

## BOOK REVIEW

**Smart Cities in the Post-Algorithmic Era: Integrating Technologies, Platforms and Governance**, edited by Nicos Komninos and Christina Kakderi (2019) 328pp., £90 (hardback) Edward Elgar, Cheltenham, ISBN 978 1 78990 704 9

This book provides a versatile account of smart city paradigm development. While it offers an overview of the smart city's underlying smart technologies (internet of things, data science, blockchain and artificial intelligence), it also emphasizes human intelligence and participatory governance as key ingredients of modern smart cities. The editors, who have put together the work of 23 contributors in this volume, hail from the Aristotle University of Thessaloniki.

The first of three parts investigates the origins of smart cities, the second the ways to connect people and infrastructure to facilitate knowledge production and activities in smart cities and the third part looks at participatory planning and governance of smart cities. Smart city research is both fragmented and divergent, as is evident from the extensive literature mapping carried out by Mora, Reid and Angelidou in the first article. This finding is not surprising as there is a variety of stakeholders associated with smart cities (academics, policymakers and practitioners), all with different motives and ways to contribute to smart city development. The authors present five different directions of smart city research – experimental, ubiquitous, corporate, European and holistic. All of these paths reflect the technology orientation of existing smart city research. The corporate path is based on the interest of large ICT companies in promoting their products and services as one-size-fits-all solutions to urban problems, while the European path views ICT solutions as important to mitigate climate change and support sustainable urban development through enhancing energy efficiency and carbon neutrality.

The rest of the articles in the first part investigate opportunities for smart cities arising from artificial intelligence and deep learning technologies, facilitation of innovation ecosystems and new knowledge creation in smart cities. While these articles offer important insights into technological development, they all emphasize the need for human and collective intelligence to come up with solutions to the complex challenges emanating from urbanization. The chapter by Schaffers presents living labs, crowdsourcing tools, digital platforms and innovation projects as sources of collecting and combining knowledge innovation. It provides a comparison of best practice from Amsterdam, Thessaloniki, Manchester, Barcelona, Helsinki and Ghent. The author acknowledges many existing challenges that hinder true collaboration among stakeholder groups. The chapter also indicates the need for valid measurement to evaluate the effectiveness and impact of existing digital solutions.

The second part of the book introduces key technologies (cloud-of-things, blockchain and big data) that facilitate the connection of city infrastructure and applications with citizens themselves. The article from Vakali and Moustaka demonstrates how user-generated content in social media can support the detection of dense areas and land uses and, for example, enhance urban planning, citizen engagement, tourism, ride and car sharing, advertising and marketing in cities. The article from Tsampoulatidis, Bechtsis and Kompatsiaris introduces blockchain technologies as a way to help government agencies to digitise existing records (e.g., birth, death, marital status, business licensing, property transfers and waste management) to enhance data efficiency and transparency. The article from Zhang, Duarte and Ratti demonstrates how big data may be used to improve early detection of diseases and ways of managing their spread. The article also happens to be relevant to the current coronavirus pandemic. The second part of the book highlights further capabilities of new technologies, but also tackles such challenges as data security, privacy and interoperability issues.

The third part discusses participatory governance and digital platforms that facilitate collaboration, sharing and development of collective intelligence in smart cities. Özdemir, Kourtit and Nijkamp look at the social policy of smart cities. They bring attention to social problems of cities such as poverty, social discrimination and socio-economic inequality. These are hard to solve, certainly through technology and data science alone. Furthermore, inclusive smart city strategies are difficult to implement as elderly people, unemployed people and mentally or physically disabled people lack the access and skills required to apply digital solutions. The chapter fails to offer any good examples of smart cities that have succeeded in addressing social problems through digital solutions. It concludes that more research is required to understand the socio-economic problems of smart cities and the needs of different social groups.

On the whole, this book offers an overview of smart city research and the technological opportunities and challenges that smart cities face. It neither provides nor intends to provide a detailed account of current digital solutions in smart cities in relation to specific domains such as health, education and transportation. To my mind, it would have been interesting to explore in detail the most successful digital public services in smart cities and their usage rates among different groups of citizens. Some of these data can be found in the DESI report.<sup>1</sup> As it is, the reader is given an introduction to new technologies and their possibilities for smart cities, but is obliged to look elsewhere for details. The book suggests several new topics for further research and development in smart cities. Just one of them is related to the digital divide and social problems in cities. The current digital solutions have improved the quality of life in cities through enhanced accessibility and ease of use of public services, but there are further opportunities to exploit.

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<sup>1</sup> European Commission (2020) *The Digital Economy and Society Index Report*, available at <https://ec.europa.eu/digital-single-market/en/desi> (accessed October 2020).