

The Impact of Environmental and Socioeconomic Factors on Infant Mortality in the MENA Region: A Panel VAR Analysis

Apu Chandra Das¹, Atia Sultana Addyene², Debabrata Das³, Shipra Barman⁴ and Mohammad Abdul Hannan Pradhan⁵

ABSTRACT

This study assesses the impact of environmental and socioeconomic factors on infant mortality in nineteen MENA countries. Annual data from 1990 to 2021 were analyzed using a Panel Vector Autoregression (PVAR) model. The dependent variable is infant mortality, while the explanatory variables are carbon dioxide (CO₂) emissions, renewable energy use, health care spending, and urban population growth. The Pedroni cointegration tests confirm there is no long-run equilibrium justifying the use of PVAR. Moreover, impulse response functions show that shocks to CO₂ levels lead to increases in the death rate that persist in the long term, while increases in healthcare and renewable energy expenditures lower the death rate over time. Urban death rates first rise, then fall as urbanization increases. The forecast error variance decomposition suggests that changes in the death rate are driven by an increasingly social and economic nature. This research contributes much-needed cross-disciplinary insights about the drivers of infant mortality. In particular, CO₂ emissions, healthcare costs, renewable energy, and urbanization are the four drivers affecting infant mortality in MENA. These findings underscore the need for policies promoting health equity, sustainable urbanization, and environmental management in the Global South.

¹ Department of Economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. E-mail: apud0896@mail.com

² Department of Economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. E-mail: atiaaddyene@gmail.com

³ Department of Economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. E-mail: daspollob525@gmail.com

⁴ Department of Economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. E-mail: barman.shipra07@gmail.com

⁵ Department of Economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh E-mail: hannan-eco@sust.edu

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