6 Changing Infrastructure in Urban India: Critical Reflections on Openness and Trust in the Governance of Public Services

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Introduction

Cities in India are in a state of flux characterized by rapid changes in population, land use, and infrastructural arrangements. With approximately 68 percent of its nearly 1.21 billion residents still living in rural communities (Census of India 2011a), the relatively recent rapid growth in India's cities has exerted severe pressure on local governments to better supply public services.[1] Indian cities can be understood as vast *provisioning machines* (Amin 2014) that provide services and infrastructure for sustaining the lives of their citizens (figure 6.1). In this critical reflection, we discuss how questions about *open systems* and *trust*—elaborated on in the theoretical work of Rao et al. (chapter 3, this volume)—relate to the provision of urban services and infrastructure. Internationally, a variety of open practices and systems demonstrate apparent promise for improving urban public service delivery. For example, governments and civil society groups have created open platforms and have crowdsourced citizens' input on diverse issues linked to local service or infrastructure needs (Hagen 2011).

Our research—drawing on perspectives of both local government and civil society intermediaries—provides insight into public service and infrastructure issues in a rapidly changing city in India, as well as theoretical reflections for advocates and theorists of open systems. We link our study to a critique of Rao et al.'s operating theory, discussed in chapter 3 of this volume, about *trust* (or trustworthiness) in combination with *open systems* (or openness), and we apply this to questions about the provision of public services and infrastructure in Chennai, India. Rao et al. (chapter 3, this volume) have introduced a trust model that applies to open systems in a

Figure 6.1
Leaky water pipe in south Bengaluru (Bangalore).
Source: Sadoway, Gopakumar, and Sridharan (2013).

generic sense but also, they suggest, can be applied to service provisioning. Indeed, the study of trust in the development of cities and urbanization has important relevance, as Tilly's (2010) historical work on the development of urban *trust networks* suggests. His work identifies how the earliest cities were both shaping and shaped by struggles over their residents' mutual trust commitments. This leads to the question of what *trust* and *openness* actually refer to in relation to the provision of urban services. Chopra and Wallace (2003, 2) conceptually suggest that questions about *trust* involve three interrelated elements: "*a trustee* to whom the trust is directed, *confidence* that the trust will be upheld, and a *willingness* to act on that confidence" (italics original). On the other hand, *open praxis*, according to Smith

and Seward (2017), involves both processes and practices of knowledge governance that are free and nondiscriminatory, or open to participation.[2]

Our research, however, conducted with a variety of intermediaries in Chennai, makes us skeptical about whether current forms of digitally inspired open development—especially approaches led or seeded by external sponsors—are being devised in ways that address key local servicing needs. We raise questions about Rao et al.'s (chapter 3, this volume) trust model because it positions publics as disembodied feedback channels (that is, as *external* agents in *sponsored* systems and/or *information generators*) rather than as (pro)active citizens or comanagers of information. Importantly, their model arguably downplays the complexities of service provisioning, particularly where aspects of overlapping or multilevel governance remain the norm (that is, various government bodies and agencies as well as civil society groups involved in questions about public services). While Rao et al. (chapter 3, this volume) refer to "trust in the sponsor," our research highlights the polycentric, multilevel power dynamics that shape complex local governance arrangements (not just single-level sponsorship). Furthermore, our findings highlight the politics of outsourcing or offloading of public service sponsorship (and trust) or management to private or nongovernmental organizations (NGOs), including recent debates in India about the provision of either free or *sharing economy* services.[3] While Rao et al.'s (chapter 3, this volume) trust model identifies broad power dynamics, we suggest that questions about specific *power trade-offs*—such as understanding why local infrastructural and servicing power struggles are occurring and how public collective or universal services are being undermined by private provisioning proposals—remain crucial to understanding open and trustworthy modes of infrastructure and services governance.

