



SMART CITY, SMART VILLAGE, SMART TERRITORY, SMART SPECIALIZATION & AFRICA'S DEVELOPMENT

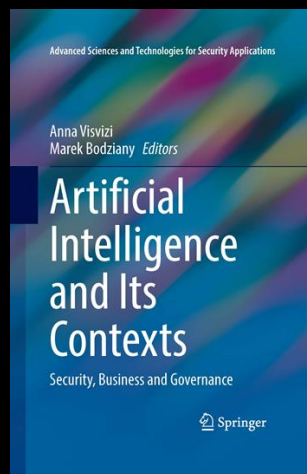
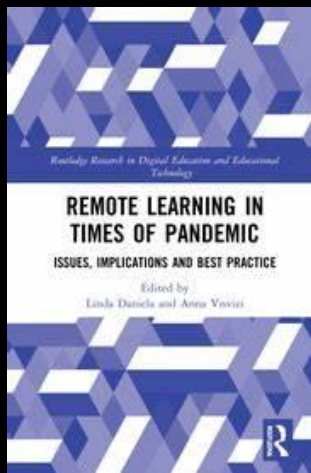
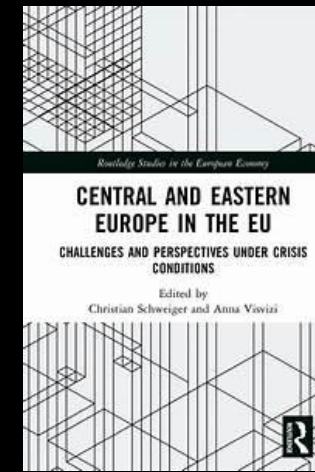
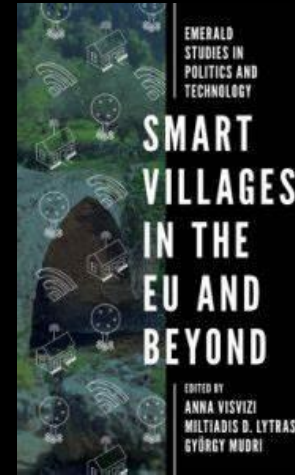
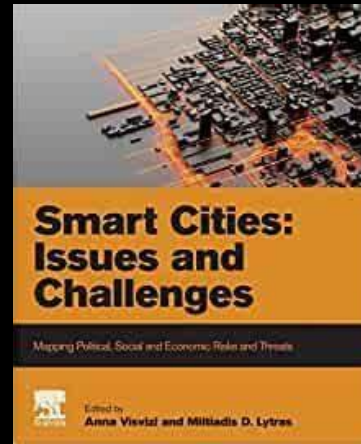
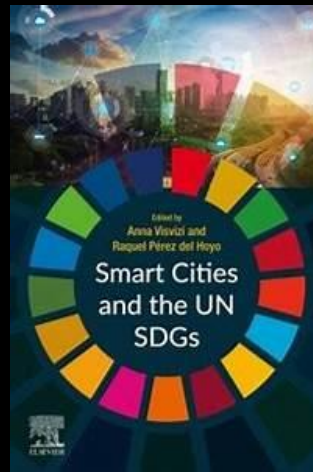
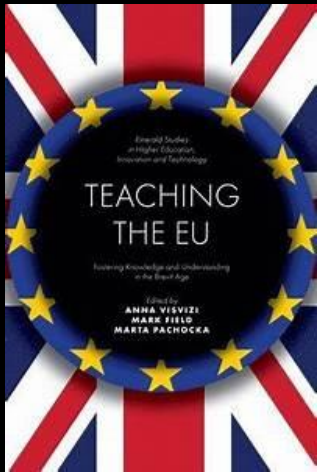
concepts, caveats, strategy, and policymaking



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Visiting Scholar, Effat University, Jeddah

2021-10-29 | Fri | 12:00-13:00 | Zoom

ANNA VISVIZI: MY WORK AND MY TEAM





SYNOPSIS

- The objective of this presentation is to shed light on the concepts of smart city, smart village, smart territory and smart specialization and to dwell on their value for and applicability in the broad and diversified African context(s). While the arguments presented in this intervention are grounded in the academic debate on relating subjects, emphasis is placed, (i) on the fit and the feasibility of employing these concepts in the debate on Africa's growth and development, and (ii) on the need for a leapfrog strategy to preempt risks and address threats to Africa's growth and prosperity.

