Abstract

Despite the prevalence of smart city discourse across many disciplines, governance systems, and policy-making bodies, its conceptual foundations are based either on semi-/democratic political constellations or deemed apolitical. This research agenda highlights the embeddedness of any smart city agenda within a more extensive political regime. Furthermore, the research agenda focuses on the authoritarian socio-technical imaginaries and their role in shaping smart city policies, implementation, and governance. The research agenda also highlights the research on authoritarian surveillance and its interconnection with authoritarian smart city conceptualisation. Furthermore, it offers three research areas for authoritarian surveillance: authoritarian practices in democratic contexts, the use of surveillance technologies for maintaining autocratic power, and authoritarian structure and governance of platform corporations. Finally, similar to critical voices in critical data studies and the field of information and communication technology for development, the research agenda aims to demystify the prevalent assumption of the good smart city that fixes all injustices that socio-political endeavours have not achieved. It argues that every technologically enabled tool or platform reflects the political constellations in which it is embedded and affects and produces new socio-technical interlinkages that could never be apolitical.

Introduction

The “smart city” has been the global buzzword of the last decade. City dashboards, data-driven urban management, AI-based seamless cities, citizen participation platforms, and datafied services are increasingly discussed in academic, policy-making, and urban governance circles. Figure 1 shows a bibliometric analysis of all publications with “‘smart city’ and/or ‘smart cities’ in either the title, abstract, or keywords” (Sharifi et al. 2021: 4) from 1991 to 2021, collected from the Web of Science. Since the ratification of Sustainable Development Goals (SDGs) in 2015 and the New Urban Agenda in 2016 by the United Nations, adopting a smart city agenda has become a global trend at the UN, EU, regional, and national levels. The systematic literature review by Sharifi et al. (2021) illustrates the twelve-fold increase in the number of academic articles after these global strategic changes compared to the period between 1991 and 2015. Other regional strategy documents, such as Europe’s Digital Decade, set digital targets for 2030 that—although not explicitly developed for urban areas—include many features of the smart city such as digital skills, secure and sustainable digital infrastructures, digital transformation of businesses, and digitalisation of public services.

The proliferating literature on smart cities is extended over a conceptual grid fed by numerous disciplinary approaches. Although almost every publication on smart cities starts with a discussion on the definition of a smart city, the differences arise from not only disciplinary divergences and their focus but also a fundamental understanding of concepts such as sustainability, Internet of Things (IoT), Big Data, efficiency, privacy, and similar. The centrality of such concepts manifests itself in different approaches to designing, planning, and governance of smart cities. Evolving from its 1990s focus on planning and transportation...
(Herrschel 2013), the smart city was soon embraced by leading expert companies. Working with the Clinton Foundation, Cisco launched Connected Urban Development in 2006 as a private-public partnership (Swabey 2012). Similarly, IBM started its Smarter Planet project in 2008 to “make sense of a sensored world” using “sophisticated analytics and algorithms” to achieve “measurable benefits for… companies and communities” (IBM n.d.). With the global discursive shift towards sustainability and human development, these economically driven approaches also transformed from focusing on technological efficiency and private sector administrative models to centring people in their thinking, although as consumers or clients (Reiter and Klenk 2019). However, another train of thought increasingly treated people as rights-holders (see, for example, Isin and Ruppert 2015 or Cardullo, Di Feliciantonio, and Kitchin 2019). It underlined the links between people with technology through social innovation, people with people through human development, people with nature through ecological sustainability, people with political systems through citizen participation, and so on. Due to its rights-based approach, this framework is wary of data protection and privacy concerns that smart cities might cause. The transformation and interlinkages between these discourses have led to conceptual developments such as the UN-Habitat’s People-Centered Smart Cities Programme launched in 2020 to achieve “inclusive and resilient smart cities” (UN-Habitat n.d.).

