Measuring the place of Sustainability and Smart approaches in smart territories

The case of 215 business students in Belgium

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Introduction

Giving rise to extensive ecological challenges, the link between sustainability and smart approaches is increasingly explored in the literature review

Based on a psychophysics approach (citizen paradigm),

Citizens build an image of their territory (associations, meanings, symbols, spaces, cultures...)

Territorial changes can be perceived positively or negatively

How a specific subcategory of citizens with a strong interest for smart cities perceive the emergence of smart territories ?
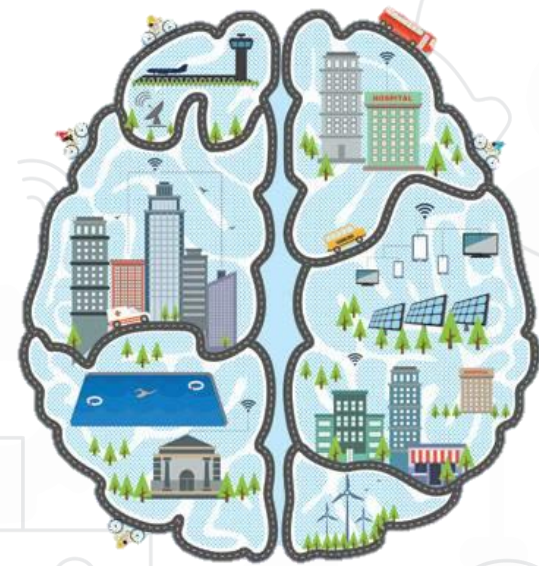
Focus on sustainability transition and smart growth

Litterature review

> *H1: Territorial changes, such the emergence of smart territories, improves the living environment.*

> The literature review positions the emergence of smart territories as a set of approaches, initiatives and strategies that local governments develop with strategic actors to support sustainable and smart territorial transitions

- *Smarter ecosystems and communities*
- *Sustainable urban development*
- *Economic growth and life quality*
- *Inclusiveness, structural and organizational improvements*
- *Positive brand image*
- *Transversal collaborations*
- *Modern and flexible norms*

Litterature review

H2: Citizens have concerns regarding to territorial changes such the emergence of smart territories.

Developing projects supporting sustainability and smart growth

Lack of understanding or knowledge of territorial changes

Objective and subjective fears

- Risk of isolation (access to internet, elders, isolated areas) and addiction to technology (data privacy)
- Financial investments
- Threat to territorial heritage and culture
- Loose of legibility, identity and imageability of their living environment

Litterature review

H3: The perception of territorial changes, such the emergence of smart territories, differs according to gender, age and regions.

Citizens belonging to a same subcategory such gender, age, culture, native region, religion and socio-professional category develop similar perceptions of territorial changes.

Involved citizens – Pragmatic perceptions on long term benefits and threats

Not Involved citizens – Familiar perceptions on progressive improvements

Litterature review

H4: The link between sustainability and smart approaches defines the perception of territorial changes, such the emergence of smart territories.

Recent researches explore similarities, interconnections and interdependencies between sustainability and smart approaches in the context of smart territories

1 Technologies and digital solutions help smart territories to achieve sustainability

2 Actual urban challenges reduce considerably the distinction between sustainability and smart approaches

3 Do not dissociate between the two approaches and others relate important complementarities.

4 New insights on the importance of sustainability in developing smart growth.

Methodology

Sample:

- 215 Business students enrolled at the University of Liège (HEC)
- Eager to be involved as active citizens or professionnals in smart city projects
- Entrolled in smart city courses to lead and develop strategic projects with local governments

Category	Details	Σ	% in the sample
Gender	Male	112	52%
	Female	103	48%
Age	Equal or less than 23	154	72%
	24 and over	61	28%
Region (official domiciliation)	Liège	72	33%
	Other Belgian cities	110	51%
	Outside of Belgium	33	15%

Data collection and measures:

- Questionnaire shared on the internal platform (restrictive access) – deadline: three days before the start of smart city courses – duration: September-October 2017
- Control variables: age, gender and region
- Seven factor analyses- identifying different profiles of perceptions – critical significant weigh (p>0,70)

Findings

H1 confirmed:

The emergence of smart territories is perceived as an opportunity to improve their living environment

Identification of 5 Potential improvements (5 on the 10 proposed):

o Inclusive participation of communities (men, born and raised in other Belgian cities)
o Better planning, implementing and monitoring of strategic projects (women)
o Digitalization of services (born and raised abroad)
   o Digitalization of service reduces complex planning of the overall strategy (age≤23)
o Integrating more adapted procedures and standards (born and raised in Liège)
o Brand image for cities (born and raised abroad)