Our investigation ultimately focused on perceptions of trust and the importance of openness in the provision of public services—such as bus shelters, public libraries, water, streetlights, and so forth. To do this, we employed three overarching questions to investigate the nature and context of service provision in Chennai: How are public services and infrastructural provisions being governed? Can open practices improve the governance of urban public services and infrastructure, and how? And how are trust relations affecting current service provision practices? We conducted semistructured interviews in 2016 and 2017 with twenty-four

Chennai-based government officials, staff, elected councilors, and civic association intermediaries.

The remainder of this reflection explores our findings on public service provisioning in Chennai and ends with our critique of Rao et al.'s (chapter 3, this volume) trust model.

Chennai as a Provisioning Machine

Chennai has a metropolitan population of 8.69 million residents.[4] It is also an iconic economic gateway to the state of Tamil Nadu and southern India (Sood 2013, 95) and has been dubbed "the Detroit of India" for its growing strength in vehicle manufacturing (Krishnamurthy and Desouza 2015, 118) (see figure 6.2). The rapid rise in population, automobile use, and land use changes have all put heavy pressure on Chennai's public services and infrastructure. The Corporation of Chennai (CoC), which Sridhar and Kashyap (2012, 99) identify as the "oldest corporation in India," founded in 1688, is the civic body that governs Chennai. The CoC government is led by a mayor and a group of councilors elected from two hundred electoral wards across the city. However, like other large cities in India, the Government of India (GOI or Centre) and the state government play a dominant role in local urban infrastructural governance and in steering the provision of services.

Public Service in a Multilevel Governance Reality

> A public service is a service where citizens should consider themselves as partners of the service. Citizens right now see themselves as consumers and not as participants.
> —Respondent 3, member of a civil society organization, interviewed on December 22, 2016

The role of cities in relation to the states and Centre is symptomatic of the longstanding problem of aborted decentralization in India. Observers have linked the longstanding lack of decentralization of financing, professional staffing, and planning in Indian urban governance (Mukhopadhyay 2006; Sivaramakrishnan 2007; Sivaramakrishnan 2011) with the corollary of increasingly concentrated power in New Delhi and state capitals.[5] Such maldistribution of political power remains a crucial impediment to

Figure 6.2
Map of southern India showing Chennai (Madras) on the southeast coast.
Source: Open Street Map (2018), https://www.openstreetmap.org/#map=5/12.983/73
.960&layers=T.

building trust and potentially initiating open practices between (and for) citizens and local governments. Related to this, Krishnaswamy, Idiculla, and Champaka (2017, n.p.) argued that "power should be located as close to the people as possible in the smallest political units feasible." This suggests that *subsidiarity*, or the act or practice of decentralization in a governance system, potentially enables an "alignment between democratic authority and urban planning power" (Krishnaswamy, Idiculla, and Champaka 2017, n.p.). Indexing the degree of subsidiarity in governance—particularly legal, political, fiscal, or economic—can thus provide insights into the ability (or autonomy) of local governments to shape urban public service provision.

Ideally, open digital practices—such as introducing public feedback channels—would contribute to better aligning democratic powers with public service provision; however, our respondents expressed some skepticism about this. As one informant stated, "e-services can help ease the process of getting things done, but they cater only to the educated and middle- and upper middle-class people" (Respondent 9, resident welfare

association, interviewed on October 11, 2016). Another informant suggested that public feedback channels lacked responsiveness: "It does not matter if the citizens want to give feedback because the CoC is not willing to take them" (Respondant 1, member of a civil society organization, interviewed on November 22, 2016). The same informant suggested that public engagement was scheduled to minimize input and maximize inconvenience ("in the middle of a workday instead of a weekend and often on short notice of a few hours") or in low-accessibility locations. Existing channels for civic engagement were also questioned, with one informant observing that "only retired citizens would be present at these consultations and they would use the forum to voice their problems with other services. Often, political henchmen crowd out the room" (Respondent 1, member of a civil society organization, interviewed on November 24, 2016).