SMART CITY & SMART CITIES RESEARCH

- Smart city, viewed “from a three-tiered perspective: as a concept; as an artifact; and as a policymaking objective” (Lytras & Visvizi 2021), i.e. an ontologically distinct object, an object of research, and a venue of research-driven policymaking.
 - ICT-enhanced infrastructure, systems, services, applications;
 - multiple stakeholders
 - mechanisms behind their relationship and modes of governing this relationship
- ICT and its application in the city space **may** have a fundamentally positive impact on smart city inhabitants (Lytras & Visvizi, 2018; Visvizi & Lytras, 2019).
- However, it is the way in which the smart city and the smart urban system are managed that is decisive in delivering on the promise inherent in ICT-enhanced smart city solutions (Visvizi et al., 2017; Visvizi et al., 2022)

SMART VILLAGES & SMART VILLAGES RESEARCH

- The conceptual boundaries of the smart village are defined by the following assumptions and claims:
- (i) A village is an ecosystem of a limited size, a community that is driven by specific mechanisms and dynamics that are the product and the outcome of multi-level interaction among all stakeholders.
- (ii) Smart village is conceptually different that the aggregate construct of a 'rural area' or 'country side'.
- (iii) A village is conceptually and empirically distinct, and so the question of and corresponding research on the value-added ICT can garner in the space of a village has its own characteristics, different from research on smart cities.
- (iv) By focusing on a village as a concept ontologically different from that of a city, a way is paved to smart villages research as a field separate from smart cities research.
- (v) By reifying the village in the analysis, the focus of analysis in smart village research shifts to inhabitants of a given village, be it plural or individual. Hence, the focus on the community.
- What follows is that (vi) research on smart villages employs insights from the debate on ICT, to engage in conceptually-sound, empirically-focused, and ethically-conscious exploration of problems, challenges, and opportunities that villages and their inhabitants face in the 21st century. (Visvizi & Lytras, 2018)

SMART TERRITORY

- Smart territory is a territory that "seeks to solve public problems through digital technology on the basis of local initiative partnerships involving multiple stakeholders, with the objective of generating more sustainable economic development and a better quality of life" (EP, 2014)
- "Smart territory" can be defined as a geographical space, which seeks to solve public problems through technology-based solutions within the framework of a partnership between multiple participants from different sectors (Navio-Marco et al., 2020)
- "The key to the movement of smartening territories lies, therefore, in applying similar ICT tools that have been used in urban areas and apply them to a wide variety of geographical contexts. This can range from rural lands to natural protected areas, and include many issues, such as food security, lighting, waste management and ecosystem services (Louman and Campos Arce, 2015; de Melo, & Hossain, 2018)"

MAKING SENSE OF SMART CITIES, SMART VILLAGES & SMART TERRITORIES

- To understand the relationship between these concepts, it is useful to examine them through the following perspectives:
 - The provenience/origin of the concept
 - The key facets and topics addressed in the emerging research agenda
 - The role/weight of ICT-based solutions in the overall research design
 - The connection to the policy-making community & the tools at hand



TOOLS & STRATEGIES: *HOW TO MAKE THE CONCEPTS USABLE*

- Smart city:
 - focus on the SDG11 and related smart city agenda's implemented around the world
- Smart village:
 - grand strategies, less tools, e.g. smart specialization
- Smart territories:
 - cohesion policy framework

WHAT ABOUT AFRICA

- **A few questions need to be addressed beforehand:**
- The academic perspective:
 - ✓ Current state of research employing smart city, smart villages and smart territories to research on Africa
- To empirical perspective:
 - ✓ To what extent leaders across Africa consider the topics as items of their strategy making
- Outstanding questions:
 - ✓ Bias (positive/negative) and universal applicability



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DK Das - Construction Economics and Building, 2020 - search.informit.org

There is a changed perspective regarding the development of cities and increasingly many countries in the West and some developing countries, as in South **Africa**, are making concerted attempts to transform their cities to **smart cities**. Using the context of the city of ...

