

ON-DEMAND TRANSPORT AND CIRCULAR ECONOMY: A SUSTAINABLE APPROACH FOR MOBILITY IN LOW-DENSITY AREAS

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Summary: The growing challenges of mobility in low-density areas require innovative, efficient, and environmentally sustainable solutions. On-demand transport (Demand Responsive Transport - DRT) emerges as a flexible mobility alternative that adapts to user needs while promoting accessibility and reducing the inefficiencies of traditional public transport. This study explores the integration of Circular Economy principles into the DRT model, aiming to extend the life cycle of transport resources, optimize energy efficiency, and minimize environmental impact. By analyzing a case study in Coimbra, Portugal, the research investigates the socioeconomic and environmental benefits of DRT, assessing its potential to reduce greenhouse gas emissions, enhance resource efficiency, and improve accessibility in underserved regions. The findings will contribute to the development of efficient and inclusive transport policies, promoting economic viability while fostering sustainability. The study also explores the optimization of routes, and the implementation of vehicle-sharing systems to enhance energy efficiency and reduce environmental externalities. By bridging efficiency, mobility, and environmental concerns, this research seeks to highlight the role of DRT as a key component in sustainable transportation networks, fostering equitable access to mobility while aligning with the goals of a greener and more resource-efficient future.