Empirical Economics Letters, 24 (11): pp. 107-124, (November 2025) ISSN 1681 8997
https://doi.org/10.5281/zenodo.17673911

Sustainable Development and Renewable Energy: An Empirical Evaluation of Environmental and ESG Performance

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Abstract: This article examines the impact of renewable energy on sustainability in the MENA (Middle East and North Africa) region, an area facing significant environmental and economic challenges. The importance of this research lies in the necessity for countries to diversify their energy sources to address sustainability and energy security challenges. To accomplish this, the study utilizes a panel data analysis methodology, comparing fixed and random effects models, while applying the Hausman test to determine the appropriate model. Data were collected over a 24-year period (2000-2023) from various sources, including TheGlobalEconomy.com, DataStream, and the World Bank. The sample includes 18 countries in the MENA region, with a total of 432 observations. The results indicate that increasing renewable energy generation capacity has a positive impact on ESG (environmental, social, and governance) performance and contributes to environmental sustainability. On the other hand, natural gas production has a negative impact on the environment due to methane and CO_2 emissions. Furthermore, wind and solar production capacities show significant potential, but their impact depends on effective management of environmental impacts. Thus, this research highlights the importance of the energy transition in the MENA region and offers recommendations for maximizing the benefits of renewable energy.

Keywords: Renewable Energy, Sustainability, ESG, Energy Transition