focus on sustainable development in the planning and implementation of New Delhi smart city projects impact the vulnerable urban populations?
17. What are some of the challenges faced by SCM while engaging the citizens in the smart city mission?
18. How are Indian smart cities envisioning (Defining it, comprehending it, planning about it, and implementing it) "sustainability" in their proposals and on ground implementation of the same?
    Please share your thoughts on Delhi's sustainability goals and if there are key themes adopted in envisioning the sustainability goals.
19. What is described as "livability" under smart cities in India? Delhi? Other case?
20. Role of ULBs in other cities under Smart cities mission and role of ULBs in Delhi?
21. Is sustainability vision in sync with the citizens' aspirations and needs? You thoughts?
22. Are there any data sets available to local people and/or other stakeholders in Delhi?
23. Can you discuss your experience of working within the government body/ministry?
24. Is there consensus of what is sustainability and for whom?
25. So, the project is ending next year, what is the goal after that? What would smart cities be after that? More funding, and from where, more development?
26. Is there anything else you would like to mention?
27. Can I follow up with email or speak again?
28. Who else do you think I should talk to? If you can provide me with their contact information or put me in touch with them?
29. Do you have any questions for me before we conclude?

Demographic Information(*required)

Age*: 18-25
26-35
36-45
46-55
56-65
65+

Gender*:

Education Qualification*:

Primary School
10th Diploma/Certificate
12th Diploma/Certificate
Bachelor's degree
Master's degree
Doctorate
Professional certificate

Employment category*:

Governmental
Non-governmental
Private
Other (Research Institute/Academia)