Journal of Urban Affairs

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ujua20

People-Centered Smart Cities: An exploratory action research on the Cities' Coalition for Digital Rights

Igor Calzada, Marc Pérez-Batlle & Joan Batlle-Montserrat

To cite this article: Igor Calzada, Marc Pérez-Batlle & Joan Batlle-Montserrat (2021): People-Centered Smart Cities: An exploratory action research on the Cities' Coalition for Digital Rights, Journal of Urban Affairs, DOI: 10.1080/07352166.2021.1994861

To link to this article: https://doi.org/10.1080/07352166.2021.1994861

© 2021 The Author(s). Published with license by Taylor & Francis Group, LLC.

Published online: 22 Nov 2021.

Submit your article to this journal

Article views: 337

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at https://www.tandfonline.com/action/journalInformation?journalCode=ujua20

JOURNAL OF URBAN AFFAIRS
https://doi.org/10.1080/07352166.2021.1994861

Routledge
Taylor & Francis Group

OPEN ACCESS Check for updates

People-Centered Smart Cities: An exploratory action research on the Cities' Coalition for Digital Rights

Igor Calzada[a], Marc Pérez-Batlle[b], and Joan Batlle-Montserrat[b]

[a]Cardiff University, University of Oxford, UN-Habitat; [b]Barcelona City Council

ABSTRACT

Declarations and manifestos have emerged across the world claiming to protect citizens' digital rights. Data-driven technologies in global cities not only have yielded techno-euphoria but also have intensified techno-political concerns as reflected in UN-Habitat's flagship program called "People-Centered Smart Cities" (PCSC) that advocates the willingness to promote inclusiveness while subverting the technocratic *smart city* meaning. Against this backdrop, in 2018, the city councils of Barcelona, Amsterdam, and New York formed the Cities' Coalition for Digital Rights (CCDR), an international network of cities—currently encompassing 49 cities—to promote globally citizens' digital rights. Inspired by Arendt's famous quote, this article explores what "the right to have digital rights" may currently mean, drawing on a sample consisting of 13 CCDR cities. Through action research to examine six digital rights-related factors, full findings revealed not only distinct strategies—related to AI adoption—but also common policy patterns in the 13 CCDR cities.

Introduction: People-Centered Smart Cities (PCSC) and Cities' Coalition for Digital Rights (CCDR)

Technology, embodied through the so-called smart cities, has been integrated into nearly all aspects of public and private urban life, promising opportunities to optimize key components of human settlements including mobility, energy, water, healthcare, education, housing, public services, public space, physical infrastructure, and the environment (Calzada, 2021a; Desouza et al., 2021; Hu & Zheng, 2021; Kirby, 2002; Kitchin, 2015; Komninos et al., 2021). Meanwhile, many cities have become testbeds for new and sometimes unregulated information and communication technologies (ICTs) in post-COVID-19 times such as artificial intelligence (AI), forcing local authorities to quickly respond to disruptive algorithmic trends and adapt traditional levers of municipal control to experimental data-use cases (Ahmed, 2018; Cheney-Lippold, 2011; Craglia et al., 2021; Csernatoni, 2020; Kitchin, 2020a). The datafication streams created by a new generation of smart city initiatives and technologies have spurred a global debate in cities about data governance, privacy, and surveillance, requiring local city governments to upgrade and tailor their digital infrastructure, consider urban governance in new ways, and assess their ability to secure data and guarantee digital rights for their fellow citizens (Bigo et al., 2019; Isin & Ruppert, 2015; Lupton & Michael, 2017; Sadowski, 2019; Sadowski et al., 2021).

Broadly, in smart cities, ICTs have been applied uncritically, with large-scale investments in ambitious digital infrastructure projects that fail to deliver the expected impacts and instead bolster concerns about the lack of transparency and privacy around the technologies that shape public services and urban life (Calzada, 2020a). Trends toward increased surveillance, private ownership of public data, and uncritical use of AI threaten urban governance by perpetuating social inequalities

CONTACT Igor Calzada calzadai@cardiff.ac.uk; igor.calzada@compas.ox.ac.uk Cardiff University, Wales Institute of Social and Economic Research and Data (Wiserd) Esrc, 38 Park Place, Cathays Park, Cardiff CF10 3BB, Wales, United Kingdom.

© 2021 The Author(s). Published with license by Taylor & Francis Group, LLC.
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

through data and digital divides and creates discontents and discrimination among urban stakeholders (Aho & Duffield, 2020; Gekker & Hind, 2020; Lightfoot & Wisniewski, 2014; Maxmen, 2019; Zuboff, 2019).

Furthermore, smart city initiatives and data-driven technologies have gained substantial attention in cities in the Global North and Global South through recent ICT apps, devices, and platforms (Datta, 2015; Gawer & Srnicek, 2021; Isin & Ruppert, 2020), including AI, digital twins, big data, blockchain, and augmented reality, among others. They have not only yielded techno-euphoria but also have intensified techno-political concerns among a wide range of urban stakeholders about the control over data, increasingly manifested through several city governments' digital rights advocacy (Janssen et al., 2020; Löfgren & Webster, 2020). Consequently, and more recently, the awareness of the techno-politics of data in cities has led to a gradual, resilient, and joint urban reaction—pushed forward by the aftermath of the pandemic and exacerbated by the algorithmic crisis—which has put city governments at the forefront of safeguarding citizens' digital rights in the post-COVID-19 era (Ada Lovelace Institute, 2021a, 2021b, 2021c; Breuer & Pierson, 2021; Burki, 2021; Calzada, 2017; CDEI (Centre for Data Ethics and Innovation), 2021; Haug, 2020; Katz et al., 2021; The British Academy, 2021).

This reaction has resulted in intensive discussions among cities and their urban stakeholders about ways to tackle the pandemic crisis by raising debates around the importance of digital rights (Newlands et al., 2020). This urban response have gradually sparked an updated institutional and alternative version to the hegemonic smart cities concept, through UN-Habitat's flagship strategic program coined as People-Centered Smart Cities (PCSC). In response to the overhyped technocratic interpretation of the smart cities concept (Habermas, 2015; Hollands, 2008; Morozov, 2019), UN-Habitat has promoted PCSC concept since 2018 (UN-Habitat, 2021a, 2021b). The foundational statements of the PCSC program explicitly addressed the need to revisit the smart city concept in light of cities' emerging role in digital rights advocacy when they acknowledged that "digital technologies in cities, depending on their use, can be a force that widens social gaps or reduces them" (UN-Habitat, 2021b, p. 1). What is more, according to this program, "in the absence of public oversight and accountability, data on citizens and communities is being extensively recorded, often by private companies, thereby raising concerns around privacy, surveillance, data sovereignty, and digital rights" (UN-Habitat, 2021b, p. 1).

PCSC's foundational statements assume that digital technologies have a transformative potential and can contribute greatly to sustainable urban development if the concept of smart cities can be divested of its technocratic attributes (Calzada, 2018). What is evident too is that smart city initiatives have fallen short on sustainability, social justice, and digital rights so far (Barbera & Jones, 2020; Brunswicker et al., 2019; De Jong et al., 2015; Kitchin, 2020b). Such mainstream and hegemonic approach have been characterized by three main flaws: (i) failure to engage citizens in a meaningful manner, (ii) privatization of public digital infrastructure and services, and (iii) lack of transparent data governance model ensuring the protection of citizens' digital rights (UN-Habitat, 2021b).

A direct outcome of this UN-Habitat PCSC policy advocacy was the Declaration of the CCDR (CCDR (Cities' Coalition for Digital Rights), 2018), which was translated into data policy by building networked data infrastructures and institutions alongside policy recommendations for PCSC (Calzada & Almirall, 2020). The CCDR, an international alliance of global cities, was formed in 2018 by the Barcelona, Amsterdam, and New York City (NYC) city councils to promote citizens' digital rights on a global scale. This broad movement has gradually expanded under the leadership of Barcelona, Amsterdam, and NYC. Today, the movement comprises an additional 46 cities—including Athens, Balikesir, Berlin, Bordeaux, Bratislava, Cluj-Napoca, Dublin, Glasgow, Grenoble, Helsinki, La Coruña, Leeds, Leipzig, Liverpool, London, Lyon, Milan, Moscow, Munich, Nice, Porto, Rennes Metropole, Rome, Stockholm, Tirana, Turin, Utrecht, Vienna, and Zaragoza in Europe; Amman in the Middle East; Atlanta, Austin, Cary, Chicago, Guadalajara, Kansas City, Long Beach, Los Angeles, Montreal, Philadelphia, Portland, San Antonio, San José, Sao Paulo, and Toronto in the Americas; and Sydney in Australia. This cohort of global cities is determined by their voluntary membership in the CCDR based

on their promise to connect with other cities that share a common ground, which could be understood as an active policy commitment toward techno-political awareness by fostering democratic citizenship within their urban stakeholders (Ada Lovelace Institute, 2021d).

Hence, paralleling the PCSC's formulation by UN-Habitat, a supranational city-network advocating for digital rights stems from it (Acuto & Pejic, 2021). The origin of the CCDR is due to the need for cities to be acknowledged as (i) the "closest democratic institutions to citizens and communities and as those (ii) best situated to deal with the growing consequences of digital rights violations" (CCDR (Cities' Coalition for Digital Rights), 2019, p. 3). The goals of the CCDR are fourfold: (i) to lead public opinion and advocacy for residents' concerns; (ii) to be an agile testbed for new policies and rules; (iii) to legislate and manage public space; and (iv) to use purchasing power.

Against this backdrop, thus, the concept of the smart city, having been highly contested in the literature from a critical academic standpoint (Calzada & Cobo, 2015; Hollands, 2008), was recently reframed by the UN-Habitat program as PCSC. According to this update, the definition of smart city has expanded to include themes like public participation, education, public health, data governance and digital inclusion, aspects that are at the core of inclusive digital and urban affairs. These concepts center more on government services rather than infrastructure and emphasize technology's role in enhancing citizen engagement through crowdsourcing, open data, citizen science, civic technology, and social media. The new categorization creates not only an urban paradigm for the Global North but also for the Global South by decolonizing the urban standpoint (Calzada, 2021c; Datta, 2015; IRPC (Internet Rights & Principles Coalition), 2014; Scholz & Calzada, 2021; Treré, 2021). The use of the concept PCSC supports UN-Habitat's endeavor to back (among other city networks) the CCDR global cities, thus shaping a digital future that puts people first and helps bridge the social, digital, and data divides (Ada Lovelace Institute, 2021b; UN-Habitat, 2021a). UN-Habitat's PCSC definition highlights the fact that smart cities should serve the people and improve living conditions for all. Far from being bypassed, the key aspect of this definition is the acknowledgment that national governments are overwhelmed by the complexity of digital policies, while municipalities rarely have the in-house skills to create PCSC projects or to execute holistic impact assessments on the agreements they sign with private companies. For UN-Habitat, digital rights are intrinsic to PCSC insofar as cities are in a privileged position to strategize and deploy digital rights-related aspects among their fellow citizens.

This article provides the full definition of smart city by following PCSC's broad approach: "PCSC is a multistakeholder approach to urban and digital transformation that works for the benefits of all, driving sustainability, inclusivity, prosperity, and human digital rights" (UN-Habitat, 2021b, p. 2). Nonetheless, in this PSCS multistakeholder approach, the triangle between the state, the market, and the citizenry requires also careful balance to protect civic digital rights and liberties and to enable participation and active citizenship (Daskal, 2018; Hintz et al., 2017). The non-problematic claim for the protection of civic digital rights could also be problematized by following the unresolved issue of the "right to the city" correctly characterized as an "empty signifier" in urban-related affairs (Harvey, 2008, p. XV). Although this article explicitly acknowledges this unresolved gap in urban studies, an examination of UN-Habitat's PCSC flagship program shows a fundamental institutional commitment to digital rights by emphasizing core academic literature about digital democracy and the data divide in cities (Forestal, 2021; Goggin et al., 2019; Nguyen, 2017). According to this interpretation, city governments must take a strategic approach to digital transformation, ensuring that it aligns with existing urban priorities such as inclusive neighborhood planning, sustainable transport, affordable housing, and reduction of carbon emissions (United Nations, 2019, 2021).

