A smart warehouse framework, architecture and system aspects under industry 4.0: a bibliometric networks visualisation and analysis

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ABSTRACT

This study contributes to a better understanding of smart warehouse systems and design in a few ways. (1) warehouse underperformance reasons; (2) smart warehouse enablers in Industry 4.0; and (3) the construction of a smart warehouse design from the viewpoint of recommended framework, architecture and system aspects. This study presents a smart warehouse framework, architecture, and system aspects in Industry 4.0. Manufacturing firms require well-designed smart warehouse technology and ecosystem to monitor and control inventory capacity for cyber-physical production environments. However, only a few studies exist to guide the industry on smart warehouse design. The industry remains skeptical of leveraging technology to compete in this digitalisation era. Symptom versus problem and bibliometric networks visualisation and analysis is deployed to observe the thematic patterns. The findings show that inventory mismanagement and communication hurdles between firms and suppliers often cause warehouse underperformance. The insights are useful in extending the literature and designing smart warehouses for creating business competitiveness.

KEYWORDS

Cyber-physical production systems; Industrial revolution 4.0; Inventory management; Smart warehouse; Technological adoption; Visualisation networks

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