

A Comparative Study of the Impact of Membership in International Climate Change Treaties and the Environmental Kuznets Curve (EKC) in Line with Sustainable Development Theories

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Abstract : In this research, we have calculated the effect of membership in international climate change treaties for 20 developed countries based on the human development index (HDI) and compared this effect with the process of pollutant reduction in the Environmental Kuznets Curve (EKC) theory. For this purpose, the data related to The real GDP per capita with 2010 constant prices is selected from the World Development Indicators (WDI) database. Ecological Footprint (ECOFP) is the amount of biologically productive land needed to meet human needs and absorb carbon dioxide emissions. It is measured in global hectares (gha), and the data retrieved from the Global Ecological Footprint (2021) database will be used, and we will proceed by examining step by step and performing several series of targeted statistical regressions. We will examine the effects of different control variables, including Energy Consumption Structure (ECS) will be counted as the share of fossil fuel consumption in total energy consumption and will be extracted from The United States Energy Information Administration (EIA) (2021) database. Energy Production (EP) refers to the total production of primary energy by all energy-producing enterprises in one country at a specific time. It is a comprehensive indicator that shows the capacity of energy production in the country, and the data for its 2021 version, like the Energy Consumption Structure, is obtained from (EIA). Financial development (FND) is defined as the ratio of private credit to GDP, and to some extent based on the stock market value, also as a ratio to GDP, and is taken from the (WDI) 2021 version. Trade Openness (TRD) is the sum of exports and imports of goods and services measured as a share of GDP, and we use the (WDI) data (2021) version. Urbanization (URB) is defined as the share of the urban population in the total population, and for this data, we used the (WDI) data source (2021) version. The descriptive statistics of all the investigated variables are presented in the results section. Related to the theories of sustainable development, Environmental Kuznets Curve (EKC) is more significant in the period of study. In this research, we use more than fourteen targeted statistical regressions to purify the net effects of each of the approaches and examine the results.

Keywords : climate change, globalization, environmental economics, sustainable development, international climate treaty

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