Inspired by Arendt's (1949) famous quote about "the right to have rights," (Arendt, 1949), this article aims to conduct action research to explore empirically the meaning of "the right to have digital rights" in a sample consisting of 13 CCDR global PCSC (Barcelona, Amsterdam, NYC, Long Beach, Toronto, Porto, London, Vienna, Milan, Los Angeles, Portland, San Antonio, and Glasgow). It analyzes six digital rights-related factors: (i) the understanding of digital rights; (ii) the degree of priority of the several digital rights (CCDR [Cities' Coalition for Digital Rights], 2019); (iii) the data

commons strategy in relation to the data governance model adopted in each city (Calzada & Almirall, 2019; Micheli et al., 2020; Tommaso, 2020); (iv) the resulting outcome expected for each city from the CCDR, understood as a city-to-city-learning program (Calzada, 2020c); (v) the expectations about data co-operatives (Calzada, 2021c; Pentland & Hardjono, 2020; Scholz & Calzada, 2021) and platform co-operatives (Calzada, 2020b; Scholz, 2014), and (vi) promises and perils regarding AI adoption and uptake in the public sector (Digital Future Society, 2021; Van Roy, 2020).

Consequently, the research question of this article is: How are 13 CCDR global PCSC implementing their city strategies advocating digital rights (factors i, ii, and iii) while learning from each other (factors iv, v, and vi)? In response to this research question, this article provides an overview through an exploratory action research via qualitative fieldwork research by collecting data in November 2020 through a semi-structured questionnaire, resulting in an in-depth examination of six digital rights-related factors (Appendix A).

Figure 1 depicts the rationale behind the nexus between PCSC and CCDR as explained in this introductory section: First, a wide variety of ICTs so far has been directed to spread the hegemonic and technocratic nature of the overhyped smart city concept and related practices. Second, this trend may have provoked a joint counter-reaction from civil society and public authorities subverting the oligopolistic power of large technological firms by suggesting an alternative response increasingly advocated by UN-Habitat as PCSC and being actively promoted by the CCDR global city-network through the dissemination of context-specific strategies and digital policies on digital rights (United Nations, 2020). Third, CCDR suggests further democratic decision-making processes in cities whereby citizens could decide how their digital data are used—not just large technological firms (Sadowski et al., 2021)—which clearly resonates with the timely debate on digital rights (Daskal, 2018; Isin & Ruppert, 2015; Karppinen & Puukko, 2020) that is presented in the next section on "the right to have digital rights."

The article is structured as follows: (i) in the following section, the notion of "the right to have digital rights" is developed; (ii) thereafter, this exploratory action research via qualitative fieldwork research is presented through its rationale, sample, and research design consisting of six digital rights-related factors; (iii) in the fourth section of this article findings related to the six digital rights-related factors will be revealed and results will be presented and discussed; and finally (iv), the article concludes with several final remarks and future research avenues.

"The right to have digital rights" in urban affairs

Hannah Arendt (1949) wrote a phrase that has gradually become one of her most quoted and often interpreted: "the right to have rights." This quotation may resemble the current post-COVID-19 algorithmic times as a contextual condition affecting urban affairs, particularly digital policies, programs, and strategies for change in the urban milieu when, in the age of digitization, dealing responsibly with citizens' rights and data poses a dilemma for city governments (Desouza et al., 2021; Hu & Zheng, 2021; Lodato et al., 2021; Wong, 2020). On the one hand, there is the tangible added value of processing citizens' personal data by private sector organizations, but on the other hand, there is the claim that individuals should retain control over these data and consequently derived civilian rights (Calzada, 2019; Hintz et al., 2017; Hummel et al., 2021; Karppinen & Puukko, 2020; Kitchin, 2020b).

Since the declaration of the independence of cyberspace (Barlow, 1996), calls for the protection of citizens' digital rights have resulted in countless reports, manifestos, organizations, projects, and political declarations in different regional, national, supranational, and global contexts (Amnesty International & Access Now, 2020; CFDREU (Charter of Fundamental Digital Rights of the European Union), 2020; Digital Rights Archive, 2021; Digital Rights Watch, 2021; MFTSDRC (Manifesto in Favour of Technological Sovereignty and Digital Rights for Cities), 2019). Citizens have traditionally reasserted their positions in relation to the state by claiming human and civil rights and making rights claims.

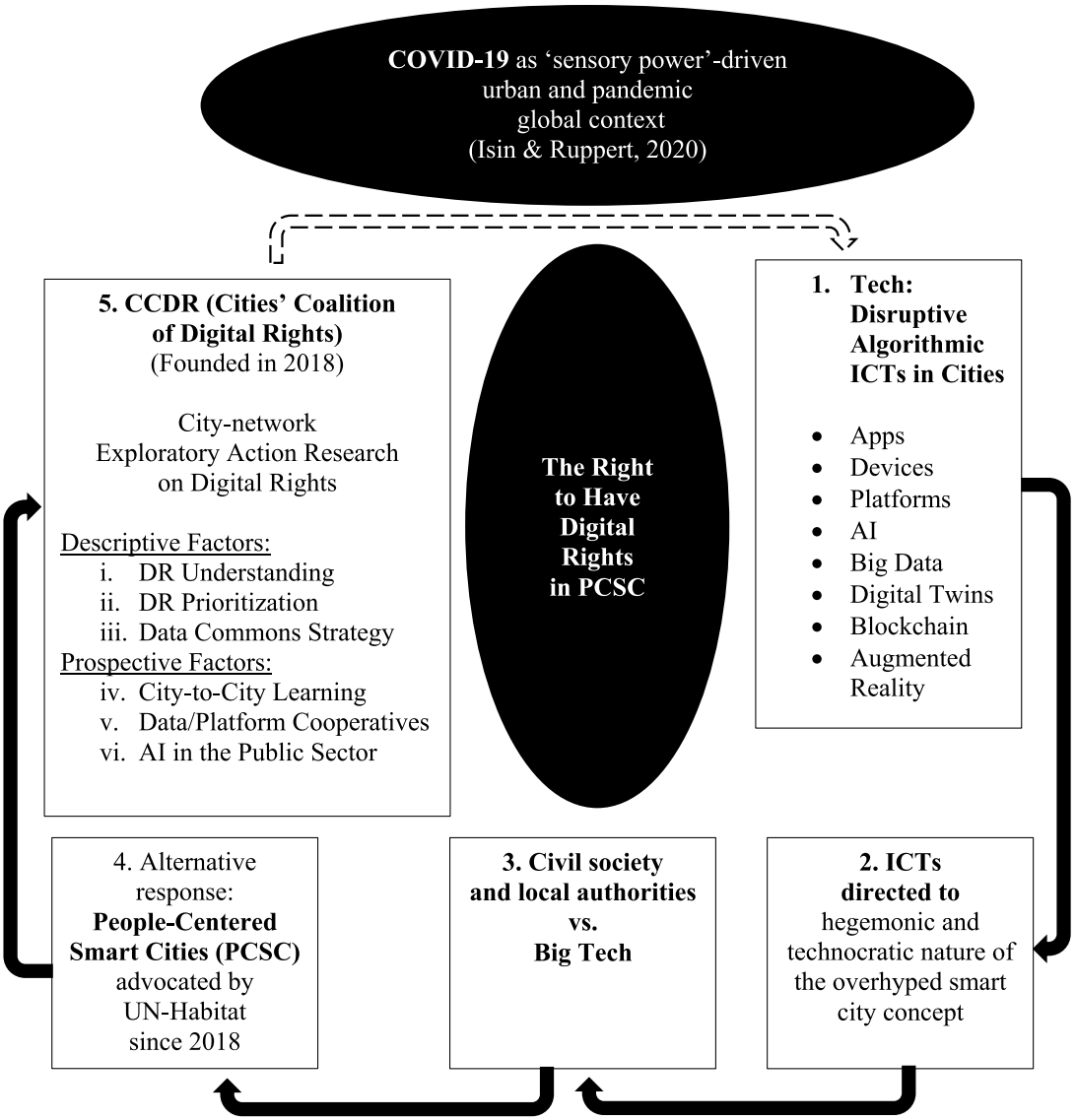

Figure 1. People-Centered Smart Cities (PCSC) and Cities' Coalition for Digital Rights (CCDR) nexus.

In many ways, the pandemic has unprecedentedly brought into sharp relief digital rights issues on which several agents had been working for years in cities worldwide (CCDR [Cities' Coalition for Digital Rights], 2020; CDR [Centre for Digital Rights], 2021), including Access Now (since 2009), Algorithmic Justice League (since 2016), Alternative Informatics Association (since 2010), Center for Democracy and Technology (since 1994), The Digital Freedom and Rights Association (since 2011), Digital Rights Watch (since 2016), Electronic Frontier Foundation (since 1990), European Digital Rights (since 2002), Free Software Foundation (since 1985), Free Software Foundation Europe (since 2001), Internet Security Research Group (since 2013), Open Rights Group (since 2005), (Pirate Parties International (since 2010), Right 2Know (since 2010), and Xnet (since 2008).

Recently, a range of literature about digital rights has appeared in different disciplinary perspectives (Forestal, 2021; Hintz et al., 2017, 2019; Isin & Ruppert, 2015; Karppinen & Puukko, 2020; Pangrazio & Sefton-Green, 2021; Taylor, 2017) alongside a large corpus encompassing high-profile

reports; institutional declarations in different supranational, (CFDREU [Charter of Fundamental Digital Rights of the European Union], 2020), national, regional, and global contexts; and empirical datasets such as atlases (EFF [Electronic Frontier Foundation], 2021) and rankings (RDR (Ranking Digital Rights), 2021). On the one hand, for several authors, algorithmic disruption has raised the question of how citizenship can be redefined through the incorporation of new digital rights related to the status of a citizen in cyberspace—access, openness, net-neutrality, digital privacy, data encryption, protection and control, and digital/data/technological sovereignty (Calzada & Almirall, 2020; Floridi, 2020). On the other hand, the authors of recent declarations include not only civil society organizations but also various coalitions of states, international organizations, industry actors—framing digital rights in terms of corporate social responsibility—as well as city coalitions such as CCDR.

Digital rights have been present in academic debates over the last years particularly under the banner of *digital rights management*, understood as a systematic approach to copyright protection for digital media (Postigo, 2012). This approach, alongside other remarkable contributions particularly on communication rights (Daskal, 2018; Padovani & Calabrese, 2014), focuses on a set of access control technologies for restricting the use of proprietary hardware and copyrighted works. More recently, though, the digital rights have been understood in a complementary fashion as follows: Pangrazio and Sefton-Green argued that "digital rights are human and legal rights that allow citizens to access, use, create, and publish digital content on devices such as computers and mobile phones, as well as in virtual spaces and communities" (Pangrazio & Sefton-Green, 2021, p. 19). Currently, digital rights are not only a set of rights in and of themselves but are also related to other human rights, particularly freedom of expression and the right to privacy in online and digital environments (Mathiesen, 2014; Seubert & Becker, 2021). In practical terms, human rights can be thought of as protection against standard threats—such as oppression, deprivation, and violence—that jeopardize human interests very much related to the notions of alienation and data justice (Taylor, 2017).

Focusing on digital rights from the urban affairs approach and further shedding light on what is meant by "the right to have digital rights" through the aforementioned PCSC multi-stakeholder approach, Daskal (2018, p. 241) claimed that "civil society organisations have been advocating digital rights aiming to construct the social-political-cultural identity of a generation who are knowledgeable, politically active, and aware of their rights in the digital age." However, more recently, Kitchin (2020a) has pointed out that in the early response to COVID-19, there was no sufficient consideration of the consequences for civil liberties and the associated digital rights, whether the supposed benefits outweighed any commensurate negative side effects, or whether public health ambitions could be realized while protecting civil liberties and ensuring digital rights. In the aftermath of COVID-19, the response given by CCDR PCSC shows how critical it has become for policymakers to elucidate the consequences of how data are collected, by whom, for what purpose, and how they are accessed, shared, and re-used (San Antonio, 2021; Telecare, 2021). Such an analysis inevitably opens up a plethora of questions regarding what it means to have "the right to have digital rights" for cities and their fellow citizens.

