The status quo: Urban AI and the deepening of technocentrism in urban management

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ABSTRACT

This paper analyzes the emergence of a latent technocentrism in urban governance in the age of urban AI. While the failures and criticisms of the smart city have highlighted the limits technocentric governance, the increasing integration of AI in cities does not mark a retreat from it, but rather its reconfiguration. By analyzing the case of Quebec, this paper shows that this regime is not based on an explicitly claimed ideology, but on a convergence of structural factors. These include the perceived benefits of AI for cities, the multi-level ecosystem dynamics, and the increasing embedding of algorithmic systems in urban management. The paper argues for a re-politicization of urban AI by strengthening participatory mechanisms (citizens' assemblies, consultations, co-design) and the internal capacities of municipalities.

Introduction

The first generations of smart cities have been the subject of sustained criticism from academic, political and citizen circles (Kempin Reuter, 2020). Technocentrism characterized by technological solutionism, the digital divide between territories, the dependence of cities on external actors, and disconnection from local realities have been widely denounced (Appio et al., 2019; Calvo, 2020; Kempin Reuter, 2020; Kitchin, 2016; León & Rosen, 2020; Mora et al., 2017). In response, there has been a reflexive shift in urban governance frameworks that now emphasize accountability, participation, transparency, and the protection of digital rights (Beckers & Mora, 2025; Calzada, 2021; Malek et al., 2021; UN-Habitat, 2023).

This development indicates that technocentrism has been surpassed. However, the rise of artificial intelligence (AI) poses a challenge to this shift (Sadek et al., 2024). Urban AI is gradually establishing itself as a central technology in urban governance (Ben Dhaou et al., 2024; Cugurullo, 2020; Son et al., 2023). It seems to be a practical tool, focused on optimization, efficiency, and complexity management (Yigitcanlar et al., 2024). Cities employ this tool to enhance service provision, foresee risks, maximize resource usage, and facilitate decision-making (Bibri et al., 2024; Jieutsa & Koseki, 2025; Yigitcanlar et al., 2024). Although it is utilized for optimal urban governance, it is not a neutral technology (Sanchez et al., 2024). Algorithmic biases can exacerbate and perpetuate social and territorial inequalities (Ferrara, 2023; Jieutsa, 2024; O'Neil, 2016). The opacity of systems ("black

box") limits transparency and accountability (Carabantes, 2020; Sanchez et al., 2024; Yigitcanlar et al., 2020). AI also contributes to the datafication and surveillance of urban spaces, posing risks to fundamental rights and the right to the city (Cugurullo et al., 2022). From an environmental point of view, deploying this system involves high energy and material consumption (Bibri et al., 2024; Ren, 2024). Additionally, the growing reliance on technology companies raises concerns about digital autonomy and democratic oversight (Cugurullo et al., 2022; Sadek et al., 2024).

This paper thus puts forth the inquiry of whether the implementation processes of urban AI perpetuate the prevailing notion of technocentrism, rooted in the concept of a smart city. To do this, we examine the case of Quebec using a qualitative approach based on a thorough review of 77 relevant publications from 2020 to 2025 and 13 in-depth interviews with local government officials involved in AI deployment or governance. The results show that urban AI contributes to the emergence of latent technocentrism that is less explicit and less ideological than that of the first smart cities. It is just as structuring. This technocentrism is not based on an assumed political project, but on a series of organizational and technical decisions that guide them towards efficiency and competitiveness. Urban AI tends to become a long-term part of administrative routines, preconfiguring certain decisions and structuring the very definition of public problems. The structural dependence on external actors, the centrality of performance logics and the low involvement of citizens in deployment processes reinforce this dynamic.

This study offers a theoretical and empirical contribution to discussions on the governance of urban technologies, such as urban AI. On the theoretical level, we introduce the concept of latent technocentrism to describe an intermediate dynamic between the explicit technocentrism of the first smart cities and responsible governance approaches. This shows that AI does not perpetuate an ideological technocentrism, but is gradually becoming institutionalized through pragmatic logics of efficiency, performance, and complexity management. On an empirical level, this paper offers a systematic analysis of the deployment of AI in Quebec municipalities.

