

ABSTRACT

Climate change, driven by rising carbon emissions, has become one of the most pressing global challenges, particularly for developing countries that often rely on carbon-intensive economic growth. This study seeks to provide a comparative analysis of the impact of institutional quality on carbon emissions in three regional groupings of developing countries: Southeast Asia (ASEAN), South Asia (SAARC), and South America (UNASUR).

Using panel data from 2004 to 2023, the research applies the System Generalized Method of Moments (System-GMM) to overcome issues of dynamic panel bias and potential endogeneity. Institutional quality is measured through three indicators from the Worldwide Governance Indicators (WGI): control of corruption, voice and accountability, and political stability. Several control variables are also included, namely renewable energy usage, economic growth, foreign direct investment (FDI), trade openness, and a dummy variable for Sustainable Development Goals (SDGs) ratification.

The findings reveal that the influence of institutional quality is context-dependent and varies across regions, underlining the importance of a comparative approach. Control of corruption and voice and accountability significantly reduce emissions in ASEAN and UNASUR, whereas political stability is associated with higher emissions in ASEAN. Furthermore, renewable energy usage contributes to emission reductions in ASEAN and SAARC but paradoxically increases emissions in UNASUR. These results underscore that while strong institutions are vital for low-carbon development, their effectiveness is shaped by regional governance dynamics and structural characteristics.

Keywords: *carbon emissions, institutional quality, System-GMM, comparative study.*