In response to this conceptual question, this article articulates an answer by suggesting that "the right to have digital rights" captures a comprehensive set of techno-political tensions in PCSC's multi-stakeholder arrangements among "subjects of rights, objectives, constraints, and governance frameworks" (Karppinen & Puukko, 2020, p. 312). Thus, beyond their status as existing legal obligations, digital rights can be articulated through a variety of political issues and employed by different stakeholders for different purposes. As such, Karppinen and Puukko (2020) criticize current debates for failing to acknowledge that rights are not simply rules and defenses against power: rights claims might often emerge from civil society, but they can also be used as vehicles of power and structures of governance. Furthermore, these authors consider that the concept of digital rights "remains vague and malleable" (Karppinen & Puukko, 2020, p. 309). Nonetheless, in line with the examination of the CCDR city cases in this article, they also argue that "actors that take part in these initiatives and

processes all contribute to a discursive exchange where the principles are crystallized and perhaps eventually institutionalized" (Karppinen & Puukko, 2020, p. 324), as is clearly the case with the PCSC of the CCDR.

Accordingly, the "right to have digital rights" in urban affairs could be articulated as a set of rights with a strong agency stemming from the civil society. The most comprehensive contribution to a set of digital rights that could be institutionalized in city governments was made by Isin and Ruppert (2015). For them, five digital rights have emerged in cyberspace so far: (i) expression, (ii) access, (iii) privacy, (iv) openness, and (v) innovation. Their position stems from Arendt's (1949) understanding of rights in legal and not performative terms, which essentially means that there can be no human digital rights without citizenship rights: either human digital rights are the rights of those who have no digital rights or the rights of those who already have digital rights, being citizens. Thus, Isin and Ruppert (2015) define a comprehensive list and definitions of five digital rights: (i) expression as blocking censorship of the Internet; (ii) access as promoting universal access to fast and affordable networks; (iii) openness as keeping the Internet an open network where everyone is free to connect, communicate, write, read, watch, speak, listen, learn, create, and innovate; (iv) innovation as protecting the freedom to innovate and create without permission; and (v) privacy as protecting privacy and defending people's ability to control how their data and devices are used.

In order to provide further insights on the potential evolution of "the right to have digital rights" in relation to city governments (Vesnic-Alujevic et al., 2019), Table 1 illustrates several existing taxonomies about digital rights: First, the taxonomy on the Charter of Human Rights and Principles for the Internet (IRPC [Internet Rights & Principles Coalition], 2014; Isin & Ruppert, 2015) shows a comprehensive list of 19 digital rights. Second, the taxonomy of the book *Smart City Citizenship* encompasses 14 digital rights (Calzada, 2021a). Third, and ultimately, the operational taxonomy formulated by the CCDR in its *Strategy 2020: Action Plan and Roadmap* (CCDR [Cities' Coalition for Digital Rights], 2019), which encompasses five digital rights. The latter taxonomy will be the only taxonomy that will be methodologically applied from now onwards to serve the purpose of this article.

Methodology: Rationale, sample, and research design

Rationale

In 2018, the CCDR, an international alliance of global PCSC which currently encompasses 49 cities worldwide, was formed by the Barcelona, Amsterdam, and NYC city councils through a declaration to promote citizens' digital rights on a global scale.

The CCDR creates policies, tools, and resources, in keeping with the Declaration of Human Rights and the principles of the Internet, established within the framework of the UN Internet Governance Forum and in coordination with the United Nations Human Settlements Program (UN-Habitat), the Office of the High Commissioner for Human Rights (UN Human Rights), United Cities and Local Governments (UCLG) and EUROCITIES. The CCDR defines five digital rights (www.citiesfordigitalrights.org), shown in the right-hand side column of Table 1. Thus, after shedding light on "the right to have digital rights" in the previous section, this article focuses on the five digital rights selected by the CCDR in its strategic formulation.

The CCDR (Cities' Coalition for Digital Rights; 2019) formulated its "Strategy 2020: Action Plan and Roadmap" in 2019 based on five strategies: (i) to build the coalition and promote the five digital rights of the declaration; (ii) to share best practices and know-how, to learn from each other's challenges and successes; (iii) to coordinate common initiatives, actions, and joint events among member cities; (iv) to advocate for relevant international policy processes; and (v) to build communities of digital policy makers to help cities lead by example on digital rights.

Against the backdrop of COVID-19, with the increased use of technologies for contact-tracing, video conferencing, geographic mapping, and surveillance, the CCDR recently attempted to go even further in safeguarding digital rights and released a statement regarding the responsible use of

Table 1. Digital rights' taxonomies.

DIGITAL RIGHTS' TAXONOMIES			
Being Digital Citizens (Isin & Ruppert, 2015)	Charter of Human Rights and Principles for the Internet (IRPC (Internet Rights & Principles Coalition), 2014)	Smart City Citizenship (Calzada, 2021a)	CCDR (Cities' Coalition for Digital Rights) (2019)
(1) Expression	(1) Right to access to the Internet (choice, inclusion, neutrality, and equality)	(1) Right to be forgotten on the Internet	(1) Right to universal and equal access to the Internet, and digital literacy
(2) Access	(2) Right to nondiscrimination in Internet access, use, and governance	(2) Right to be unplugged	(2) Right to privacy, data protection, and security
(3) Openess	(3) Right to liberty and security on the Internet (protection)	(3) Right to one's own digital legacy	(3) Right to transparency, accountability, and nondiscrimination of data, content and algorithms
(4) Innovation	(4) Right to development through the Internet (sustainability and development)	(4) Right to protect one's personal integrity from technology	(4) Right to participatory democracy, diversity, and inclusion
(5) Privacy	(5) Freedom of expression and information on the Internet (freedom to protest, right to information, freedom from censorship, and freedom from hate speech)	(5) Right to freedom of speech on the Internet	(5) Right to open and ethical digital service standards
	(6) Freedom of religion and belief on the Internet	(6) Right to one's own digital identity	
	(7) Freedom of online assembly and association	(7) Right to the transparent and responsible usage of algorithms	
	(8) Right to privacy on the Internet (anonymity, freedom from surveillance, and freedom from defamation)	(8) Right to have a last human oversight in expert-based decision-making processes	
	(9) Right to digital data protection (protection of personal data, use of personal data, and obligations of data collectors)	(9) Right to have equal opportunity in the digital economy	
	(10) Right to education on and about the Internet	(10) Right to consumer rights in e-commerce	
	(11) Right to culture and access to knowledge on the Internet	(11) Right to hold intellectual property on the Internet	
	(12) Rights of children and the Internet	(12) Right to universal access to the Internet	
	(13) Rights of people with disabilities and the Internet	(13) Right to impartiality on the Internet	
	(14) Right to work and the Internet	(14) Right to a secure Internet	
	(15) Right to online participation in public affairs		
	(16) Rights to consumer protection on the Internet		
	(17) Right to health and social services on the Internet		
	(18) Right to legal remedy and fair trial for actions involving the Internet		
	(19) Right to appropriate social and international order for the Internet (governance, multilingualism, and pluralism)		

technology with regard to pandemic response. While technologies could be leveraged during the pandemic crisis, the CCDR assisted governments and organizations to use them responsibly through 10 principles tied to the CCDR's core values: (i) nexus and proportionality (neither the technologies nor the data collected may be used for purposes other than those deemed strictly necessary for crisis response); (ii) impermanence (once the risk of the pandemic has decreased to insignificant levels, these technologies must no longer be used and all personal data should be deleted); (iii) consent and trust (these technologies cannot be imposed under any of coercion or reward system); (iv) privacy by design (privacy should be evaluated in the context of the real risks of re-identification or other privacy loss, especially when using highly sensitive information such as healthcare data); (v) control (where applicable, technologies should empower citizens to be stewards of their own data); (vi) openness and transparency (technologies must be developed using open technologies, data models, formats, and code, so that the code can be audited, verified and adopted by other cities and organizations, fostering transparency); (vii) responsiveness (technologies for COVID-19 should not be stand-alone measures but should draw upon the existing expertise, needs, and requirements of public health authorities and society, culture, and behavior, if they are to be effective in combatting the pandemic); (viii) participation (the development of such technologies should consider the needs of all people and include strong feedback loops between policymakers and citizens, with opportunities for iteration); (ix) social innovation (the successful and equitable use of these technologies requires a focus on social innovation, rather than on technological innovation, when they are to be used in everyday life in our societies; and (x) fairness and inclusion (technologies must be accessible and serve all communities, assuring equal accessibility and equal treatment across communities).

Sample: 13 CCDR cities

Rather than analyzing the different actions performed up to now by the coalition, the methodological rationale behind this article is to explore what "the right to have digital rights" may currently mean: how CCDR global PCSC are articulating their strategies to advocate the right to have digital rights and policies to protect citizens. In the end, this research will contribute to our understanding of how the coalition is impacting city governments in their exercise of advocating for citizens' digital rights.

To respond to the research question formulated in the first section of this article, an exploratory action research via qualitative fieldwork research by collecting data from a sample of 13 CCDR cities was designed. After a review on the "right to have digital rights" in urban affairs (as shown in the previous section), the research design entirely focused on the operational approach considering five digital rights as the official standpoint of the CCDR. Actually, in the previous section, the paper deepened into the digital rights taxonomies by taking account of different approaches and the justification for advocating in favor of a wide range of digital rights. During the methodological design process, different digital rights' taxonomies have been confronted with the CCDR taxonomy. Thus, this methodological design attempts to elucidate a variety of techno-political issues through the interplay of stakeholders to progress into actionable initiatives toward digital rights' institutionalization throughout the cohort of the 13 CCDR cities. The selection of the sample encompassing 13 CCDR cities is justified by the fact that these 13 CCDR cities actively governed the General Assembly 2020, during which the survey was conducted in November. Thus, we could consider these 13 cities as the leading and avant-garde group of cities among the rest of the members by pushing strategically ahead the whole CCDR. Appendix B depict the location and provide insights respectively about the 13 CCDR cities in detail.

Research design: Six digital rights-related factors through action research

To look into how 13 CCDR PCSC are developing their digital rights advocating strategies around the five digital rights defined by CCDR, the research design adopted an action research-driven progressive and exploratory approach based on six digital rights-related factors (Bartels,

2020; Bennett & Brunner, 2020; Soeiro, 2021): (i) digital rights' understanding; (ii) their prioritization; (iii) data commons strategy; (iv) city-to-city-learning; (v) data and platform co-operatives; and (vi) AI adoption and uptake in the public sector.

These six factors stem from the fact that, on the one hand, digital rights and understanding (factors i and ii) are very much related to the data commons strategy implemented by each city (factor iii), and, on the other hand, the CCDR has been established as a learning platform by its member cities (factor iv) that currently are interested in exploring the promises and perils of data and platform co-operatives (factor v) and the potentials and risks of AI in the public sector (factor vi). As shown in Figure 2, the first three factors explore the descriptively the implementation of digital rights in each city; the remaining three factors prospectively explore a post-COVID-19 resilient approach given the situation when the responses were given. The first three descriptive factors are presented as a snapshot whereas the remaining three strategic factors attempt to shed light on techno-political challenges for the 13 selected CCDR cities.