Research background

From technocentrism in smart cities to responsible governance

Technocentrism in smart cities refers to an approach that places digital technologies at the center of urban governance (Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017). From this perspective, urban challenges are mainly understood as technical problems requiring technological solutions, relegating the social, cultural, political and human dimensions of public action to the background (Hu et al., 2023; Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017; Yigitcanlar et al., 2019). The technocentric model is thus opposed to human-centered or socio-centric approaches that favor citizen participation, equity and anchoring in local contexts (Hu et al., 2023; Kempin Reuter, 2020; Mora et al., 2017). Although it has fostered efficiency and rapid modernization of urban services, this model has attracted much criticism, particularly for its potential to reinforce inequalities and to prioritize corporate and institutional interests over those of ordinary citizens (Calvo, 2020; Kempin Reuter, 2020; Kitchin, 2016; León & Rosen, 2020; Mora et al., 2017; Söderström et al., 2014; Willis, 2019). It is characterized mainly by technological solutionism, the digital divide, the dependence of cities on external actors, and disconnection from local realities (Calvo, 2020; Hu et al., 2023; Kempin Reuter, 2020; Kitchin, 2016; León & Rosen, 2020; Mora et al., 2017; Söderström et al., 2014; Willis, 2019).

Technocentrism is primarily defined by the belief that digital technologies can offer solutions to a multitude of urban issues. This technological solutionism ideology, as outlined by Hollands (2015), Kitchin et al. (2017) and León & Rosen (2020), holds that technological innovations possess the power to address various urban challenges. In this light, devices such as the Internet of Things (IoT), Big Data or digital platforms are mobilized to analyze, optimize and rationalize urban management (Mora et al., 2017). Urban issues are translated into data flows that are massively collected, centralized and processed by algorithmic systems (Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017). This tendency to datafication tends to make quantitative performance the main criterion for evaluating public policies (Artyushina, 2020; Calvo, 2020; Hollands, 2015; Kempin Reuter, 2020; Krivý, 2018). As a result, urban problems are reformulated as optimization and calculation issues that can be solved by algorithms rather than by participatory processes (Artyushina, 2020; Calvo, 2020; Hollands, 2015; Kempin Reuter, 2020; Krivý, 2018). However, this emphasis on performance is criticized for its tendency to reduce complex urban realities to technical variables (Kempin Reuter, 2020).

A second component of technocentrism is increased dependence on external actors (Hollands, 2015; León & Rosen, 2020; Söderström et al., 2014). Technological solutionism is part of a multi-level epistemic community (Kitchin et al., 2017) made up of technology companies, consulting firms and experts, which shape the smart city agenda (Hollands, 2015; León & Rosen, 2020; Söderström et al., 2014). This configuration leads to a structural dependence of municipalities on private suppliers and external actors (Cardon & Crépel, 2019; Courmont & Le Galès, 2019a; Gong & Sun, 2024; Jiang et al., 2022; Przeybilovicz & Cunha, 2024) (Cardon & Crépel, 2019; Hollands, 2015; Jiang et al., 2022; Przeybilovicz & Cunha, 2024). Technological companies often take the lead in promoting proprietary solutions that may not match local needs or values (Hu et al., 2023; Kempin Reuter, 2020; Mora et al., 2017). Public-private partnerships emerge as key drivers of technological decision-making, at the expense of community-oriented approaches (Hollands, 2015; León & Rosen, 2020; Söderström et al., 2014).

Technocentrism also manifests as a disconnection from local realities and the needs of populations. Several authors highlight the gap between the expectations of residents and the technological devices deployed (Hu et al., 2023; Kempin Reuter, 2020; Mora et al., 2017). Technocentric models tend to concentrate decision-making between technical experts and corporate actors, limiting citizen involvement (Hu et al., 2023; Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017). This configuration can lead to the exclusion of vulnerable groups and the exacerbation of existing inequalities (Calvo, 2020). Surveillance technologies, algorithmic management of urban services, or automated prioritization of public interventions have been associated with forms of systemic discrimination (Gohari et al., 2022; Kempin Reuter, 2020; O'Neil, 2016; Willis, 2019). Consequently, rather than consistently fostering more inclusive urban landscapes, some smart city projects have actually exacerbated existing disparities (Kempin Reuter, 2020; Mora et al., 2017; Yigitcanlar et al., 2019).

