

Introduction

The sustainability changes are increasing in their complexity and this resonates globally. Smart interventions in the urban sector are gaining attention as the solution. With the onset of the smart city movement, the inclusion of smart technologies aims to promote environmental, social, and economic well-being for the citizens. With this growth of interventions, the literature for the execution and case examples is also at a boom. A systematic assessment of scholarly information forms the foundation of a bibliometric analysis. The analysis in this paper aims to not only capture the current state but also guide and encourage research scholars to delve further into the topic of smart cities and sustainable urban planning.

In this paper, I aim to address the question of which author, country, and affiliation are most prolific in the conversation of smart cities and sustainable urban planning. I would further delve into the keyword cluster and trend topics in their publications.

Methodology

(WOS) Web of Science was the primary resource for the data collection for this study. Publications containing 'smart city', 'sustainable', and 'urban planning' in any of the searchable fields (title, abstract, keyword) and in all languages were looked for. For the period of 2003 – 2023, 2140 publications were sourced and analyzed. The Bibliometric analysis pertaining to author information, collaborations, countries, affiliations was done on the Biblioshiny software.

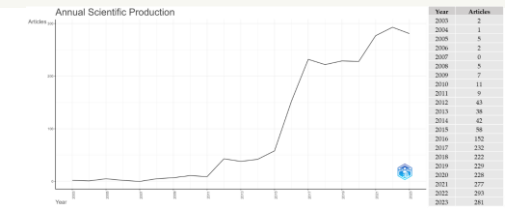
Sources

'Sustainability' is the dominant publishing journal, followed by 'Sustainable Cities and Society'. Both these surpass the other journals by more than double the publications with 196 and 115 articles respectively. These along with 'Smart and Sustainable Built Environment', 'Cities', 'Energies', 'Land', and 'Smart Cities' are some of the highest-regarded journals for urban planning. Two conference proceedings are also in the top 10 sources for publications, Smart Transport (CSUM2022), and Smart and Sustainable Planning for Cities and Regions (SSPCR 2017).

Country Collaboration

There have been publications from countries all over the world and with collaborations

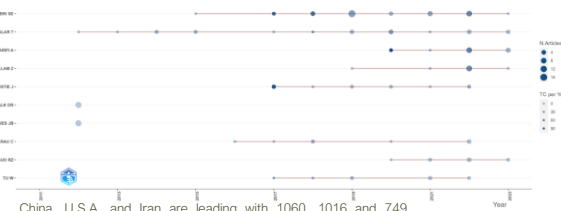
Between 2003 and 2023, 2140 documents have been published by 8025 authors in 815 sources. The research increased from 2 in 2003 to 284 in 2023 with an average annual growth rate of 28.12%.



Annual Scientific Production

A jump in publications is visible in 2016, where 152 publications were seen, as compared to 58 in 2015. The average citation per document is 15.55.

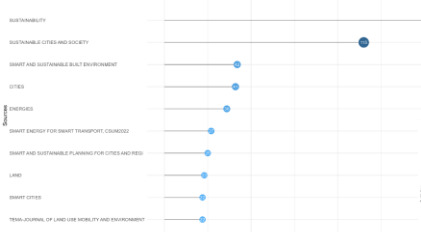
Authors' Production Over Time



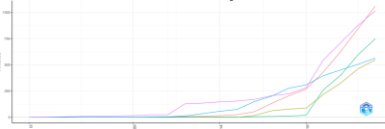
Simon Elias Bibri dominates the list with 41 publications, followed by Yigitcanlar Tan with 23 publications.

Author Production

Most Relevant Sources



Country Production Over Time



Country Production

China, U.S.A. and Iran are leading with 1060, 1016 and 749 publications respectively, followed by Italy (565) and India (548)

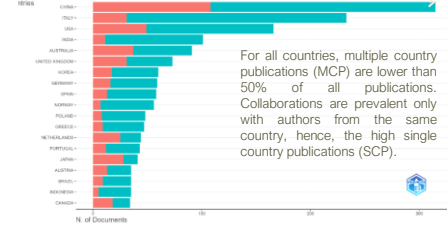
Corresponding Author's Country

Top ten countries with higher SCP are China, Italy, U.S.A., India, Australia, the United Kingdom, South Korea, Germany, Spain, and Norway.

Country Collaboration Map



Corresponding Author's Countries



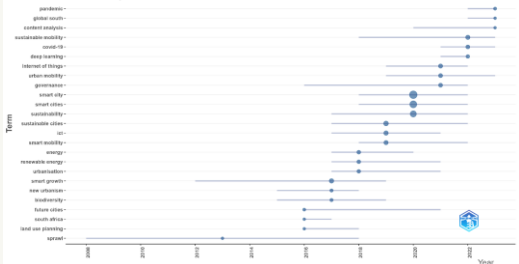
For all countries, multiple country publications (MCP) are lower than 50% of all publications. Collaborations are prevalent only with authors from the same country, hence, the high single country publications (SCP).

The highest citation for the article 'Smart sustainable cities of the future: An extensive interdisciplinary literature review' by Simon Elias Bibri (Bibri and Krogstie, 2017) in Sustainable Cities and Society is 636, followed by 'The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data' by Gilberto Pastorello, (Pastorello et al., 2020) in Scientific Data with 576 citations. This is followed by 'The Compact City Fallacy' by Michael Neuman (Neuman, 2005) in Journal of Planning Education and Research with 512 citations, 'The COVID-19 pandemic: Impacts on cities and major lessons for urban planning, design, and management' by Ayyoob Sharifi (Sharifi and Khavarian-Garmsir, 2020) in Science of Total Environment with 466 citations and 'Ultrafine Particles in Cities' by Prashant Kumar, (Kumar et al., 2014) in Environment International with 440 citations.

Trend Analysis

There has been a gradual shift in the topics being discussed in the publications. 'Sprawl' is seen as a topic being discussed from 2008 – 2018, 'smart growth' was discussed from 2012 – 2019, 'new urbanism' had a short discussion between 2015 – 2018. In 2017 focus was put on 'energy' and 'sustainability'. In 2019, 'deep learning' and 'IoT' is seen getting introduced into the discussion. 'Covid-19' and 'Pandemic' is a recurring topic from 2020 onwards.

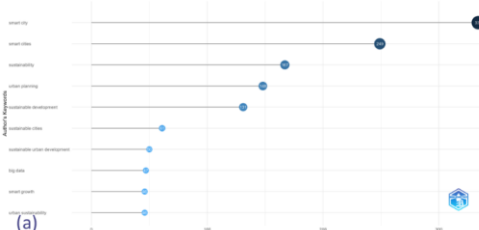
Trend Topics



Keywords

The keywords represent the topic of discussion within the papers. The most relevant word has been smart city/smart cities, being used at the highest 26%, followed by urban planning being used at 6% of all. Sustainability (23%) is visible as the topic of discussion in multiple forms such as sustainability (7%), sustainable development (6%), sustainable cities (3%), sustainable urban development (2%), urban sustainability (2%), sustainable mobility (2%) and sustainable city (1%). Other keywords being used are climate change (2%), ICT (2%) and GIS (2%).

Most Relevant Words



Most Globally Cited Documents