Despite the problems with public feedback, informants believed that engagement channels remained important. For instance, one of our informants argued that "there should be an official mechanism to organize residents of various neighborhoods to discuss civic issues and make representations to their elected representatives" (Respondent 6, member of civil society organization, interviewed on November 10, 2016). Another informant noted that "there are mechanisms like the mayor's meeting every Monday morning or the online complaints cell, but these do not work. The city needs more decentralized mechanisms for a feedback system to work" (Respondent 3, member of civil society organization, interviewed on December 22, 2016).

Citizen Action Group (CAG), the Chennai civic association we partnered with for this research, also identified an overdependence on centrally appointed Indian Administrative Service (IAS) staff in providing public services. The IAS staff members serve on a rotating basis in local government offices. Rather than developing Chennai-based capacity in the CoC to address local needs, rotating staff or consultancies are responsible for public services and infrastructure. Even within the CoC, subsidiarity, such as greater local ward feedback mechanisms or powers, is severely lacking. This was exemplified in the statement made at the beginning of this section by informant R3, who called for decentralization to neighborhoods. Models such as Rao et al.'s (chapter 3, this volume) should therefore account for the multilevel power struggles that influence setting of public priorities for urban services.

Valorizing Corporate and Consultant-Driven Service Solutions

A main finding of our research revolved around India's design and implementation of its Smart Cities Mission (SCM). SCM is a top-down initiative directed by the central government of India, and its formulation and financing favors corporate and consultant-driven solutions. SCM is also focused on middle-class concerns, such as parking, rather than basic needs, such as water provisioning. The high valorization of *smart cities* and high-tech solutions arguably is linked to a fetishization of build-operate-transfer and public-private partnership models in Indian cities. Such approaches defer to external expertise for how urban public services and infrastructure nominally ought to operate (Coelho, Kamath, and Vijaybaskar 2011; Sadoway et al. 2018; Sangita and Dash 2005). The valorization of corporate and consultant-driven solutions also serves to diminish trust in the longstanding local knowledge systems and local staff capacity.

The Chennai Smart City (CSC) initiative is emblematic of public-private partnership models, as it favors corporate, technology-oriented solutions over democratically governed service provision. The CSC initiative's proposal was prepared by the global consulting firm Jones Lang Lasalle Inc. One claim in this proposal was that extensive public consultations—including with elected representatives and NGOs—were conducted. However, the proposal indicates that only the opinions of the CoC mayor, a single member of the Legislative Assembly, and just two business-oriented civil society organizations—the Institute for Transportation and Development Policy (ITDP Chennai) and Chennai City Connect—were involved. There was, concomitantly, limited public engagement. Moreover, software and technology vendors were consulted, and their suggestions focused on technology-oriented solutions employing sensors, chips, or cameras, while largely ignoring local basic service and more basic infrastructure needs, such as water, sewerage, and mass transit. One informant, for instance, suggested that "right now, there is a perception of what people want and ideas like the elevated expressways, or RFID [radio frequency identification] tagging garbage bins, are proposed" (Respondent 3, member of a civil society organization, interviewed on December 22, 2016).

While information technologies could clearly be employed in augmenting or potentially improving provision of any public service, the concerns of our informants centered on the belief that these technology- and consultant-led

approaches were premature to the extent of missing the need for basic service and infrastructure needs across the city. Another respondent raised concerns about the improper distribution of basic services and how these services were being provided to neighborhoods on an ability-to-pay basis rather than being universally affordable for residents, saying, "There are some people who can afford to pay, but there are others who are not able to afford [to], yet officials demand that they pay for all services" (Respondent 9, resident welfare association, interviewed on November 10, 2016). Kundu (2011), from a public investment perspective, has traced how infrastructure investments in India favor affluent neighborhoods and the cities most able to (re)finance cost recovery. These comments and observations highlight the chasm that needs to be overcome when designing open systems that put local priorities for public services or infrastructure first, let alone devising trustworthy technologically supported solutions.

