

Title: Is digitalization essential for abating carbon emission growth in South Asia?

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Abstract: Output generation processes across South Asia are deemed unclean (highly emission-intensive) due to excessive reliance on fossil fuels. Thus, decarbonizing the growth processes of countries within this region has critical emphasis among policymakers. However, since the South Asian countries are not yet ready to undergo the renewable energy transition in full form, it is unlikely that their annual carbon discharge levels will subside anytime soon. Under such constraining circumstances, these countries need to limit the rate at which their respective carbon emission levels rise each year. Therefore, the impacts of digitalization on annual carbon emission growth rates in selected South Asian countries are assessed in this study. Overall, considering internet penetration rate as a proxy of digital technology adoption, the results confirm that policies aimed at digitalizing the concerned South Asian economies not only exert emission growth rate-reducing impacts via a direct channel, but also indirectly reduce emission growth rates by making natural resource-based industries more productive, expediting the energy sector greening processes, greening the financial sectors, making corruption controlling measures within institutions more effective, and limiting urbanization-induced environmental quality-worsening effects. Therefore, it is relevant for the South Asian governments to emphasize on digitalization while simultaneously ensuring that green digital technologies are adopted within the major macroeconomic sectors across this region.

Keywords: Digitalization, Carbon emissions, Natural resources, South asiaInteraction effect

DOI: <https://doi.org/10.1016/j.heliyon.2024.e39012>

<https://www.sciencedirect.com/science/article/pii/S2405844024150438>