

A FRAMEWORK PROCESS FOR REGIONAL VARIATION AND IMPLICATIONS FOR URBAN SUSTAINABILITY

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Abstract

The goal of this investigation is to understand the factors that influence the continuous evolution of cities. We explore the process leading urban settlements of diverse regions to exhibit different urban features that result in different energy demand patterns. We developed a three-level holistic framework to characterize this process. i.) As depicted in the first level of the framework, the value formulation level consists of interactions between institutions and social norms which determine a value system comprising the attitudes, preferences and priorities of the city inhabitants. ii.) At the decision-making level, which is the second step of our process, the value system guides the formulation of policies. The implementation of policies is followed by public- and/or private-sectors' development interventions that translate into land use patterns as well as technology development and deployment. iii.) These interventions determine the resulting urban features; such as urban built form as well as energy and transportation infrastructural development and performance. The resulting urban features pose a constraint to the continuous reiterations of the process and to the level of cities' resilience, creating a loop mechanism that we call path dependence. We finally propose possible intervention approaches, short- and long-term actions, to affect the evolutionary process and enhance urban sustainability considering regional factors.

Keywords: Sustainable development; Urban energy; Transport networks; Urban built form

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