Some CoC staffers directed civil society groups to consultants when they sought information. Our observations indicate that CoC staff are transferring their responsibilities to consultants and are losing their institutional capacity to service local communities in the process. For example, one informant noted that "the engineer managing the project would also not know or be able to recall what the figures are. Hence every time we required any data, the engineer would connect them to the concerned consultant" (Respondent 1, member of a civil society organization, interviewed on November 24, 2016). One official explained that CoC engineering staff "have support from consultants, since these days a lot of projects see the involvement of external parties. Though it is an opportunity for officials and staff to pick up new skills, they leave it to the consultants to do the job" (Respondent 21, city government official, interviewed on February 24, 2017). This also relates to our earlier observations about subsidiarity, in part because central and state-level programs can valorize the professionalism of external or private sector consultants rather than developing in-house or homegrown public service talent.

Another consequence of valorization (of consultants and corporations) is that the CoC appears to be treating citizens deferentially as passive and disconnected consumers rather than as engaged political participants. One informant observed that "there is a lot of disconnect between the government and the citizens, [and] with extremely high use of ICT-based infrastructure [(information and communication technology)], completely useless and

unnecessary ideas are approved and executed, resulting in a major waste of public money" (Respondent 3, member of a civil society organization, interviewed on December 22, 2016). This raises questions about how programming for public services is being devised, funded, and approved—and whether governments favor corporate and consultant-driven solutions over more universal, democratic, and collaborative service provision. As external governmental infrastructure financing projects and external consultant-driven approaches become further entrenched in cities like Chennai, open practices would appear to be more difficult to devise.

Work-Arounds for Opening Up Public Service Accessibility

Based on the preceding discussion, we suggest that open system advocates and theorists need to consider how their approaches could not only open up or increase the accessibility to and setting of priorities for public services but also how their approaches might unwittingly limit or misdirect access to such services. Despite the major challenges hindering democratic and collaborative service provision discussed earlier, some citizens and public officials are finding pathways for accessing services. At times, these improvisations involve developing ad hoc solutions or adaptive or situational workarounds. Such workarounds have implications for how public service provision functions and how service provision systems may shift over time. However, we do not wish to romanticize civic or local government workarounds as necessarily innovative service provision models. Instead, we highlight them as features of public service systems that signal a lack of empowerment and trust-building among local citizens. While we have limited space for elaboration here, examples of trust-building from our interviews included comanagement of problems with government and residents during the 2016 floods, the use of direct public dial phone connections to CoC officials for improving access and accountability, and civil society groups working both with and also independent from government to address information, infrastructure, or service asymmetries. For example, during the 2016 flooding disasters that beset Chennai, one respondent suggested that there was a mutual appreciation of local residents' needs by CoC officials, as noted in the following observation (Respondent 9, resident welfare association, interviewed on November 10, 2016): "They worked with us like common people without thinking that they were government

officials. But now the very same people show their authority and attitude when I approach them for any work."

After the disaster and the common or partnership mode of governance, the informant speaking about the flooding suggested that there was a return to paternalistic approaches. Issues of fairness in service provisioning were also reflected by another informant's comments: "There is also no equity in CoC. Current and retired public officials have clout so their complaints are attended to immediately, even from senior engineers" (Respondent 24, retired city government official, interviewed on February 16, 2017). This highlights how service asymmetries can be shaped by local personal networks that also undermine the possibility of building or strengthening trust networks among wider publics.

Since mobile phones have become an omnipresent part of familial or social networks, the use of direct public dial phone connections to CoC officials for improving service access and accountability suggests another workaround that has opened up the situation for some residents. In other situations, where some communities have been unable to access services, wealthier or more connected communities—such as those with active resident welfare associations (RWAs)—have also devised workarounds to address their needs. Workarounds for those with powerful political or staff connections were illustrated in these comments (Respondent 2, member of a civil society organization, interviewed on January 10, 2017): "We do not find the need to interact with elected representatives like councilors or ministers. We have some eminent residents of the city who are part of our [RWA] Board and who accompany us to meetings with senior officials."