These dominant discourses unfolding in a rapidly globalised urbanised world with increasing access to information and communication technologies (ICTs) have received criticism not only from scholars but also from policy makers and development organisations. From massive failures in the World Bank’s ICT for development programmes (Dodson, Sterling, and Bennett 2013) to private initiatives such as one laptop per child, finding technological fixes for social, economic, and environmental problems have proved unsuccessful (Townsend 2013). Additionally, the impacts and risks of surveillance-enabled smart environments (Galdon-Clavell 2013) have been criticised in light of what smartness might mean for surveillance purposes. Drawing on the role of military establishments in mastering the unruliness of urban

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1 The lower number of articles in 2021 is due to the literature search by Sharifi et al. in early 2021. The authors predict the continuation of the upward trend.
environments especially after 9/11, the smart city has been theorised as a surveillance city or security city, underlining the “central place of surveillance in smart city projects” (Murakami Wood 2015). The integrated surveillance also highlights the disciplinary aspects of smart cities in producing “docile subjects and mechanisms of political legitimisation” (Vanolo 2014: 883).

Despite their critical tone, the universalist approach of the aforementioned critique neglects the specificities of each urban environment where these projects become implemented. Therefore, it has been criticised for contending that the smart city is a “universal, rational and depoliticised project that largely plays out according to the terms of profit-maximising, multinational technology companies” (Shelton, Zook, and Wiig 2014: 14). It is then argued that the real-world smart city projects are situated within “existing social and spatial constellations of urban governance and the built environment” (Shelton, Zook, and Wiig 2014: 14) and, therefore, research and policy about them should take into consideration the “in-depth empirical case studies of specific smart city initiatives and comparative research that contrasts smart city developments in different locales” (Kitchin 2014: 131). Despite such critical debates, less attention has been paid to the political systems in which smart cities are embedded.

Although it might seem logically ineluctable to think about any governance model, including smart city projects, without considering their political context, histories, structure, and capabilities, surprisingly, this simple fact has not received adequate attention. For example, in a systematic literature review on smart city governance in developing countries, the authors have identified these barriers to smart city development: budget constraints and financing issues, lack of investment in basic infrastructure, lack of technology-related infrastructure readiness, fragmented authority, lack of governance frameworks and regulatory safeguards for smart cities, lack of skilled human capital, lack of inclusivity, environmental concerns, lack of citizen participation, and technology illiteracy and knowledge deficit among the citizens (Tan and Taeihagh 2020: 899). Many of the barriers discussed in the literature are, then, linked to inefficient or bad governance and not seen as the symptoms of underlying political systems that cause social injustice, environmental catastrophes, and inadequate infrastructure in the first place. Another study of the 100 Smart Cities Mission in India focuses on ICT-based citizen engagement through the MyGov.in website without mentioning the complicated urban politics dominant in many Indian states (Sarbeswar, Jung Hoon, and Scott 2017). Another systematic literature review on the governance of smart cities remains highly depoliticised, even in discussing the degree of autonomy a city possesses as a contextual factor of smart city governance (Ruhlandt 2018). Similar systematic reviews from an information technology perspective (1990–2019) focus on improving democratic processes for e-governance (Andrés and Enrique 2019) without enquiring if any democratic procedure is possible. Likewise, systematic literature reviews with a security approach suffice to mention the security risks and implications of innovations in “authoritarian (or at least not fully democratic) regimes” only in the concluding words (Laufs, Borrion, and Bradford 2020: 15).