Finally, technocentrism is accompanied by a digital territorial divide (Yigitcanlar et al., 2019). Cities that are economically developed are better able to adopt technocentric policies, while less endowed regions may be marginalized or adopt these strategies at uneven paces and capacities (Mora et al., 2017). This differentiation reinforces interterritorial disparities, widening the innovation and digital governance gap.

In response to the accumulation of these criticisms, cities have gradually adopted more cautious and reflective postures towards digital technologies. The emergence of discussions on accountable governance, the ethics of urban technologies, and citizen engagement reflects an effort to move beyond a purely technocentric perspective (Abed, 2019; Almulhim & Yigitcanlar, 2025; Beckers & Mora, 2025; Calzada, 2021; Malek et al., 2021; UN-Habitat, 2020). The principles of participation, transparency, respect for fundamental rights and protection of freedoms now occupy a central place in the governance frameworks of urban technologies (Ataman et al., 2025; Farida et al., 2023; Kolotouchkina et al., 2022; Rasoulzadeh Aghdam et al., 2025; UN-Habitat, 2020). These approaches, described as human-centric or responsible are based on co-production, feedback loops, civic deliberation and indicators oriented towards collective well-being (Ben Dhaou et al., 2024; Bou Nassar et al., 2025; Hu et al., 2023; Kolotouchkina et al., 2022; Rasoulzadeh Aghdam et al., 2025; UN-Habitat, 2023; Yigitcanlar et al., 2019). They aim to reposition citizens as co-creators of public services rather than as simple data providers (UN-Habitat, 2020). However, this does not mean abandoning initial motivations for adoption, such as the efficiency and innovation promised.

The emergence of Urban AI and the technocentrism statu quo

AI is now widely deployed across cities worldwide and is increasingly referred to in the literature as urban AI (Batty, 2023; Caprotti et al., 2024). Urban AI designates any "system integrating data from the urban environment, processed by algorithms, and whose results find useful applications in the socio-spatial fabric of the city" (Popelka et al., 2023, p. 14). It relies on the rapid, often real-time processing of large volumes of urban data generated by sensor networks and Internet of Things infrastructures, enabling enhanced urban management (Batty, 2023; Cugurullo, 2020; Luusua et al., 2022; Son et al., 2023).

Urban AI is applied to land-use planning, infrastructure management, mobility systems, housing, and public service delivery (Caprotti et al., 2024; Cugurullo & Xu, 2025; Heidari et al., 2022; Koseki et al., 2022; Son et al., 2023). While typologies vary, major categories include autonomous vehicles, robots, urban brains, and software agents (Cugurullo et al., 2024). Others classify AI according to planning phases with analytical, functional, textual, visual, and interactive AI (Othengrafen et al., 2025). Applications span mobility optimization, smart grids, environmental monitoring, infrastructure maintenance, and emerging generative AI simulations (Servicenow et al., 2025). AI thus permeates multiple urban domains, becoming a central component of contemporary urban management (Yigitcanlar et al., 2024).

The emergence of urban AI comes at a time when the first generations of smart cities are being questioned for their technocentrism (Kempin Reuter, 2020; Mora et al., 2017). More responsible governance frameworks are emerging (UN-Habitat, 2020). However, the implementation of urban AI challenges, if not contradicts, this aspiration for responsible governance. AI is not a neutral technology, as Sanchez et al. (2024) emphasize. Biases in databases and algorithmic models can reproduce and amplify urban inequalities, to the detriment of the most vulnerable populations (Cugurullo, 2020; Sanchez et al., 2024; Sherman, 2023). By strengthening surveillance devices in the public space, some AI applications can also infringe on fundamental rights and the right to the city (Cugurullo et al., 2022; Lefebvre, 1968; Yigitcanlar et al., 2020). In addition, the "black box" nature of many algorithmic systems makes their operation difficult to explain, limiting transparency and public understanding of their impacts (Carabantes, 2020; Sanchez et al., 2024; Sherman, 2023).

