**Governing disruptive technologies for inclusive development in cities:**

**A systematic literature review**

# Supplemental Data

## A- Summary statistics on shortlisted articles

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| **Figure A-1: Geographical distribution of shortlisted studies** | **Figure A-2: Distribution of methods across the shortlisted studies** |
| **Figure A-3: Distribution of main technology discussed in the shortlisted studies** | **Figure A-4: Distribution of city labels across the shortlisted studies** |
| **Figure A-5: Publication trend of the shortlisted studies (End date of analysis: 23 March 2022)** | |
| **Figure A-6: Distribution of publication sources across the shortlisted studies (showing only the sources contributing >1 publications)** | |

## Table B: Details of shortlisted articles

| **S no** | **Author (s)** | **Title** | **Publication year** | **Source title** | **Description** | **Method** | **Location** | **City label** | **Technology** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Hanson, J. | The inclusive city: delivering a more accessible urban environment through inclusive design | 2004 | Other (Book) | The author discusses the different public needs and its relation to inclusive design, with regards to built environment design, policies and legislation. | Conceptual | UK | Urban development (General) | Advanced technologies (General) |
| 2 | Ianchovichina, E. & Lundstrom, S. | Inclusive growth analytics: Framework and application | 2009 | Other (Report - The World Bank) | The authors apply an analytical framework that coordinate anti-poverty and growth dimensions for inclusive cities to the case of Zambia. The authors highlight the importance of improving access to education, training, and good governance practices for improving the quality of life. | Case study | Africa | Urban development (General) | Advanced technologies (General) |
| 3 | Harrison C., Eckman B., Hamilton R., Hartswick P., Kalagnanam J., Paraszczak J., Williams P. | Foundations for Smarter Cities | 2010 | IBM Journal of Research and Development | The authors present the Conceptual foundations behind IBM's Smarter City development model, focussing on how cities can incorporate complex analytics on real world data to improve service delivery. | Case study | Multiple | Smart city | ICT, Digital Platforms |
| 4 | Caragliu A., del Bo C., Nijkamp P. | Smart cities in Europe | 2011 | Journal of Urban Technology | The authors develop a definition of smart cities based on evidence on the geography of smart cities in the EU27. They also determine the factors affecting smart city performance | Case study | Europe | Smart city | ICT |
| 5 | Joss S. | Eco-cities: The mainstreaming of urban sustainability - Key characteristics and driving factors | 2011 | International Journal of Sustainable Development and Planning | The authors debate on the contemporary eco-city developments. They systematically mapping recent initiatives at global level; evaluate key characteristics and discuss the factors that drive and condition innovation in eco cities | Review | Multiple | Eco city | Advanced technologies (General) |
| 6 | Komninos N. | Intelligent cities: Variable geometries of spatial intelligence | 2011 | Intelligent Buildings International | The author highlights the different architectures of spatial intelligence, specifically the use of information communication technologies (ICTs) and institutional frameworks that support innovation ecosystems | Case study | UK, HK, Netherlands | Intelligent city | ICT |
| 7 | Odendaal N. | Splintering urbanism or split agendas? examining the spatial distribution of technology access in relation to ICT policy in Durban, South Africa | 2011 | Urban Studies | The author examines the spatial distribution of new technology access in relation to urban change and the ICT policy in Durban, South Africa. The results show that current spatial patterns mirror overall investment patterns, reflecting the existing social inequities. | Case study | South Africa | Urban development (General) | ICT |
| 8 | Schaffers H., Komninos N., Pallot M., Trousse B., Nilsson M., Oliveira A. | Smart cities and the future internet: Towards cooperation frameworks for open innovation | 2011 | Other (Lecture Notes in Computer Science, Artificial Intelligence, and Bioinformatics) | The authors show how "smart cities" can act as environments of open and user-driven innovation. By exploring smart city pilots, the authors demonstrate how Internet experimentally-driven research, projects in living labs and common resources regarding research and innovation can be identified and shared in open innovation environments | Conceptual | Europe | Smart city | Advanced technologies (General) |
| 9 | Shin D.-H., Lee C.-W. | Disruptive innovation for social change: How technology innovation can be best managed in social context | 2011 | Telematics and Informatics | The authors present a model based on Actor-Network Theory (ANT) to interpret and understand the Korea's strategy for the development of the ubiquitous city. The authors stress on the need for participatory design in u-city development and the need for the deigns to be grounded in the final users' needs. | Case study | South Korea | Ubiquitous city | Advanced technologies (General) |
| 10 | Tang L., Lin L., Shao G., Su X., Zhao J. | Redefining the digital city for promoting sustainable urban development | 2011 | International Journal of Sustainable Development and World Ecology | The authors explore the various aspects of digital city definitions and propose an urban digital operating system (Urban DOS). Their proposed system is targeted to improve life quality, socioeconomic functions and sustainable development and is demonstrated in a mid-size city in China | Case study | China | Digital city | Digital Platforms |
| 11 | Batty M., Axhausen K.W., Giannotti F., Pozdnoukhov A., Bazzani A., Wachowicz M., Ouzounis G., Portugali Y. | Smart cities of the future | 2012 | European Physical Journal: Special Topics | The authors discuss the definitions of smart cities, define scenarios based on new cities badging themselves as smart, older cities regenerating themselves as smart, the development of science parks, tech cities, and technopoles focused on high technologies, the development of urban services using contemporary ICT, the use of ICT to develop new urban intelligence functions, and the development of online and mobile forms of participation | Conceptual | Europe | Smart city | ICT |
| 12 | Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J. R., Mellouli, S., Nahon, K., Pardo, T. A. & Scholl, H. J. | Understanding smart cities: An integrative framework. 2012 45th Hawaii international conference on system sciences | 2012 | IEEE | Through an extensive literature review, the authors present a framework for understanding smart cities through 8 critical factors: management and organization, technology, governance, policy context, people and communities, economy, built infrastructure, and natural environment. | Review | NA | Smart city | Advanced technologies (General) |
| 13 | Gil-Garcia J.R. | Towards a smart State? Inter-agency collaboration, information integration, and beyond | 2012 | Information Polity | The author shows the current trends towards greater inter-organizational collaboration, information sharing, and integration in a 'smart city'. The paper debates the promises and challenges identified for government information sharing and integration initiatives | Conceptual | NA | Smart city | Digital Platforms, data governance |
| 14 | GhaffarianHoseini A., Dahlan N.D., Berardi U., GhaffarianHoseini A., Makaremi N. | The essence of future smart houses: From embedding ICT to adapting to sustainability principles | 2013 | Renewable and Sustainable Energy Reviews | The authors theoretically analyse case models of smart houses to identify their characteristics. They show how smart houses embrace technologies of the functional automation and ICT. | Case study | USA | Smart city | ICT, automation |
| 15 | Hancke G.P., de Silva B.C. | The role of advanced sensing in smart cities | 2013 | Sensors (Switzerland) | The paper discusses an overview of the state of the art with regards to sensing in smart cities such as sensing applications in smart cities, sensing platforms and technical challenges associated with these technologies | Review | NA | Smart city | ICT, IoT |
| 16 | Joss S., Molella A.P. | The Eco-City as Urban Technology: Perspectives on Caofeidian International Eco-City (China) | 2013 | Journal of Urban Technology | The study analyses the selected case using a historical and Conceptual perspective of "techno-city". The authors highlight the relationship between the city and its hinterland and discuss the focus on science and technology driving the city's concept. | Case study | China | Eco city | Advanced technologies (General) |
| 17 | Komninos, N. & Tsarchopoulos, P | Toward Intelligent Thessaloniki: From an Agglomeration of Apps to Smart Districts. | 2013 | Journal of the Knowledge Economy | The authors discuss the case of Intelligent city in Thessaloniki, Greece through the deployment of technologies such as IoT networks, smart public spaces, data platforms and e-services amongst others. They call for a new orientation in urban governance that addresses the challenges of building a long-term sustainable model. | Case study | Europe | Intelligent city | ICT, IoT |
| 18 | Anttiroiko A.-V., Valkama P., Bailey S.J. | Smart cities in the new service economy: Building platforms for smart services | 2014 | AI and Society | The authors build an overall framework for the basic forms and dimensions of smart public services. They discuss key dimensions of smart services and the Conceptual modelling of smart service platforms through which digital technology is increasingly embedded in social creativity. | Conceptual | Europe | Smart city | Digital Platforms |
| 19 | Gabrys J. | Programming environments: Environmentality and citizen sensing in the smart city | 2014 | Environment and Planning D: Society and Space | The author evaluates how smart-city proposals might be understood through processes of environmentality or the distribution of governance within and through environments and environmental technologies. The author uses the Sustainable Cities (CSC) project, developed by MIT and Cisco to explore their research questions. | Case study | Multiple | Smart city, Sustainable city | ICT, Digital Platforms |
| 20 | Kitchin R. | The real-time city? Big data and smart urbanism | 2014 | GeoJournal | The authors discuss how cities are being instrumented with digital devices and infrastructure that produce 'big data', providing real time analysis for improved urban governance. The critically reflect on the politics of big urban data, technocratic governance and city development, and corporatisation of city governance and technological lock-ins. | Case study | Multiple | Smart city | Big Data |
