

## ABSTRACT

Economies are continuously facing stress due to increased environmental risks. Protecting the environment become a global phenomenon, and environmental degradation is occurring at a faster pace than before which needs to be sustained. SDGs were developed to meet the current challenges faced by the world. All countries are moving towards eco-innovation which is in line with the SDGs to promote sustainable development, but it is easily accessible to the ones that achieve efficiency gains and lie on the right side of EKC. This study empirically tested the impact of eco-innovation on greenhouse gas emissions among European Union countries, covering a period from 2012-19. Driscoll-Kraay and PCSE estimation techniques were applied to correct for heteroskedasticity, serial correlation and cross-sectional dependency and get valid estimates. The results found that all dimensions i.e., activities side, output side, resource efficiency side, and socio-economic side of eco-innovation are significantly contributing towards reducing greenhouse gas emissions except the input side. The socio-economic outcome is the most effective dimension for EU countries to reduce greenhouse gas emissions. The output side and activity side are the second and third highest contributors for EU countries to reduce greenhouse gas emissions respectively. Resource efficiency is the weakest contributor to reducing environmental degradation among others after the input side. Energy consumption has a positive and significant relationship with greenhouse gas emissions whereas environmental taxes and economic growth are significantly contributing to reducing greenhouse gas emissions. These results are helpful from the perspective of policymakers as it assists them in making strategies accordingly.