Special Issue "The Sustainable Development of Smart Cities through Digital Innovation"

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Special Issue Information

Dear Colleagues,

The 'smart city' concept has been wrought from distinctive theoretical underpinnings. Initially, this term was used to describe those cities that utilized advanced computerized systems to provide a safe, secure, green, and efficient transportation services and utilities to meet the demands of their citizens (Caragliu, Del Bo & Nijkamp, 2011; Hall, Bowerman and Braverman, Taylor, Todosow and Von Wimmersperg, 2000). A thorough literature review suggests that several cities are already using disruptive technologies, including advanced, integrated materials, sensors, electronics, and networks, among others, which are interfaced with computerized systems to improve their economic, social and environmental sustainability (Camilleri, 2015, 2017; Deakin and Al Waer, 2011; Hall et al., 2000). These cities are increasingly relying on data-driven technologies, as they gather and analyze data from urban services including transportation and utilities (Ramaswami, Russell, Culligan, Sharma and Kumar, 2016; Gretzel, Sigala, Xiang and Koo, 2015). Their underlying objective is to improve the quality of life of their citizens (Ratten, 2017; Buhalis and Amaranggana, 2015). Hence, 'smart cities' have introduced technological innovations to address contingent issues like traffic congestion; air pollution; waste management; loss of biodiversity and natural habitat; energy generation, conservation and consumption; water leakages and security,

among other matters (Camilleri, 2019; 2014; Ahvenniemi, Huovila, Pinto-Seppä and Airaksinen, 2017; Ratten and Dana, 2017; Ratten, 2017).

Ecologically-advanced local governments and municipalities are formulating long-term sustainable policies and strategies. Some of them are already capturing data through multisensor technologies via wireless communication networks in real time (Bibri, 2018; Bibri and Krogstie, 2017). Very often, they use the Internet's infrastructure and a wide range of smart data-sensing devices, including radio frquency identification (RFID), near-field communication (NFC), global positioning systems (GPS), infrared sensors, accelerometers, and laser scanners (Bibri, 2018). A few cities have already started to benefit from the Internet of Things (IoT) technology and its sophisticated network that consists of sensor devices and physical objects including infrastructure and natural resources (Zanella, Bui, Castellani, Vangelista and Zorzi, 2014).

Several cities are crunching big data to better understand how to make their cities smarter, more efficient, and responsive to today's realities (Mohanty, Choppali and Kougianos, 2016; Ramaswami et al., 2016). They gather and analyze a vast amount of data and intelligence on urban aspects, including transportation issues, citizen mobility, traffic management, accessibility and protection of cultural heritage and/or environmental domains, among other areas (Angelidou, Psaltoglou, Komninos, Kakderi, Tsarchopoulos and Panori, 2018; Ahvenniemi et al., 2017). The latest advances in technologies like big data analytics and decision-making algorithms can support local governments and muncipalities to implement the circular economy in smart cities (Camilleri, 2019). The data-driven technologies enable them them to reduce their externalities. They can monitor and control the negative emissions, waste, habitat destruction, extinction of wildlife, etc. Therefore, the digital innovations ought to be used to inform the relevant stakeholders in their strategic planning and development of urban environments (Camilleri, 2019; Allam & Newman, 2018; Yigitcanlar and Kamruzzaman, 2018; Angelidou et al. ,2018; Caragliu et al., 2011).

In this light, we are calling for theoretical and empirical contributions that are focused on the creation, diffusion, as well as on the utilization of technological innovations and information within the context of smart, sustainable cities. This Special Issue will include but is not limited to the following topics:

- Advancing the circular economy agenda in smart cities;

- Artificial intelligence and machine learning in smart cities;
- Blockchain technologies in smart cities;
- Green economy of smart cities;
- Green infrastructure in smart cities;
- Green living environments in smart cities;
- Smart cities and the sustainable environment;
- Smart cities and the use of data-driven technologies;
- Smart cities and the use of the Internet of Things (IoT);
- Sustainable energy of smart cities;
- Sustainable financing for infrastructural development in smart cities;
- Sustainable housing in smart cities;
- Sustainable transportation in smart cities;
- Sustainable tourism in smart cities;
- Technological innovation and climate change for smart cities;
- Technological innovation and the green economy of smart cities;
- Technological innovation and the renewable energy in smart cities;
- Technological innovation and urban resilience of smart cities;
- Technological innovation for the infrastructural development of smart cities;
- The accessibility and protection of the cultural heritage in smart cities;
- The planning and design of smart cities;
- The quality of life of the citizens and communities living in smart cities;
- Urban innovation in smart cities;

- Urban planning that integrates the smart city development with the greening of the environment;
- Urban planning and data driven technologies of smart cities.

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