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The advancement and convergence of Internet of Things (IoT), mobile devices technology, big data and cloud computing with its various technological implementations are finally enabling the vision of **Smart Cities** and Industry 4.0. However, cloud computing concept has ...

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[\[PDF\] unilorin.edu.ng](#)African **smart cities** strategies for agenda 2063

M Slavova, E Okwechime - Africa Journal of Management, 2016 - Taylor & Francis

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Smart villages: Comprehensive review of initiatives and practices

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V Zavrtnik, A Kos, E Stojmenova Duh - Sustainability, 2018 - mdpi.com

... is being developed and put into practice in different parts of the world, whereas the ones with the most climate-related difficulties are chosen (West and East Africa, Latin America, South and Southeast Asia). This is an ever evolving program where different stakeholders (...)

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Resources and Agriculture–Job Creation Enablers in African Smart Villages

J NdoutouMve, VI Lakshmanan - Smart Villages, 2022 - Springer

Economic prosperity in a smart village requires job creation enablers, which in an African context would include among others, mining, agriculture, animal husbandry, tourism and indigenous arts and culture. This chapter covers two of the most prevalent job creation ...

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[book] Handbook of Research on **Smart Territories** and Entrepreneurial Ecosystems for Social Innovation and Sustainable Growth

[JM Palma-Ruiz](#), [JM Sáiz-Alvarez](#), [Á Herrero-Crespo](#) - 2019 - books.google.com

... needs, the importance of solving the priority urban problems such as environmental management, efficient use of resources, and sustainable urban transportation with the help of rapidly developing information technologies should be emphasized on the road to **Smart territories**. ...

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The Role of Business in the Innovation Ecosystem: The Case of Smart Cities as Business Models

[M Gutiérrez-Leefmans](#) - Handbook of Research on **Smart Territories** ..., 2020 - igi-global.com

... If we focus on this definition and see a country like a business, then business model theory seems to be a perfect fit to study **smart territories**. Business models are formulas, architectures, or systems that represent how value is created for the customer and how value is captured ...

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To examine women social entrepreneurial ecosystems: Opportunities and challenges

[SR Nair](#) - Handbook of research on **smart territories** and ..., 2020 - igi-global.com

... In the Middle East and North **Africa** (MENA) region, while the difference between women's involvement in social versus commercial entrepreneurship was very striking, in Australia and USA both men and women were almost equally involved in SE, whereas, in Southern and ...

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... These problems are getting worse considering the dramatic demographic migration to cities in **African** countries due to climate change ... We believe that the frugal approach, as a general methodology to optimize return on investment and value creation in the **smart territories**, will ...

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Abstract This short article provides a kind of egocentric and longitudinal state of the art of a geographical questioning on the size and evolution of cities. The different stages in the construction of an evolutionary theory of systems of cities are recalled, punctuated by the questions ...

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Systems-of-Systems and Regional Resilience Assessment

[I Ed-daoui](#), [M Itmi](#), [A El Hami](#), [N Hmina](#) - ..., Systems, **Smart Territories** and ..., 2021 - Springer

Abstract In the context of regional resilience, focus is on the conception of metrics to evaluate the ability of regions to resist economic shocks. Still, less attention is given to structures, interactions and workflow pathways within the spatial object in the development of resilience

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Mathematical Modeling and Optimal Control of Complex Epidemiological Networks

[G Cantin](#), [N Verdière](#) - Complex Systems, **Smart Territories** and Mobility, 2021 - Springer

... The chikungunya disease is an arbovirus mostly transmitted to human beings by mosquitoes species *Aedes Albopictus*, which was firstly identified in 1953 in eastern **Africa**. This vector-borne disease admits similarities with the dengue disease and represents a severe public ...

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[PDF] Smart and Sustainable Territories in Italy: A Review of the BRI Areas of Convergence

[PDF] academia.edu

[P Gazzola](#), [S Jedrzejczak](#) - VIRTUAL Conference, 2020 - academia.edu

... The concept of **smart territories** or smart land seems more tailored in providing a framework on which territories can aggregate both in term of ... Furthermore, many of the fastest-growing agglomerations are urban areas with less than 1 million inhabitants located in Asia and **Africa**. ...