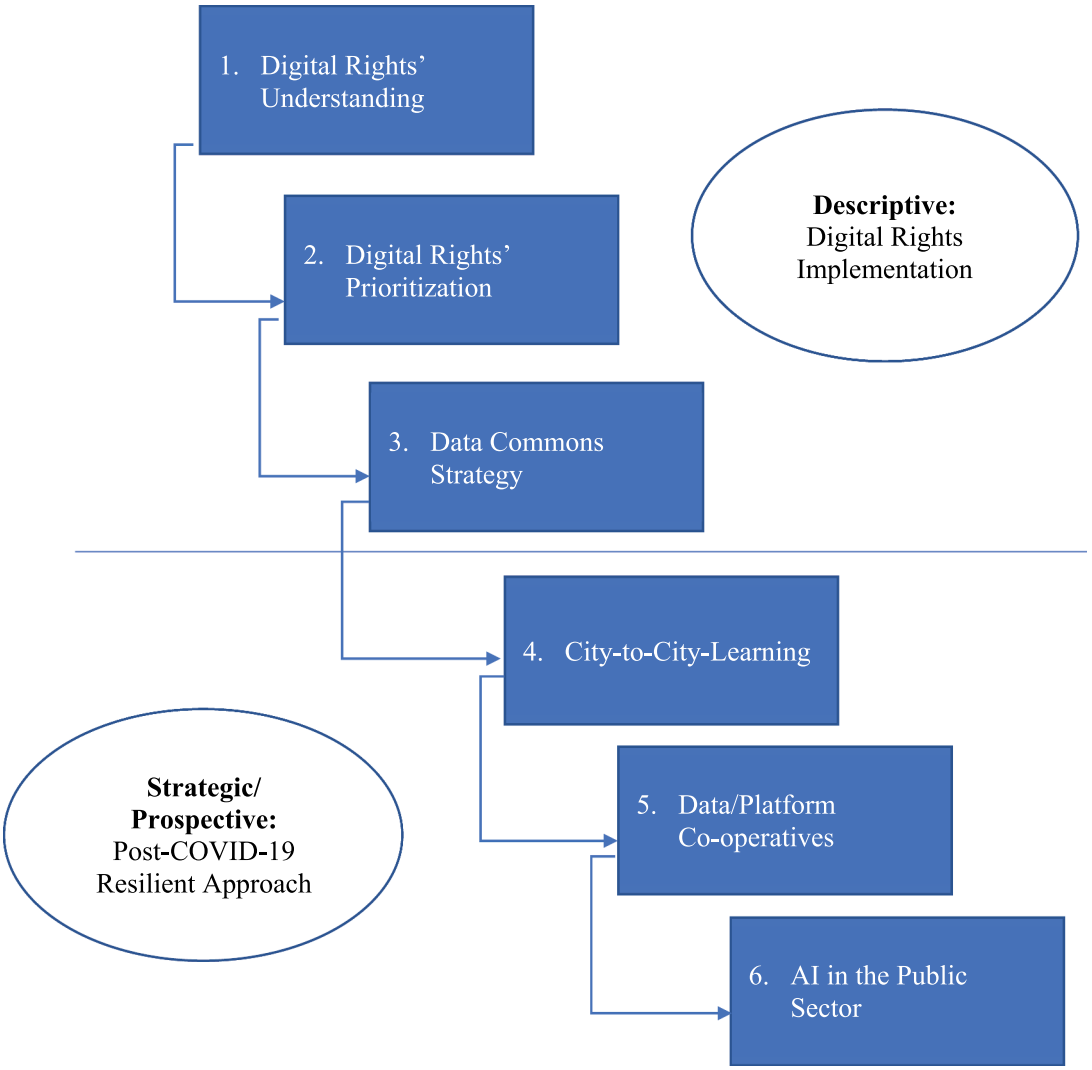

Figure 2. Progressive and exploratory action research design consisting of six digital rights-related factors.

This action research approach took the form of an iterative process with core members of CCDR board team, by elucidating the aforementioned six digital rights-related factors stemming from existing city strategies at the time of conducting the study. The first three factors aim to shed light on how cities are understanding digital rights and therefore implementing their related data commons strategies, while the last three factors are related with cities' post-COVID-19 response and consequently agency in the specific field of platform and data co-operatives and the emerging use of AI in the public sector, given their remarkable and pervasive impact in citizens' digital rights. The benefits of this approach are twofold (Figure 2): First, it offers directly a descriptive understanding of digital rights (regarding the first three factors) through the unique interpretation of each city representative (as those directly responding to this survey); and second, complementarily, regarding the other remaining three factors, this research offers a strategic/prospective view from present post-pandemic times onward with pros and cons to better align potential plans among CCDR cities for recovery, to experiment with data and platform co-operatives and to uptake AI in the public sector.

Since the pandemic began in 2020, the CCDR tracked and reported observations and lessons-learned as various cities confronted the pandemic. Amid these initiatives, the authors conducted exploratory research by collecting data through a semi-structured questionnaire (Appendix A). The data collection process was conducted by gathering responses to the questionnaire from the 13 city strategists/representatives of 13 CCDR cases during November 2020, particularly amid the General Assembly that took place on November 18, 2020, held within the policy framework of the Smart City Expo World Congress 2020 (SCEWC2020), which was employed to complete the sample (https://citiesfordigitalrights.org/event/cc4dr-general-assembly). Figure 2 shows the action research design consisting of six digital rights-related factors:

Results and discussion

Digital rights' understanding

Digital rights are associated mostly by all European cities with digital inclusion awareness as a direct result of the GDPR, whereas in the case of American cities, they reflect the value of public consultations in reference to Toronto and the so-called case of Sidewalk Labs (Baeten, 2020; Sidewalk Labs, 2018), the explicit concern about selling personal data (Los Angeles), the claim for the universal broadband (NYC), and the relationship with broader universal rights and anti-racism (Portland) (Q1).

The understanding of digital rights is very much associated with the following CCDR priority areas: The first option is clearly digital inclusion followed by privacy regulation. The priorities of open technologies and data economy were ranked equally as third and fourth options. The option less ranked by cities was the one related to accountable decision-making in AI (Q2).

All the cities were actively implementing projects, with the exception of a few early members (Q3). Regarding the nature of projects, several cities mentioned "big community engagement component" through "community advisory groups" with "volunteer residents," whereas others are combining "start-up ecosystems" with "municipality citizen cards" and "emerging technology charters" by highlighting the paradigm of "digital humanism." Several cities were actively launching knowledge exchange activities through workshops and festivals bringing together experts and citizens, by and large involving universities and civil society. Nonetheless, some hindrances and barriers were found also for implementing such projects: public trust, financial support, and sponsorship (Q4).

Ultimately, regarding specific contextual issues, the city of Toronto acknowledges that "the Sidewalk Labs smart city proposal on Toronto's waterfront certainly put a spotlight on these issues" and added that "it gained significant media attention, which helped raise awareness of the importance of digital rights amongst residents and decision-makers." As such, this testimony by the city representative of Toronto ensures an extremely relevant point in the failure of the surveillance capitalism in favor of the active claim to the "right to have digital rights" (Artyushina, 2020; Baeten, 2020; Sidewalk Labs, 2018; Q5).

Digital rights' prioritization

When it comes to prioritizing the five digital rights that CCDR is focusing on, disparities surfaced among cities (Q6). Despite the fact that (i) the universal and equal access to the Internet and digital literacy overall were ranked in first position; Long Beach and Porto prioritized in second position at the similar level, (ii) open and ethical digital service standards and (iii) privacy, data protection, and security; (iv) participatory democracy, diversity, and inclusion was equally prioritized in second position by cities including Toronto, Vienna, Milan, Barcelona, and NYC. Ultimately, cities put (v) transparency, accountability, and non-discrimination of data, content, and algorithms as the final option.

At present, all CCDR cities are embedding the formulation of digital rights in projects, initiatives (Q7), and internal dynamics (Q8). Regarding the expectations of the cities to achieve strategic implementation of digital rights, Amsterdam, Vienna, San Antonio, and Glasgow had "high" hopes of reaching completion, whereas the rest showed "medium" hopes. Not surprisingly, and being entirely realistic, none of the cities expect "full" or "low" or even "no" evolution of their implementations (Q9).

When asking about the most critical stakeholder to achieve more protection for digital rights (Q10), the responses significantly vary, even particularizing in-depth the context and acknowledging that local contextual conditions matter (Calzada, 2020c). We could group the questions as follows: (i) several cities, including Long Beach, Toronto, NYC, London, Los Angeles, and San Antonio, responded "residents and community-based organizations"; (ii) others, such as Milan and Barcelona clearly indicated "private tech companies providing public services"; finally, (iii) cities like Porto mentioned "specific research groups from the academia," Amsterdam mentioned "Waag Society as the key strategic partner," and Portland and Glasgow cited current "political leaders."

Hence, as the final question (Q11) examining the multi-stakeholder composition following the Penta Helix framework in each city (Calzada, 2020a) in terms of which stakeholder group creates or supports the existing ecosystems for digital rights protection, the general ranking shows a clear picture in favor of public institutions, followed by civil society (civil groups, associations, and NGOs) showing an active civilian fabric in all CCDR cities. In second and third positions are ranked these groups respectively: on the one hand, academia and research centers, and on the other hand, social entrepreneurs, urban activists, and change-makers. Not surprisingly, private companies are less likely to be supportive stakeholder groups in all cities, being in the last position of the given options. Nonetheless, remarkably there are nuanced distinctions from case to case by showing this trend: Whereas Amsterdam, London, Milan, Portland, and Glasgow favored public institutions, San Antonio and NYC gave high rankings to academia and research centers. Porto ranked social entrepreneurs, urban activists, and change-makers in the highest position.

Data commons strategy

Regarding the leading data governance model in each city (Q12), the most agreed response was that "without the engagement of the civil society, it is rather difficult to achieve an inclusive data governance model," respectively followed by these two statements at the same level: "the public sector is leading the data governance model of the city" and "the scientific domain, universities, and scientific institutions are gaining ground in the data governance model of the city." However, in a deep look at the responses and keeping in mind the ponderations, we could elucidate the following findings: Whereas the public sector leads in Toronto, Portland, San Antonio, and Glasgow, the private sector does in Long Beach, London, Milan, and Los Angeles; scientific institutions do in Porto, Amsterdam, Vienna, and NYC; civil society does in Portland; and ultimately, certain entrepreneurs, activists, and innovators do in Barcelona. These responses corroborate several insights about previous findings.

When asked about COVID-19 affecting initial priorities on digital rights (Q13), the majority of cities, seven, responded "absolutely," whereas four cities responded simply "yes," and only two responded "very little." It is clear that none of cities have not been affected at all by COVID-19.

Cities have taken specific actions to tackle COVID-19 as follows (Q14): (i) free Wi-Fi to low income residents in Toronto; (ii) Data4COVID-19 project to assess correlation of mobility and real-time pandemic health metrics in Porto; (iii) Digital Rights for Corona taskforce in Amsterdam; (iv) digital access as the priority in London; (v) the redevelopment of a digital strategy for schools in Vienna; (vi) access to the Internet, which proved to be the enabler for exercising constitutional rights such as the right to education in Milan; (vii) online education in Los Angeles; (viii) engagement with local organizations to distribute electronic devices to families in Portland; (ix) and acknowledgment of a trend toward increasing data sharing within Glasgow and national public bodies.

When asked about a definition of a good data commons strategy, several different (even complementary) strategies arose as shown in Table 2, Table 3 (Q15):

City-to-city-learning

Which are the attributes of CCDR as a city-to-city learning program (Calzada, 2020c) (Q16)? Responses revealed five attributes: (i) To share best practices, (ii) to connect with staff in several municipalities, (iii) to advocate better regulations, (iv) to ask for advice and resources to peer cities, and (v) to build commons projects. The activities mentioned included webinars, forums, and resources shared via e-mail (Q17). When asked about the political leadership in each city (Q18), mostly all the cities found the support and back-up at the strategic level "for digital rights' protection actions" and "for setting a digital rights respectful data strategy," whereas cities overall found less support in terms of "conducting city-to-city-learning initiatives" and "collaborating within the CCDR network" at the operational level. Finally, to conclude this section, several cities were identified as best-in-class cities (Calzada, 2020c), including the CCDR founding cities, Barcelona, NYC, and Amsterdam, as well as Milan, Toronto, London, and Helsinki as cities encompassing also the CCDR (Q19).