Urban AI may reinforce the tendencies of technocentrism, particularly through the use of solutionist logic. Complex challenges such as traffic congestion, security, or public service management are often reimagined as algorithmic optimization problems (Caprotti et al., 2024; Cugurullo & Xu, 2025; Heidari et al., 2022; Koseki et al., 2022; Son et al., 2023). Furthermore, Urban AI relies heavily on large amounts of data from sensors, platforms, and digital infrastructure, contributing to the growing phenomenon of datafication in public action (Batty, 2023; Caprotti et al., 2024; Popelka et al., 2023). The centrality of data could accentuate the dependence of municipalities on expensive technical infrastructure, energy-intensive data centers, and supply chains for critical material resources (Jin & Miles, 2025). It also reinforces the structural dependence on big tech companies, which design, deploy and maintain algorithms (Sadek et al., 2024; Sudmann, 2019). Despite the criticism leveled at the smart city model, the dominant position of private actors in the urban AI landscape remains largely unchanged, raising issues of digital sovereignty and democratic control. Moreover, the increasing role of AI systems in urban decision-making raises questions about the very foundations of responsible governance. When algorithms participate in prioritizing public interventions or allocating resources, questions of human control and accountability arise (Connecticut, 2023; Sanchez et al., 2024). Automated decision-making can create unpredictable or unfair effects that are difficult for citizens to challenge.

Contemporary discourse highlights a normative shift towards ethical and inclusive values (Rasoulzadeh Aghdam et al., 2025). Despite this, a persistent underlying technocentric structure exists. AI is increasingly central to urban management (Cugurullo et al., 2024). Cities are developing dedicated strategies and investing in improving algorithmic capabilities, while promoting the anticipated benefits of these technologies (Ben Dhaou et al., 2024; Servicenow et al., 2025). Municipal leaders' speeches, which are often imbued with technological optimism, help to legitimize the gradual integration of AI as an inevitable evolution of local public action. Therefore, the challenges of urban AI raise a fundamental question: do these technologies really make it possible to consolidate responsible governance? Or do they participate in a renewed reconfiguration of technocentrism in more sophisticated and data-intensive forms? AI doesn't just add a layer of technology; it redefines urban knowledge production, power relations and modes of participation. It tests the ability of cities to reconcile algorithmic innovation and democratic principles.

Method

This paper adopts an exploratory qualitative approach based on the case of Quebec (Creswell & Creswell, 2017; Yin, 2009). We chose this field because it has been recognized as having a great deal of dynamism in the field of AI (Conseil de l'innovation du Quebec, 2023). In particular, this region has a concentration of academic, entrepreneurial, and institutional players, which makes it a relevant laboratory for analyzing the dynamics of AI deployment in the region's municipalities.

The initial stage of the research involves a comprehensive examination of 77 pieces of literature, which were published between 2020 and 2025. The collection encompasses news articles, content from government websites, reports from technology companies, municipal records (strategic plans, press releases, internal policies), and publications from intermediary organizations. We have sourced these documents from municipal websites, AI-focused companies, as well as local and regional news outlets. The analysis of this corpus had two main objectives. First, to identify the actors involved in the urban AI ecosystem. Second, to identify the AI tools actually deployed, their fields of

application and their implementation methods. This stage allowed for the mapping of relationships between actors and the identification of key technological tendencies (computer vision, supervised learning, generative AI, predictive systems, etc.).

The second phase is based on 13 semi-structured interviews with municipal actors directly involved in the deployment or governance of AI. The participants are 6 elected officials, 2 directors or senior managers in urban planning, 3 managers of information technology, AI or information systems, and 2 senior managers in municipal management. Each interview, which ranged from 30 to 60 minutes in length, explored various aspects. These include the existing applications of AI, the underlying drivers and decision-making processes behind these selections, the implementation strategies, the collaborations involved, and the anticipated consequences.