| 21 | Kramers A., Höjer M., Lövehagen N., Wangel J. | Smart sustainable cities - Exploring ICT solutions for reduced energy use in cities | 2014 | Environmental Modelling and Software | The authors propose an analytical framework combining typology of ICT opportunities with a typology of household functions - to understand how ICT investments could contribute to reduce energy use in cities | Conceptual | Sweden | Smart sustainable city, Mega city | ICT |
| 22 | Perera C., Zaslavsky A., Christen P., Georgakopoulos D. | Sensing as a service model for smart cities supported by Internet of Things | 2014 | Transactions on Emerging Telecommunications Technologies | The authors investigate the concept of sensing as a service and how it fits with the IoT. They elaborate on concept of sensing as a service model in technological, economical and social perspectives and identify the major open challenges and issues, particularly for smart cities. | Conceptual | NA | Smart city | ICT, IoT |
| 23 | Söderström, O., Paasche, T. & Klauser, F. | Smart cities as corporate storytelling | 2014 | City | The authors discuss how smart city as a terms was popularised in municipalities, media and especially private firms . They then focus on IBM's approach in the smarter cities campaign to understand the competition between private companies over authorship, authority and profit in the smart city business. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 24 | Yigitcanlar T., Lee S.H. | Korean ubiquitous-eco-city: A smart-sustainable urban form or a branding hoax? | 2014 | Technological Forecasting and Social Change | The authors investigate the adoption of u-eco city measures that use technology to provide for a higher quality of life with a low to negative impact on the natural environment. In particular they focus on South Korea's u-eco cities initiatives. | Case study | South Korea | Eco city, Ubiquitous city | Advanced technologies (General) |
| 25 | Zanella A., Bui N., Castellani A., Vangelista L., Zorzi M. | Internet of things for smart cities | 2014 | IEEE Internet of Things Journal | The authors present a case on urban IoT systems and their role in smart city visions. They provide a survey of the enabling technologies, protocols, and architecture for an urban IoT and discuss the best practices in Padova Smart city. | Case study | Italy | Smart city | IoT |
| 26 | Al Nuaimi E., Al Neyadi H., Mohamed N., Al-Jaroodi J. | Applications of big data to smart cities | 2015 | Journal of Internet Services and Applications | The authors Review the applications of big data to support smart cities, discusses different definitions of the smart city and big data, explores the opportunities, challenges and benefits of incorporating big data applications for smart cities | Review | NA | Smart city | Big Data |
| 27 | Albino V., Berardi U., Dangelico R.M. | Smart cities: Definitions, dimensions, performance, and initiatives | 2015 | Journal of Urban Technology | The authors discuss the meaning of the word “smart” in the context of cities and identify the main dimensions and elements characterizing a smart city | Conceptual | NA | Smart city | Advanced technologies (General) |
| 28 | Angelidou M. | Smart cities: A conjuncture of four forces | 2015 | Cities | The author explicates the current technology push and demand pull for smart city solutions. They discuss the forces shaping the smart city conception | Conceptual | Multiple | Smart city | Advanced technologies (General) |
| 29 | De Jong M., Joss S., Schraven D., Zhan C., Weijnen M. | Sustainable-smart-resilient-low carbon-eco-knowledge cities; Making sense of a multitude of concepts promoting sustainable urbanization | 2015 | Journal of Cleaner Production | The authors conduct a bibliometric analysis to demonstrate how the twelve most frequent city categories are Conceptualised individually and in relation to one another in the academic literature. They show how each term harbours particular Conceptual perspectives that render them distinctive | Review | NA | Smart city, Sustainable city, Information city, Knowledge city, etc | Advanced technologies (General) |
| 30 | Höjer, M. & Wangel, J. | Smart sustainable cities: definition and challenges | 2015 | Other (Book - Springer) | The authors discuss the historical development behind smart sustainable cities, focussing on their governance challenges. | Conceptual | NA | Smart sustainable city | Advanced technologies (General) |
| 31 | Hollands R.G. | Critical interventions into the corporate smart city | 2015 | Cambridge Journal of Regions, Economy and Society | The paper presents a critical perspective on the corporate model of smart city development. The author also discusses the nature of smartness emerging from small scale and participatory perspectives | Conceptual | NA | Smart city | Advanced technologies (General) |
| 32 | McNeill, D. | Global firms and smart technologies: IBM and the reduction of cities | 2015 | Transactions of the institute of British geographers | The author traces the growth of IBM in the domain of smart city technologies, policies and practices. The author presents how businesses such as IBM can maximise its stored knowledge, ensure its labour costs providing added value, constructing sectoral and geographic markets for smart cities, and creating scalable models. | Case study | Multiple | Smart city | Advanced technologies (General) |
| 33 | Pick J.B., Sarkar A., Johnson J. | United States digital divide: State level analysis of spatial clustering and multivariate determinants of ICT utilization | 2015 | Socio-Economic Planning Sciences | The authors develop a Conceptual model of technology utilisation where factors associated with ICT availability and utilisation are discussed in conjunction with independent socio-economic and demographic variables, based on an empirical analysis in the USA. | Empirical | USA | Urban development (General) | ICT |
| 34 | Yigitcanlar T. | Smart cities: an effective urban development and management model? | 2015 | Australian Planner | The authors question if smart cities model are truly an effective urban development and management model to solve the problems or are just an effective branding model through an extensive literature Review. | Review | NA | Smart city, Eco city | Advanced technologies (General) |
| 35 | Bifulco F., Tregua M., Amitrano C.C., D’Auria A. | ICT and sustainability in smart cities management | 2016 | International Journal of Public Sector Management | The authors show the connections between smart city features and new technologies as tools, and sustainability as the goal | Review | Europe | Smart city | ICT |
| 36 | Castelnovo W., Misuraca G., Savoldelli A. | Smart Cities Governance: The Need for a Holistic Approach to Assessing Urban Participatory Policy Making | 2016 | Social Science Computer Review | The authors discuss adopting a holistic approach to the assessment of smart city governance and policy decision making. They propose a performance assessment framework that overcomes the limitations of existing approaches and contributes to filling the current gap in the knowledge base in this domain | Conceptual | NA | Smart city | Advanced technologies (General) |
| 37 | Gil-Garcia J.R., Zhang J., Puron-Cid G. | Conceptualizing smartness in government: An integrative and multi-dimensional view | 2016 | Government Information Quarterly | The authors present a framework to understand and measure smartness in government. They provides guidelines for the comprehensive development of smart governments. They also identify multiple dimensions of smartness and propose an integrative view to analyse their contribution to smartness. | Conceptual | NA | Smart city | Data governance |
| 38 | Hashem I.A.T., Chang V., Anuar N.B., Adewole K., Yaqoob I., Gani A., Ahmed E., Chiroma H. | The role of big data in smart city | 2016 | International Journal of Information Management | The authors discuss the various state-of-the-art communication technologies and smart-based applications used within the context of smart cities. They propose a business model of using big data in smart cities. | Conceptual | Europe | Smart city | Big Data, IoT |
| 39 | Khatoun R., Zeadally S. | Smart cities: Concepts, architectures, research opportunities | 2016 | Other (Communications of the ACM) | Given the challenges from increasing urbanisation and exponential growth of cities, the authors highlight the motivations behind cities adopting smart city policies that address the needs of businesses, institutions, and its citizens. They also emphasize the need to differentiate between related concepts of smart cities and smart urbanism. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 40 | Kitchin R. | The ethics of smart cities and urban science | 2016 | Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences | The author discusses the forms, practices and ethics of smart cities and urban science. He focuses on the instrumental rationality and realist epistemology; privacy, datafication, dataveillance and geosurveillance; and data uses. | Conceptual | NA | Smart city | Big Data |
| 41 | Marsal-Llacuna M.-L., Segal M.E. | The Intelligenter Method (I) for making “smarter” city projects and plans | 2016 | Cities | The authors present a novel method of 'intelligenter cities' a mechanism to design smart cities. Here they propose that qualitative and quantitative collaborations that the urban subsystem being planned or projected can establish with related subsystems, to safeguard sustainability while promoting urban development and improving resilience | Conceptual | NA | Smart city | Advanced technologies (General) |
| 42 | Meijer A., Bolívar M.P.R. | Governing the smart city: a Review of the literature on smart urban governance | 2016 | International Review of Administrative Sciences | The authors analyse 51 publications to show how they differ in their emphasis on smart technology, smart people or smart collaboration as the defining features of smart cities. They also demonstrate the transformative or incremental perspective on changes in urban governance | Review | NA | Smart city | ICT |
| 43 | Olaverri-Monreal C. | Autonomous vehicles and smart mobility related technologies | 2016 | Infocommunications Journal | The author analyses location-based data to determine which services could be useful for citizens at a certain time. The results would improve the citizens' ability to navigate the most efficient routes and modes of travel. | Conceptual | NA | Smart city | Autonomous Vehicles |