Table 2. A good data commons strategy.

City	A good data commons strategy should . . .
(1) Long Beach	"Evolve from open data portal, requiring data to be open by default, publish data governance and standards."
(2) Toronto	"Be based on open data, new ideas and perspectives unlock the potential for it to be re-used, analyzed, and correlated. A stable foundation and substantial investment in open data is key to the success of strategic initiatives like Smart Cities, Civic Innovation, and Open Government."
(3) Porto	"Focus on safe and secure physical space in-house with controlled access with tools and shared models to access data. Communication between data commons, no silos, and relevant data sets should be allowed to be linked and discovered."
(4) Amsterdam	"Blend (i) data about the city available for citizens and (ii) data sovereignty for citizens."
(5) London	"Be based on the cooperation between central government, local government, and private organizations, creates data commons strategy."
(6) Vienna	"Be based on multistakeholder data frameworks such as Penta Helix."
(7) Milan	"Be interoperable to scale up services for the benefit of the public sector, private sector, and citizens."
(8) Los Angeles	"Be forged in partnership with stakeholders inside and outside of City Hall."
(9) Portland	"Be open, timely, engaging and protecting personal data and privacy all the time. Portland has been working on a data lake aiming to become a common resource in the city in the future. Talent, digital literacy, and efforts that promote digital justice are also part of building data commons."
(10) San Antonio	"Give the public control over their data assets, provides meaningful consent, protects privacy of individuals, and enables data-driven decision making for public authorities and organizations."
(11) NYC	"Be led by public sector with significant involvement from the private sector, in addition to academia and civic tech."
(12) Barcelona	"Be based on transparency, accountability, pedagogy, and data sovereignty by citizens."
(13) Glasgow	"Provide value to all stakeholders in the city."

Table 3. AI in the public sector.

CCDR City	AI: Main challenge or obstacle (Q24)	Specific AI projects and their digital rights' risk assessment (Q25)
(1) Long Beach	"Capacity, funding, and lack of urgency."	"Zencity resident discourse and sentiment analysis platform."
(2) Toronto	"Before resorting to a particular technology solution such as AI, it is important to have a clear understanding of the problem/issue, and then develop a solution to address it. If AI is part of that solution, then depending on the problem and scope, it may be necessary to first have a conversation with the community."	"Following COVID-19, the City implemented a chatbot to help manage the influx of questions from residents. The chatbot uses AI to process questions and provide responses. I don't believe a digital rights impact assessment was conducted."
(3) Porto	"Challenge, lack of transparency from providers, lack of guidelines from decision-makers, and tech deficit."	"Yes, all have a Data Protection impact assessment. All solutions are vendor-lock free and city open platform must be used, together with its guidelines."
(4) Amsterdam	"Understanding what you are implementing."	"Yes, overview in English limited, but examples at: https://assets.amsterdam.nl/publish/pages/922120/amsterdam_intelligence.pdf https://www.amsterdam.nl/wonen-leefomgeving/innovatie/de-digitale-stad/grip-op-algoritmes/ https://algoritmeregister.amsterdam.nl/"
(5) London	"Lack of knowledge and resources within the organization."	"We used machine learning and AI to determine the business of London during the lockdown. A thorough ethics review was undertaken prior to the project (https://www.turing.ac.uk/research/research-projects/project-odysseus-understanding-london-busyness-and-exiting-lockdown)"
(6) Vienna	"Data protection, high costs."	"Picture analytics – traffic signs and geo location (focus on privacy). E-mail classification (IEEE certification ECPAIS)"
(7) Milan	"Having a national interoperable plan. Being able to act on information acquired from a data set."	"We are framing a project to monitor the social-economic impact of urban green policies."
(8) Los Angeles	"The main challenge is rooting out algorithmic bias and ensuring we're not doubling down on mistakes."	"We are working on a number of digital inclusion and equity initiatives to expand broadband and device access throughout the city."
(9) Portland	"The conflict with the digital rights of our fellow citizens."	"Not yet, it seems difficult."
(10) San Antonio	"Internal awareness and understanding how algorithms are embedded in technology that we procure."	"Not yet, but we plan to."
(11) NYC	"Staffing and explaining technical concepts to government leaders. Wariness of public conversations."	"Facial Recognition Technology Working Group, which has digital rights explicitly at the center. Algorithm Management & Policy work, which is less well connected."
(12) Barcelona	"Intra organizational view."	"Currently developing an AI strategy for the city hall."
(13) Glasgow	"Public trust. As a consequence, adoption is being coordinated by Scottish Government through their AI strategy. Thus, the city council has an active role within the development of the strategy."	"Not as yet."

Data and platform co-operatives

When asked about the potential strength of citizen-driven data initiatives and projects (Q20), eight out of 13 CCDR cities considered that "probably they could be strong, but they need aid," whereas the rest (five CCDR cities) thought that "they lack consistency and leadership."

The study provided the following context of data and platform co-operatives (Calzada, 2020b, 2021b; Scholz & Calzada, 2021): "platforms and data co-operatives are becoming a resilient response in several cities to tackle the negative side-effects of the unemployment caused by COVID-19 crisis. Several initiatives are flourishing around creating digital co-operatives also known as platform or/and data co-operatives." Ten out of 13 cities was familiar with data and platform co-operatives, whereas the rest (3 cities) were not entirely sure about familiarity with this form of co-operatives (Q21). When asked whether "data and platform co-operatives could certainly assist his/her city in tackling COVID-19-driven economic and social vulnerabilities" (Q22), two cities considered "this is the way to do it," five cities thought "probably but it is difficult," and six cities selected "why not?." When asked about specific initiatives related to data and platform co-operatives (Q23), Amsterdam suggested several projects (https://towardsamdex.org and https://hollandseluchten.waag.org) and North American cases such as Portland, NYC, and San Antonio argued that interlocal data sharing agreements could establish a common ground between public bodies that could provide the basis for data and platform co-operative initiatives.

AI in the public sector

The last factor related to AI (European Commission, 2021; Smuha, 2020; UK Government, 2021; Véliz, 2021) was contextualized as follows: "The interest on the use of AI within city, regional, and national governments to support redesigning governance processes and policy-making mechanisms, as well as to improve public services delivery and engagement with citizens is growing." When asked about the main challenge or obstacle for the public sector to implement AI (Q24) and specific AI projects and their digital rights' risk assessment (Q25), the cities gave several and varied responses as follows:

Regarding citizens' reactions to AI implementation in the public sector (Q26), only two cities considered "they react positively"; another one "expects positive reactions," but the rest of the cities, particularly five cities, responded, "we will see, we do not know yet how citizens do or will respond," and another five cities said, "we think we might face serious issues and contestation." Thus, related to AI implementations in the public sector, the cautious responses were the most common pattern among CCDR cities. Nonetheless (Q27), CCDR cities considered several areas in which AI could clearly contribute to delivering efficient and inclusive public services, including chatbots, traffic management, health, education, urban development, air quality forecasting, applications approval systems, and social services.

Conclusions

So far, the long-held urban affairs tradition of prophesying possible futures for urban landscapes has hegemonically taken form to build a highly techno-centric and overhyped smart city mainstream approach (Calzada & Cobo, 2015; Hollands, 2008), in which the processes for operating and maintaining urban life are uncritically infused with modern ICT capabilities, like apps, sensors, and platforms mediated through opaque algorithms (Hand, 2020; Isin & Ruppert, 2020). Against this backdrop, COVID-19 has been a trigger for accelerating the side effects of digital transformations on the daily operations of the so-called smart city by directly affecting citizens' awareness of their right to claim their digital rights. Consequently, in 2018, UN-Habitat's PCSC strategic flagship program subverted this smart city version by potentially encouraging city governments to proactively consider in their policies and strategies "the right to have digital rights." Consequently, paralleling the PCSC's

formulation by UN-Habitat, CCDR as a supranational city-network—currently encompassing 49 global cities and advocating for digital rights in city governments—was founded by the city councils of Barcelona, Amsterdam, and New York.

This exploratory and progressive action research aimed at gathering evidence of how the 13 examined CCDR cities were implementing their city strategies advocating digital rights while learning from each other. City governments in these cities have demonstrated an active position in experimenting and pursuing the right to have rights for their fellow citizens by spurring their five strategic digital rights: (i) the right to equal and universal access to the Internet (digital literacy), (ii) the right to privacy, data protection, and security; (iii) the right to transparency, accountability, and nondiscrimination in data, content, and algorithms; (iv) the right to participatory democracy, diversity, and inclusion; and (v) the right to open and ethical digital service standards.

To respond to the research question, this study took an exploratory and progressive action research approach to examining how Barcelona, Amsterdam, NYC, Long Beach, Toronto, Porto, London, Vienna, Milan, Los Angeles, Portland, San Antonio, and Glasgow are implementing (while learning from each other) their digital rights strategies and policies by acknowledging that these cities conceive and deliver these public policies and services to protect their fellow citizens' digital rights. This exploratory and progressive approach stems from the fact that the six factors attempt to provide a policy implementation cycle from the present (the first three factors) to the future (the remaining three factors). By progressive, this article understands the elaboration of the questionnaire followed sequential order from present to future by employing action research with CCDR city representatives as the main methodological approach (Bartels, 2020; Calzada, 2021a; Soeiro, 2021). Action research as a methodological approach that provides a progressive operationalization, helped us to establish the most suitable research design about the "right to have digital rights" with the 13 CCDR cities. Despite this article showed four taxonomies in Table 1, the taxonomy operationalized by this article was only the CCDR taxonomy. This article considers this topic rich enough as to experiment with further taxonomies and sets of digital rights in cities. The exploratory nature of the approach responds to the fact that 13 CCDR cities answered the questionnaire resulting in some preliminary outcome to shed light on the meaning of the "right to have digital rights" from the urban affairs standpoint.

The main conclusion of this research is twofold. First, the semi-structured questionnaire provided a rich diverse set of initiatives and projects in each city, which offer great potential as global influencers of other cities beyond the CCDR network. And second, despite this broad and remarkable set of diversity in the implementations, this article found common policy patterns among them. Consequently, we can elucidate them as final remarks:

First, the understanding of digital rights was very much related to digital inclusion with a strong community engagement component but equally challenged by the lack of public and financial support. Furthermore, this understanding could be seen as a direct response to the excesses of surveillance capitalism (particularly among the U.S. cities belonging to the CCDR) and as active claims to "the right to have digital rights" by fellow citizens. Second, the most prioritized digital right among the cities was the universal and equal access to the Internet and digital literacy, despite the fact that the identification of the most critical stakeholders in a city varied considerably, although "residents and community-based organizations" were seen in several U.S. cities as a common pattern. Equally, CCDR cities overall depict an active civilian fabric that creates and supports the existing ecosystems for digital rights protection encompassing public institutions and civil groups, associations, and NGOs, both jointly advocating "the right to have digital rights" as a vehicle for change in digital policies (Breuer & Pierson, 2021; Calzada, 2018; Karppinen & Puukko, 2020). Third, regarding a good data commons strategy, in the similar vein of the previous final remark, the role of the civil society—by pushing ahead the rest of the stakeholders to attain inclusive data governance models—is posed as an essential condition, particularly in the aftermath of the COVID-19 crisis. Fourth, the best-in-class cities identified were Barcelona, NYC, Amsterdam, Milano, Toronto, London, and Helsinki. Unlike some competitive forms such as city ranking and benchmarking of cities (Acuto & Pejic, 2021; Almirall et al., 2020), CCDR is clearly expanding, though as a co-operative network for implementing digital rights'

initiatives through mutual learning (Calzada, 2020c). Fifth, consequently, despite the fact citizen-driven projects might need aid or even sometimes lack consistency, data and platform co-operatives could be seem as a way forward in post-pandemic times (Calzada, 2020b, 2021b; Scholz & Calzada, 2021). Sixth, ultimately, AI uptake in the public sector is perceived by cities as highly controversial and carrying plenty of unknown risks (Digital Future Society, 2021).

