



### Smart Cities - Research Trends

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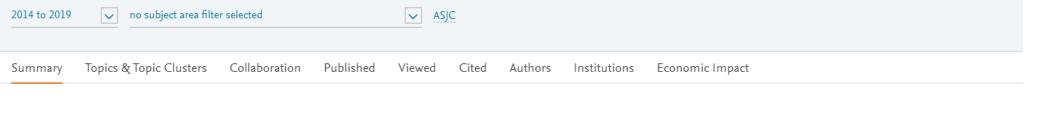


## Agenda

- Analyze Research trends thanks to the Data (via Scopus and SciVal)
- Portfolio mapping of research around 'Urban Innovation, Smart Cities and Sustainable Cities'
- Collaborations within 'Urban Innovation, Smart Cities and Sustainable Cities'
- Overview of Contributing Institutions
- Visual index of relevant terms



### Urban Innovation/Smart Cities/Sustainable Cities



#### Overall research performance







#### Overall research performance



Field-Weighted Citation Impact 🎎

1.38





## Topics of Prominence



## **Topic Prominence in Science**

- We have identified ~96,000 global research topics by clustering all of Scopus and ranked them by Prominence.
- Topics were grouped into ~1,500 Topic Clusters
- Prominence looks at very recent citations, recent views and CiteScore values

A Topic is a collection of documents with a common focused intellectual interest

They can grow or decline, be large or small, new or old and are often multidisciplinary

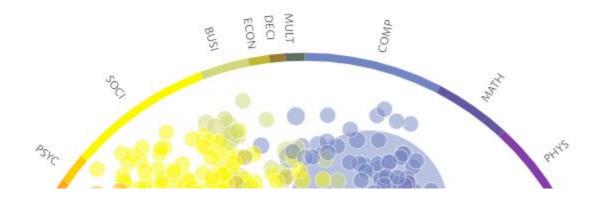


For more information please visit <a href="https://www.elsevier.com/solutions/scival/releases/topic-prominence-in-science">https://www.elsevier.com/solutions/scival/releases/topic-prominence-in-science</a>

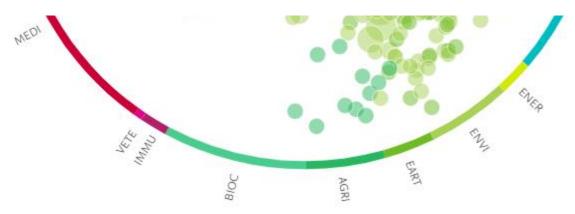
### Sustainable cities

Worldwide

In this Publication Set



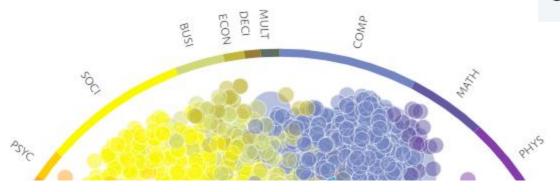
Торіс	Scholarly Output 🔱	Publication Share	Field-Weighted Citation Impact	Prominence percentile
Internet; Technology; Smart cities T.13953	118	3.71% 🔺	2.86	99.768
Food; Agriculture; Food networks T.3195	30	1.26% 🔺	1.77	99.491
Adaptation; Climate change; Adaptation planning T.1567	29	0.72% 🔺	0.90	99.844
China; Urban development; Sustainable urban T.46308	26	11.56% 🔺	3.23	87.430
Innovation; Sustainable development; Socio-technical transitions T.5457	24	0.89% 🔺	3.10	99.902



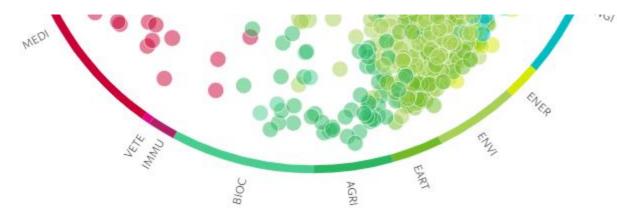
### Urban Innovation/Smart Cities/Sustainable Cities

Worldwide

In this Publication Set



Topic	Scholarly Output 🔱	Publication Share	Field-Weighted Citation Impact	Prominence percentile
Internet; Technology; Smart cities T.13953	621	19.54% 🔺	2.05	99.768
Internet; Authentication; Fog computing T.10997	402	9.24% 🔺	2.05	99.924
Cloud computing; Mobile devices; Computing MEC T.4790	333	7.49% 🔺	2.76	99.943
Electric power transmission networks; Electric load management; Electricity cost T.257	226	3.90% ▲	2.13	99.954
Buildings; Energy efficiency; Energy retrofit T.3222	222	6.54% ▲	1.71	99.858



## Urban Innovation/Smart Cities/Sustainable Cities Collaboration

Collaboration \$

+ Add to Reporting Shortcuts >

Scholarly Output in Urban Innovation/Smart Cities/Sustainable Cities, by amount of international, national and institutional collaboration



Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
■ International collaboration	29.0%	5,346	7,500	1.4	2.19
■ Only national collaboration	25.3%	4,656	3,761	0.8	1.43
Only institutional collaboration	38.5%	7,098	4,117	0.6	1.13
■ Single authorship (no collaboration)	7.2%	1,333	817	0.6	1.22

#### Academic-Corporate Collaboration \$

+ Add to Reporting Shortcuts ✓

Scholarly Output in Urban Innovation/Smart Cities/Sustainable Cities with both academic and corporate author affiliations



Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
Academic-corporate collaboration	2.1%	400	354	0.9	1.53
■ No academic-corporate collaboration	97.8%	18,173	15,841	0.9	1.52



# Urban Innovation/Smart Cities/Sustainable Cities Contributing Institutions & Scholarly Output





# Urban Innovation/Smart Cities/Sustainable Cities Main keyphrases

Top 50 keyphrases by relevance, based on 18,573 publications | Learn about keyphrase calculations >

```
Intelligent systems Network architecture
Artificial intelligence Research
Research
Research
Relectric power transmission networks
Management

Communication Technology

Sustainable development
Intelligent buildings

Data mining Learning systems
Surveys Buildings
Data privacy
Housing
Energy utilization Energy efficiency Ubiquitous computing

Data handling
Sustainability
Optimization
Economics
Energy management
Digital storage
Quality of service

Network architecture
Planning
Planning
Electric power transmission networks
Management

The Models

Reviews
Intelligent

Vehicles

Reviews

Intelligent building

Cloud computing
Decision making
Decision making
Decision making

Public policy
Sensors
Algorithms
Digital storage
Industry

Cloud computing
Decision making

Industry
Decision making

Planning
Electric power transmission networks

Electric power transmission networks

Electric power transmission networks

Application
Sensor nodes

Sensor nodes

Sensor nodes

Sensor Algorithms

Electric vehicles
```

A A A relevance of keyphrase | declining A A A growing (2014-2018)



### Conclusion

- Connect technology to the purpose importance of multidisciplinarity
- Focus on collaboration and co-creation
- How to use smart to become more sustainable?



# Thank you

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