

# TOPICAL REPORT

## CITIES

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### COVID-19



#### Future of Cities Will Shape Post-COVID-19 World

"In cities, which are home to over half of the world's population, long-standing inequities have been deepened by the pandemic. Although urbanization has been accompanied by lower poverty, job creation and growth, distribution of such urban gains has been uneven, often marked by striking spatial, social and economic inequalities."

Source: World Bank

#### When cities breathe out—how will they change in the post-pandemic world?

"COVID-19 HAS dented the prosperity, populations and popularity of big cities around the world. But adapting to shocks is what great cities do. How will urban centres change in the post-pandemic world and what are the political implications of a shift towards more remote working from suburban areas?"

Source: Economists

### SMART CITIES



### URBAN STUDIES



#### Perspectives on urban transformation research: transformations in, of, and by cities

"We outline three perspectives on urban transformations in, of and by cities as a structuring approach for integrating knowledge about urban transformations. We illustrate how each perspective helps detangle different questions about urban transformations while also raising awareness about their limitations. Each perspective brings distinct insights about urban transformations to ultimately support research and practice on transformations for sustainability and resilience. Future research should endeavour to bridge across the three perspectives to address their respective limitations."

Source: Urban Transformations

#### Cities and the Biosphere

"Earlier, Vitousek et al. (1986) had published a paper in BioScience on human appropriation of the products of photosynthesis. This work inspired our paper 'Ecosystem Appropriation by Cities' (Folke et al. 1997). Our goal was to place cities as part of their broader global biosphere context and investigate the extent to which cities actually were dependent upon the life-supporting ecosystems and the environmental functions and ecosystem services those generate."

Source: Ambio's 50th Anniversary Collection

### CITIES



#### Best-Performing Cities 2021

"Cities drive economic growth nationwide. They are the primary locations where businesses create new jobs and workers earn higher wages, keeping the United States competitive in the global economy. However, metro areas are also incredibly diverse. Each has unique characteristics generated through a combination of investment and policy choices that influence the community's economic outcomes. The Milken Institute's Best-Performing Cities Index (BPCI) provides a means for comparing metro areas' recent performance."

Source: Milken Institute

## Urban Intelligence Rising: Why Smart Cities Are Better Cities

"Cities around the world are replacing educated guesses with data-based decisions that are better for citizens and for the environment. In the process, they're building an entirely new type of infrastructure that marries bits and bytes with steel and stone."

Source: Forbes

### Smart cities are built on data

"The key to urban planning and smart city development is data, experts say. That sounds easy enough considering the amount of data available today, but challenges persist."

Source: GCN

## URBAN PLANNING



### Design cities around people, not dustbins

"To plan the places where people will live around the current specification of 32-tonne trucks is absurd. Why not change the bin lorries? Who knows what size an electric dustcart might be in a decade's time? Yet houses are supposed to last for generations."

Source: Financial Times

## LIVEABLE CITIES



### Here's how digital infrastructure can make cities more inclusive for elderly people

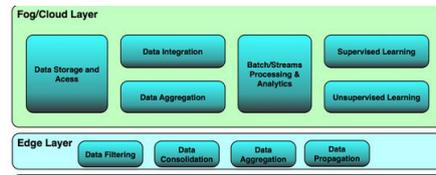
"Senior citizens need help and encouragement to remain active as they age in their own communities. Given the choice, that's what most would prefer. The smart city can provide the digital infrastructure for them to find and tailor the local neighbourhood information they need to achieve this."

Source: WEFForum

## FUTURE CITIES



## SMART CITIES



### Blockchain: The operating system of smart cities

"The article first provides background to the Blockchain concept, current and emerging trends in its development, followed by a survey of potential urban applications with particular attention to the domains of governance, transport, supply chain and logistics. Next, the paper presents the challenges that must be overcome to enable widespread adoption and deployment of the technology. The paper is intended for urban researchers and practitioners alike and will be a contribution that can be used by a broad range of stakeholders who wish to understand the disruptive forces of Blockchain, opportunities and potential applications, as well as challenges in the context of Smart Cities."

Source: International Journal of Social Science and Education Research

### Smart City: The main assist factor for smart cities

"Smart city concepts derive from the use of technology and knowledge to enhance society's efficiency and competitiveness. The indicators are needed that support the achievement of a smart city. We will analyze the indicators that can impact the smart city achievement in this article. The aim of this study is to identify the indicators that influence the process of developing a smart city in order to be able to help other cities to establish sustainable policies and work plans so that they can prepare themselves for a smart city consistently."