As a concluding statement of this article, United Nations recently has created the Hub for Human Rights and Digital Technology as a way to encourage cities to strategize their "right to have digital rights": "Together, as we seek to recover from the pandemic, we must learn to better curtail harmful use of digital technology and better unleash its power as a democratizing force and an enabler" (United Nations, 2021, p. 1).

This research, being exploratory by nature, was not meant to provide a full explanation on digital rights, but instead it contributes to opening up new future and critical avenues in the techno-political research on smart cities. It particularly pays attention to the way digital rights discourse has been already embedded in the institutional digital strategies of CCDR cities. The authors hope that this exploratory action research will initiate further advancements and invite new and additional research avenues on urban affairs-related digital rights.

Note

1. Several questions' responses have been anonymized. Acknowledging each city's unique context was crucial and also part of the ethical informed consent before gathering data from the direct response of each city representative.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Economic and Social Research Council (ESRC) under Grant ES/S012435/1 "WISERD Civil Society: Changing Perspectives on Civic Stratification and Civil Repair."

About the authors

Igor Calzada, MBA, FeRSA (www.igorcalzada.com/publications) is a Senior Researcher working in smart city citizenship, benchmarking city-regions, digital rights, data co-operatives, and digital citizenship; since 2021 at WISERD, Cardiff University and since 2012 at the Future of Cities/Urban Transformations ESRC Programme, University of Oxford, funded by EC-H2020 and Marie Curie Regional Programmes. Additionally, he serves as Senior Advisor to UN-Habitat in Digital Transformation for Urban Areas, People-Centered Smart Cities. Previously, he worked at the DG Joint Research Centre, European Commission as Senior Scientist in Digital Transformations and AI. With more than 20 years of research/policy experience as Senior Lecturer/Researcher in several universities, he has been director in the public (Basque Government) and private sectors (Mondragon Co-operative Corporation). Publications: 49 journal articles; 11 books; 18 book chapters; 27 policy reports; 147 international keynotes; and 32 media articles. He is the author of the monograph *Smart City Citizenship* published by Elsevier.

Marc Pérez-Batlle is responsible for technological projects and he is the point of contact of the Cities' Coalition for Digital Rights (CCDR) at Barcelona City Council.

Joan Batlle-Montserrat is responsible for technology and digital rights and the official at the Cities' Coalition for Digital Rights (CCDR) at Barcelona City Council. In addition, he is the technical chair of Eurocities Knowledge Society Forum.

ORCID

Igor Calzada http://orcid.org/0000-0002-4269-830X

Data availability

The responses to the questionnaire are safely stored at Barcelona City Council datasets.

References

Acuto, M., & Pejic, D. (2021). Shaping a global comparative imagination? Assessing the role of city rankings in the 'global city' discourse. *Area*, *53*(2), 247–256. https://doi.org/10.1111/area.12710

Ada Lovelace Institute. (2021a). *The citizens' biometrics council: Recommendations and findings of a public deliberation on biometrics technology, policy, and governance*.

Ada Lovelace Institute. (2021b). *Data divide: Public attitudes to tacking social and health inequalities in the COVID-19 pandemic and beyond*.

Ada Lovelace Institute. (2021c). *What place should COVID-19 vaccines passports have in society?*

Ada Lovelace Institute. (2021d). *Checkpoints for vaccine passports: Requirements for governments and developers*. Ada Lovelace Institute.

Ahmed, S. (2018). Personal risk and algorithmic opacity: An investigation of user-identified concerns in the construction of the social credit system. *Working paper presented at Freie Universität Berlin, workshop on digital transformation in China - recent trends and impacts*, Berlin.

Aho, B., & Duffield, R. (2020). Beyond surveillance capitalism: Privacy, regulation and big data in Europe and China. *Economy and Society*, *49*(2), 187–212. https://doi.org/10.1080/03085147.2019.1690275

Almirall, E., Pietro, L., Canizales, P., & Lornidze, E. (2020). *Digital cities in Europe: A report on the state and ambitions of European digital cities*. ESADE.

Amnesty International & Access Now. (2020). *The Toronto declaration*. https://www.torontodeclaration.org

Antonio, S. (2021). https://cosacovid-cosagis.hub.arcgis.com

Arendt, H. (1949). The rights of man: What are they? *Modern Review*, *3*(26) , 4–37.

Artyushina, A. (2020). Is civic data governance the key to democratic smart cities? The role of the Urban Data Trust in Sidewalk Toronto. *Telematics and Informatics*, *55*, 101456. https://doi.org/10.1016/j.tele.2020.101456

Baeten, G. (2020). Sidewalk Labs' plans for Toronto shake the foundations of planning as we know it. *Plan Canada* Fall, Automme.

Barbera, F., & Jones, I. R. (2020). *The foundational economy and citizenship: Comparative perspectives on civil repair*. Bristol University Press.

Barlow, J. P. (1996). *A declaration of the independence of cyberspace*. https://vimeo.com/111576518?ref=tw-v-share

Bartels, K. (2020). Transforming the relational dynamics of urban governance: How social innovation research can create a trajectory for learning and change. *Urban Studies*, *57*(14), 2868–2884. https://doi.org/10.1177/0042098019889290

Bennett, H., & Brunner, R. (2020). Nurturing the buffer zone: Conducting collaborative action research in contemporary contexts. *Qualitative Research*. https://doi.org/10.1177/1468794120965373

Bigo, D., Isin, E., & Ruppert, E. (2019). *Data politics*. Routledge.

Blanco, I., Salazar, Y., & Bianchi, I. (2020). Urban governance and political change under a radical left government: The case of Barcelona. *Journal of Urban Affairs*, *42*(1), 18–38. https://doi.org/10.1080/07352166.2018.1559648

Breuer, J., & Pierson, J. (2021). The right to the city and data protection for developing citizen-centric digital cities. *Information, Communication & Society*, *24*(6), 797–812. https://doi.org/10.1080/1369118X.2021.1909095

Brunswicker, S., Priego, L. P., & Almirall, E. (2019). Transparency in policy making: A complexity view. *Government Information Quarterly*, *36*(3), 571–591. https://doi.org/10.1016/j.giq.2019.05.005

Burki, T. (2021). Equitable distribution of COVID-19 vaccines. *The Lancet Infectious Diseases*, *21*(1), 33–34. https://doi.org/10.1016/S1473-3099(20)30949-X

Calzada, I. (2017). The techno-politics of data and smart devolution in city-regions: Comparing Glasgow, Bristol, Barcelona, and Bilbao. *Systems*, *5*(1), 1–18. https://doi.org/10.3390/systems5010018

Calzada, I. (2018). (Smart) citizens from data providers to decision-makers? The case study of Barcelona. *Sustainability*, *10*(9), 3252. https://doi.org/10.3390/su10093252

Calzada, I. (2019). Technological sovereignty: Protecting citizens' digital rights in the AI-driven and post-GDPR algorithmic and city-regional European realm. *Regions eZine*. https://doi.org/10.1080/13673882.2018.00001038

Calzada, I. (2020a). Democratising smart cities? Penta-helix multistakeholder social innovation framework. *Smart Cities*, *3*(4), 1145–1172. https://doi.org/10.3390/smartcities3040057

Calzada, I. (2020b). Platform and data co-operatives amidst European pandemic citizenship. *Sustainability*, *12*(20), 8309. https://doi.org/10.3390/su12208309

Calzada, I. (2020c). Replicating smart cities: The City-to-City Learning programme in the Replicate EC-H2020-SCC project. *Smart Cities*, *3*(3), 978–1003. https://doi.org/10.3390/smartcities3030049

Calzada, I. (2021a). *Smart city citizenship*. Elsevier Science Publishing Co Inc. https://doi.org/10.1016/c2017-0-02973-7

Calzada, I. (2021b). Postpandemic technopolitical democracy: Algorithmic nations, data sovereignty, digital rights, and data cooperatives. In J. Zabalo, I. Filibi, & L. Escacedo (Eds.), *Democratic deepening: Emerging forms of scales for developing democracy and citizen participation*. Springer. https://doi.org/10.13140/RG.2.2.28983.85922
Calzada, I. (2021c). Data co-operatives through data sovereignty. *Smart Cities*, *4*(3), 1158–1172. Special Issue "Feature Papers for Smart Cities." https://doi.org/10.3390/smartcities4030062
Calzada, I., & Almirall, E. (2019, June 11–12). Barcelona's grassroots-led urban experimentation: Deciphering the 'data commons' policy scheme. *Data for Policy 2019*, London. University College London.
Calzada, I., & Almirall, E. (2020). Data ecosystems for protecting European citizens' digital rights. *Transforming Government: People, Process and Policy*, *14*(2), 133–147. https://doi.org/10.1108/TG-03-2020-0047
Calzada, I., & Cobo, C. (2015). Unplugging: Deconstructing the smart city. *Journal of Urban Technology*, *22*(1), 23–43. https://doi.org/10.1080/10630732.2014.971535
CCDR (Cities' Coalition for Digital Rights). (2018). *Declaration of Cities' Coalition for Digital Rights*. https://citiesfordigitalrights.org/
CCDR (Cities' Coalition for Digital Rights). (2019). *Strategy 2020: Action plan and roadmap*. Barcelona City Council.
CCDR (Cities' Coalition for Digital Rights). (2020). *City examples of digital rights in times of COVID-19*. https://citiesfordigitalrights.org/city-examples-digital-rights-times-covid-19
CDEI (Centre for Data Ethics and Innovation). (2021). *COVID-19 repository & public attitudes*.
CDR (Centre for Digital Rights). (2021). *Centre for Digital Rights*. https://www.centrefordigitalrights.org/ .
CFDREU (Charter of Fundamental Digital Rights of the European Union). (2020). https://digitalcharta.eu/wp-counten/uploads/DigitalCharter-English-2019-Final.pdf
Cheney-Lippold, J. (2011). A new algorithmic identity: Soft biopolitics and the modulation of control. *Theory, Culture & Society*, *28*(6), 164–181. https://doi.org/10.1177/0263276411424420
Craglia, M., Scholten, H., Micheli, M., Hradec, J., Calzada, I., Luitjens, S., Ponti, M., & Boter, J. (2021). *Digitranscope: The governance of digitally-transformed society*. JRC123362 vols. Publications Office of the European Union. https://doi.org/10.2760/503546 .
Csernatoni, R. (2020). New states of emergency: Normalizing techno-surveillance in the time of COVID-19. *Global Affairs*, *6*(3), 301–310. https://doi.org/10.1080/23340460.2020.1825108
Daskal, E. (2018). Let's be careful out there . . . : How digital rights advocates educate citizens in the digital age. *Information, Communication & Society*, *21*(2), 241–256. https://doi.org/10.1080/1369118X.2016.1271903
Datta, A. (2015). New urban utopias of postcolonial India:'Entrepreneurial urbanization' in Dholera smart city, Gujarat. *Dialogues in Human Geography*, *5*(1), 3–22. https://doi.org/10.1177/2043820614565748
De Jong, M., Joss, S., Schraven, D., Zhan, C., & Weijnen, M. (2015). Sustainable-smart-resilient-low carbon-eco-knowledge cities; making sense of a multitude of concepts promoting sustainable urbanization. *Journal of Cleaner Production*, *109*, 25–38. https://doi.org/10.1016/j.jclepro.2015.02.004
Desouza, K. C., Kapucu, N., & Wu, J. (2021). Special issue: Smart governance in the contemporary era. *Journal of Urban Affairs*, *43*(4), 503. https://doi.org/10.1080/07352166.2021.1909903
Digital Future Society. (2021). *Governing algorithms: Perils and powers of AI in the public sector*. Digital Future Society.
Digital Rights Archive. (2021). www.digitalrightsarchive.net
Digital Rights Watch. (2021). *State of digital rights report*. https://digitalrightswatch.org.au/2021/02/05/the-state-of-digital-rights-report-a-2020-retrospective/
EFF (Electronic Frontier Foundation) (2021). *Atlas of surveillance*. https://atlasofsurveillance.org/atlas
European Commission. (2021). *Proposal for a regulation of the European Parliament and the Council*.
Floridi, L. (2020). The fight for digital sovereignty: What it is, and why it matters, especially for the EU. *Philosophy & Technology*, *33*(3), 369–378. https://doi.org/10.1007/s13347-020-00423-6
Forestal, J. (2021). Constructing digital democracies: Facebook, Arendt, and the politics of design. *Political Studies*, *69*(1), 26–44. https://doi.org/10.1177/0032321719890807
Gawer, A., & Srnicek, N. (2021). *Online platforms: Economic and societal effects*. EPRS European Parliamentary Research Service.
Gekker, A., & Hind, S. (2020). Infrastructural surveillance. *New Media & Society*, *22*(8), 1414–1436. https://doi.org/10.1177/1461444819879426
Goggin, G., Vromen, A., Weatherall, K., Martin, F., & Sunman, L. (2019). Data and digital rights: Recent Australian developments. *Internet Policy Review*, *8*(1), 1–19. https://doi.org/10.14763/2019.1.1390
Government UK. (2021). *A guide to using Artificial Intelligence in the public sector*.
Habermas, J. (2015). *The lure of technocracy*. Polity Press.
Hand, D. J. (2020). *Dark data*. Princeton University Press.
Harvey, D. (2008). The right to the city. *New Left Review*, *53*, 1–16.
Haug, N. (2020). Deducing which pandemic policies work best. *Nature Human Behaviour*, *4*, 1303–1312. https://doi.org/10.1038/s41562-020-01009-0
Hintz, A., Dencik, J., & Wahl-Jorgensen, K. (2019). *Digital citizenship in a datafied society*. Polity Press.
Hintz, A., Dencik, L., & Wahl-Jorgensen, K. (2017). Digital citizenship and surveillance society. *International Journal of Communications*, *11*, 731–739. https://ijoc.org/index.php/ijoc/article/view/5521 .

