

The Impact of Green ERP Systems on Sustainable Supply Chain Management: With Special Reference to Sports Equipment Manufacturing Market

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Abstract

The manufacturing industry for sports equipment, apparel, and fitness technology devices faces significant sustainability challenges due to the use of petrochemical-based materials and high energy consumption. This review highlights the application of green enterprise resource planning (ERP) tools to enhance sustainable supply chain management. Key benefits include a 30% reduction in carbon footprint and a 25% improvement in resource utilization efficiency. Stakeholder surveys reveal critical issues such as high costs and integration difficulties, particularly for small and medium enterprises (SMEs). This study employs a systematic literature review and qualitative analysis to examine existing research, synthesize findings, and identify gaps in the adoption and effectiveness of green ERP systems. The review identifies several research gaps, including the limited availability of affordable solutions for SMEs, insufficient exploration of real-time data sharing for supplier relationship management, and inadequate studies on the long-term impacts or adaptability of green ERP systems in industries beyond sports equipment. Green ERP systems, adapted from conventional ERP systems, aim to optimize efficiency, reduce waste, and quantify emissions, thereby enabling energy conservation and proper waste management. However, their scalability is hindered by high implementation costs and integration challenges for SMEs. Future research should focus on developing cost-effective solutions, implementing real-time data sharing mechanisms, and expanding the adoption of green ERP systems across other industries. By addressing these challenges, green ERP systems can emerge as a vital tool for advancing sustainability and operational performance in the sports equipment sector and beyond.

Keywords: *Green ERP systems, Sustainable supply chain management, Green supply chain integration, SME challenges, Energy efficiency*