The data from the interviews were analyzed using a thematic approach. Coding was carried out in a hybrid way, combining an inductive and a deductive approach around the dimensions of technocentrism. This analytical strategy has made it possible to examine the extent to which municipal practices and discourses are part of a technocentric logic, or on the contrary, testify to an attempt to implement a more responsible governance of urban AI. By combining the documentary analysis (which provides a structural perspective on the ecosystem) with the interviews (which offer a situated viewpoint from the actors), a comprehensive understanding of the complexities of AI implementation in Quebec municipalities can be gained.

Results

Urban AI in Quebec municipalities

Canada has a strong reputation as a global hub for AI. In particular, there is a particularly high concentration in Quebec, particularly in Montreal. The country was the first to launch a dedicated national strategy (Pan-Canadian AI Strategy) in 2017. Between 2011 and 2022, the government invested nearly $385 million in over 4,000 AI research projects (Attema et al., 2025). The Quebec ecosystem is characterized by its close ties between universities, startups, incubators and public institutions, facilitated by initiatives such as Vitrine IA Québec. As a result, AI is used in various sectors.

At the municipal level, this technology is deployed in various fields. Municipalities are mobilizing a range of technologies from traditional Machine Learning (ML) to generative AI. This adoption affects infrastructure management, citizen services, mobility, the environment and internal administration. Cities are utilizing an array of technologies, from traditional machine learning to the latest generative AI. These technological approaches incorporate techniques such as supervised learning, computer vision, spatio-temporal modeling, natural language processing (NLP), and generative AI tools directly integrated into the services.

In the field of infrastructure, AI is mainly used for predictive maintenance and automated anomaly detection. Solutions such as City Rover use computer vision and Deep Learning (DL) models to detect cracks and potholes from images captured by cameras on municipal vehicles. For drinking water networks, CANN Forecast uses supervised learning algorithms and time-based statistical models to anticipate water consumption and prioritize interventions on risky behaviors. In winter

service, Météo-Routes combines meteorological data, predictive models and decision-making support systems to optimise routes and the use of abrasives.

Citizen services are a second major field of application. Several municipalities have implemented chatbots, based on NLP and LLM techniques. These tools automate answers to frequently asked questions and guide users in their administrative procedures. Internally, various AI agents use generative AI to assist in the drafting of documents, the synthesis of information or regulatory analysis. In some cases, machine learning is also used for automated information extraction in invoice processing or call center support.

In mobility, municipalities use predictive models and real-time data analysis to optimize flows. Tools like Niosense rely on GPS data analysis and optimization algorithms to dynamically adjust the timing of traffic lights. Modelling platforms such as CIVILIA use geostatistics, simulation and machine learning to assess the impact of construction sites or plan cycling networks. Some smart bus stops also incorporate computer vision to measure ridership and detect anomalies. Cities like Quebec have partnered with big tech companies such as Google to optimize traffic management by synchronizing traffic lights under the Green Light Project.

Finally, in terms of the environment and climate resilience, AI supports territorial analysis and risk management. ACARA CLIMATE combines multi-source data and analytical models to assess climate vulnerability. Geospatial solutions like XEOS and K2 GEOSPATIAL leverage satellite image analysis, LiDAR, and DL to map heat islands and track the state of the urban canopy. Other tools use predictive modeling and scenario simulation to anticipate cascading effects during major crises.

Doing more with less: Combining performance and limited resources

The in-depth examination of the interviews uncovers a striking pattern. Urban AI is deployed in a setting characterized by a surge in citizen expectations, yet without a corresponding expansion in organizational capabilities. Several respondents explicitly describe this structural tension: “I have an increase of nearly 400% in citizen demand. But I haven’t had more employees for 5 years, so I always have to do more with fewer resources.” (ID0019). From this perspective, AI is perceived as a strategic lever for meeting the imperatives of efficiency and rationalization. As one manager puts it: “For us it makes all the difference. This is the lever we need. That’s when I saw, in terms of resource optimization, how much we gain from working with AI” (ID007).