| 44 | Schreiber, F. & Carius, A. 2016. | The inclusive city: urban planning for diversity and social cohesion. | 2016 | Other (Book) | The authors present a critical analysis of the challenges associated with mega city and regions, given the current pace of rural urban migration and increasing heterogeneity in their composition. In particular they focus on developing principles of social cohesion, diversity, and overall inclusive development. | Conceptual | Multiple | Mega city | Advanced technologies (General) |
| 45 | Sharma R., Fantin A.-R., Prabhu N., Guan C., Dattakumar A. | Digital literacy and knowledge societies: A grounded theory investigation of sustainable development | 2016 | Telecommunications Policy | The authors use empirical data from five cases to evaluate the digital literacies in knowledge-intensive public services such as education, healthcare and e-government. Using their analysis based in a grounded theory investigation, they derive a set of best practices. | Case study | Multiple | Sustainable city | ICT |
| 46 | Sun Y., Song H., Jara A.J., Bie R. | Internet of Things and Big Data Analytics for Smart and Connected Communities | 2016 | IEEE Access | Through a Case study in Italy, the authors show that Internet of Things (IoT) has the potential to provide a ubiquitous network of connected devices and smart sensors for smart and connected cities. They also highlight how big data analytics can enable the move from IoT to real-time control in such cities. | Case study | Europe | Smart city, Connected city | Big Data, IoT |
| 47 | Ahvenniemi H., Huovila A., Pinto-Seppä I., Airaksinen M. | What are the differences between sustainable and smart cities? | 2017 | Cities | The authors analyses 16 sets of city assessment frameworks. They find a stronger focus on modern technologies and “smartness” in the smart city frameworks compared to urban sustainability frameworks, urban sustainability frameworks measure environmental sustainability, and smart city frameworks lack environmental indicators while highlighting social and economic aspects. | Case study | Multiple | Smart sustainable city | Advanced technologies (General) |
| 48 | Alizadeh T. | An investigation of IBM's Smarter Cites Challenge: What do participating cities want? | 2017 | Cities | The author provides an index of all participating cities in the IBM Smarter Cities Challenge. The author presents the state of smart city thinking in urban governments. | Case study | Multiple | Smart city | Advanced technologies (General) |
| 49 | Angelidou, M. | The role of smart city characteristics in the plans of fifteen cities | 2017 | Journal of Urban Technology | The author identifies the different characteristics of smart cities over 15 cities across the world - Amsterdam, Barcelona, London, PlanIT Valley, Stockholm, Cyberjaya, Singapore, King Abdullah Economic City, Masdar, Skolkovo, Songdo, Chicago, New York, Rio de Janeiro, and Konza. | Case study | Multiple | Smart city | Advanced technologies (General) |
| 50 | Añón Higón D., Gholami R., Shirazi F. | ICT and environmental sustainability: A global perspective | 2017 | Telematics and Informatics | The authors investigate this non-linear relationship between ICT and CO2 emissions on a global scale through a panel data set consisting of 142 economies, highlighting the differences between developed and developing countries. | Empirical | Multiple | Urban development (General) | ICT |
| 51 | Bibri S.E., Krogstie J. | Smart sustainable cities of the future: An extensive interdisciplinary literature Review | 2017 | Sustainable Cities and Society | The authors develop a theoretical model of smart sustainable city to address the key limitations pertaining to existing models of sustainable urban form—with support of ICT of the new wave of computing and the underlying big data and context–aware computing technologies and their advanced applications | Review | NA | Smart sustainable city | ICT |
| 52 | Bibri S.E., Krogstie J. | ICT of the new wave of computing for sustainable urban forms: Their big data and context-aware augmented typologies and design concepts | 2017 | Sustainable Cities and Society | The authors explore the potential of ICT of the new wave of computing to evaluate and improve the contribution of sustainable urban forms to the goals of sustainable development | Conceptual | NA | Sustainable city | ICT |
| 53 | Bibri S.E., Krogstie J. | The core enabling technologies of big data analytics and context-aware computing for smart sustainable cities: a Review and synthesis | 2017 | Journal of Big Data | The authors Review the literature to identify the core enabling technologies of big data analytics and context-aware computing as ecosystems in relevance to smart sustainable cities | Review | NA | Smart sustainable city | Big Data |
| 54 | Crayton T.J., Meier B.M. | Autonomous vehicles: Developing a public health research agenda to frame the future of transportation policy | 2017 | Journal of Transport and Health | The authors discuss the evolving relationship between technological innovations in transportation and public health in terms of automated transportation. They define a research agenda to examine the public health implications of autonomous vehicle policy, as seen through existing evidence on road casualties, environmental health, aging populations, non-communicable disease, land use, and labour markets. | Conceptual | NA | Sustainable city | Autonomous Vehicles |
| 55 | Fu, Y. & Zhang, X. | Trajectory of urban sustainability concepts: A 35-year bibliometric analysis | 2017 | Cities | The authors present a bibliometric study on the related concepts of smart city, eco city, resilient city, and sustainable city. They conduct a clustering analysis and a multidimensional scaling of major city concepts through a co-word matrix. They also analyse the composition of the different city concepts and their central issues. | Review | NA | Smart city, Sustainable city, Resilient city | Advanced technologies (General) |
| 56 | Giest S. | Big data analytics for mitigating carbon emissions in smart cities: opportunities and challenges | 2017 | European Planning Studies | The author investigates the challenges city governments face when dealing with big data in the context of carbon emission reduction. She reveals the institutional complexity behind big data integration that limits its maximum utilisation | Case study | Europe, UK | Smart city | Big Data, Data governance |
| 57 | Jamei E., Mortimer M., Seyedmahmoudian M., Horan B., Stojcevski A. | Investigating the role of virtual reality in planning for sustainable smart cities | 2017 | Sustainability | The authors present a Review of the capacity of VR to address current challenges in creating, modelling, and visualizing smart cities through material modelling and light simulation in a VR environment. | Conceptual | Australia | Smart city, Sustainable smart city | VR |
| 58 | Kummitha R.K.R., Crutzen N. | How do we understand smart cities? An evolutionary perspective | 2017 | Cities | The authors Review the research in smart cities to identify conflicting views in smart city planning, focussing on those that limit knowledge about the ‘real’ smart city and its implications for building creative and inclusive urban space. They propose a framework consisting of consisting of Restrictive, Reflective, Rationalistic and Critical schools (3RC) | Review | NA | Smart city | ICT |
| 59 | Li B., Kisacikoglu M.C., Liu C., Singh N., Erol-Kantarci M. | Big Data Analytics for Electric Vehicle Integration in Green Smart Cities | 2017 | IEEE Communications Magazine | The authors provide a discussion and overview of the data analytics landscape on the electric vehicle integration to green smart cities. The authors also survey the data analytics techniques used for handling the big data of smart grid and electric vehicles. | Conceptual | NA | Smart city | Electric Vehicles, IoT |
| 60 | Loideain N.N. | Cape Town as a smart and safe city: Implications for governance and data privacy | 2017 | International Data Privacy Law | The author discuss the use of smart city technologies for countering crime and ensuring public safety. They examine the policy-making and the key initiatives deployed in this regard in Cape Town. | Case study | South Africa | Smart city | Data governance |
| 61 | Marjani M., Nasaruddin F., Gani A., Karim A., Hashem I.A.T., Siddiqa A., Yaqoob I. | Big IoT Data Analytics: Architecture, Opportunities, and Open Research Challenges | 2017 | IEEE Access | The authors discuss the state-of-The-Art research efforts directed toward big IoT data analytics and the relationship between them. | Conceptual | NA | Urban development (General) | Big Data, IoT |
| 62 | Mora, L., Bolici, R. & Deakin, M. | The first two decades of smart-city research: A bibliometric analysis | 2017 | Journal of Urban Technology | The authors trace the first two decades of smart cities through a bibliometric analysis to show how the domain is fragmented and lacks cohesion. In this regard, they highlight the need to develop social intelligence, cultural artifacts, and environmental attributes in ICT-led urban innovation and development. | Review | Europe, USA | Smart city | ICT |
| 63 | Mullins P.D. | The ubiquitous-eco-city of Songdo: An urban systems perspective on South Korea’s Green city approach | 2017 | Urban Planning | The author examines the challenges of using a green-city model led by networked technology from an urban systems perspective, using the case of Songdo in South Korea. They find the green city model was insufficient in its ability to cope with the complexity and dissonance that occurs in relation to current glocal challenges faced by cities today. | Case study | South Korea | Eco city, Ubiquitous city, Smart city | Advanced technologies (General) |
| 64 | Sholla S., Naaz R., Chishti M.A. | Ethics Aware Object Oriented Smart City Architecture | 2017 | China Communications | The authors propose a Ethics-Aware Object-Oriented Smart City Architecture (EOSCA) framework for smart city development. This framework would incorporate ethics, tradition and law form as essential ingredients of complex social palette of smart city development. | Conceptual | NA | Smart city | ICT |
| 65 | Vleugel J.M., Bal F. | More space and improved living conditions in cities with autonomous vehicles | 2017 | International Journal of Design and Nature and Ecodynamics | The authors discuss the benefits and challenges associated with deploying autonomous vehicles in mega cities to move towards a more sustainable form of development. They discuss several scenarios on how cities can successful reduce the strain on their resources and move away from environmentally damaging solutions in terms of mobility services. | Conceptual | NA | Mega city | Autonomous Vehicles |
