

The impact of energy consumption, financial development, and foreign direct investment on environmental quality: fresh insights from static and dynamic panel models

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Abstract:

The current global trend shows that there is a tremendous increase in CO₂ emission and that the level of emission is increasing with various development factors such as consumption of non-renewable energy, financial development, and FDI. However, very few studies have examined the impact of development factors that increase CO₂ emissions, especially for African Countries. Therefore, this study contributes to the existing literature by examining the impact of these development factors (i.e., renewable energy consumption, non-renewable energy consumption, FDI, and financial development) on CO₂ emission while also considering the importance of institutional quality and technical advancement in African countries. The study also addresses the issues of whether institutional quality and technological advancement have a role in protecting the environment and achieving faster economic growth. A panel between 1996 to 2020 and a model for estimation is used. Results of the analysis indicate that using renewable energy is a fundamental tool in promoting sustainable development by reducing environmental pollution. However, Financial developments and Foreign Direct investment positively impact CO₂ emissions. Nevertheless, the majority of the institutional quality estimates are significant for reducing environmental pollution. Technological innovation is revealed as environmental degradation reducer and encourages sustainable growth. The findings call for African policymakers to formulate policies that encourage the use of renewable energy, fund renewable energy projects, and promote technology innovation through financial institutions to achieve sustainable development.

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