

Assessing the Environmental Lifecycle of Digital Records Management Systems: E-waste, Energy and Ecological Implications in the UAE

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Abstract:

This paper extends previous research on environmental sustainability in the United Arab Emirates' (UAE) digital records management landscape (Chaterera-Zambuko, 2025) by moving beyond the analysis of government strategies and policies to develop a conceptual understanding of the environmental lifecycle of digital records systems. It examines the ecological footprint of digital recordkeeping encompassing e-waste, energy consumption, and resource use through the integrated lens of lifecycle assessment (LCA), Green ICT theory, and the records continuum model. Drawing from these complementary frameworks, the study proposes a conceptual model that embeds environmental sustainability indicators at each stage of the digital records lifecycle, from creation to long-term preservation and disposition. The paper highlights how the combined application of these theoretical perspectives can illuminate the environmental implications of digital transformation and support the design of greener information infrastructures. By mapping sustainability principles onto the records continuum, it contributes a theoretical foundation for future empirical research and professional practice aimed at minimizing the ecological impact of digital recordkeeping in the UAE and comparable contexts.

Keywords:

Digital records management, environmental lifecycle assessment, e-waste, Green ICT, records continuum model.