The tools deployed illustrate a reconfiguration of urban problems into objects that can be processed by algorithmic systems. Road defects are becoming an automated detection problem via devices such as computer vision and DL. The risks of water main breaks are reformulated as predictive issues through the ML. The dynamics of congestion or climate vulnerability are modelled by solutions such as Niosense or ACARA CLIMATE. This progressive algorithmization transforms urban uncertainty into a problem of data analysis, classification or optimization. Citizen requests are also transformed into tokens that are processed by NLPs and LLMs. Interactions between citizens and their municipalities are thus done through algorithms and generated responses.

However, municipalities do not present AI as a proprietary or deterministic solution. One respondent said: “When we use AI, it’s because it was the most appropriate solution. That doesn’t mean it was the only one we saw” (ID014). AI is described as one tool among others, mobilized in a pragmatic logic. It is designed as a support at work rather than a substitute: “The foundation behind it is

to use this technology to increase the operational efficiency of the organization. […] So it becomes a support for the employee's work and it does not replace them » (ID009). This posture underlines an instrumental appropriation, oriented towards the improvement of processes.

Nevertheless, the analysis highlights a growing spread of AI as a near-default solution to save time and increase productivity. Chatbots, administrative assistants, or generative tools are now widely used, including in municipalities that do not have specialized tools. Respondents emphasize the substantial time gains. "If it takes you 3 days to make a nice presentation of 50 slides and then the other one next to you uses gamma and gives me back the 50 slides in 02h00, I could no longer afford for you to spend 3 days on it" (ID001). AI is even described as "the employee you don't need to hire" (ID007), reflecting the perception of a partial substitute for the shortage of human resources.

In addition, some actors emphasize its role in the preservation of organizational memory. "A city is a lot of information left and right [...] We lose a certain quality of organizational memory [...] And working with AI means that this memory doesn't disappear" (ID018). AI thus appears as a cognitive stabilization device in a context of increased staff mobility.

Finally, despite this largely positive vision "We will optimize everything to the maximum" (ID007), municipalities remain aware of the issues associated with AI. This is particularly true in terms of responsible use and supervision of generative AI. Several have adopted internal policies aimed at guiding practices and ensuring human control over algorithmic productions. AI is viewed as a potential solution to the current challenges facing local public action. It is not considered a goal in itself, but rather as a preferred tool or even a default option for converting urban issues into technological solutions focused on efficiency, rapidity, and resource optimization. However, municipalities admit that the challenges posed by the technology would not limit their deployment because for them the city has pressing and constant needs that must be addressed and urban AI makes it possible to optimize their response.

Emerging deployment and structural dependence of cities

The analysis of the ecosystem shows that the deployment of urban AI concerns municipalities of various sizes, but remains quantitatively limited at the provincial level. Of all the municipalities in Quebec, 172 have been identified as using various AI tools, while about 32 have more advanced tools (computer vision, predictive modeling, simulation, integrated systems, etc.). Compared to the total number of Quebec municipalities (1123), this level of adoption remains relatively low. Urban AI therefore appears to be an emerging and still unevenly distributed phenomenon, concentrated in certain more dynamic territories, more specifically those with sufficient resources. However, the rollout cuts across the three main municipal categories: very small municipalities (less than 10,000 inhabitants), medium-sized municipalities (10,000–100,000 inhabitants) and large municipalities (more than 100,000 inhabitants). Medium-sized municipalities occupy a central position. They have sufficient financial and organizational resources to invest in technology solutions, but they do not have the full in-house teams of major cities. Larger municipalities, on the other hand, tend to develop in-house solutions or build structured AI strategies, while smaller ones remain more dependent on standardized tools.

Despite this diversity, municipalities are highly dependent on external actors for the identification, selection and deployment of AI solutions. Technology companies play a central role in the development of tools, but also in raising awareness and training. Several solutions have emerged following

training offered to municipalities. As one participant pointed out, "It was at this training [...] that I was hooked" (ID010). Mainly local companies structure the available offer and guide uses. NPOs and municipal groups such as Regional County Municipality (RCMs) and metropolitan communities are also strategic intermediaries. They act as facilitators, coaches and especially NPOs sometimes as an "external innovation department" for municipalities without in-house expertise. One participant said that "Going through organizations allows us to sort out and achieve these goals, because we lack the resources to do it ourselves" (ID007). These intermediaries make it possible to circumvent the constraints of public procurement rules and reduce the risks associated with the technological choice. Their role goes beyond simple mediation because they influence the dissemination of solutions and contribute to structuring regional adoption dynamics.