| 66 | Yeh H. | The effects of successful ICT-based smart city services: From citizens' perspectives | 2017 | Government Information Quarterly | The authors surveyed participants of selected smart city campaigns in Taiwan to understand the factors contributing to acceptance and utilisation of ICT based smart city services. They emphasise on increasing citizen engagement in the development and deployment of ICT services to increase their overall usage. | Empirical | Taiwan | Smart city | ICT |
| 67 | Alizadeh, T. | Crowdsourced smart cities versus corporate smart cities | 2018 | Other (Conference - IOP Conference Series: Earth and Environmental Science) | The author offers a perspective of bottom-up development of smart cities that accounts for passive crowdsourcing using publicly available data. The authors present this as an alternative to public engagement in smart cities, especially when dealing with global technology corporations. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 68 | Allam Z. | Contextualising the smart city for sustainability and inclusivity | 2018 | New Design Ideas | The author discusses the Smart City concept to respond to economic prospects but to equally contribute to the liveability of cities | Conceptual | NA | Smart city | Advanced technologies (General) |
| 69 | Bibri S.E. | The IoT for smart sustainable cities of the future: An analytical framework for sensor-based big data applications for environmental sustainability | 2018 | Sustainable Cities and Society | The authors review literature to identify big data based IoT in the context of smart sustainable cities. They present an analytical framework identifying the governance and policy challenges associated with said technology for environmental sustainability. | Review | NA | Smart sustainable city | IoT |
| 70 | Bifulco F., D’Auria A., Amitrano C.C., Tregua M. | Crossing technology and sustainability in cities’ development | 2018 | Sustainability Science | They authors show technology as an element crossing sustainability, as processes and models in cities management and service provisions to citizens are significantly changing. They explore the ties between technology and the three selected spheres through a content analysis of reports issued by the 10 cities. | Review | Europe | Sustainable city | Advanced technologies (General) |
| 71 | Calzada, I. | (Smart) citizens from data providers to decision-makers? The Case study of Barcelona. | 2018 | Sustainability | The authors examine the transformation of Barcelona from a traditional smart city to a more experimental city though a combination of literature Review, interviews with key stakeholders, and symposium participation. | Case study | Spain | Smart city | Data governance |
| 72 | Chong M., Habib A., Evangelopoulos N., Park H.W. | Dynamic capabilities of a smart city: An innovative approach to discovering urban problems and solutions | 2018 | Government Information Quarterly | The authors use a theoretical lens of dynamic capabilities to expand the definition of a smart city. They include the notion of an urban organization with dynamic capabilities, which operates within cycles of 'sense’, 'seize’, ‘align’, and ‘transform’ functions on a case site in Texas, USA | Case study | USA | Smart city | ICT |
| 73 | Cui L., Xie G., Qu Y., Gao L., Yang Y. | Security and privacy in smart cities: Challenges and opportunities | 2018 | IEEE Access | The authors survey the current situations of smart cities with respect to security and privacy to provide an overview of both the academic and industrial fields | Review | NA | Smart city | ICT, Digital platforms |
| 74 | Datta A. | The digital turn in postcolonial urbanism: Smart citizenship in the making of India's 100 smart cities | 2018 | Transactions of the Institute of British Geographers | The author explores emergence of new forms of postcolonial citizenship at the intersection of digital and urban publics for the case of 100 Smart cities' project in India. | Case study | India | Smart city | ICT |
| 75 | Ge M., Bangui H., Buhnova B. | Big Data for Internet of Things: A Survey | 2018 | Future Generation Computer Systems | The authors propose a conceptual framework to outline the critical Big Data technologies across IoT domains. Based on the framework they suggest how certain Big Data technology used in one IoT domain can be re-used in another IoT domain. | Review | NA | Urban development (General) | Big Data, IoT |
| 76 | Hopkins J., Hawking P. | Big Data Analytics and IoT in logistics: a Case study | 2018 | International Journal of Logistics Management | The authors monitor the role and impact of Big Data Analytics and the Internet of Things (IoT), in supporting a large logistics firm’s strategy to improve driver safety, lower operating costs, and reduce the environmental impact of their vehicles. | Case study | NA | Urban development (General) | Big Data, IoT |
| 77 | Junior, C. M., Ribeiro, D. M. N. M., Da Silva Pereira, R. & Bazanini, R. | Do Brazilian cities want to become smart or sustainable? | 2018 | Journal of Cleaner Production | The authors analyse a set of data points for 150 cities in Brazil to show how city managers are positioning their cities as more smart than sustainable. Their results show that larger cities have a superior performance compared to medium sized cities in terms of the selected performance indicators. | Empirical | Brazil | Smart city, Sustainable city | Advanced technologies (General) |
| 78 | Lim, H. S. M. & Taeihagh, A. | Autonomous vehicles for smart and sustainable cities: An in-depth exploration of privacy and cybersecurity implications | 2018 | Energies | The authors analyse the potential of adopting autonomous vehicles in smart and sustainable cities and identify potential governance challenges associated with them. They go on to identify potential privacy and cybersecurity risks associated with adopting autonomous vehicles through a Review of cases including USA, UK, China, Australia, Japan, Singapore, South Korea, Germany, France, and the EU. | Case study | Multiple | Smart city, Sustainable city | Autonomous Vehicles |
| 79 | Lytras M.D., Visvizi A. | Who uses smart city services and what to make of it: Toward interdisciplinary smart cities research | 2018 | Sustainability | The authors explore smart cities from the perspectives of citizens' awareness of applications and solutions that are considered 'smart' and their ability to use these applications and solutions. They show that most educated users of smart city services ae concerned about the utility, safety, accessibility and efficiency of those services | Empirical | Multiple | Smart city | Advanced technologies (General) |
| 80 | Martin, C. J., Evans, J. & Karvonen, A. | Smart and sustainable? Five tensions in the visions and practices of the smart-sustainable city in Europe and North America | 2018 | Technological Forecasting and Social Change | Through a systematic literature Review, the authors identify the tensions between smart city development goals and sustainable development goals for cases in Europe and North America. Based on their Review, they recommend empowering citizen to participate in the environmental protection and social equity dimensions of smart city development. | Review | North America, Europe | Smart city | Advanced technologies (General) |
| 81 | Pereira G.V., Eibl G., Stylianou C., Martínez G., Neophytou H., Parycek P. | The role of smart technologies to support citizen engagement and decision making: The SmartGov case | 2018 | International Journal of Electronic Government Research | The authors propose a generic framework for Smart City Governance focusing on the inputs and outcomes of the SmartGov project conducted in two pilot programs in Spain. | Case study | Europe | Smart city | ICT, Digital Platforms |
| 82 | Praharaj S., Han J.H., Hawken S. | Towards the right model of smart city governance in India | 2018 | International Journal of Sustainable Development and Planning | The authors analyse the urban governance dynamics in Indian cities with regards to its 100 smart city programme. They highlight the need for smart cities in emerging economies to address deep-seated structural issues of municipal government's and engage in the process of governance transformation. | Case study | India | Smart city | Advanced technologies (General) |
| 83 | Sankowska P.-J. | Smart government: An European approach toward building sustainable and secure cities of tomorrow | 2018 | International Journal of Technology | The author discusses the definition of Smart Government by showing its specifics and fundamental rules from the European perspective. The paper also highlights the different structural implementation tools in this context. The author also draws attention to the ICT components of smart government and the challenges associated with its implementation. | Case study | Europe | Smart city | ICT |
| 84 | Silva B.N., Khan M., Han K. | Towards sustainable smart cities: A Review of trends, architectures, components, and open challenges in smart cities | 2018 | Sustainable Cities and Society | Based on a literature Review of relevant articles, the authors present an overview of smart cities, its features and characteristics, generic architecture, composition, and real-world implementation. of smart cities. They also discuss the challenges associated with implementing smart cities. | Review | NA | Smart city | ICT, IoT |
| 85 | Ullah, F., Sepasgozar, S. M. & Wang, C. | A systematic review of smart real estate technology: Drivers of, and barriers to, the use of digital disruptive technologies and online platforms. | 2018 | Sustainability | The authors review literature related to the Big9 technologies - drones, the internet of things (IoT), clouds, software as a service (SaaS), big data, 3D scanning, wearable technologies, virtual and augmented realities (VR and AR), and artificial intelligence (AI) and robotics. Through this review they identify the key stakeholders in these technologies and discuss their matching with the Technology Acceptance Model for a smoother transition for consumers. | Review | NA | Smart city | ICT, IoT, Digital Platforms |
| 86 | Visvizi, A. & Lytras, M. D. | Rescaling and refocusing smart cities research: From mega cities to smart villages. | 2018 | Journal of Science and Technology Policy Management | The authors link the literature on mega cities with smart cities and proposes new avenues of inter and multidisciplinary research geared toward building bridges between the normative and the empirical in the smart cities discourse. | Conceptual | NA | Mega city | Advanced technologies (General) |
| 87 | Yigitcanlar T., Kamruzzaman M., Buys L., Ioppolo G., Sabatini-Marques J., da Costa E.M., Yun J.J. | Understanding ‘smart cities’: Intertwining development drivers with desired outcomes in a multidimensional framework | 2018 | Cities | The authors aim to develop a clearer model of smart city development by locating and placing its key drivers in a multidimensional framework. They identify three drivers of community, technology, and policy that are linked to outcomes of productivity, sustainability, accessibility, wellbeing, liveability, and governance. | Review | NA | Smart city | Advanced technologies (General) |