Authoritarian Eutopias and Smart City

Smart city imaginaries, from the beginning, have carried a utopian agenda at their core. The longing for seamless, efficient, connected cities is vivid in IBM’s narrative of its Smart Planet initiative: “computational power was being infused into things no one had thought of as computers: phones, cars, roads, power lines, waterways and food crates. A trillion connected and intelligent things were becoming a system of systems—an “internet of things”—and producing oceans of raw data” (IBM n.d.). The techno-solutionist mind of politicians, development agencies, Big Tech companies, and urban managers was set to eradicate poverty, uneven access, and voicelessness through ICTs, platforms, and Big Data analytics. However, the smart and digital are not enough to help the subaltern talk. By forcing different elements of an urban environment to unite under a seemingly cohesive smart city plan, the experiments carried under the banner of smart city or eco-city have led to “Frankenstein urbanism” (Cugurullo 2018), for example, by developing participatory platforms for citizen engagement in societies with a longstanding record of political oppression and undemocratic rule. These utopian visions are not only a misfit but also produce new exclusionary structures that deepen the societal divide between different groups (Marvin, Luque-Ayala, and McFarlane 2015). Although the transformation of citizenship and civic engagement in response to the smart city has been the
subject of scrutiny (see, for example, Powell 2021), these shifts are majorly studied in semi-/democratic political systems.

If the smart city fulfils a utopian picture of a future where data-driven, citizen-centred, and just cities thrive, what happens when this vision of the smart city is combined with the prospect of smart control? What about authoritarian regimes’ socio-technical imaginaries—“visions of desirable futures” (NEOM n.d.) attainable through forms of social order and advances in science and technology (Jasanoff and Kim 2015)? Looking at one of the most functional systems of centralised internet control and surveillance—the Great Firewall of China—reveals such utopian visions at policy, design, and governance levels. The early realisation of the rise of the new information age by Chinese leaders and the threat of growing oppositional political views paved the way for one of the earliest closed, centralised models of internet governance. Following what was famously said in the early 1980’s “if you open the window for fresh air, you have to expect some flies to blow in” (MacKinnon 2008: 32), filtering, control, and surveillance have been integrated into futuristic visions from the beginning. This vision informs the present-day building of more than five hundred smart cities across China based upon a surveillance-driven digital grid that has proved resilient in times of political crisis or the COVID-19 pandemic. The combination of technological advancements showcased in these smart city projects and the depoliticisation of smart city discourse attract Western stakeholders such as Danish architecture firm BIG, which is working with the Chinese tech company Terminus to plan a smart city run entirely by AI (Bacchi 2020). The research on smart cities in China has rarely been critical and has almost never discussed this urban form as authoritarian or surveillant (see, for example, Yu and Xu 2018, Wang, Zhou, and Wang 2020, Zhou et al. 2021, and Song et al. 2021). It is then no surprise that, for example, an overview of smart cities in China identifies the “two most prominent Chinese characteristics in the construction of smart cities” as being “people-oriented and in-depth urban informatization” (Yang, Lee, and Zhang 2021: 89).

This lack of political situatedness is even more startling when considering smart cities in authoritarian systems that are just visions with no possibility of material realisation. For example, NEOM in Saudi Arabia is a proposed 170-kilometre linear city and claims to not only be a smart city but also a cognitive city based on AI “that continuously learns and predicts ways to make life easier” and “seamless” (NEOM n.d.). Although the current research on NEOM highlights the imaginary aspect of this vision, it fails to position this vision within a political regime that has a long history of gender, ethnic, religious, and political oppression. However, research papers on this city engage with city branding (Aly 2019), fulfilment of smart city concepts and dimensions (Doheim, Farag, and Badawi 2019), economic diversification from oil and gas (Hassan 2020), and achieving smart, sustainable cities with GeoICT (Aina 2017). Even when calls for a comparative global agenda have been issued, authoritarianism as a political form has not been a significant component (Miller et al. 2021), even in cases such as Dubai, where the focus stays on worlding strategies and the country’s effort to become a regional hub (Breslow 2021).

