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THE ECONOMIC  
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WITH INTERNATIONAL PARTICIPATION

April 16-18, 2026 KAYSERİ

THE GLOBAL ECONOMY

*in the age of polycrisis*

ARTIFICIAL INTELLIGENCE • ECOLOGY • FINANCIAL RESILIENCE

PROCEEDING BOOK

Editors

Ömer Burak YEL & Emine ABANOZ



NEW

İSTANBUL  
NİŞANTAŞI  
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Ömer Burak YEL

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## DOES THE CIRCULAR ECONOMY MITIGATE HEALTH EXPENDITURES? EVIDENCE FROM THE EU-15 CONTROLLING FOR INCOME, EDUCATION AND URBANIZATION

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### Abstract

In recent years, the prevailing linear economic system, based on an expansionary model driven by intensive natural resource consumption, has increasingly generated adverse impacts on ecosystems and the global climate. In response to the urgent need to decouple economic growth from environmental degradation and to develop innovative and sustainable solutions, the Circular Economy (CE) has emerged as a significant framework for both preventing and addressing existing environmental challenges. This approach emphasizes the elimination of waste and pollution, the use of renewable energy sources, the extension of product life cycles through closed-loop systems, and the regeneration of natural capital. The healthcare sector, however, represents a substantial source of environmental pressure due to its resource-intensive structure, characterized by high levels of single-use medical products, hazardous and chemical waste generation, and significant energy consumption. The integration of circular economy strategies into healthcare systems holds considerable potential for structural transformation, contributing not only to environmental sustainability but also to improved cost efficiency in healthcare expenditure. In this context, the study aims to examine the impact of the circular economy on health expenditures in EU-15 over the period 2010–2022. Income, education, and urbanization levels are selected as control variables. The empirical analysis employs a dynamic panel data approach using the Difference Generalized Method of Moments (Difference GMM) estimator developed by Arellano and Bond (1991) to address potential endogeneity and unobserved heterogeneity. The findings indicate that healthcare expenditures in the EU-15 countries exhibit strong persistence, being significantly influenced by their past values. Moreover, circular economy practices are found to have a statistically significant negative effect on healthcare expenditures. Per capita income also demonstrates a reducing effect on healthcare expenditures. Overall, the results suggest the existence of a direct linkage between sustainable environmental policies and reductions in healthcare system expenditures.

**Keywords:** Circular Economy, Health Expenditure, Dynamic Panel Data Analysis.

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