Environmental Engineering and Management Journal

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IMPACT OF GREEN TECHNOLOGY INNOVATION EFFICIENCY ON CHINA'S MANUFACTURING GLOBAL VALUE CHAIN POSITION: THE THRESHOLD EFFECT OF ENVIRONMENTAL REGULATION

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Abstract

Improving green technology innovation efficiency (GTIE) is a critical strategy for achieving high-quality development and enhancing China's position in the global value chain (GVC). Using data on China's manufacturing industry covering 2007 to 2023, this study empirically tested both the impact of GTIE improvement on the GVC position and the threshold effect of environmental regulations (ER). This analysis not only expands the research on the relationship between GTIE and GVC but also provides a new paradigm for achieving high-quality development in the manufacturing industry amid changes in ER intensity. Results indicate that an improvement in GTIE enhances GVC position through technological progress, improved energy efficiency, and enhanced export competitiveness. Heterogeneity analysis reveals stronger effects in high-energy-consuming industries. The threshold test indicates that the impact of enhancing GTIE exhibits a threshold effect dependent on ER intensity. When the intensity of ER is below the threshold, improvements in GTIE more significantly promote the position of GVC.

Key words: environmental regulation, global value chain position, green technology innovation efficiency, manufacturing industry

Received: March, 2025; Revised final: December, 2025; Accepted: December, 2025

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