**Authoritarian Surveillance, Authoritarian Smart City**

Although the political embeddedness of the smart city remains neglected, the field of surveillance studies has partly addressed the issue through the lens of authoritarian surveillance. The theorisation of authoritarian surveillance has frequently taken a historical approach in highlighting the significance of “authoritarian surveillance operation and legacy” for today’s surveillance processes, for instance, by examining their presence in post-fascist South-European countries (Samatas, Chiara Fonio, and Galdon Clavell 2011: 1), by analysing US military interventions in the Philippines resulting in a surveillance state (McCoy 2009), by studying race classification under apartheid in South Africa (Bowker and Star 2000), or by studying IBM’s involvement in co-planning and co-organizing of the Holocaust for the Nazis (Black 2012). Apart from this historical approach, the literature on the current state of affairs is divided into three categories. The first category, well-established across many academic disciplines, scrutinises authoritarian practices (Glasius 2018) in democratic contexts, especially after the Snowden revelations and throughout the Trump administration (Murakami Wood 2017). The second category has evolved from an uncritical enthusiasm for “liberation technologies” (Diamond 2010) into the reality of using surveillance technologies to maintain
autocratic power (see, for example, Jones 2022). The third category, which remains completely unexplored, engages with the authoritarian structure and governance of platform corporations beyond the customary notions of the nation-state. Figure 2 demonstrates these three overlapping strands.

![Figure 2: Conceptual strands of authoritarian surveillance.](image)

Each of these strands offers new research perspectives for smart cities in a disciplinary intersection of urban studies, political theory, policy studies, STS, and similar. Contrary to the first group, the authoritarian structure of platform corporations and Big Data companies is absent in both smart city and authoritarian surveillance scholarships. The political structures of private companies are not only noteworthy for their increasingly vital role in decision-making about the future of digital markets and rights but also for the way they shape public-private partnerships in any political system situated anywhere on the spectrum between democracy and authoritarianism. In this sense, it is not only the socio-technical imaginaries of nation-states that form the smart city conceptualization, implementation, and governance but also the worldviews and visions of digital platform leaders such as Elon Musk, Mark Zuckerberg, and Jeff Bezos. Musk’s adherence to long-termism, colonisation of outer space, and effective altruism for future generations (Torres 2022) has grave consequences on how he engages with current world affairs and social justice for the Earth’s present population. Under his recent management of Twitter, teams on human rights, accessibility experience, machine learning ethics, transparency and accountability, and public policy have either been eliminated or massively reduced in staff number and size (Hatmaker 2022). The Metaverse, “a set of interconnected digital spaces that lets you do things you can’t do in the physical world” (Tech at Meta 2021), simulates social relations in virtual spaces; one might wonder what kind of politics such virtual societies will induce. Similarly, Amazon’s dream of market domination, ongoing antitrust investigations against it, and its controversial labour management procedures pose the question of whether an authoritarian system of platform governance is not already in place within the Silicon Valley giants. The answer to this question should also consider that these companies, similar to sovereign powers, are even building their own infrastructure to own the internet (Mims 2022).

The second authoritarian surveillance group, as already discussed in previous sections, engages with smart city programmes in contexts where many established smart city pillars, such as citizen participation, are fundamentally limited or non-existent. The efforts of authoritarian regimes to influence and shape digital communication networks as “tools of oppression” (Burgers and Robinson 2016: 248) have already been the subject of scholarly and civil society’s debates. The concept of “networked authoritarianism” (MacKinnon 2011: 32) opposed the illusion of a technological fix and “add-ICTs-and-wait approach” (Samarakoon, Christiansen, and Munro 2017: 649) by underlining the integration of digital technologies in the texture of
authoritarian regimes’ governance structure. This approach differs from dystopian ways of thinking about the dark side of the internet (Deibert 2013; Mozorov 2011) and is rather concerned with the strategic utilisation of digital technologies for existing authoritarian surveillance systems.

Although not entirely focused on surveillance, there is also a growing literature on digital repression and digital governance in authoritarian contexts. Situated at the disciplinary overlap of political science, public administration, and international relations, this body of research discusses the use of digital technologies for the survival and continuation of authoritarian rule. This might include new forms of political control and digital repression (Feldstein 2021), informational theories on how modern dictators survive (Guriev and Treisman 2019; Gnutitsky 2015), controlling the internet and digital strategies within autocratic politics (Keremoğlu and Weidmann 2020), internet governance and its repressive structure in authoritarian regimes (Boas 2006), the paradoxical opportunities provided by digital technologies for both dictators and activists (Xu 2021; Rød and Weidmann 2015), and collecting the variety of technologies and tactics used for digital censorship (Kawerau, Weidmann and Dainotti in press; Hellmeier 2016; Deibert et al. 2012), including internet shutdowns, denial-of-service (DoS) attacks, and interceptive technologies.