| 88 | Allam Z., Dhunny Z.A. | On big data, artificial intelligence and smart cities | 2019 | Cities | The authors Review the urban potential of AI and proposes a new framework binding AI technology and cities while ensuring the integration of key dimensions of Culture, Metabolism and Governance | Conceptual | NA | Smart city | AI |
| 89 | Appio, F. P., Lima, M. & Paroutis, S | Understanding Smart Cities: Innovation ecosystems, technological advancements, and societal challenges | 2019 | Technological Forecasting and Social Change | The authors summarise the articles included in a special issue and propose a hybrid framework that systematically integrates smart cities and innovation systems. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 90 | Bibri S.E. | Data-driven smart sustainable urbanism: the intertwined societal factors underlying its materialization, success, expansion, and evolution | 2019 | GeoJournal | The author examines the societal factors underlying its materialization, success, expansion, and evolution of big tata platforms in terms of their inherent flaws, limits, and biases | Conceptual | NA | Smart sustainable city | Digital Platforms |
| 91 | Bibri S.E., Krogstie J. | Generating a vision for smart sustainable cities of the future: a scholarly backcasting approach | 2019 | European Journal of Futures Research | The authors generate a vision for smart sustainable cities of the future by answering guiding questions related to the futures study being conducted. They analyse, investigate, and develop a model for smart sustainable cities of the future using backcasting as a scholarly approach | Review | NA | Smart sustainable city | Big Data |
| 92 | Bouzguenda I., Alalouch C., Fava N. | Towards smart sustainable cities: A Review of the role digital citizen participation could play in advancing social sustainability | 2019 | Sustainable Cities and Society | The authors explore the role of Information and Communications Technology (ICT) in citizen participation as a major contributor towards ‘smart sustainable cities | Review | NA | Smart sustainable city | ICT |
| 93 | Bunnell, T. | Inclusiveness in Urban Theory and Urban Centred International Development Policy | 2019 | J. Reg. City Plan | Moving away from theory building in Western European and American context, the author calls for developing urban concepts in the post-colonial geographical landscape. In this paper, the author explores the relationship between inclusivity and related concepts in the discipline of post-colonial urban development. | Conceptual | NA | Urban development (General) | Advanced technologies (General) |
| 94 | Cohen T., Cavoli C. | Automated vehicles: exploring possible consequences of government (non)intervention for congestion and accessibility | 2019 | Transport Reviews | The authors explore the possible longer-term effect of government (lack of) intervention on the widespread adoption of autonomous vehicles. They offer a package of policies and governance interventions to better manage the adoption of AVs. | Review | UK | Urban development (General) | Autonomous Vehicles |
| 95 | De Jong, M., Hoppe, T. & Noori, N. | Branding, Sustainable Urban Development and the Rentier State. How Do Qatar, Abu Dhabi and Dubai Present Themselves in the Age of Post Oil and Global Warming? | 2019 | Energies | The authors explore the policies behind sustainable urbanisation in the cases of Qatar, Abu Dhabi, and Dubai in terms of their internal and external branding strategies. The authors highlight the differences and commonalities in the branding strategies across all three cases, discussing the role of free economic zones, academic institutions in a knowledge economy, and smart and sustainable neighbourhoods in the overall development model. | Case study | Multiple | Sustainable city | Advanced technologies (General) |
| 96 | Emejulu A., McGregor C. | Towards a radical digital citizenship in digital education | 2019 | Critical Studies in Education | The authors introduce the concept of ‘radical digital citizenship’ and its implications for digital education where critical social relations with respect to technology are considered | Conceptual | NA | Urban development (General) | ICT, Digital Platforms |
| 97 | Evans, J., Karvonen, A., Luque-Ayala, A., Martin, C., Mccormick, K., Raven, R. & Palgan, Y. V. | Smart and sustainable cities? Pipedreams, practicalities and possibilities | 2019 | Other (Book - Taylor & Francis) | In the introduction to a special issue, the authors argue for including social equity and environmental technological designs of smart city development. By highlighting the differences of smart cities as a development model in comparisons to others the authors raise a call to consider on the power of digital technologies to make cities more sustainable. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 98 | González-González E., Nogués S., Stead D. | Automated vehicles and the city of tomorrow: A backcasting approach | 2019 | Cities | The authors discuss opportunities that AVs offer in delivering attractive, healthy and sustainable urbanisation patterns. Their results indicate the need for mixed-use development policy, the clustering of urban facilities and services, the restriction of motorized access in cities, and the adoption of shared high-quality multimodal transport. | Review | NA | Sustainable city | Autonomous Vehicles |
| 99 | Herrera-Quintero, L. F., Chavarriaga, J., Banse, K., Bermudez, D. & Proeller, G. | Disruptive Technologies in Intelligent Transportation Systems | 2019 | IEEE | The authors discuss the merits and challenges of developing and implementing Intelligent Transportation Systems. They discuss its potential disruptive nature of innovation and present certain recommendations for practitioners. | Conceptual | NA | Intelligent city | Advanced technologies (General) |
| 100 | Ismagilova E., Hughes L., Dwivedi Y.K., Raman K.R. | Smart cities: Advances in research—An information systems perspective | 2019 | International Journal of Information Management | The author presents a synthesis of the smart city literature by analysing and discussing the key findings from existing research on issues related to smart cities from an Information Systems perspective - covering smart mobility, smart living, smart environment, smart citizens, smart government, and smart architecture | Review | NA | Smart city | Advanced technologies (General) |
| 101 | Lim H.S.M., Taeihagh A. | Algorithmic decision-making in AVs: Understanding ethical and technical concerns for smart cities | 2019 | Sustainability | The authors investigate the ethical and technical concerns surrounding algorithmic decision-making in Avs. They identify biases, ethics, and perverse incentives as key ethical issues in the AV algorithms' decision-making that can create new safety risks and discriminatory outcomes | Review | NA | Smart city | Autonomous Vehicles |
| 102 | Meerow S., Pajouhesh P., Miller T.R. | Social equity in urban resilience planning | 2019 | Local Environment | The authors discuss through a cross-sectional analysis of how issues of equity are incorporated into urban resilience planning. They develop a tripartite framework of equity to analyse the goals, priorities, and strategies of formal resilience plans created by member cities of the 100 Resilient Cities programme | Review | Multiple | Resilient city | Advanced technologies (General) |
| 103 | Mora, L., Deakin, M. & Reid, A. | Combining co-citation clustering and text-based analysis to reveal the main development paths of smart cities. | 2019 | Technological Forecasting and Social Change | The authors conduct a statistical and bibliometric analysis on the publications related to the development of smart cities since 1992. They map the different publications through their related themes and identify the potential development pathways for smart city development in each thematic cluster. | Empirical | NA | Smart city | Advanced technologies (General) |
| 104 | Nilssen, M. | To the smart city and beyond? Developing a typology of smart urban innovation. | 2019 | Technological Forecasting and Social Change | The author analyses the different dimensions of smart cities to propose a suitable typology of smart city initiatives based on the type of urban innovations. The proposed typology is based on a continuum of the different types of innovations in smart city projects. | Case study | Norway | Smart city | Advanced technologies (General) |
| 105 | Raven, R., Sengers, F., Spaeth, P., Xie, L., Cheshmehzangi, A. & De Jong, M. | Urban experimentation and institutional arrangements | 2019 | European Planning Studies | The authors explore the variation in institutional arrangements in different urban contexts of smart city development. They examine the implications of regulatory, normative, and cognitive aspects on experimentation in smart city developments of Amsterdam, Hamburg, and Ningbo. | Case study | Europe, China | Urban development (General) | Advanced technologies (General) |
| 106 | Rotta M.J.R., Sell D., dos Santos Pacheco R.C., Yigitcanlar T. | Digital commons and citizen coproduction in smart cities: Assessment of Brazilian municipal e-government platforms | 2019 | Energies | The authors evaluate a model specifically developed to evaluate eGov platforms regarding their potential to promote commons in smart cities across several municipalities in Brazil. The platforms are shown to have fewer opportunities for citizen co-production leading to fewer opportunities to increase a city's smartness | Case study | Brazil | Smart city | Digital Platforms |
| 107 | Sánchez-Corcuera R., Nuñez-Marcos A., Sesma-Solance J., Bilbao-Jayo A., Mulero R., Zulaika U., Azkune G., Almeida A. | Smart cities survey: Technologies, application domains and challenges for the cities of the future | 2019 | International Journal of Distributed Sensor Networks | The authors discuss the various definitions of smart cities, their adopted technologies and the domains of applications of said technologies. They elaborate on how several cities can incorporate the smart paradigm into its daily functioning | Review | Multiple | Smart city | ICT |
| 108 | Sepasgozar, S. M., Hawken, S., Sargolzaei, S. & Foroozanfa, M. | Implementing citizen centric technology in developing smart cities: A model for predicting the acceptance of urban technologies | 2019 | Technological Forecasting and Social Change | The authors investigate the appropriateness of adopting advanced technologies in smart cities based on contextual differences and acceptance. To do so, they integrate the Technology Acceptance Model with smart city discourse to generate a new synthetic model that can assist in the prediction of technology acceptance in the implementation of smart cities. | Empirical | ASIA | Smart city | Advanced technologies (General) |