Educational and research institutions are mainly involved in research and development, as well as in responsible governance. However, their specific involvement in municipal dynamics remains limited in view of the density of the Quebec AI ecosystem. Government agencies, on the other hand, exert indirect influence through general funding of innovation, without a policy specifically dedicated to municipal AI.

Discussion

The results suggest that the governance of urban AI in Quebec does not mechanically reproduce the technocentrism of the first generations of smart cities. Nevertheless, they reveal the existence of what we introduce as a latent technocentrism, which is more diffuse and institutionalized. This is gradually becoming part of administrative routines and municipal digital infrastructures.

Municipal stakeholders present urban AI as a pragmatic optimization tool, intended to improve the performance, predictability and efficiency of urban management. This vision is part of a technophile imaginary where AI is perceived as capable of "steering" the city at different scales, in a quasi-autonomous way (Cugurullo & Xu, 2025; Echeverría & Tabarés, 2017). The speeches highlight competitiveness, sustainability and the modernization of public action, thus helping to normalize the integration of this technology. These logics are similar to those identified by scholars criticizing the normalization of technologies in urban governance (Hollands, 2015; Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017). The vision of urban AI held by municipal stakeholders is not merely idealistic, but pragmatic. It contributes to fostering the perception that AI, despite its challenges, is a functional technology that enables significant gains. While certainly pragmatic, this current vision also contributes to the normalization of technology through peer pressure (Gong & Sun, 2024; Rodriguez Müller et al., 2025). This leads to a solutionism driven not by corporations, as in the case of smart cities, but by the municipal stakeholders themselves. These people are in favor of the time and productivity gains that the technology offers, especially since urban AI not only provides assistance but also operates in a near autonomous way (Cugurullo, 2020).

Indeed, the analysis shows that algorithms no longer only assist the decision but preconfigure it. They define relevant categories, prioritize, anticipate risks, and guide interventions. Public action then tends to become a process of algorithmic supervision, where the administration monitors and adjusts automated systems rather than collectively deliberating on the ends. It is similar to recent studies on anticipatory governance where AI is embedded in urban governance and transforming

into an infrastructure of power, shaping the city continuously and often invisibly (Cugurullo, 2020; Cugurullo & Xu, 2025; Son et al., 2023).

Contrary to some assumptions of a territorial digital divide (Samsurijan et al., 2023; Yigitcanlar et al., 2019), the results show that municipalities of various sizes are deploying urban AI tools. Technological accessibility, especially through subscription models and turnkey solutions, limits the structural exclusion of small municipalities. However, adoption remains low compared to the total number of Quebec municipalities. This partial diffusion seems to be less related to access than to organizational and cultural factors. These include fear of job loss, resistance to change, technological skepticism or competing budget priorities (Yigitcanlar et al., 2023). Latent technocentrism is therefore not uniformly imposed but progresses where institutional, cultural and political conditions allow it.

A central result is the structural dependence of municipalities on external actors. The same companies, NPOs and intermediaries return to the identified projects, acting as external offices of the smart city. This is similar to previous smart cities governance practices where external actors frame urban policies (Hollands, 2015; Kitchin et al., 2017; Mora et al., 2017). In the case of Quebec, although many are NPOs, their distribution logics are similar to market dynamics. This configuration favors the emergence of an epistemic community of urban AI (Kitchin et al., 2017), committed to the promotion of performance-oriented and optimization-oriented solutions. Municipalities integrated into a multi-level ecosystem (states, international organizations, research centers, companies), become both beneficiaries and testing grounds. International discourses associating AI with sustainable development, innovation and modernization help to legitimize its local adoption (Gong & Sun, 2024; Rodriguez Müller et al., 2025). In this context, technocentrism is not the result of an explicit decision, but of an institutional trajectory and ecosystem dynamics in which municipalities operate.