NB: Sustainable and ecological benefits are not identified as potential improvements

They perceive that this emergence reinforces dynamic communities, governance, digital transition and territorial image

Findings

H2 confirmed:

There are some concerns regarding the emergence of smart territories, even by involved citizens with strong interest for smart cities

Lack of understanding or knowledge of territorial changes
- Is unknown (men, women, age≤23, age≥23, born and raised in Liège, born and raised in other Belgian cities)
- Is incomprehensible (men, women, age≤23, born and raised in Liège, born and raised in other Belgian cities, born and raised abroad)

Objective and subjective fears
- Scares (women, age ≥23, born and raised abroad)

Even if they are eager to contribute positively, the concept of smart territories is still not well defined

They are frightening by this emergence (subjective fear – no objective fear had been identified)

Findings

H3 confirmed: Each subcategory perceives differently the emergence of smart territories - 3 to 4 profiles have been identified for each subcategory

Male	Female
1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City
2. Sustainability-oriented	2. Smartness-Oriented
3. Involvement-oriented	3. Planning and organising oriented
4. Smart and Sustainable city oriented	

Under 24 yeals old	More than 24 years old
1. Misunderstanding of the Smart City	1. Digitalization vs complex planning
2. Smartness-Oriented vs Sustainability-oriented	2. Synergy between Sustainability and Smart City
3. Smart and Sustainable city oriented	3. Threating the Smart City
	4. Misunderstanding of the Smart City

Born and raised in Liège	Born and raised in other Belgian cities	Born and raised abroad
1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City
2. Smartness-Oriented vs Sustainability-oriented	2. Involvement-oriented	2. Brand image for cities
3. Smart and Sustainable city oriented	3. Smart and Sustainable city oriented	3. Sustainability-oriented
4. Procedural adaptability-oriented	4. Smartness-oriented	4. Synergy between Sustainability Sustainability and Smart City
		5. Digital-oriented

Findings

H4 confirmed: In the context of the emergence of smart territories, the link between sustainability and smart growth is confirmed

Each subcategory combines differently between sustainability and smart approaches

Male	Female
1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City
2. **Sustainability-oriented**	2. **Smartness-Oriented**
3. Involvement-oriented	3. Planning and organising oriented
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Under 24 yeals old	More than 24 years old
1. Misunderstanding of the Smart City	1. Digitalization vs complex planning
2. **Smartness-Oriented vs Sustainability-oriented**	2. **Synergy between Sustainability and Smart City**
3. **Smart and Sustainable city oriented**	3. Threating the Smart City
	4. Misunderstanding of the Smart City

Born and raised in other Belgian cities

Born and raised in Liège		Born and raised abroad
1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City	1. Misunderstanding of the Smart City
2. **Smartness-Oriented vs Sustainability-oriented**	2. Involvement-oriented	2. Brand image for cities
3. **Smart and Sustainable city oriented**	3. **Smart and Sustainable city oriented**	3. **Sustainability-oriented**
4. Procedural adaptability-oriented	4. **Smartness-oriented**	4. **Synergy between Sustainability and Smart City**
		5. Digital-oriented

Findings

Combination between sustainability and smart approaches	Details
Sustainability-oriented (2 subcategories)	Use of technological solutions and smart initiatives to promote sustainability
Smartness-Oriented (2 subcategories)	Achieving neutral climate and ecological improvements to support a smart growth
Smart and sustainable city oriented (4 subcategories)	**There is no distinction between sustainability and smart approaches**
Smartness-Oriented vs Sustainability-oriented (2 subcategories)	It is correct to think that digital and smart are used to support sustainability, however, it is wrong to pretend that sustainability is a component of smart approach
Synergy between Sustainability and Smart City (2 subcategories)	There is a direct link between sustainability and smart approaches

Conclusion

o *There is no distinction between sustainability and smart approach*
  o Research: how to strategize different combinations between sustainability and smart approaches: developing the smartainability approach.

o *They are frightening by this emergence (subjective fear – no objective fear had been identified)*
  o Research: subjective fears impacting citizenship in the emergence of smart territories

o *Even if they are eager to contribute positively, the concept of smart territories is still not well defined*
  o Research: the emergence of smart territories as a territorial change: managerial, psychological and urbanistic perspectives

o *Sustainable and ecological benefits are not identified as potential improvements in the emergence of smart territories*
  o Research : the impact of developing smart initiatives on sustainability territorial transition

Thank you for your attention

Questions?