| 109 | Sharma S., Nanda M., Goel R., Jain A., Bhushan M., Kumar A. | Smart cities using internet of things: Recent trends and techniques | 2019 | International Journal of Innovative Technology and Exploring Engineering | The authors discuss the role of Smart Cities in various domains such as smart infrastructure, smart building, and smart security amongst others. They focus on showing how IoT technologies and other primary technology components work alongside the features of Smart Cities | Conceptual | NA | Smart city | IoT |
| 110 | Tomor Z., Meijer A., Michels A., Geertman S. | Smart Governance For Sustainable Cities: Findings from a Systematic Literature Review | 2019 | Journal of Urban Technology | Through a systematic literature Review, the authors extract empirical evidence stating that the sustainability benefits of technology-driven cities is sparse. The authors call for understanding contextual conditions of smart governance to improve on the desired results. | Review | NA | Smart city, Sustainable city | Advanced technologies (General) |
| 111 | Van den Buuse D., Kolk A. | An exploration of smart city approaches by international ICT firms | 2019 | Technological Forecasting and Social Change | The study explores the strategic approaches taken by selected ICT companies for smart city development by analysing reports and conducting interviews. They highlight how companies have developed resources and capabilities in the smart city domain and present an actor-centric perspective on the role of companies in urban development. | Case study | Multiple | Smart city | ICT |
| 112 | Yigitcanlar T., Kamruzzaman M., Foth M., Sabatini-Marques J., da Costa E., Ioppolo G. | Can cities become smart without being sustainable? A systematic Review of the literature | 2019 | Sustainable Cities and Society | The authors investigate the claims of sustainability in the smart city discourse by questioning if a city can become smart without targeting sustainability goals. The authors call for a post-anthropocentric approach in practice and policymaking for the development of smart and sustainable cities. | Review | NA | Smart city, Smart Sustainable city | Advanced technologies (General) |
| 113 | Yigitcanlar T., Wilson M., Kamruzzaman M. | Disruptive impacts of automated driving systems on the built environment and land use: An urban planner's perspective | 2019 | Journal of Open Innovation: Technology, Market, and Complexity | In the context of smart cities, the authors discuss vehicle automation, in particular the potential impacts of systematic adoption of autonomous vehicles on the built environment and land use. | Conceptual | NA | Smart city | Autonomous Vehicles |
| 114 | Zhang L.-M., Zhang R.-X., Jeng T.-S., Zeng Z.-Y. | Cityscape protection using VR and eye tracking technology | 2019 | Journal of Visual Communication and Image Representation | The authors quantify eye tracking data and protocol analysis data in VR environment to identify differences in perception of cityscape features. By doing so they propose a multi cultural integrated strategy for protecting the existing cityscape. | Empirical | China | Smart city | VR |
| 115 | Anttiroiko, A.-V. & De Jong, M. | The inclusive city: The theory and practice of creating shared urban prosperity | 2020 | Other (Book) | The authors highlight the importance of techno-economic factors while pursuing inclusive development. They discuss the significance of inclusive development, particularly the need for economic inclusion in utilising people's capabilities for value and resource creation. | Conceptual | NA | Urban development (General) | Advanced technologies (General) |
| 116 | Boeing G., Besbris M., Schachter A., Kuk J. | Housing Search in the Age of Big Data: Smarter Cities or the Same Old Blind Spots? | 2020 | Housing Policy Debate | The authors explore if technology platforms serve as information equalizers or do they reflect traditional information inequalities that correlate with neighbourhood sociodemographic | Empirical | USA | Smart city | Digital Platforms |
| 117 | Carr C., Hesse M. | When alphabet Inc. plans Toronto’s waterfront: New post-political modes of Urban governance | 2020 | Urban Planning | The authors trace place-making practices that involved all levels of government, the general public, and networks of actors throughout the private sector in the case of Sidewalk Labs development | Case study | Canada | Smart city | Advanced technologies (General) |
| 118 | Chan J.K.H. | The urban ethics of an AI-powered planetary urbanization | 2020 | Jahr - European Journal of Bioethics | The author explores the relation between people and smart cities, given the rise of the 'smarter smart cities', where urban technologies are enabled by artificial intelligence (AI) that can sense, track, learn, predict, and attempt to control human behaviours | Conceptual | NA | Smart city | AI |
| 119 | Cugurullo F., Acheampong R.A., Gueriau M., Dusparic I. | The transition to autonomous cars, the redesign of cities and the future of urban sustainability | 2020 | Urban Geography | The authors propose a theoretical framework to understand the diffusion of autonomous cars in cities, on the basis of social attitudes, technological innovation and urban politics. Based on the survey conducted, they discuss possible urban futures triggered by adopting AVs. | Empirical | Ireland | Smart city | Autonomous Vehicles |
| 120 | Dahiya, B. & Das, A. | New urban agenda in Asia-Pacific: governance for sustainable and inclusive cities | 2020 | Other (Book - Springer) | The authors explore the New Urban Agenda through key sustainable and development issues worldwide and systematically review the theoretical concepts related to its governance implications. They test they analysis of the New Urban Agenda on cases from the Asia-Pacific region. | Conceptual | Asia | Sustainable city | Advanced technologies (General) |
| 121 | Gohari S., Ahlers D., Nielsen B.F., Junker E. | The governance approach of smart city initiatives. Evidence from trondheim, Bergen, and Bodø | 2020 | Infrastructures | The authors discuss the intellectual connection between governance and smart cities, from an empirical and a analytical perspective. They show how illustrate how the structural sources of the interests, roles, and power in smart city initiatives can impact policy goals and governance systems | Case study | Norway | Smart city | Advanced technologies (General) |
| 122 | Lee A., Mackenzie A., Smith G.J.D., Box P. | Mapping Platform Urbanism: Charting the Nuance of the Platform Pivot | 2020 | Urban Planning | The authors trace the current tendencies that shape the nature and dynamics of platform urbanism. They detail on the interoperability between data sources and the increasing lock-in associated with corporate products and services | Review | NA | Smart city | Digital Platforms |
| 123 | Lee J.Y., Woods O., Kong L. | Towards more inclusive smart cities: Reconciling the divergent realities of data and discourse at the margins | 2020 | Geography Compass | The authors discuss the role of smart citizens, smart public participation, and grassroots and bottom-up measures for inclusive development. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 124 | Löfgren K., Webster C.W.R. | The value of Big Data in government: The case of ‘smart cities’ | 2020 | Big Data and Society | The authors investigate the evolution of digital governance research to align it with current developments associated with data analytics. They focus on the ‘promise’ of Big Data for service delivery and policy formulation in smart city environments. | Conceptual | NA | Smart city | Big Data |
| 125 | Mann M., Mitchell P., Foth M., Anastasiu I. | #BlockSidewalk to Barcelona: Technological sovereignty and the social license to operate smart cities | 2020 | Journal of the Association for Information Science and Technology | The authors present a critique of lack of privacy, community consultation, the prospect of the city losing its civic ability to self-govern, and its repossession of public land and infrastructure in the Sidewalk Labs' smart city development in Toronto, Canada | Case study | Canada | Smart city | Advanced technologies (General) |
| 126 | Masucci M., Pearsall H., Wiig A. | The Smart City Conundrum for Social Justice: Youth Perspectives on Digital Technologies and Urban Transformations | 2020 | Annals of the American Association of Geographers | Through a Case study in the USA, the authors explore how the youth understand the impact of digital technologies on urban transformations and whether their technology skills and digital literacy give them a sense of ownership over the future of their city. Their analysis shows that emergent smart city is reproducing actual as well as perceived urban inequities. | Case study | USA | Smart city | Advanced technologies (General) |
| 127 | Nesti G. | Defining and assessing the transformational nature of smart city governance: insights from four European cases | 2020 | International Review of Administrative Sciences | The author debates on the transformation of existing institutional structures and administrative practices in smart city development. The study outlines the smart city model of urban governance as the result of specific goals, relationships among stakeholders, policy styles and policy tools. | Case study | Europe | Smart city | Advanced technologies (General) |
| 128 | Nikitas A., Michalakopoulou K., Njoya E.T., Karampatzakis D. | Artificial intelligence, transport and the smart city: Definitions and dimensions of a new mobility era | 2020 | Sustainability | The authors discuss the nexus of AI, transportation and the smart city. The present cases from smart mobility initiatives such as Connected and Autonomous Vehicles, autonomous Personal and Unmanned Aerial Vehicles, and Mobility-as-a-Service. | Review | NA | Smart city | AI, automation, Autonomous vehicles, IoT |
| 129 | Noori, N., Hoppe, T. & De Jong, M. | Classifying pathways for smart city development: Comparing design, governance and implementation in Amsterdam, Barcelona, Dubai, and Abu Dhabi | 2020 | Sustainability | The authors investigate the different pathways for smart city development using four cities (Dubai, Masdar city, Barcelona, and Amsterdam) to determine any commonalities or patterns. They identify four distinct drivers based on business-driven approach, technological optimism, social inclusion and visionary leadership the four cities respectively. | Case study | Multiple | Smart city | ICT, IoT |
