

Beyond the Environmental Kuznets Curve in South Asian economies: accounting for the combined effect of information and communication technology, human development and urbanization

**Abstract**

The aim of this study is to investigate the role of information and communication technology (ICT) and human capital development on environmental degradation (CO<sub>2</sub>) using the Environmental Kuznets Curve (EKC) framework in line with the 21st Conference of the Parties to the UNFCCC (COP21). Five South Asian countries namely: Bangladesh, India, Nepal, Pakistan and Sri Lanka were considered in the context of the present study between the annual time period of 1990 to 2016. Pedroni cointegration test and Kao's residual cointegration test are used to assess long term relationship while Dumitrescu and Harlin (Econ Model 29:1450–1460, 2012) is used to test causality relationship between the variables. Empirical findings from the study showed significant effects of ICT import, renewable energy usage and human development decrease CO<sub>2</sub> levels while ICT export and urbanization increase carbon emission levels in the long run. Furthermore, a significantly positive association is observed between economic growth and CO<sub>2</sub> emission while the square of national income exerts a significantly negative effect on environmental degradation, which supports the EKC for the South Asian states. From a practical implication context, policymakers should not only concentrate on their economic growth trajectory improvement but also enhance the improvement of their ICT infrastructure, invest more in renewable energy sources, follow policies that would help the countries to raise human development standards, as well as consciousness for environmental sust

ainability should be pursued.