

IoT in Smart-City Auckland – Developing an Urban IoT Diffusion Framework

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Abstract

Smart cities integrate technology, sustainability and governance to address urbanisation challenges, employing IoT for real-time monitoring and efficiency. This study explores IoT adoption in Tāmaki Makaurau Auckland, examining benefits, challenges and diffusion patterns across transport, utilities and environmental sectors. Using Rogers’ diffusion of innovations (DOI) framework, it analyses adoption drivers – relative advantage, compatibility, complexity, trialability and observability – through qualitative methods, including literature reviews, open-data analysis and stakeholder interviews. Findings aim to develop an urban IoT diffusion framework, offering insights for scalable, sustainable, smart city strategies. Tāmaki Makaurau initiatives, such as smart traffic systems and water management, highlight IoT’s role in enhancing liveability, resource efficiency and economic growth, positioning it as a model for urban innovation.

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