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Climate-smart agriculture: in need of a theory of scaling

[PDF] cgjar.org

[R Vermooy](#), [C Bouroncle](#) - CCAFS Working Paper; 256, 2019 - cgspace.cgjar.org

... The 113 references found in early 2018 in English all concern CCAFS work in **Africa** and Asia. Of the 144 references found by the end of ... a limited number of CSVs/climate **smart territories** (eg in Central America, there are three climate-**smart territories** with the one in Guatemala ...

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WHAT ABOUT AFRICA

- **A few questions need to be addressed beforehand:**
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 - ✓ Current state of research employing smart city, smart villages and smart territories to research on Africa
- To empirical perspective:
 - ✓ To what extent leaders across Africa consider the topics as items of their strategy making
- Outstanding questions:
 - ✓ Bias (positive/negative) and universal applicability

AN OUTLINE OF A CONVERSATION

What challenges
Africa faces today?

Which of these
challenges can be
navigated by
means of ICT?

What are the
preconditions of
efficient and
'prudent' use of ICT
in African context?

Which are the
questions should be
asked before
contemplating the
use of ICT?

Which tools and
which strategies to
employ for which
purpose?

leapfrog strategy to
preempt risks and address
threats to Africa's growth
and prosperity



REFERENCES

EP (2014) Mapping Smart Cities in the EU, European Parliament Think Tank, [https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL-ITRE_ET\(2014\)507480](https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL-ITRE_ET(2014)507480)

Kashef, M., Visvizi, A., Troisi, O. (2021) Smart city as a smart service system: Human-computer interaction and smart city surveillance systems, *Computers in Human Behavior*, 2021, 106923, <https://doi.org/10.1016/j.chb.2021.106923>

Lytras, M.D., Visvizi, A. (2021) Information management as a dual-purpose process in the smart city: Collecting, managing and utilizing information, *International Journal of Information Management*, <https://doi.org/10.1016/j.ijinfomgt.2020.102224>

Navío-Marco, J., Rodrigo-Moya, B., Gerli, P. (2020) The rising importance of the "Smart territory" concept: definition and implications, *Land Use Policy*, Volume 99, 105003, <https://doi.org/10.1016/j.landusepol.2020.105003>.

Visvizi, A., Lytras, M. (2018) 'Rescaling and refocusing smart cities research: from mega cities to smart villages', *Journal of Science and Technology Policy Management*, Vol. 9 No. 2, pp. 134-145. <https://doi.org/10.1108/JSTPM-02-2018-0020>

Visvizi, A., Lytras, M.D. (2018) 'It's Not a Fad: Smart Cities and Smart Villages Research in European and Global Contexts', *Sustainability* 2018, 10, 2727, <https://doi.org/10.3390/su10082727>

Visvizi, A., Lytras, M.D., Mudri, G. (eds) (2019) *Smart Villages in the EU and Beyond*, Bingley, UK: Emerald Publishing, ISBN: 9781787698468, <https://books.emeraldinsight.com/page/detail/Smart-Villages-in-the-EU-and-Beyond/?K=9781787698468>

Visvizi, A., Mazzucelli, C.G., Lytras, M. (2017) "Irregular migratory flows: Towards an ICTs' enabled integrated framework for resilient urban systems", *Journal of Science and Technology Policy Management*, 8(2): 227-242, <https://doi.org/10.1108/JSTPM-05-2017-0020>

Visvizi, A., Perez del Hoyo, R. (eds) (2021) *Smart Cities and the UN SDGs*, Elsevier, 9780323851510, <https://www.elsevier.com/books/smart-cities-and-the-un-sdgs/visvizi/978-0-323-85151-0>



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FOR YOUR
ATTENTION

My team and I continue working on several projects, mostly edited books, but also other.

Should you have questions, comments, ideas, please, send a note at avisvizi@gmail.com

I'd be pleased to start a conversation.

Anna Visvizi, Ph.D.

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