Our colleagues at CAG also observed that in Chennai several affluent neighborhoods demanded garbage collection twice a day, while many low-income areas have this service only once a week or every two weeks. It was also observed by our colleagues that repairing roads, water supplies, and electricity faults in Chennai has also been shaped by the influence exercised by wealthier communities. The workarounds that these RWAs have devised could hardly be described as adequate solutions for accessing what an IAS official in Chennai (Respondent 21, city government official, interviewed on February 24, 2017) described as "rights-based services," since many others remain unable to exercise their right to access public infrastructure.

Issues of infrastructure access revolve around public service provision, since some citizens or groups appear to have access and others simply do

not. Despite the notable power imbalances, our findings also suggest that there remains some hope for more community collaboration, power sharing, or governance innovation through workarounds. This was perhaps evident in one type of civic workaround that a local group used to generate their own data as an alternative to inadequate public information, as noted in the following comment (Respondent 4, member of a civil society organization, interviewed on January 5, 2017): "For the various studies we conducted, the CoC did not have the level of data we required.… We had to first create a Detailed Project Report which included a technical, financial, social, and environmental study so that we could gather data." This anecdote suggests that some groups were opting for workarounds to garner data for achieving improved public services or public responses. Workarounds were also identified in the local tendency for quick fixes among public agencies, as noted in the following observation: "All these agencies do '*jugaad*' [meaning a quick fix] that usually does not completely solve the problem" (Respondent 1, member of a civil society organization, interviewed on December 22, 2016).

Workarounds, as implied in our earlier observations on valorization and subsidiarity, suggest that distinct local sociocultural and political histories shape Chennai's service and infrastructure conditions. In the following section, we relate the Chennai case to the questions about trust and openness that we raised at the beginning of this discussion.

Reflections on Public Services and Open, Trustworthy Systems

In this short reflection, we have argued that Rao et al.'s (chapter 3, this volume) trust model requires a deeper focus on local contextual complexities related to public services and infrastructure provision and priorities. Our research in Chennai suggests that research into trust and openness needs to deeply consider the *local power struggles* over urban service needs and provisioning as well as *priority setting*, especially where there are diverse and changing local priorities. The observations made by our civil society intermediaries and officials within the CoC affirmed this to some extent; however, additional research and more varied perspectives would be helpful.

On the surface, there also appears to be potential for opening up channels for citizen input (such as crowdsourcing) to address concerns about local service deficiencies. However, as our previous work in Chennai has found (Sadoway and Shekhar 2014), transformations in urban infrastructure governance

are unlikely to occur unless basic needs and community-defined priorities are first addressed, particularly via electoral political mechanisms, as well as being embedded in local knowledge systems. Our research has also highlighted a need to analyze the overlapping or multilevel power dynamics—among governments, civil society, and business—not just trust in single-level sponsorship, which is implicit in Rao et al.'s (chapter 3, this volume) approach.

Additionally, our findings underscored the importance of understanding how advocates for deepening the role of open systems and improving trust in the governance of urban services need to consider questions about the degree of local subsidiarity, the nature of corporate or consultant-driven solutions in a given context, and the types of local workarounds that alter or reshape urban service provisioning or provisions. Overall, we found the Rao et al. (chapter 3, this volume) model underequipped for analyzing the complexities of urban service provisioning, particularly in fast-changing Indian cities and in city regions where multilevel or polycentric governance remains the norm. For example, their view of the public as disembodied feedback channels (*external* agents in *sponsored* systems and/or *information generators*) does not capture the dynamics of the public as (pro)active citizens or comanagers of information, as our short study in Chennai identified. This also highlights the dangers of outsourcing or offloading service responsibilities not only to consultants but also to private, charitable, or nongovernmental vehicles. We posit that greater citizen control (or cocreation) ought to play an integral role in analyzing or actualizing open governance practices. In the view of many of our informants—particularly civil society intermediaries who work on the front lines with diverse communities—Chennai's materially poorest residents (and also many in the growing middle class) appear to be largely left out of local civic engagement regarding future land use or infrastructure planning and budgeting.