Hollands, R. G. (2008). Will the real smart city please stand up? *City*, *12*(3), 303–320. https://doi.org/10.1080/13604810802479126
Hu, Q., & Zheng, Y. (2021). Smart city initiatives: A comparative study of American and Chinese cities. *Journal of Urban Affairs*, *43*(4), 504–525. https://doi.org/10.1080/07352166.2019.1694413
Hummel, P., Braun, M., Tretter, M., & Dabrock, P. (2021). Data sovereignty: A review. *Big Data & Society*, *8*(1), 2053951720982012. https://doi.org/10.1177/2053951720982012
IRPC (Internet Rights & Principles Coalition). (2014). *The Charter of Human Rights and Principles for the Internet (United Nations Internet Governance Forum, IGF)*. Retrieved from bit.ly/ZgqdyC.
Isin, E., & Ruppert, E. (2015). *Being digital citizens*. Rowman & Littlefield.
Isin, E., & Ruppert, E. (2020). The birth of sensory power: How a pandemic made it visible? *Big Data & Society*, *7*(2), 205395172096920. https://doi.org/10.1177/2053951720969208
Janssen, M., Hartog, M., Matheus, R., Ding, A. Y., & Kuk, G. (2020). Will algorithms blind people? The effect of explainable AI and decision-makers' experience on AI-supported decision-making in government. *Social Science Computer Review*, 0894439320980118. https://doi.org/10.1177/0894439320980118
Karppinen, K., & Puukko, P. (2020). Four discourses of digital rights: Promises and problems of rights-based politics. *Journal of Information Policy*, *10*, 304–328. https://doi.org/10.5325/jinfopoli.10.2020.0304
Katz, I. T., Weintraub, R., Bekker, L.-G., & Brandt, A.-M. (2021). From vaccine nationalism to vaccine equity—Finding a path forward. *New England Journal of Medicine*, *384*(14), 1281–1283. https://doi.org/10.1056/NEJMp2103614
Kirby, A. (2002). Do cities have a purpose? *Cities*, *19*(6), 371–372. https://doi.org/10.1016/S0264-2751(02)00067-7
Kitchin, R. (2015). Making sense of smart cities: Addressing present shortcomings. *Cambridge Journal of Regions, Economy and Society*, *8*(1), 131–136. https://doi.org/10.1093/cjres/rsu027
Kitchin, R. (2020a). Civil liberties *or* public health, or civil liberties *and* public health? Using surveillance technologies to tackle the spread of COVID-19. *Space and Polity*, *24*(3), 362–381. https://doi.org/10.1080/13562576.2020.1770587
Kitchin, R. (2020b). *Data lives: How data are made and shape our world*. Policy Press.
Komninos, N., Kakderi, C., Mora, L., Panori, A., & Sefertzi, E. (2021). Towards high impact smart cities: A universal architecture based on connected intelligence spaces. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-021-00767-0
Labs, S. (2018). *Digital governance proposals for DSAP consultation*. DSAP Consultation.
Lightfoot, G., & Wisniewski, T. P. (2014). Information asymmetry and power in a surveillance society. *Information and Organization*, *24*(4), 214–235. https://doi.org/10.1016/j.infoandorg.2014.09.001
Lodato, T., French, E., & Clark, J. (2021). Open government data in the smart city: Interoperability, urban knowledge, and linking legacy systems. *Journal of Urban Affairs*, *43*(4), 586–600. https://doi.org/10.1080/07352166.2018.1511798
Löfgren, K., & Webster, C.-W.-R. (2020). The value of Big Data in government: The case of 'smart cities.' *Big Data & Society*, *7*(1), 1–14. https://doi.org/10.1177/2053951720912775
Lupton, D., & Michael, M. (2017). Depends on who's got the data: Public understandings of personal digital dataveillance. *Surveillance & Society*, *15*(2), 254–268. https://doi.org/10.24908/ss.v15i2.6332
Mathiesen, K. (2014). Human rights for the digital age. *Journal of Mass Media Ethics*, *29*(1), 2–18. https://doi.org/10.1080/08900523.2014.863124
Maxmen, A. (2019). Surveillance science. *Nature*, *569*, 614–617. https://doi.org/10.1038/d41586-019-01679-5
MFTSDRC (Manifesto in Favour of Technological Sovereignty and Digital Rights for Cities). (2019). https://www.barcelona.cat/digitalstandards/manifesto/0.2/
Micheli, M., Ponti, M., Craglia, M., & Suman, A.-B. (2020). Emerging models of data governance in the age of datafication. *Big Data & Society*, *7*(2), 2053951720948087. https://doi.org/10.1177/2053951720948087
Morozov, E. (2019). Digital socialism? *New Left Review*, *116/117*, 33–67. https://newleftreview.org/issues/ii116/articles/evgeny-morozov-digital-socialism .
Newlands, G., Lutz, C., Tamò-Larrieux, A., Villaronga, E. F., Harasgama, R., & Scheitlin, G. (2020). Innovation under pressure: Implications for data privacy during the Covid-19 pandemic. *Big Data & Society*, *7*(2), 2053951720976680. https://doi.org/10.1177/2053951720976680
Nguyen, J. (2017). Identity, rights and surveillance in an era of transforming citizenship. *Citizenship Studies*, *22*(1), 86–93. https://doi.org/10.1080/13621025.2017.1406456
Padovani, C., & Calabrese, A. (2014). *Communication rights and social justice: Historical accounts of transnational mobilizations*. Palgrave Macmillan UK.
Pangrazio, L., & Sefton-Green, J. (2021). Digital rights, digital citizenship and digital literacy: What's the difference? *Journal of New Approaches in Educational Research*, *10*(1), 15–27. https://doi.org/10.7821/NAER.2021.1.616
Pentland, A., & Hardjono, T. (2020). *Data cooperatives. Building the new economy*. MIT.
Postigo, H. (2012). *Digital rights movement*. MIT Press.
RDR (Ranking Digital Rights). (2021). *Ranking digital rights*. https://rankingdigitalrights.org/
Sadowski, J. (2019). When data is capital: Datafication, accumulation, and extraction. *Big Data & Society*, *6*(1), 1–12. https://doi.org/10.1177/2053951718820549

Sadowski, J., Viljoen, S., & Whittaker, M. (2021). Everyone should decide how their digital data are used—Not just tech companies. *Nature*, *595*(7866), 169–171. https://doi.org/10.1038/d41586-021-01812-3
Scholz, T. (2014). *Platform cooperativism vs. the sharing economy*. https://medium.com/@trebors/platform-cooperativism-vs-the-sharing-economy-2ea737f1b5ad
Scholz, T., & Calzada, I. (2021). Data cooperatives for pandemic times. *Public Seminar*. https://doi.org/10.13140/RG.2.2.12320.51200/1
Seubert, S., & Becker, C. (2021). The democratic impact of strengthening European fundamental rights in the digital age: The example of privacy protection. *German Law Journal*, *22*(1), 31–44. https://doi.org/10.1017/glj.2020.101
Smuha, N. A. (2020). Beyond a human rights-based approach to AI governance: Promise, pitfalls, plea. *Philosophy & Technology*. https://doi.org/10.1007/s13347-020-00403-w
Soeiro, D. (2021). Smart cities and innovative governance systems: A reflection on urban living labs and action research. *Fennia*, *199*(1), 1–9. https://doi.org/10.11143/fennia.97054 .
Taylor, L. (2017). What is data justice? The case for connecting digital rights and freedoms globally. *Big Data & Society*, *4*(2), 2053951717736335. https://doi.org/10.1177/2053951717736335
Telecare. (2021). https://ajuntament.barcelona.cat/personesgrans/es/canal/teleassistencia
The British Academy. (2021). *The COVID decade: Understanding the long-term societal impacts of COVID-19*.
Tommaso, F. (2020). An alternative to data ownership: Managing access to non-personal data through the commons. *Global Jurist*, *21*(1), 181–210. https://doi.org/10.1515/gj-2020-0034
Treré, E. (2021). Intensification, discovery and abandonment: Unearthing global ecologies of dis/connection in pandemic times. *Convergence: The International Journal of Research into New Media Technologies*. https://doi.org/10.1177/13548565211036804
UN-Habitat. (2021a). *Digital cities toolkit: Policy toolkit for People-Centered Smart Cities*. https://unhabitat.org/digitalcitiestoolkit/#
UN-Habitat. (2021b). *People-Centered Smart Cities*. UN Habitat.
United Nations. (2019). *Extreme poverty and human rights*. UN.
United Nations. (2020). *Report of the secretary-general: Roadmap for digital cooperation*. UN.
United Nations. (2021). *Hub for human rights and digital technology*. https://www.digitalhub.ohchr.org/
Van Roy, V. (2020). *AI Watch: National strategies on Artificial Intelligence: A European perspective in 2019*. Publication Office of the European Union.
Véliz, C. (2021). Moral zombies: Why algorithms are not moral agents. *AI & Society*, *36*(2), 487–497. https://doi.org/10.1007/s00146-021-01189-x
Vesnic-Alujevic, L., Stoermer, E., Rudkin, J., Scapolo, F., & Kimbell, L. (2019). *The future of government 2030+: A citizen-centric perspective on new government models*. EUR 29664 EN. Publications Office of the European Union.
Wong, P.-H. (2020). Democratizing algorithmic fairness. *Philosophy & Technology*, *33*, 225–244. https://doi.org/10.1007/s13347-019-00355-w
Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile.

Appendix A

QUESTIONNAIRE[1]
18 November 2020
General Assembly: Smart City Expo World Congress 2020
Exploring the Digital Rights in the CCDR Cities Worldwide
https://citiesfordigitalrights.org/

This is a research questionnaire elaborated in collaboration between the CCDR core team (led by Marc Pérez-Batlle and Joan Batlle-Montserrat) and Dr Igor Calzada (Cardiff University, WISERD, University of Oxford, Urban Transformations ESRC and Future of Cities Programmes, and UN-Habitat) to examine several strategic ongoing priorities among the CCDR partner cities.