The complexities of studying such systems with a variety of actors are reflected in the use of assemblage theory in papers on authoritarian surveillance. Its conceptual flexibility helps researchers to transcend the limitations of a structural approach to emerging techno-political authoritarian constellations in order to describe authoritarian surveillant assemblages (Topak 2019) and resistance assemblages (Akbari and Gabdulhakov 2019). Other perspectives from political geography, international relations, policy studies, political theory, and similar can deepen and further develop the discussion using transdisciplinary or interdisciplinary theories and methods. Also, comparative studies, for example, about the complexities of comparing authoritarian regimes’ capacities and resources in achieving pervasive surveillance during the COVID-19 pandemic (Akbari 2021) or other common crises and challenges can shed light on the varieties of authoritarianism itself and how each different authoritarian form deals with the problem at hand.

**Politicising the Smart City**

Although smart city research has been less attentive to the historical, spatial, and cultural locatedness (Murakami Wood 2009) of its subject of research, other neighbouring fields of study are increasingly vocal about the importance of integrating critical political perspectives into research. Information and Communication Technology for Development (ICT4D) scholars are questioning the meaningfulness of ICT4D research considering the universal approach of the United Nations’ development goals, the problematic legacy of development discourse and its embeddedness in colonial relations, the standardising effect of development indicators, and the techno-solutionist approaches that try to fix social, economic, and political injustice by using ICTs (see, for example, Masiero 2022). Likewise, critical data studies throws important questions about how Big Data, privacy, or platforms are understood without taking the Global Souths’ realities into consideration (see, for example, Milan and Treré 2019). Similarly, this research agenda on authoritarian smart cities politicises the smart city research to:

- improve the theoretical debate on smart cities by adding new perspectives that allow us to conceptualise undemocratic visions of the smart city,
- theorise authoritarian surveillance with concrete case studies of its structural and discursive elements not only within political systems but also within private entities, and
- highlight the epistemic politics of scholarly practices in depoliticising the smart city and reducing it to a collection of measurable indicators.

Although all of the actors involved in promoting smart city discourse, from development agencies to nation-states to private companies, adhere to a universal set of standards and indicators, these seemingly neutral values are anything but apolitical. The smart economy has caused precarious labour conditions and deepened the divide between the gig workers in the Global South and the platform owners (mostly) in the Global
North (Anwar and Graham 2022). Smart technologies such as blockchain are forced on aid-receiving refugees, and due to their so-called lack of digital skills, iris scanning and similar corporally integrated technologies have become prevalent (Cheesman 2022). Further collaborations between WFP and the ill-famed technology company Palantir to use data for reducing operational costs have raised concerns about the “humanitarian-intelligence nexus” (Martin and Taylor 2019). The omnipresent surveillance of the Chinese government during the COVID-19 pandemic alarmed many smart city protagonists about what smart living might entail. Smart governance initiatives such as digital IDs in the hands of Taliban forces has shown how dangerously these systems could be misused (Schoemaker 2021). Using traffic camera footage for controlling women’s hijab in Iran (Akbari 2019) has illustrated the data injustices related to smart mobility. These are some examples of how the smart city’s conceptualisation, governance, and implementation is inherently political and embedded within political systems that pursue authoritarian objectives. Furthermore, this research agenda aims to demystify the prevalent assumption of the good smart city that fixes all injustices that socio-political endeavours have not achieved. Every technologically enabled tool or platform reflects the political constellations in which it is embedded and affects and produces new socio-technical interlinkages that could never be apolitical.

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**References**


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