

Fiscal Decentralisation–Institutional Quality–Human Capital and Carbon Emissions Nexus: A Comparative Study of G7 and E7 Economies

Abstract for General Public

Humanity living on planet earth faces severe environmental issues due to rising global temperature, and changing of climate due to the alarming rate of carbon emissions into the natural atmosphere. Economies across the globe depict heterogeneous share in global carbon emission digits due to diverse economic structure. In the last few decades, many governments around the globe have given up the responsibilities of tackling environmental policies to the lower tiers, i.e. subnational government. Compared with technical advancement, policy formulation and institutions of the government are frequently neglected, because they are indirect and difficult to assess from the perspective of their effects on energy efficiency and emission control. However, because of the increase in global warming, environmental federalism is being studied relatively actively now, and there is debate among policymakers, researchers, and academic institutes. Environmental federalism refers to the intersection between environmental and public economics intending to distribute power over environmental resources between subnational and national governments. Hence, the association between environmental pollution and fiscal decentralization has attracted the attention of environmental economists. The present study aims to investigate the role of fiscal decentralization, institutional quality and human capital in carbon emissions over the period of 1980-2021 for a panel of Group of 7 member states and 7 Emerging economies. The multiplicative terms of key explanatory variables will be introduced in the econometric models to capture more specific impact on carbon emissions. Moreover, this study will provide new dimension to compare and discuss the empirical findings for both developed and developing economies (Group of 7 member states and 7 emerging economies). The panel data is first checked for various diagnostic test to consider the most suitable and appropriate econometric estimation techniques based on the nature of the data. The econometric estimation techniques will include panel cointegration check, Cross-sectional Augmented Autoregressive Distributed Lag Order Model, Pooled Mean Group, Common Correlated Effect Mean Group, and Fixed Effect generalized Least Square for robustness check. I expect that the multiplicative term of institutional quality and fiscal decentralisation is likely to decrease carbon emissions in the cases of both developed and developing countries, Fiscal decentralisation through the ‘race to the bottom’ approach is likely to increase carbon emissions, Non-linear fiscal decentralisation will negatively affect carbon emissions through the ‘race to the top’ approach, Human capital and renewable energy research and development expenditures shall have a negative effect on carbon emissions, The interactive or joint effect of fiscal decentralisation with institutional quality, human capital, and renewable energy R&D shall have a negative relationship with carbon emissions. In brief, this study will add into the global struggle of curbing environmental pollution by adding a new dimension (by introducing the multiplicative terms of explanatory variables) that will provide a clear understanding for policy makers and governments of both developed and developing nations.