The questionnaire is structured in **SEVEN sections**:

(1) **CHARACTERIZATION**
(2) **UNDERSTANDIN OF DIGITAL RIGHTS**
(3) **PRIORITY OF DIGITAL RIGHTS**
(4) **DATA COMMONS STRATEGY**
(5) **CITY-TO-CITY-LEARNING**
(6) **DATA/PLATFORM COOPERATIVES**
(7) **AI IN THE PUBLIC SECTOR**

Thank you in advance for responding the **27 questions**. The estimated time for responding should **not exceed 15 min**.

(1) CHARACTERIZATION

Could you please provide the details to the following questions?
- City:
- Department:
- Number of people working at your department:

(2) DIGITAL RIGHTS IN YOUR CITY:

(1) **Which is the most important priority of your city regarding digital rights? (Max 50 words)**

(2) **From 1 to 5, being 1 low and 5 high, how could you rank each of the following five actions among the CCDR priority areas for your city?**
   (a) Privacy regulation
   (b) Accountable decision-making in AI
   (c) Open-technologies
   (d) Digital inclusion
   (e) Data-Economy

(3) **Is your city actively working on to raise citizens awareness on the need to protect their digital rights?**
   (a) Yes, we already have projects
   (b) No
   (c) I do not know

(4) **If yes, how? What actions are being implemented by your public authority to raise awareness on the need for protecting digital rights? If no, are there any particular barriers that you would like to highlight? (Max 50 words)?**

(5) **Is there any specific contextual aspect that could leverage the relevance of digital rights in your city? Which one? (Max 50 words)**

(3) PRIORITY OF DIGITAL RIGHTS:

(6) **From 1 to 5, being 1 low and 5 high, please rank each of the following five digital rights for your city?**
   (a) Universal and equal access to the internet, and digital literacy
   (b) Privacy, data protection and security
   (c) Transparency, accountability, and nondiscrimination of data, content and algorithms

(d) Participatory democracy, diversity, and inclusion
(e) Open and ethical digital service standards

(7) **Are you embedding the formulation of digital rights in ongoing initiatives or projects?**
(a) Yes
(b) No
(c) I do not know

(8) **Are you embedding the formulation of digital rights in internal dynamics?**
(a) Yes
(b) No
(c) I do not know

(9) **How do you think the strategic implementation of these digital rights will evolve in your city in a year time? (Choose one). We expect to achieve**:
(a) Full
(b) High
(c) Medium
(d) Low
(e) No

(10) **Who is the most critical stakeholder in your city (other than the municipality) to achieve more protection for digital rights and why? (Mention just one please and answer why it is the most critical Max 50 words)**

(11) **Could you rank the way stakeholders in your city create or support the existing ecosystem for Digital Rights protection (seeing from the Penta Helix framework;** Calzada, 2020a**). How would you rank the following stakeholder groups-helixes (being 1 low relevancy and 5 high relevance)**
(a) Public institutions
(b) Private companies
(c) Academia and research centers
(d) Civil societies (civil groups, associations, NGOs, . . .)
(e) Social entrepreneurs, urban activists, and change-makers

(4) DATA COMMONS STRATEGY

(12) **How would you define the leading data governance model in your city? (Disagree 1 and Agree 5)**
(a) The public sector is leading the data governance model of the city
(b) The private and public partnership is the norm
(c) The scientific domain, universities and scientific institutions are gaining ground in the data governance model of the city
(d) Without the engagement of the civil society, it is rather difficult to achieve an inclusive data governance model
(e) Certain entrepreneurs, activists and innovators are pushing ahead the city ecosystem of data

(13) **Is COVID-19 and its effects are modifying your initial priorities on digital rights?**
(a) Certainly not
(b) Very little
(c) Yes
(d) Absolutely

(14) **Has there been any specific action taken to tackle the COVID-19 effects in your city? (Max 50 words)**

(15) **How would you define a good data commons strategy for your city? (Max 50 words)**

(5) CITY-TO-CITY-LEARNING

(16) **What do you expect from the CCDR? (Max 50 words)**

(17) **Which are the most relevant activities for your city within the CCDR? (Max 50 words)**

(18) **Do you have strong political leadership at present in the following action lines? [For each, indicate: "Yes", "No", "Sometimes"]**
(1) Overall in Digital Rights' protection actions
(2) Conducting City-to-city-learning initiatives with other international cities (outside CCDR)
(3) Setting a Digital Rights respectful Data Strategy
(4) Collaborating within the CCDR Network

(19) **Any referential (best-in-class) city within the CCDR?**

(6) DATA/PLATFORM COOPERATIVES

(20) **How strong are citizen-driven data initiatives and projects in your city? Select the most suitable one**:
- (a) Very strong, we can rely on them
- (b) Probably they could be strong but they need aid
- (c) They lack consistency and leadership
- (d) Not at all; they are very weak
- (e) Other

Platforms and data co-operatives are becoming a resilient response in several cities to tackle the negative side-effects of the unemployment caused by COVID-19 crisis. Several initiatives are flourishing around creating digital co-operatives also known as platform or/and data co-operatives.

(21) **Are you familiar with platform and/or data co-operatives?**
- (a) Yes, indeed
- (b) No, I do know about them
- (c) I am not sure

(22) **Do you think platform and/or data co-operatives could certainly assist your city in tackling COVID-19-driven economic and social vulnerabilities?**
- (a) I cannot see it
- (b) Probably but it is difficult
- (c) Why not?
- (d) I really think this is the way to do it

(23) **Are there any initiatives in your city related to data co-operatives? (Max 50 words)**

(7) AI IN THE PUBLIC SECTOR

The interest on the use of AI within city, regional and national governments to support redesigning governance processes and policy-making mechanisms, as well as to improve public services delivery and engagement with citizen is growing.

(24) **What is the main challenge/obstacle for the public sector to implement AI? (Max 50 words)**

(25) **Are you implementing any specific project at the moment? Which one, in which area, and did you involve any digital rights impact assessment? (Max 50 words)**

(26) **How do you think citizens would react, or what are the reactions to AI implementations in the public sector?**
- (a) They react positively
- (b) We expect positive reactions
- (c) We will see, we do not know yet how citizens do or will respond
- (d) We think we might face serious issues and contestation
- (e) They react negatively

(27) **Do you have any area in which AI could clearly contribute to deliver efficient and inclusive public services? (Max 50 words)**

Appendix B

Appendix B: Description of the sample of the 13 CCDR cities.

CCDR City	Department	Staff	Strategic Projects related to Digital Rights https://citiesfordigitalrights.org/cities
(1) Long Beach https://citiesfordigitalrights.org/city/long-beach	Technology & Innovation	150	• Digital inclusion and digital divide: ○ http://longbeach.gov/ti/digital-inclusion/ ○ Digital Inclusion Trailblazer • Data goveranance and privacy: ○ https://whatworkscities.bloomberg.org/ • Transparency and accountability: ○ DataLB: http://datalb.longbeach.gov/ ○ Justice Lab: http://www.longbeach.gov/iteam/priorities/justice-lab/ • Participatory democracy, diversity and inclusion: ○ Office of Equity: http://www.longbeach.gov/health/healthy-living/office-of-equity/ ○ Language Access Policy: http://www.longbeach.gov/globalassets/health/media-library/documents/healthy-living/office-of-equity/language-access-resolution-and-policy-update-2018—english
(2) Toronto https://citiesfordigitalrights.org/city/toronto	Technology Services	700	• Improving transit reliability, speed and capacity by trying out new ideas like the King Street Pilot • Adjusting traffic signals to respond to real-time traffic patterns like the Smart Traffic Signals Pilot • Understanding your water use by day week, month, or year through the MyWater Toronto app • Making inspection results transparent for more than 15,000 restaurants on the DineSafe map • Using open data to help solve civic issues on the City's Open Data Initiative • Establishing a new role of Chief Information and Security Officer (CISO)
(3) Porto https://citiesfordigitalrights.org/city/porto	Communications, Networks, and Infrastructures	5	• Participatory democracy, diversity, and inclusion: ○ Porto Innovation Hub ○ ScaleUp Porto program ○ Hackacity Porto ○ Desafios Porto
(4) Amsterdam https://citiesfordigitalrights.org/city/amsterdam	CTO/CIO	100	• DataLab: https://www.amsterdam.nl/bestuur-organisatie/organisatie/overige/datalab-amsterdam/ • OpenCity: https://www.amsterdam.nl/bestuur-organisatie/meedenken-meepraten/openstad-online/ • Decode: https://decodeproject.eu/
(5) London https://citiesfordigitalrights.org/city/london	Chief Digital Officer Office	3	• Smarter London Together Roadmap: https://www.london.gov.uk/sites/default/files/smarter_london_together_v1.66_-_published.pdf • London Datastore: https://data.london.gov.uk/ • Crowdfund London: https://www.london.gov.uk/what-we-do/regeneration/funding-opportunities/crowdfund-london • Mayor's Civic Innovation Challenges: https://www.civicinnovation.london/ • Digital Talent Program: https://www.london.gov.uk/what-we-do/skills-and-employment/skills-londoners/digital-talent-programme • Sharing Cities with European Cities: http://www.sharingcities.eu/ • Data Trast with the Open Data Institute: https://theodi.org/article/uks-first-data-trust-pilots-to-be-led-by-the-odi-in-partnership-with-central-and-local-government/

(*Continued*)

Appendix B: (Continued).

CCDR City	Department	Staff	Strategic Projects related to Digital Rights https://citiesfordigitalrights.org/cities
(6) Vienna https://citiesfordigitalrights.org/city/vienna	CIO Office	12	• Digital Humanism: https://www.ec.tuwien.ac.at/dighum2019 • Digital Agenda Wien: http://www.digitaleagenda.wien/
(7) Milan https://citiesfordigitalrights.org/city/milan	Office of the Deputy Mayor for Digital Transformation and Services to Citizens	9	• Digital Folder: http://www.comune.milano.it/wps/portal/ist/it/servizi/fascicolocittadino • School-Work Alternation Program: http://www.comune.milano.it/wps/portal/ist/it/news/primopiano/archivio_dal_2012/educazione_istruzione/miur_alternanza_scuola_lavoro
(8) Barcelona https://citiesfordigitalrights.org/city/barcelona Calzada (2018); Blanco et al. (2020)	CIO Office	20	• Ethical Digital Standards: https://www.barcelona.cat/digitalstandards • Decidim: https://www.decidim.barcelona/ • Barcelona Open Data portal: https://opendata-ajuntament.barcelona.cat/en/ • Decode: https://decodeproject.eu/ • Chief Data Officer
(9) Los Angeles https://citiesfordigitalrights.org/city/los-angeles	Mayor's Office of Budget & Innovation	3	• Information Technology Agency: https://ita.lacity.org/
(10) Portland https://citiesfordigitalrights.org/city/portland	Smart City PDX – Bureau of Planning	15	• Digital Equity Action Plan (DEAP): https://www.smartcitypdx.com/guiding-principles • City of Portland Privacy and Information Protection Principles
(11) San Antonio https://citiesfordigitalrights.org/city/san-antonio	Innovation	11	• CivTechSA: https://www.civtech-sa.com/ • SmartSA: https://www.sanantonio.gov/smartsa
(12) New York City https://citiesfordigitalrights.org/city/new-york-city	Mayor's Office of the CTO	40	• Cities Open Internet Pledge: https://actionnetwork.org/letters/sign-to-e-mail-your-mayor-set-net-neutrality-protections-in-my-city • Library Privacy Week: https://libraryprivacyweek.nyc/
(13) Glasgow https://citiesfordigitalrights.org/city/glasgow	Chief Executive Department	300	• Digital Glasgow Strategy: https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQDN2UUTDNUT81