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# A Foundational Framework for Smart Sustainable City Development: Theoretical, Disciplinary, and Discursive Dimensions and Their Synergies

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## Highlights

- In the subject of smart sustainable cities, the underlying theories are a foundation for practice. The research problem of smart sustainable city development is too complex to be addressed by single disciplines, thereby the relevance of adopting an interdisciplinary and transdisciplinary strategy.
- Smart sustainable city development involves the application of a set of integrative foundational elements drawn from urban planning, urban design, sustainability, sustainable development, sustainability science, data science, computer science, complexity science, systems theory, systems thinking, and ICT.
- The paper attempts to systematize the very complex and dense scientific area of smart sustainable cities in terms of identifying, distilling, and structuring the core dimensions of a foundational framework for smart sustainable city development as a set of future practices.
- The paper offers an in-depth interdisciplinary and transdisciplinary discussion covering topics at the heart of the very synergic relationship between the theoretical, disciplinary, and discursive dimensions of the foundational framework underpinning smart sustainable city development.
- The study provides an important lens through which to understand a set of influential theories and established academic disciplines and discourses of high integration, fusion, and applicability potential in relation to the practice of smart sustainable city development.

## Abstract

In the subject of smart sustainable cities, the underlying theories are a foundation for practice. Moreover, scholarly research in the field of smart sustainable cities operates out of the understanding that advances in the underlying knowledge necessitate pursuing multifaceted questions that can only be resolved from the vantage point of interdisciplinarity or transdisciplinarity. Indeed, research problems in this field are inherently too complex to be addressed by single disciplines. The PhD study addressing the topic of smart sustainable city development falls within the broad research field of sustainability transition and sustainability science where ICT is seen as a salient factor given its transformational, disruptive, and synergetic effects as an enabling, integrative, and constitutive technology. In light of this, the approach to the PhD study is of an applied theoretical kind, and its aim is to investigate and analyze how to advance and sustain the contribution of sustainable urban forms to the goals of sustainable development with support of ICT of pervasive computing. This is to primarily

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