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Article

Special issue on "The city 2.0 - smart people, places and planning"

Journal of Urban Management

Provided in Cooperation with:

Chinese Association of Urban Management (CAUM), Taipei

Suggested Citation: Nijkamp, Peter; Kourtit, Karima; Türk, Umut (2022) : Special issue on "The city 2.0 - smart people, places and planning", Journal of Urban Management, ISSN 2226-5856, Elsevier, Amsterdam, Vol. 11, Iss. 2, pp. 139-141, <https://doi.org/10.1016/j.jum.2022.05.011>

This Version is available at:

<https://hdl.handle.net/10419/271453>

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Contents lists available at ScienceDirect

Journal of Urban Management

journal homepage: www.elsevier.com/locate/jum

Editorial

Special issue on ‘The city 2.0 – Smart People, Places and Planning’



1. The ‘New Urban World’

Our contemporary world is facing rather drastic geo-demographic, technological and environmental transformations, with far-reaching implications for urban sustainability and resilience in all continents. For example, we observe an unprecedented urbanisation mainly in developing countries, and we witness far-reaching environmental and climatological changes all over the world. With a structural rise in the number and size of large global cities, it is clear that cities – or, in general, urban agglomerations – tend to become new centre points of profound (social, cultural, innovative, technological etc.) changes in the human, economic and physical geography in our world, while they are also characterised by a great variety of severe negative externalities (crowding, environmental decay, socio-psychological stress, crime, etc.). The emerging ‘*urban century*’ is clearly full of sunny and shadow sides. To cope with the challenges of the ‘*New Urban World*’ (Kourtit, 2019) a wise response by citizens, stakeholders and governments is needed so as to safeguard our urban planet. Such a response ought to comply with the UN Sustainable Development Goals (SDGs) and the New Urban Agenda, against the background of recent alarming IPCC studies and the pressing need for local sustainability initiatives.

2. The rise of the ‘smart city’

To cope with the great many challenges and problems in our urbanised world, a creative and effective response mechanism is needed, in which modern technology plays inevitably a critical role. In particular, Information and Communication Technology (ICT) has become a spearhead for sustainable and resilient development in the ‘*New Urban World*’. This has led to a great popularity of the new concept of ‘*smart city*’ or ‘*intelligent city*’ (see e.g. Caragliu et al., 2011; Giffinger, 2019.; Kourtit et al., 2012). The essence of a smart city is that it is able to enhance his achievements – in a social, economic, technological, environmental, or cultural sense – by employing advanced knowledge information and digital data strategies and tools. Even though nowadays a smart city is often believed to be digitally-oriented, it ought to be recognised that in principle the significant rise in urban performance through actionable and intelligent knowledge management – including data analytics, social media access and learning principles (based on citizen science) – is the crucial factor in smart city policy. Thus, a smart city is in general not an autonomous goal in itself, but a strategic and action-driven concept and a data-oriented framework for improving the economic, social and environmental sustainability and resilience of urban areas. And therefore, a smart or intelligent city should not be judged on the basis of its digital sophistication, but rather by its outcomes (e.g. socio-cultural inclusiveness, resource efficiency, health conditions, or liveability). From this perspective, a smart city meets its purposes, if it significantly contributes to a broad package of urban agglomeration advantages (including scale advantages, sustainability goals, proximity benefits and connectivity advantages).

3. Information needs of the ‘smart city’

Several advantages come together in ‘smart cities’, in particular the fruits of the modern information society and the benefits of digital technology. Smart cities all over the world tend to become socio-economic magnets and cognitive brainports for progress and sustainability. Digital information policy however, is not a matter of volume and quantity of data; smart cities are only relevant as escalators (‘cities as data engines’; Batty, 2013) for enhanced and accelerated sustainability, if – next to its substance – the information architecture is logically designed and assessed, using several logical data-analytic principles, in particular, cascading and decomposition (see Kourtit, 2021). Especially in our current era of ‘big data’, with an extreme variability in geographical scale, precision, frequency and user groups, a structured and systemic data management by smart cities is a prerequisite for reaping the fruits of contemporary

<https://doi.org/10.1016/j.jum.2022.05.011>

Available online 26 May 2022

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urbanisation. But the challenges of urban data management are manifold (see e.g. Laurini et al., 2022), as the data questions on the ‘New Urban World’ are numerous. For example, which type of people prefer to live in which type of city (e.g. monocentric vs. polycentric)? And what are the spatial locational preferences of business (e.g. city centre vs. suburbs)? What is the locational profile of public facilities? And what is the functional profile of public space and with whom is it shared? How does the worldwide COVID-19 pandemic affect future city life? And finally, what is the competence and role of governance in the development of settlement systems in a democratic society? Clearly, the modern city tends to become a multi-faceted and powerful data system comprising a very heterogeneous force field of spatial human behaviour and stimulating the cognitive competences of its inhabitants and planners in the context of the urban SDGs.