| 130 | Radu, L. D. | Disruptive Technologies in Smart Cities: A Survey on Current Trends and Challenges. | 2020 | Smart Cities | The author discusses the different relevant disruptive technologies associated with smart cities, in particular, big data, blockchain, artificial intelligence, machine learning, and IoT amongst others. The author investigates these disruptive technologies, their applications in smart cities, and the challenges associated with their governance. | Review | NA | Smart city | ICT, IoT |
| 131 | Ranchod R. | The data-technology nexus in South African secondary cities: The challenges to smart governance | 2020 | Urban Studies | The author proposes that smart governance is a critical factor in urban technological transformation processes though the analysis of multiple South African cities. The author highlights the strategic, organisational and political challenges of municipal administrations to develop an effective data-technology ecosystem | Case study | South Africa | Smart city | Digital Platforms |
| 132 | Rose G., Raghuram P., Watson S., Wigley E. | Platform urbanism, smartphone applications and valuing data in a smart city | 2020 | Transactions of the Institute of British Geographers | The authors investigate the data generated from 8 mobile apps in a case city in UK. They discuss on the data that the apps generated and shared and on how the app designers anticipated that the data would create different kinds of value for embodied app users. | Case study | UK | Smart city | Digital Platforms |
| 133 | Tan S.Y., Taeihagh A. | Smart city governance in developing countries: A systematic literature Review | 2020 | Sustainability | Through a systematic literature Review, the authors showcase the smart city development in developing countries. Their analysis includes understanding the Conceptualisations, motivations, and unique drivers behind (and barriers to) smarty city development in such contexts. | Review | Developing countries | Smart city | Advanced technologies (General) |
| 134 | Yigitcanlar T., Butler L., Windle E., Desouza K.C., Mehmood R., Corchado J.M. | Can building “artificially intelligent cities” safeguard humanity from natural disasters, pandemics, and other catastrophes? An urban scholar’s perspective | 2020 | Sensors (Switzerland) | The authors conduct an extensive Review of literature on AI to understand the impact of AI adoption on cities. Further on, they discuss how building artificially intelligent cities can safeguard humanity from natural disasters, pandemics, and other catastrophes. | Review | NA | Intelligent city, Smart city | AI |
| 135 | Yigitcanlar T., Cugurullo F. | The sustainability of artificial intelligence: an urbanistic viewpoint from the lens of smart and sustainable cities | 2020 | Sustainability | The authors Review the literature on AI and smart and sustainable cities and their developments, trends, and applications to understand the impact of AI adoption on sustainability. | Review | NA | Smart city, Sustainable city | AI |
| 136 | Yigitcanlar T., Desouza K.C., Butler L., Roozkhosh F. | Contributions and risks of artificial intelligence (AI) in building smarter cities: Insights from a systematic Review of the literature | 2020 | Energies | The authors propose a multi-dimensional framework to showcase how AI-enabled innovations are incorporated in smart cities. They highlight the focus of AI literature on the different dimensions of smart city development including economy, society, environment, and governance. | Review | NA | Smart city | AI |
| 137 | Zheng C., Yuan J., Zhu L., Zhang Y., Shao Q. | From digital to sustainable: A scientometric Review of smart city literature between 1990 and 2019 | 2020 | Journal of Cleaner Production | Through a text and citation analysis, the authors aim to provide a visual, quantitative, and longitudinal large-scale Review of the most recent work on smart city development. Their Review also identifies the core research sub-topics in this domain and highlights the most promising technologies in smart cities. | Review | NA | Smart city | Big Data, IoT |
| 138 | Allam, Z. & Jones, D. S. | Future (post-COVID) digital, smart and sustainable cities in the wake of 6G: Digital twins, immersive realities and new urban economies | 2021 | Land Use Policy | The authors discuss the major directions and scope emerging dimensions inherent to 6G technology, including Digital Twins and Immersive Realities (XR) in the smart city context and sustainable development goals by identifying the socio-economic impact of adopting such technologies. | Conceptual | NA | Smart city, Sustainable city, Digital city | 6G, digital twins |
| 139 | Austin, L. & Lie, D. | Data Trusts and the Governance of Smart Environments: Lessons from the Failure of Sidewalk Labs’ Urban Data Trust | 2021 | Surveillance & Society | The authors discuss the urban data trust model for the case for Sidewalk Labs Toronto development, given their cancellation and issues regarding incoherency of data privacy. | Case study | Canada | Smart city | Data governance |
| 140 | Calzada, I. | The Right to Have Digital Rights in Smart Cities | 2021 | Sustainability | The authors explore the meaning of digital rights in a sample of 13 CCDR global people-centred smart cities across UK, Europe and USA. They examine the understanding and the prioritisation of digital rights through a semi-structured questionnaire conducted in the selected cities. | Case study | Europe, USA, Canada | Smart city | Advanced technologies (General) |
| 141 | Cugurullo, F. | Frankenstein urbanism: eco, smart and autonomous cities, artificial intelligence and the end of the city | 2021 | Other (Book) | The author investigates the phenomenon of eco city, smart city, and autonomous city as the location of adopting artificial intelligence technologies for managing urban services. Focussing on urban experimentation, the author explores the cases of Masdar city and Hong Kong to reflect on the new fragmented identity of a city. | Conceptual | Multiple | Smart city, Eco city, Autonomous city | AI |
| 142 | D Schraven, S Joss, M De Jong | Past, present, future: Engagement with sustainable urban development through 35 city labels in the scientific literature 1990–2019 | 2021 | Journal of Cleaner production | The authors investigate the use of city labels in the scientific literature over three decades, their Conceptual dimensions, and their mutual interdependencies through an extensive bibliometric analysis. They highlight the diversification of city labels beyond ‘smart’ and ‘sustainable’. | Review | NA | Smart city, Sustainable city | Advanced technologies (General) |
| 143 | Esposito, G., Clement, J., Mora, L. & Crutzen, N. | One size does not fit all: Framing smart city policy narratives within regional socio-economic contexts in Brussels and Wallonia | 2021 | Cities | The authors highlight the no one-size model for smart city development by examining the policies in Wallonia and Brussels regions through a Narrative Policy Framework. They highlight the need to consider the role of regional governments as they take different approaches towards urban innovation based on their socio-economic context. | Case study | Europe | Smart city | Advanced technologies (General) |
| 144 | Goyal, N., Howlett, M. & Taeihagh, A. | Why and how does the regulation of emerging technologies occur? Explaining the adoption of the EU General Data Protection Regulation using the multiple streams framework | 2021 | Regulation & Governance | Applying the multiple streams framework to examine the regulation of emerging technologies, the authors test how technological change can affect policymaking and identify the conditions required to de-couple the different individual streams. Their selected case is the EU's General Data Protection Regulation, where they show the alignment of the different streams through policy entrepreneurship affects the regulatory design of technologies. | Case study | Europe | Urban development (General) | Data governance |
| 145 | Icasiano, C. D. A. & Taeihagh, A. 2021. | Governance of the risks of ridesharing in Southeast Asia: An in-depth analysis | 2021 | Sustainability | The authors present multiple case studies in Asia (Singapore, Philippines, Vietnam, Indonesia, and Malaysia) on how each of the governments managed the risk of adopting ride sharing technologies. They highlight the need for a consistent and unified regulatory approach for adopting new technologies and cooperating with regulators across different jurisdictions. | Case study | Asia | Smart city, Sustainable city | Ridesharing |
| 146 | Li, Y., Taeihagh, A., De Jong, M. & Klinke, A. | Toward a commonly shared public policy perspective for analyzing risk coping strategies | 2021 | Risk analysis | The authors examine the existing risk coping strategies and Review the different approaches taken to address it. Based on identified indicators, they propose six general responses to risk management, including no response, prevention, control, precaution, toleration, and adaptation. | Conceptual | NA | Urban development (General) | Advanced technologies (General) |
| 147 | Liang, D., De Jong, M., Schraven, D. & Wang, L. | Mapping key features and dimensions of the inclusive city: A systematic bibliometric analysis and literature study | 2021 | International Journal of Sustainable Development & World Ecology | The authors systematically Review and present their understanding of the inclusive city concept by investigating its features and dimensions. They highlight the multi-dimensional nature of inclusive city, which includes social, economic, environmental, spatial, and political dimensions. | Review | NA | Urban development (General) | Advanced technologies (General) |
| 148 | Mercille, J. | Inclusive smart cities: beyond voluntary corporate data sharing | 2021 | Sustainability | The authors discuss the risk presented to data governance and privacy when larger corporate actors monopolise the smart city services. They argue for companies being compelled to share data to be considered by governments and policy makers for a more inclusive city. | Conceptual | NA | Smart city | ICT, Digital Platforms |
| 149 | Mossberger K., Tolbert C.J. | Digital Citizenship and Digital Communities: How Technology Matters for Individuals and Communities | 2021 | International Journal of E-Planning Research | The authors place emphasis on understanding the uses and outcomes for broadband across cities and neighbourhoods as digital human capital in communities. They discuss cases that show that like other human capital, technology use conveys economic benefits for communities. | Case study | Multiple | Smart city | ICT, Digital Platforms |