Another factor contributing to this latent technocentrism is the gradual confinement of municipalities to approaches that limit participation. The results show that tools deployed respond to local challenges but remain mainly oriented towards internal performance. Citizen participation remains marginal in the lifecycle and this is an important critic on smart cities that is still present in AI governance practices (Hu et al., 2023). This can therefore reinforce technocentrism where municipalities are focused on optimization in service delivery through disruptive technologies such as AI without citizen-centric approaches.

Technocentrism can also be reinforced by defining urban problems solely through the lens of technology Kempin Reuter, 2020; León & Rosen, 2020; Mora et al., 2017). The increasing integration of AI into decision-making processes tends to redefine public problems themselves. When algorithms determine priorities or model risks, they implicitly influence what is considered a legitimate problem and an acceptable response (Batty, 2024). This dynamic can lead to a gradual disconnection from local needs and an institutionalization of technological solutionism. AI is touted as capable of reducing urban complexity, anticipating uncertainty, and achieving sustainability goals (Son et al., 2023). Despite a declared awareness of the risks (bias, opacity, environmental impacts, etc.), control mechanisms remain limited in the face of the "black box" nature of the systems. Cities don't always have the expertise to fully understand the algorithms they use, increasing vendor lock-in.

Thus, the governance of urban AI is not based on an explicit and assumed technocentrism. Rather, it is part of an operational and latent form of technocentrism, where Urban AI is gradually becoming an ordinary, even unavoidable, component of urban management. This technocentrism is less ideological than pragmatic, less spectacular than that of smart cities, but just as structuring. Caught up in a multi-level dynamic of AI valorization, and practical benefits of the technology, municipal actors tend to perceive its integration as rational, necessary and inevitable. The challenge is therefore not only to regulate AI, but to politicize its uses again, by strengthening participatory mechanisms (citizens' assemblies, consultations, co-design) and the internal capacities of municipalities. Without these rebalancings, AI risks imposing itself not as a deliberate choice, but as an institutional trajectory that is difficult to contest, consolidating a diffuse technocentrism at the heart of contemporary urban governance.

Conclusion

The objective of this research was to examine whether the deployment of urban AI in Quebec municipalities reproduces technocentric governance. The literature review and interviews reveal a nuanced picture. AI is now integrated into municipalities of various sizes and mobilized mainly for the objectives of administrative optimization, infrastructure management and service improvement. It is perceived in a pragmatic way, as an effective tool to "do more with less". Cities do not see it as an autonomous end, and many demonstrate an awareness of the ethical and organizational issues associated with its use.

However, the results show that this gradual integration is accompanied with what we describe as latent technocentrism. AI tends to become a permanent part of administrative routines, to preconfigure certain decisions and to structure the very definition of public problems. The structural dependence on external actors, the centrality of performance logics and the low citizen involvement in the deployment processes reinforce this dynamic. Thus, AI does not reproduce an explicit and ideological technocentrism, but it contributes to reconfiguring its forms, in a more diffuse, pragmatic and institutionalized way.

However, there are some limitations. The 77 documents analyzed, although from a long watch (2020–2025), do not necessarily reflect the exhaustiveness of an ever-evolving ecosystem. To address this issue, we extended our observation period and conducted interviews with key municipal actors to expand our literature review and gain a more comprehensive understanding of ongoing dynamics. Nevertheless, some emerging or informal initiatives may have escaped analysis. Future research could extend the investigation to other territories to compare urban AI adoption and governance trajectories. A comparative approach would provide a better understanding of whether the latent technocentrism observed in Quebec is a generalized or contextual trend. In addition, it seems essential to explore more systematically the mechanisms likely to limit this technocentric drift: mechanisms for citizen participation, strengthening the internal capacities of municipalities, alternative models of technological development or more restrictive governance frameworks.

As AI becomes entrenched in urban practices and imposes itself as an ordinary management infrastructure, the question is no longer just whether it reproduces technocentrism, but how to orient its integration so that it remains compatible with democratic principles and the collective goals of local public action.

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