# The The impact of energy consumption on environmental quality: empirical evidence from the MINT countries


## ABSTRACT

Rapid increases in energy consumption and economic growth over the past three decades are considered the driving force behind rising environmental degradation, which remain a threat to people and healthy environment. This study investigates the impact of energy consumption on environmental quality in the MINT countries using a panel PMG/ARDL modelling technique, and the Granger causality test spanning from 1971 to 2017. The empirical results confirm the existence of long-run nexus among the variables employed. The results also reveal that economic growth, energy consumption and bio-capacity have a positive and statistically significant effect on environmental degradation during the long run period. We find that a 1% increase in primary energy consumption leads to 0.4172% increase in environmental deterioration in the long-run period, but it is insignificant in the short run. This implies that energy consumption deteriorates environmental quality through a negative effect of ecological footprint. The result also suggests that as MINT countries increase the use of energy to accelerate pace of economic growth, environmental quality would deteriorate through increased ecological footprints. The coefficient of the error correction term (ect) is negative and significant (− 0.2306), suggesting that ecological footprint, a measure of environmental degradation would converge to its long-run equilibrium in the MINT region by 23.06% speed of adjustment every year due to contribution of economic growth, energy consumption, urbanization and biocapacity. The Granger non-causality test results reveal a unidirectional causal relationship from economic growth, energy consumption, and urbanization to ecological footprint and from economic growth to biocapacity. The results further show bi-directional causality between biocapacity and ecological footprint as well as between biocapacity and economic growth. Moreover, urbanization causes economic growth and biocapacity Granger-causes urbanization. Based on these findings, policy implications are adequately discussed.



**Keyword:** Energy consumption; Economic growth; Pooled mean group; MINT countries; Environmental degradation