| 150 | Noori, N., De Jong, M., Janssen, M., Schraven, D. & Hoppe, T. | Input-output modeling for smart city development | 2021 | Journal of Urban Technology | To help policymakers make an informed choice, the authors present a Conceptual understanding of the smart city by describing its various facets and using them to develop an Input-Output model. The authors then test their proposed model on the case of Smart city in Dubai. | Case study | Dubai | Smart city | Advanced technologies (General) |
| 151 | Praharaj, S. | Area-based urban renewal approach for smart cities development in India: Challenges of inclusion and sustainability. | 2021 | Urban Planning | The author present a review of India's Smart City Mission, focussing on its design and implementation framework. They empirically analyse the program to identify to what extent it fulfils its inclusion and sustainability goals. | Case study | Asia | Smart city | ICT |
| 152 | Repette P., Sabatini-Marques J., Yigitcanlar T., Sell D., Costa E. | The evolution of city-as-a-platform: Smart urban development governance with collective knowledge-based platform urbanism | 2021 | Land | The authors Review journal articles published in the last decade to analyse how platform urbanism support local governance efforts in the development of smarter cities. They highlight the transformative and disruptive impacts of platform urbanism on the government and discuss the opportunities and challenges for smarter urban development governance. | Review | NA | Smart city | Digital Platforms |
| 153 | Schraven, D., Joss, S. & De Jong, M. | Past, present, future: Engagement with sustainable urban development through 35 city labels in the scientific literature 1990–2019. | 2021 | Journal of Cleaner Production | The authors present a bibliometric analysis that investigates the use of city labels, their conceptual dimensions and connections, and their future development trajectories. They highlight the concerns of achieving synergies between the conceptual city labels and relevant SDGs, in particular, SDG 11. | Review | NA | Smart city, Sustainable city, Resilient city | Advanced technologies (General) |
| 154 | Shorfuzzaman, M., Hossain, M. S. & Alhamid, M. F. 2021 | Towards the sustainable development of smart cities through mass video surveillance: A response to the COVID-19 pandemic | 2021 | Sustainable Cities and Society | The authors propose a data-driven deep learning-based framework for the sustainable development of a smart city, that offers a much needed response to combat the COVID-19 pandemic through mass video surveillance. | Empirical | UK | Smart city, Sustainable city | AI, deep learning |
| 155 | Strüver, A., Saltiel, R., Schlitz, N., Hohmann, B., Höflehner, T. & Grabher, B. | A Smart Right to the City—Grounding Corporate Storytelling and Questioning Smart Urbanism | 2021 | Sustainability | The authors present a critique on the entrepreneurial city concept and the capitalist city concept by David Harvey and Henri Lefebvre respectively. They use the smart city development in Graz in Austria to reflect how waste and mobility strategies only operate as spatial and technical fixes. | Case study | Europe | Smart city | Advanced technologies (General) |
| 156 | Taeihagh, A. | Governance of artificial intelligence | 2021 | Policy and Society | The author summarises the challenges of governance of AI, including emerging governance approaches to AI, policy capacity building, legal and regulatory challenges, and future avenues that require attention. | Conceptual | NA | Urban development (General) | AI |
| 157 | Taeihagh, A., Ramesh, M. & Howlett, M. | Assessing the regulatory challenges of emerging disruptive technologies | 2021 | Regulation & Governance | In the introduction of a special issue, the authors aim to provide a better understanding of the regulatory challenges posed by disruptive technologies and to develop generalizable propositions for governments' responses to them. | Conceptual | NA | Urban development (General) | Advanced technologies (General) |
| 158 | Tan, S. Y. & Taeihagh, A. | Adaptive governance of autonomous vehicles: Accelerating the adoption of disruptive technologies in Singapore. | 2021 | Government Information Quarterly | The authors investigate the case of development and implementation of autonomous vehicles in Singapore, highlighting the country's adaptive strategy that is both pre-emptive and responsive. Some of the key policy instruments identified include implementing regulatory sandboxes, the formalisation of safety assessments and the release of technical guidelines. | Case study | Singapore | Urban development (General) | Autonomous Vehicles |
| 159 | Tan, S. Y., Taeihagh, A. & Tripathi, A. | Tensions and antagonistic interactions of risks and ethics of using robotics and autonomous systems in long-term care | 2021 | Technological Forecasting and Social Change | The authors present a systematic Review mapping out the technological risks and ethical issues associated with the adoption of autonomous systems and robots for long-term care. They also identify the antagonistic interactions between some of the technological risks and ethical issues that could offset each other - which have implications for advancing the knowledge on the governance of autonomous systems for long-term health care. | Review | NA | Urban development (General) | Autonomous systems |
| 160 | Alsayel, A., De Jong, M. & Fransen, J. | Can creative cities be inclusive too? How do Dubai, Amsterdam and Toronto navigate the tensions between creativity and inclusiveness in their adoption of city brands and policy initiatives? | 2022 | Cities | The authors attempt to outline the operationalisation, measurements, consistencies, and relationships between the concepts of inclusive city and creative city adopted by different cities. The authors illustrate their propositions through several global case studies, including Dubai, Amsterdam, and Toronto. They highlight the how certain concepts of creative cities complement inclusive cities while contradicting others. | Case study | Multiple | Creative city | Advanced technologies (General) |
| 161 | Choi, T.M., Kumar, S., Yue, X. and Chan, H.L. | Disruptive technologies and operations management in the Industry 4.0 era and beyond | 2022 | Production and Operations Management | The authors discuss the various types of disruptive technologies in in operation management literature while highlighting their role in the industry. They go on to propose a future research agenda to reconcile potential conflicts in the human-machine interaction. | Empirical | NA | Urban development (General) | Advanced technologies (General) |
| 162 | Kolotouchkina, O., Barroso, C. L., & Sánchez, J. L. M. | Smart cities, the digital divide, and people with disabilities | 2022 | Cities | The authors highlight the emerging need to address digital divide in cities, as access to key urban services, information and other experiences are increasingly dependent on using technology. The authors provide insights on how leadership in digital accessibility can improve and transform the urban environment for people with disabilities. | Empirical | Multiple | Smart city, Sustainable city | Advanced technologies (General) |
| 163 | Leal Filho, Walter, Diogo Guedes Vidal, Chen Chen, Maria Petrova, Maria Alzira Pimenta Dinis, Peter Yang, Steven Rogers | An assessment of requirements in investments, new technologies, and infrastructures to achieve the SDGs | 2022 | Environmental Sciences Europe | The authors present a bibliometric analysis to assess the global progress of SDGs, its implementation and identifies the challenges associated with its implementation. They identify resource-related constraints, limited technologies and infrastructures affecting SDG2, SDG11, SDG13, SDG15, and SDG16, that need to be improved. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 164 | Li, L., Taeihagh, A. & Tan, S. Y. | What factors drive policy transfer in smart city development? Insights from a Delphi study | 2022 | Sustainable Cities and Society | The authors conduct an e-Delphi survey over two rounds to investigate to consolidate the factors that facilitate policy transfer among smart cities. They identify having a policy entrepreneur; financial instruments; cities’ enthusiasm for policy learning; capacity building; explicit regulatory mechanisms; and policy adaptation to local contexts as key factors in driving policy transfer in smart cities - offering relevant lessons to policy makers in this domain. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 165 | Mora, L., Deakin, M., Zhang, X., Batty, M., De Jong, M., Santi, P. & Appio, F. P. | Assembling sustainable smart city transitions: An interdisciplinary theoretical perspective | 2022 | Other (Book Chapter - Sustainable Smart City Transitions) | The authors present a theorisation of sustainable smart city that comprises of smart city development studies, transition management, systems innovation studies, human geography, spatial planning and critical urban studies literature. Their proposed theoretical model combines smart-city-related concepts to understand the causal mechanisms in sustainable smart city transitions. | Review | NA | Sustainable smart city | Advanced technologies (General) |
| 166 | Mora, L., Gerli, P., Ardito, L. & Petruzzelli, A. M. | Smart city governance from an innovation management perspective: Theoretical framing, review of current practices, and future research agenda | 2023 | Technovation | The authors present a systematic review of the literature on smart city transitions. They present a governance framework developed from a innovation management perspective. They also analyse the current approaches in the governance of smart city transitions and propose evidence--based recommendations for the above. | Conceptual | NA | Smart city | Advanced technologies (General) |
| 167 | Gerli, P., Zhang, J. & Mora, L. | Will they survive? Governance of grassroots digital innovations in post-pandemic smart cities | Forthcoming | NA | The authors investigate the role of Grassroots Digital Innovations in creating a stable solution for the top-down management of smart cities. They conduct expert interviews across Europe to understand the governance of Grassroots Digital Innovations and their connections with smart city transitions. | Empirical | Europe | Smart city | Advanced technologies (General) |
| 168 | Praharaj, S | The Covid-19 stimulated command and control governance in the smart cities of India | Forthcoming | NA | The author investigates the role of Integrated Command and Control centres for Smart city projects in India, in particular to address emergencies. The findings indicate a new emphasis on surveillance technologies and centralised operation of urban services. The author also identifies the governance challenges associated with Integrated Command and Control Centres and proposes certain policy recommendations. | Case study | India | Smart city | IoT, ICT, Digital Platforms |