

# Identifying factors that influence the transition towards a smarter sustainable city: Preliminary findings of the case study of Porto Alegre, Brazil

Luiza Schuch de Azambuja<sup>1</sup>

<sup>1</sup>*FinEst Centre for Smart Cities, Tallinn University of Technology, Ehitajate tee 5, 12616 Tallinn, Estonia*

## Abstract

The Smart Sustainable City (SSC) concept is promising as it can be seen as a combination of a smart city and a sustainable city. New initiatives are created for a variety of purposes with the overall goal of improving the quality of life in cities. In this paper, the research approach used, to investigate factors that influence the transition of a city towards a SSC, is a case study of the city of Porto Alegre, Brazil. This poster brings the preliminary findings obtained through 12 interviews, performed from February to April 2022, with local representatives from different city departments and areas.

## Keywords

Smart Sustainable Cities, smart governance, drivers and barriers, challenges

## 1. Introduction

There is a rise of smart initiatives being created around the globe with the overall goal of improving the quality of life in cities. For a city to be considered a Smart Sustainable City (SSC) it should govern the relations with multiple stakeholders to ensure the balance of the three sustainability pillars (social, economic and environment), make use of information and communication technologies (ICTs) to connect the city systems and foster innovation [1]. This research aims to understand factors that support the transition of cities towards a smarter sustainable city. This paper presents the ongoing research project, the steps performed so far and the next steps that will be taken to achieve the research aim.

## 2. Methodology

Figure 1 illustrates the research methodology applied in this study.

The first step of this research was the literature review on smart cities and sustainable cities, which originated the SSC Framework [1]. After, a systematic literature review was performed to identify drivers and barriers related to smart sustainable cities [2]. The 57 drivers and 63 barriers found in the literature were used as a base to develop the data collection instrument.

---

*EGOV-CeDEM-ePart 2022, September 06–08, 2022, Linköping University, Sweden (Hybrid)*

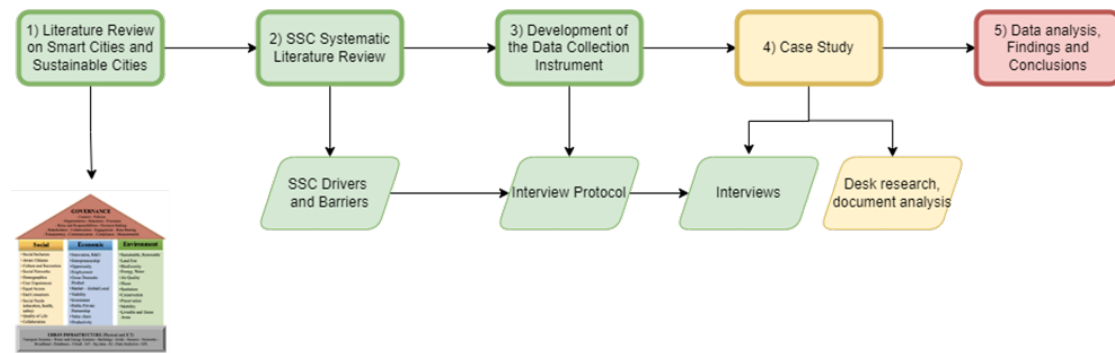
✉ [luiza.schuch@taltech.ee](mailto:luiza.schuch@taltech.ee) (L. S. d. Azambuja)

ORCID [0000-0001-7878-3875](https://orcid.org/0000-0001-7878-3875) (L. S. d. Azambuja)



© 2022 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

CEUR Workshop Proceedings (CEUR-WS.org)



**Figure 1:** Research Methodology

The data collection started in February 2022 and twelve (12) interviews were conducted in Porto Alegre, nine (9) interviews were face to face and three (3) online.

### 3. Preliminary Results and Next Steps

Porto Alegre (POA) does not have a smart (sustainable) city agenda or a holistic strategic plan; however, the city has many initiatives in place that can support the SSC transition e.g. the well-established channel where citizens can make requests [3] and the innovation ecosystem PACTO ALEGRE (<https://pactoalegre.poa.br/>). In addition, the city was one of the first cities in Brazil that created a local open data portal (<http://datapoa.com.br/>). The preliminary findings shows the importance of systems integration for service delivery, public-private partnerships, establishment of a multidisciplinary team to evaluate technology solutions, etc. The next step in this study is to finalise the data analysis and suggest potential measures to overcome the challenges faced by the city.

### Acknowledgments

This research was supported by the European Union’s Horizon 2020 Research and Innovation Programme grant agreement No. 856602 (FinEst Twins project).

### References

- [1] L. Azambuja, G. Pereira, R. Krimmer, Clearing the existing fog over the smart sustainable city concept, in: Proceedings of the 13th International Conference on Theory and Practice of Electronic Governance, ACM, New York, NY, USA, 2020, p. 628–637. URL: <https://doi.org/10.1145/3428502.3428595>. doi:10.1145/3428502.3428595.
- [2] L. Azambuja, Drivers and barriers for the development of smart sustainable cities, in: 14th International Conference on Theory and Practice of Electronic Governance, ACM, New York, NY, USA, 2021, p. 422–428. URL: <https://doi.org/10.1145/3494193.3494250>. doi:10.1145/3494193.3494250.

- [3] L. Azambuja, J. Lheureux-De-Freitas, C. Moreira, M. Macadar, A smart city initiative, in: Proceedings of the 15th Annual International Conference on Digital Government Research - dg.o '14, ACM Press, New York, New York, USA, 2014, p. 245–252. URL: <https://doi.org/10.1145/2612733.2612768>. doi:10.1145/2612733.2612768.