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The Impact of Information and Communication Technologies (ICTs) on Environmental Pollution: Evidence from Developed Countries

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ABSTRACT

This study aims at analyzing the impact of internet users, employed as a proxy for information and communications technologies (ICTs), on CO₂ emissions for a panel of developed countries, spanning the period from 1990 to 2015. On one hand, information technologies (ITs) can produce more efficient economic growth with less energy demand. In this respect, using energy in a more efficient way across all sectors of the economy, IT sector provides a potential solution to reduce CO₂ emissions level. On the other hand, given that the installation and the operation of new ICT devices are characterized as highly energy intensive, air pollution may increase because of increased electricity demand. Therefore, the net impact of the ICTs on air pollution is not clear. Using panel data approaches such as unit root, cointegration and causality tests, we analyze whether internet usage alleviates CO₂ emissions level of developed countries. Relying on the result that increased Internet access results in lower levels of air pollution, we suggest some crucial policy implications to the governments of developed nations. For instance, increased investment in the ICT sector could be a plausible channel to mitigate air pollution level.

KEYWORDS Information and communication technology; air pollution; developed countries; panel data models; energy efficiency

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