Instead of simply focusing on improving public services, we have suggested that the first step in improving services and *building urban trust networks* would be to focus on directly involving the public first to address basic local public service and infrastructure needs and priorities, such as public and community toilets, water supplies, parks, child care facilities, or primary health care centers. One of our informants referred to these as "rights-based services" that needed to be "requested by communities, rather than individuals" (Respondent 21, city government official, interviewed on February 24, 2017). This illustrates how challenges about public service provision have

resulted in continued calls for "shared infrastructural rights" (Amin 2013, 486) alongside new forms of democratic practices in India's dynamic cities (Coelho, Kamath, and Vijaybaskar 2011, 30). However, as Tilly's work (2010, 272) on trust highlights, while cities can serve as platforms for competing trust networks, their ability to properly integrate democratic urban governance with the provision of public services remains historically rare.

Finally, we suggest that further research is needed to explore how both *rapid urbanization* and *new urban citizenships* are reshaping not only service or infrastructure expectations but also questions about trustworthiness and openness in local governance. The politics of urban infrastructure and services therefore needs to be understood in relation to how both local servicing asymmetries and the local political contexts of class, caste, and gender intersect to (re)shape urban government.

Notes

1. We define *public services* as nominally universal services, governed or managed by public bodies, and provided to residents or citizens through a range of infrastructure. We define *infrastructure* as sociotechnical "assemblages of public works, technical installations, and institutional arrangements that mediate flows of services," such as water, waste, energy, mobility, and communications (Sadoway et al. 2013, 3).

2. Smith and Seward (2017) list four key practices: peer production, crowdsourcing, sharing, and consumption (for example, reuse, remixing, or repurposing).

3. An example of a private-led sharing economy service and infrastructure initiative is Facebook's Free Basics initiative in India. The initiative involves proposals by Facebook to bundle free online services, on an open platform, with free Internet access (Yim, Gomez, and Carter 2017).

4. Census of India (2011b) data.

5. This included governments ignoring the provisions of the Indian Constitution's 74th Amendment, which mandated the decentralization of functions to local governments and community wards' committees (Kundu 2011).

References

Amin, Ash. 2013. "Telescopic Urbanism and the Poor." *City* 17 (4): 476–492.

Amin, Ash. 2014. "Lively Infrastructure." *Theory, Culture & Society* 31 (7–8): 137–161. http://www.stellenboschheritage.co.za/wp-content/uploads/Theory-Culture-Society -2014-Amin-137-61.pdf.

Census of India. 2011a. *Primary Census Abstract: Figures at a Glance, India*. http:// www.censusindia.gov.in/2011census/PCA/PCA_Highlights/pca_highlights_file /India/5Figures_at_glance.pdf.

Census of India. 2011b. *Provisional Population Totals, Urban Agglomerations/Cities Having Population 1 Million and Above*. http://www.censusindia.gov.in/2011-prov -results/paper2/data_files/india2/Million_Plus_UAs_Cities_2011.pdf.

Chopra, Kari, and William A. Wallace. 2003. "Trust in Electronic Environments." In *Proceedings of the 36th Hawaii International Conference on Systems Science*, Big Island, HI, January 6–9, 2003, 1–9. Washington, DC: IEEE Computer Society.

Coelho, Karen, Lilitha Kamath, and M. Vijaybaskar. 2011. "Infrastructures of Consent: Interrogating Citizen Participation Mandates in Indian Urban Governance." IDS Working Paper Series 362. Brighton: Institute of Development Studies.

Hagen, Erica. 2011. "Mapping Change: Community Information Empowerment in Kiberia (Innovations Case Narrative: Map Kiberia)." *Innovations* 6 (1): 69–94.

