Globalization and environmental problems in developing countries

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Introduction

Global climate change is among the leading problems of the globe in the twenty-first century. The main reason for climate change is attributed to global warming. Given that the global warming issue is mostly related to environmental degradation, global economies have attempted to provide specific solutions via environmental agreements, e.g., the Paris Agreement in the 2015 United Nations Climate Change Conference. Meanwhile, the number of empirical studies on environmental degradation determinants has increased, especially since the early 2010s.

Environmental degradation arises at the early stage of economic development when the income per capita reaches the upper-middle-income level, where environmental degradation begins to fall. This phenomenon occurs because global economies plan to generate business and employment opportunities rather than support environmental quality at the early development stages. However, ecological awareness increases as income also increases, making it the fundamental reason for reducing environmental degradation in the later stages of economic development (Chen et al. 2020).

At this stage, globalization and international trade indicators are considered as the leading determinants of

environmental degradation. However, measuring international trade and globalization is a new research task after the Global Financial Crisis of 2008–9. Empirical papers have used different globalization indicators. The subject is open to new gauges and measures (see, e.g., economic complexity in Can and Gozgor 2017; Gozgor 2018; export concentration in Apergis et al. 2018; export diversification in Gozgor and Can 2016; export quality in Gozgor and Can 2017; Fang et al. 2019; trade potential in Gozgor 2017). There is almost no consensus among researchers on the best measure of globalization and its impact on developing countries' environmental degradation. This special issue's main objective is to provide different aspects of globalization and globalization's environmental degradation effects in developing countries.

The first paper in this special issue, by Fang et al. (2021), analyzes the role of economic complexity in energy demand using a panel dataset of 25 OECD countries, spanning the period 1978 to 2016. The authors find that per capita income positively affects energy demand, while energy prices and economic complexity negatively affect it. The authors conclude that promoting technological innovation (i.e., higher economic complexity) will decrease the OECD countries' energy demand.

The second paper, by Rehman et al. (2021), examines the relationship between sectoral-level energy consumption of oil and natural gas and Pakistan's economic growth from 1980 to 2016. The authors document that oil consumption in the agriculture and power sectors have positive effects on economic growth. Similarly, farmers, households, and industry sectors' natural gas consumption positively affect Pakistan's economic growth.

The third paper, by Shang and Xu (2021), proposes a new model to measure ecotourism's environmental pollution impact. The authors first obtain environmental pollution data from the scenic areas of ecotourism. The authors then use these conversion data to construct a model to evaluate the pollution impact of ecotourism on scenic spots. The findings illustrate that the new proposed model measures the environmental pollution impact better than the previous models.

The fourth paper, by Payne and Apergis (2021), investigates the convergence of per capita carbon dioxide emissions

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in analyzing stochastic and club convergence within a panel framework for developing economies, i.e., the low-income, the lower-middle-income, and the combined panel of countries. The authors conclude that there is a significant geographic proximity among many developing economies within the respective convergence clubs.

The fifth paper, by Tarazkar et al. (2021), examines the effect of population age structure on environmental degradation in a panel of ten Middle East countries from 1990 to 2014. The authors find that children and working-age populations positively impact environmental pollution; however, older people hurt CO₂ emissions. The authors conclude that policymakers in the Middle East region should consider the population age structure to decrease carbon dioxide emissions.

The sixth paper, by Aslan and Altinoz (2021), examines the relationships among natural resources, gross capital formation, globalization, and economic growth in the developing countries in different continents from 1980 to 2018. The Panel Vector Autoregression (PVAR) method findings indicate that natural resources and globalization positively impact economic growth in European, Asian, and American countries. There is bidirectional causality between globalization and economic growth. Also, there is bidirectional causality between capital formation and growth in Europe and Asia and between natural resources and growth in Asia and America. However, there is unidirectional causality from growth to natural resources in Europe, from capital formation to growth in Africa and America, from growth to natural resources in Europe, and from natural resources to economic growth in America. The paper's novelty is that new growth models should include the role of natural resource rents and globalization.

Tourism development is an essential tool in promoting economic growth; however, it may also affect environmental degradation and energy indicators (Li et al. 2019). The last paper, by Teng et al. (2021), examines the effects of domestic tourism, international tourism, economic growth, and CO₂ emissions on China's regions from 2006 to 2017. The Panel Vector Autoregressive Model's findings indicate that promoting international tourism and domestic tourism increases economic growth and CO₂ emissions.

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