Smart cities policies for urban development: Systematic insight into public value creation

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This presentation delineates the emerging insights from the scientific literature regarding the role of smart cities in the generation of public value.

The implementation of smart cities is driven by various technologies, which play a central role in urban transformation and interconnections (Ali et al., 2023). These include ICT, Cloud/Edge computing, IoT, Big Data, AI, Machine Learning, and Blockchain. Overemphasis on technology alone cannot resolve urban challenges (Hollands, 2020). Concerns arise over accessibility, societal inequalities, sustainability, ethical data use, and governance transparency (e.g., Kitchin, 2018; Kitchin et al., 2019; Caragliu & Del Bo, 2022). Therefore, a city is considered smart when investments in technology are combined with those in human capital, infrastructure and governance, which together promote sustainable growth and quality of life while prioritising social equity and environmental protection (e.g., Caragliu et al., 2013; Bifulco et al., 2016).
The adoption of this broader definition of smart cities implies a re-examination of public intervention and its orientation towards the production of public value.

Despite being considered by many as a key paradigm in public administration, there is no universally accepted definition of public value (e.g. Bryson et al., 2017). It is described as “what is good for and valued by a community” (Moore, 1995) or “what impacts public values” (Meynhardt, 2009). Public value emerges from government-generated benefits and their fair distribution, addressing individual and collective needs (Alford & O’Flynn, 2009). It balances current user interests with contributions to the public sphere (Benington & Moore, 2011), though stakeholder perceptions vary by context (Bracci et al., 2019). Its values include efficiency, accountability, transparency, legitimacy, democracy, trust, fairness, and inclusion (Meynhardt, 2009) while its creation depends on public managers' ability to (i) achieve valuable outcomes, (ii) ensure sustainable initiatives, and (iii) secure legitimacy and support (Moore, 1995).

The smart city represents a promising avenue for public value creation by driving urban innovation to enhance city performance (Meijer et al., 2016). In the public sector, innovation is justified only when it generates public value (Hartley, 2005). As such, urban innovation initiatives - ideas, practices and projects - are evaluated based on their value contribution, which includes short-term effects and long-term impacts (e.g., Dameri & Benevolo, 2016; Barrutia et al., 2022). Challenges in this contribution include (i) political and bureaucratic resistance to change, (ii) lack of competition and financial incentives, (iii) long investment horizons and limited budgets, (iv) conflicting stakeholder interests, (v) governmental self-interest, (vi) deficiencies in leadership, skills, and knowledge, and (vii) poor partner selection or relationship management (e.g., Crosby et al., 2017; Cabral et al., 2019). As a result, public value creation dynamics generated by smart city initiatives remains contested and need further investigation (e.g., Komninos et al., 2021).

The study employs a three-step methodological approach, incorporating bibliometric analysis, network analysis, and content analysis to ensure a comprehensive examination of the subject.

Thanks to the processing in R of documents from Scopus, bibliometric analysis reveals that research on public value in smart cities has grown steadily since 1997, with publications remaining below 10 per year until 2009. A significant surge occurred in 2022 (+59.57% compared to 2021), marking the peak of publications. However, 2023 saw a slight decline (-12%), indicating a potential stabilization.

Despite growing interest, the relatively low number of publications suggests significant opportunities for further research in public value and smart cities.

The network analysis identifies the most relevant index keywords and the research trends, as well as outline and visualize keyword connections based on weight, strength, and clustering. Public value (116 occurrences) and public values (49 occurrences) ranked highest, reflecting distinct meanings—managerial effectiveness (Osborne et al., 2013) vs. normative principles (Jørgensen & Bozeman, 2007). Among key themes, local government ranks highly, reaffirming its role in public value creation. Technological innovation is also central, with keywords like e-government, smart city, and open data, while sustainability is important and appear as a link between urban policies and environmental and societal concerns.

The content analysis categorized research into five themes:

- Stakeholder Engagement and Participation (31 documents) – The most studied area, exploring collaborative approaches to co-create public value in smart cities.
- Results Measurement and Evaluation (29 documents) – Focuses on methods and tools for assessing the public value impact of smart city initiatives.
- Organizational and Management Capacity (22 documents) – Examines leadership, human resources, accounting, and process management in public service delivery.
- Policies and Strategies (22 documents) – Investigates institutional logics, decision-making, and value hierarchies in public value creation. This category is closely linked to organizational capacity, as strategy implementation depends on management effectiveness.
- Outsourcing and Partnerships (10 documents) – The least explored topic, analysing privatization trends and collaborations between governments and private/non-profit entities.

Revealed key findings on technological innovation in Public Value Creation focuses on assessing digital solutions' impact on public value and utilizing media sentiment analysis to evaluate government performance. Quantifying benefits remains difficult due to indirect effects. They also emphasizes the role of e-governance, open data, and digital platforms in enhancing government-stakeholder interactions, promoting openness, transparency, and trust while addressing barriers like skill gaps and resistance to change. While technological innovation is vital for public value creation, challenges in measurement and implementation persist.

In terms of environmental protection, findings reveal that policies and strategies are important and focus on sustainable urban policies and integrated approaches to mitigate urbanization impacts. They stress assessing the effectiveness of environmental policies and involve stakeholders to understand citizens' perceptions, despite the limitations of current measurement tools.

In terms of social equity, findings reveal a large focus of policies and strategies on integrating social equity in their decisions and the need for equitable decision-making and assessing government impacts on social goals. They also outline the presence of transformational leadership and practices that ensure fair distribution of benefits from smart city initiatives, as well as the relevance of participatory processes.

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