Source: INTERNATIONAL JOURNAL OF INNOVATION IN ENTERPRISE SYSTEM

### Data-Driven Solutions in Smart Cities: The case of Covid-19 Apps

"In this paper, we present five case study mobile applications developed using AppSheet and Google Apps Script technologies to prevent the spread of COVID-19 and provide support to (potentially) infected citizens. Several aspects relevant to the coronavirus pandemic are considered: quick COVID-19 patient assessment based on user-provided symptoms integrated with contact tracing; volunteer help during quarantine; UAV-based COVID-19 outdoor safety surveillance; test scheduling and an AR-based pharmacy shop assistant."

## Future Cities: From Le Corbusier's Radiant City to the Dutch "Breathing City 2050"

"Throughout history, religious reformers and visionary architects have attempted to envision the future of our cities: from the Venetian model city of Palmanova to the multi-story housing complex for 5,000 people drafted by Italian architect Paolo Soleri, from Frank Lloyd Wright's Broadacre City to Le Corbusier's Radiant City, numerous masterplans have been crafted to illustrate some of the most unprecedented ambitions."

Source: Archdaily

### SUSTAINABLE CITIES



### A new initiative could make cities more biodiverse: Here's how

"The COVID-19 pandemic has impacted our perceptions about work, transportation, consumption, and urban habits. It has also made us reevaluate assumptions built over the last decades regarding sustainable urban development. Densely populated cities have been some of the most affected by the pandemic, due in part to overcrowded housing and stress on healthcare systems. Cities that have attempted to reduce their urban sprawl are now experiencing commuting and public transportation issues as well as contagion risks which are pushing economically mobile citizens to relocate to suburbs or rural areas even if temporarily."

Source: WEFForum

### How Can Green Cities Create Equitable Futures?

"Understanding what drives economic, social, and educational disparities between communities is one of urbanism's most critical and highly-discussed topics. It's an increasingly complex issue, with many factors at play- one of them being the design and location of desirable urban green spaces. While sometimes they are a tool that helps to bolster underserved communities in terms of health and economic benefits, safety, and climate resistance, other times they can actually drive out the residents that they are created to serve. Now, the challenge lies in how to design these recreational sites to create better futures for all."

Source: Archdaily

Source: Web Intelligence and Resilience in Smart Cities

### The connection of smart cities approach and social innovation

"The enhancing globalization raises new challenges for the cities, like the increasing number of urban population, the rising environmental problems, or the overcrowding of some cities. Nowadays with the widespread of intelligent technologies, more and more cities are creating strategies for making themselves more innovative, and smart. That is why the inequalities among different cities are also rising, as some of them cannot adapt these challenges and turns to a relatively peripheral situation. In their case social innovation can be an adequate solution for solving the problems in a bottom-up way, and foster their development. The aim of this research is to analyse the connection of smart cities with the idea of social innovation, as they both have some similar characteristics."

Source: Miskolci Egyetem

### Journeys in the Age of Smart Cities: Some Fresh Perspectives

"Modern cities are intrinsically multidisciplinary and multicultural places. Inspired by that view, this chapter has invited a cross-disciplinary international team of domain experts to present their differing views (in their distinctive styles) on the current state and future evolution of smart cities. In presenting their views, the experts have adopted the metaphor of a journey, since the people, organizations, and technologies comprising a smart city can be regarded as being on journeys from conception to death, from start-up to bankruptcy, and from innovation to obsolescence. To do this, the chapter begins with a person-centric exploration of smart cities, examining topics such as innovation, entrepreneurship, generational issues, memory, and education before ending with a set of discussions around the key enabling technologies such as artificial intelligence, the Internet of Things, smart transport, mixed reality, and wearables. The chapter concludes by regarding the smart city as a type living laboratory for innovative technology development, reflecting on the expert's opinions for potential directions of travel that smart city research might take."

