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IMPACT OF SERVITIZATION TRANSFORMATION ON CARBON PERFORMANCE IN CHINESE MANUFACTURING ENTERPRISES

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Abstract

Carbon neutrality is an important strategy for China in addressing global climate change. Moreover, Chinese manufacturing servitization's impact on carbon emissions is imperative for understanding the carbon performance effects of the manufacturing transformation and formulating effective policies. This study innovatively analyzes the carbon performance of manufacturing enterprises undergoing servitization, presenting comprehensive and in-depth empirical support for achieving China's dual carbon goals. From a servitization perspective, we found that deepening and broadening servitization significantly impact carbon performance. The relationship between servitization depth and carbon emission performance exhibits an inverted U shape: while basic service development increases total carbon emissions and intensity, high-level service advancement exerts a "green effect," reducing total carbon emissions and intensity beyond a certain turning point and thereby improving carbon performance. The servitization width's expansion also increases carbon emissions, demonstrating an "expansion effect." State-owned enterprises' servitization reduces carbon emissions, while private enterprises' servitization increases them. Moreover, mature servitization improves resource efficiency and industrial structure optimization. This study contributes to a more comprehensive understanding of the manufacturing transformation and upgrading process and offers new perspectives for policymakers.

Key words: carbon emissions, carbon performance, manufacturing transformation, servitization

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