Krishnamurthy, Rashmi, and Kevin C. Desouza. 2015. "City Profile: Chennai, India." *Cities* 42:118–129.

Krishnaswamy, S., M. Idiculla, and R. Champaka. 2017. "The Scales of Planning: Adopting a Multi-scalar Approach." *The Hindu*, March 19.

Kundu, Debolina. 2011. "Elite Capture in Participatory Urban Governance." *Economic & Political Weekly* 46 (10): 23–25. http://re.indiaenvironmentportal.org.in/files /urban%20governance.pdf.

Mukhopadhyay, Partha. 2006. "Whither Urban Renewal?" *Economic & Political Weekly* 41 (10): 879–884.

Open Street Map. 2018. Openstreetmap.org. https://www.openstreetmap.org/#map=5 /12.983/73.960&layers=T.

Sadoway, D., G. Gopakumar, V. Baindur, and M. G. Badami. 2018. "JNNURM as a Window on Urban Governance in India: Its Institutional Footprint, Antecedents and Legacy." *Economic & Political Weekly* 53 (2): 71–81. https://smartnet.niua.org /sites/default/files/resources/sa_liii_2_130118_rua_david_sadoway.pdf.

Sadoway, D., G. Gopakumar, and N. Sridharan. 2013. "Critical Urban Infrastructure(s): Launching and International Research Network on Critical Issues in and about Urban Infrastructure." Conference paper for "Engaging Canada: Emerging Priorities for Sustainable Partnerships," Shastri Indo-Canadian Institute, New Delhi, June 1, 2013.

Sadoway, David, Govind Gopakumar, Vinay Baindur, and Madhav G. Badami. 2013. "Assembling Infrastructure Decongestion: An Overview of Critical Issues in and about Urban Infrastructure and JNNURM in India." Seminar at National Institute of Urban Affairs, New Delhi, August 1, 2013.

Sadoway, David, and Satyarupa Shekhar. 2014. "(Re)prioritizing Citizens in Smart Cities Governance: Examples of *Smart Citizenship* from Urban India." *Journal of Community Informatics* 10 (3). http://ci-journal.net/index.php/ciej/article/view/1179/1115.

Sangita, Satyanarayana N., and Bikash C. Dash. 2005. "Electronic Governance and Service Delivery in India: Theory and Practice." Working Paper 165. Nagarabhavi, Bengaluru (Bangalore): Institute for Social and Economic Change.

Sivaramakrishnan, K. C. 2007. "Municipal and Metropolitan Governance: Are They Relevant to the Urban Poor?" In *The Inclusive City: Infrastructure and Public Services for the Urban Poor in Asia*, edited by Aprodicio A. Laquian, Vinod Tewari, and Lisa M. Hanley, 278–302. Washington, DC: Woodrow Wilson Center Press.

Sivaramakrishnan, K. C. 2011. *Re-visioning Indian Cities: The Urban Renewal Mission*. New Delhi: SAGE Publications.

Smith, Matthew L., and Ruhiya Seward. 2017. "Openness as Social Praxis." *First Monday* 22 (4). https://firstmonday.org/ojs/index.php/fm/article/view/7073.

Sood, Ashima. 2013. "Urban Multiplicities: Governing India's Megacities." *Economic & Political Weekly* 48 (13): 95–101.

Sridhar, K. S., and N. Kashyap. 2012. *State of India's Cities: An Assessment of Urban Conditions in Four Mega Cities*. Bangalore: Public Affairs Centre.

Tilly, Charles. 2010. "Cities, States, and Trust Networks: Chapter 1 of *Cities and States in World History*." *Theory and Society* 39 (3–4): 265–280.

Yim, Moonjung, Ricardo Gomez, and Michelle Carter. 2017. "Facebook's 'Free Basics' and Implications for Development: IT Identity and Social Capital." *Journal of Community Informatics* 12 (2): 217–225. http://www.ci-journal.net/index.php/ciej/article/view/1321.