Source: In: Handbook of Smart Cities

### Smart cities built with smart materials

"The Smart City Index (1) defines a smart city as "an urban setting that applies technology to enhance the benefits and diminish the shortcomings of urbanization for its citizens." The top-ranked city, Singapore, has addressed urban challenges with information technology since 2014 through its Smart Nation Initiative (2). The influence of technology is reflected in the city's open platform for sharing energy data, crowd-sourced location data for smart navigation, and even online forums for citizen participation in policy-making (2). The smart city concept requires the acquisition of massive amounts of data in real time, and large networks of smart devices must spread the burden of communication and processing evenly across the network to prevent information overload at its center. Opportunities to solve this challenge have recently emerged through the development of increasingly "smart materials" that can sense, process, and respond to environmental stimuli without centralized resources."

Source: Science

### **Achieving resilience through smart cities? Evidence from China**

"Exploiting the quasi-experimental nature of smart city development in China, this paper uses DID and PSM-DID to determine their impact on urban resilience. Four aspects of urban resilience are analyzed: economic resilience, social resilience, ecological resilience, and infrastructure resilience. The results show that the development of smart cities can improve social resilience considerably without any obvious effect on economic and ecological resilience and even negatively affect infrastructure resilience; the distribution effect, technological effect, and structural effect are important mechanisms for smart cities to influence urban resilience; and smart cities that have a sound industrial structure, enough good-quality companies, large size, and a large pool of highly-skilled labor are much more likely to be associated with a high level of urban resilience. Policy suggestions are also provided to promote the simultaneous improvement of smart cities and urban resilience, and hence help establish a new 'urban resilience' model."

Source: Habitat International



### **The role of micro-mobility in shaping sustainable cities: A systematic literature review**

"This paper consolidates knowledge on the topic, analyses past and ongoing research developments, and provides future research directions by using a rigorous and auditable systematic literature review methodology. To achieve these objectives, the paper analysed 328 journal publications from the Scopus database covering the period between 2000 and 2020. A bibliographic analysis was used to identify relevant publications and explore the changing landscape of micro-mobility research. The study constructed and visualised the literature's bibliometric networks through citations and co-citations analyses for authors, articles, journals and countries. The findings showed a consistent spike in recent research outputs covering the sustainability aspects of micro-mobility reflecting its importance as a low-carbon and transformative mode of urban transport."

Source: Transportation Research Part D: Transport and Environment

### **The Health Cost of Transport in Cities**

"The study aims to provide an understanding of health cost assessments of different transport modes in urban contexts, and their relevance for transport planning and political decision-making."

Source: Built Environment and Health

## **FUTURE CITIES**



### **Urban living, mobility & health – the future of our cities**

"The Covid-19 pandemic brought to light the social inequalities and exposed frailties in the access to certain fundamental human rights, such as access to health and mobility. The type of housing, sanitation level, mobility, and urban structures play an essential role in people's individual and collective health. The right to the city, the right to an efficient mobility structure, planned urbanization, and urban equipment improve a population's quality of life and health. How can architects and urban planners tackle the global challenges

of developing necessary infrastructure and services, especially in more impoverished regions of the world? Which practices can be implemented to improve citizens' lives? How can technology, innovation, and local communities contribute?"

Source: LAB-U - Laboratory of Urbanism

## **SUSTAINABLE CITIES**



### **Urban Habitats: Cities and Their Potential for Nature Protection**

“What can cities do to harbour and promote wildlife, to support nature conservation and environmental sustainability, and also to improve people’s relationship to nature, both by direct interventions and by education/communication?”

To answer this question a few main lines are followed and linked to each other. These include (1) natural history, (2) ecological aspects, (3) nature management, (4) attractiveness of nature and the affinity to nature, and (5) future perspectives. We reviewed publications relating to three broad scientific disciplines as applied in current urban ecology, namely: (1) natural sciences, (2) engineering/urban planning, and (3) social sciences.”

Source: Urban Habitats: Cities and Their Potential for Nature Protection

### **Challenges and emerging technologies for sustainable smart cities**

“The Internet of Things (IoT) has been considered as an innovation, which ventures out a smarter world spanning the actual world with the digital world. Even though the IoT idea has picked up a lot of consideration during the most recent couple of many years, genuine execution of huge scope IoT network is as yet developing. Globalization has associated urban communities on inverse sides of the planet in types of rivalry beforehand obscure – for capital, for assets and the Creative Class. These provoke lead to try different things with new ways to deal with the arrangement, plan, account, development, administration, and activity of metropolitan foundation and administrations that are comprehensively called Smart Cities, which also plays a very important role in future sustainability of built environments.”

Source: Indoor and Built Environment

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