

Empowering Smart Cities through Disruptive Technology: Evidence from Local Governments in Slovenia

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Abstract

As cities advance toward smarter and more responsive governance, integrating disruptive technologies into urban systems has become a strategic imperative. Technologies such as artificial intelligence, blockchain, and the Internet of Things hold transformative potential for urban management by enhancing service delivery, promoting transparency, and fostering sustainable innovation. Yet, many local governments face significant institutional, technical, and resource-based challenges in building the capabilities needed for effective adoption. This study investigates how Slovenian municipalities, key agents in the governance of urban areas, develop and strengthen their capacity for adopting disruptive technologies. Building on the Technology Organization Environment framework and adapting it to the complexity of urban ecosystems, we conducted a nationwide survey of 143 public managers across local governments. The analysis, based on structural equation modelling, provides a nuanced understanding of the organisational, technological, and contextual factors that shape digital readiness at the municipal level. The results show that organisational innovativeness and government support are critical enablers of both digital and human capacities essential for smart city transformation. While financial constraints and citizen expectations influence readiness in varied and sometimes unexpected ways, targeted government incentives and clear strategic direction significantly enhance local governments' ability to adopt and integrate disruptive technologies. Notably, rural municipalities face distinct challenges due to resource limitations and varying levels of digital engagement among citizens. This research contributes to the discourse on smart city development by offering a validated framework for assessing municipal readiness for digital innovation. It provides actionable insights for urban policymakers and public managers seeking to align technological strategies with institutional capacities and community needs. Ultimately, the study highlights the vital role of empowered and adaptive local governments in leading inclusive and sustainable digital transformation across urban settings.

Keywords: Smart cities, Disruptive technologies, Urban governance, Local government, Digital transformation

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