4. The data revolution

Digital technology and an ICT-oriented society provide many unprecedented opportunities for a significant enhancement of performance and welfare improvement in both the private and public domain. Digital information becomes gradually a pervasive and systemwide feature of any advanced society. The current ‘big data’ wave allows researchers and policy-makers in the field to acquire new analytical insights regarding the fundamentals of a contemporaneous city, in particular on: (i) micro-statistical and conceptual foundations of sustainable city life and urban public space, (ii) spatial choices and locational perceptions of urban actors and relevant stakeholders involved, (iii) the dynamics in city formation, morphology and urban land use, (iv) the supply of and access to social amenities and environmental services in urban agglomerations, (v) the architecture, planning and governance challenges of modern intelligent cities, and (vi) the new data metrics (including advanced geo-science and data mining research tools and methods) in contemporaneous urban sciences (‘the city as a data warehouse’). The new data flood may serve both the scientific community and society at large, with a view to supporting sustainable, liveable and inclusive cities in our world. This revolutionary big data development ties in with the need to address the functioning and governance of modern self-organizing urban agglomerations, characterized by multiple layers of rich architectural design and historical heritage, a multidimensional pattern of many individual and collective interests and behaviours, a dynamic interaction between economic, technological, environmental, knowledge and business stakeholders, and a great variety of internal and external network linkage patterns (Lai, 2021). The current digital era transforms the city into a complex and dynamic data container with an unprecedented wealth of information. Urban transformation in the future and new data availability and handling will go hand in hand. Sustainable city governance takes place in a data-rich environment. The heterogeneity in data (volume, scale, origin, reliability, frequency, access) does not only call for an advanced data expertise (‘urban data analytics’), but also for a solid, society-, environment-, and people-oriented framing of governance challenges in relation to the SDG tasks of cities in our world.

5. Scope of the special issue

Current forecasts on geo-demographic developments suggests that in the future our planet will be ‘urban’. In the light of the rapid urbanisation of our world there is a need for smart and actionable initiatives, from both a governance side and the scientific community. Against the above sketched background, the guest editors have composed a special issue of the *Journal of Urban Management* on the theme of ‘*The City 2.0 – Smart People, Place and Planning*’. It addresses the challenges inherent in sustainable development of cities, seen from an evidence-based smart governance and data-analytics or modelling perspective. The various contributions are conceptual or applied in nature, and reflect original quantitative thinking on current urban issues. This special issue offers an interesting collection of innovative studies at the edge of smart sustainable cities (with people, places and planning) and modern data analytics (including interactive platform and social media information). It forms a sound mix of applied policy-oriented studies and novel research-based contributions using urban metrics in relation to digital information on quality of life in cities, so as to provide a tool for innovative sustainable urban governance.

6. Composition of the special issue

This special issue comprises 12 carefully selected and reviewed articles, which are organised logically in 3 parts. The first part of this special issue departs from the focus on and engagement of *people* in a smart city context. Katharine Willis and Christian Nold offer an emotion data framework employing citizens’ emotions in participating in smart city governance, so as to create a dynamic leverage point of negotiation on urban space. Silvia Blasi, Edoardo Gobbo, and Silvia Rita Sedita address next citizen engagement in a smart city context using Twitter data on Italian municipalities which have employed Twitter accounts as an information channel for their inhabitants on varying urban policy and management issues. Another smart city study is undertaken by Guijun Li, Tanxiaosi Luo, Qian Liu, and Yangju Song, on experience sharing in urban transitions, by applying case-based reasoning and triangulation to experience mining in Beijing.

The second part of this special issue on the City 2.0 starts from a *place-based* perspective. In their study on the shape of neighbourhoods, Alon Sagi, Avigdor Gal, Daniel Czamanski and Dani Broitman provide an original data-analytic study on smart governance from a flexible neighbourhood delimitation perspective using inter alia machine learning tools. Next, Eduardo Amaral Haddad, Fernando S. Perobelli, Inacio Araujo, Miguel S. Jacob and Rodrigo S. Ferreira present a modelling study on the value chain of E-hailing in Brasil, and try to assess the nature, magnitude and interdependencies of the links of consumer operations in a shared e-platform context. Cities have also an important cultural significance; the profile of global cities as cultural vanguards is studied and modelled by Karima Kourtit and Peter Nijkamp, who address in particular the role of cities as cultural magnets shaping a high urban cultural value, on the basis of a multivariate database on 40 world cities. In a subsequent article, Rebekka E. Aparidia, Isabelle Nilsson, Neil Reid and Julie Wartell zoom in

on the experience economy by highlighting the role of local neighbourhood characteristics for economic performance, using the Californian brewpub industry as a case study. A final contribution in this second part of the special issue is offered by *Mia Wahlström, Umut Türk, Karima Kourtit* and *Peter Nijkamp*, who introduce the concept of ‘city love’ (and its constituents ‘body’ and ‘soul’) as an anchor point for an ‘urbanometric’ analysis of the neighbourhood appreciation of residents in Rotterdam.

The smart city concept has clearly important implications for *urban planning*. *Juste Raimbault* and *Denise Pumain* take their orientation in the SDGs in the framework of urban systems and develop a trade-off simulation model based on a bi-objective optimisation of emissions and innovation utilities. *Bogdan-Constantin Ibanescu, Gabriela Carmen Pascariu, Alexandru Banica* and *Ioana Bejenaru* contribute next an article on smart initiatives in relation to digital mobility footprints of cities, looking into the smart mobility profile of cities in Romania. In the next article, *Laurie Schintler* and *Connie L. McNeely* focus on artificial intelligence as a new tool in smart resilience planning in cities, in particular by critically reviewing the structural, process and outcome conditions in relation to absorptive capacity, recovery speed and policy practices. A final contribution is offered by *Stefano Colombo* who in this micro-founded theoretical study on optimal city zoning and big data analyses the optimal design of a residential zone in a linear town by a welfare-maximising regulator.

This special issue on cities 2.0 has demonstrated the analytical and governance power of a data-metric approach to the many challenges inherent in modern urban sustainability planning. The cross-fertilisation of advanced data-analytics and rational urban planning will undoubtedly lead to new advances in urban sciences.

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