**Smart City Development Paths: Insights from the First Two Decades of Research**

Luca Mora[[1]](#footnote-1)\*, Mark Deakin[[2]](#footnote-2), Alasdair Reid[[3]](#footnote-3)

\* Corresponding author

**ABSTRACT** [Please write your abstract here. Abstract should be no more than 750 words in length and does not have to contain bibliographic references]

|  |
| --- |
| More than twenty years have now passed since the concept of smart city first appeared in a scholarly publication, marking the beginning of a new era in urban innovation. Since then, the literature discussing this new concept and the ICT-oriented urban innovation approach it stands for has been growing steadily, along with the number of initiatives that cities all over the world have launched to pursue their ambition of becoming smart. However, current research still falls short of providing a clear understanding of smart cities and the scientific knowledge policy makers and practitioners both need to deal with their progressive development. In response to this short fall, this paper offers a bibliometric study of the first two decades of smart city research, whereby citation link-based clustering and text-based analysis are combined to: (1) build and visualize the network of scholarly publications shaping the intellectual structure of the smart city research field; (2) identify the clusters of thematically related publications; (3) reveal the emerging development paths of smart cities these clusters support and the strategic principles they embody. This study uncovers five main development paths:   1. Experimental Path, in which smart cities are described as urban testbeds for experimenting Internet of Things infrastructures and service applications and analyzing their functioning, relevance and potential impact in real life environments; 2. Ubiquitous Path, where smart cities and ubiquitous cities are overlapped and considered as two equivalent concepts; 3. Corporate Path, in which urban areas become smart when they are equipped with a platform of digital solutions provided by ICT consultancies; 4. European Path, that represents smart cities as highly efficient urban systems in which digital technologies are used to tackle environmental degradation and fight climate change by transforming buildings, energy networks and transport systems; 5. Holistic Path, where smart cities are considered as urban settlements in which digital technologies are assembled to meet local development needs and their development process is grounded on collective intelligence, participatory governance, collaborative association, community-led urban development and open and user-driven innovation.   Overall, this analysis offers a comprehensive and systematic view of how a smart city can be understood theoretically and as a scientific object of knowledge able to inform policy-making processes. |

**KEYWORDS** [List 3 to 5 keywords]

|  |  |
| --- | --- |
| Keyword 1 | Smart cities |
| Keyword 2 | Urban innovation |
| Keyword 3 | Bibliometric analysis |
| Keyword 4 | Co-citation analysis |
| Keyword 5 | Development paths |

**SUBJECT CATEGORIES** [Select 3 to 5 WoS Subject Categories that the paper covers. Wos Subject Categories can be found in the first column of Table 1]

|  |  |
| --- | --- |
| WoS Subject Category 1 | Urban Studies |
| WoS Subject Category 2 | Planning & Development |
| WoS Subject Category 3 | Computer Science, Interdisciplinary Applications |
| WoS Subject Category 4 | Social Sciences, Interdisciplinary |
| WoS Subject Category 5 |  |

**PRESENTER** [Select the author who will be presenting the paper at the Conference. Only the presenter shall be invited to attend the Conference and present the paper]

|  |  |
| --- | --- |
| Presenter’s name and surname | Luca Mora |

1. Edinburgh Napier University, School of Engineering and the Built Environment, L.Mora@napier.ac.uk [↑](#footnote-ref-1)
2. Edinburgh Napier University, School of Engineering and the Built Environment, M.Deakin@napier.ac.uk [↑](#footnote-ref-2)
3. Edinburgh Napier University, School of Engineering and the Built Environment, Al.Reid@napier.ac.uk [↑](#footnote-ref-3)