The pathway toward bioenergy growth: does information and communication technology development make a difference in EU economies?

ABSTRACT

Information and communication technology has been ascribed a crucial role in raising resource and energy efficiency and thereby contributing to environmental abatement. This study investigates the effect of information and communication technology on bioenergy industry sustainability in twenty-seven European Union members from 1990 through 2019. Using the panel fully modified ordinary least squares, the outcomes demonstrate that bioenergy industry growth inclines with an increase in information and communication technology input. While the bioenergy industry is found to be decreasing carbon dioxide releases. Economic growth, institutional quality, and human capital are seen to improve the bioenergy industry growth. On the other hand, bioenergy industry development is found to be mitigating carbon dioxide and pollution. The result indicates that bioenergy industry sustainability in EU region members can be well inclined by improving the information and communication technology development in production procedures. This will later help in tackling environmental pollution and climate change. The assessed outcome is viewed to be valid as they were confirmed by panel dynamic ordinary least squares and pooled ordinary least squares. The investigation proposes for European state participants to increase the part of information and communication technology input in their bioenergy industry to increase the growth and sustainability levels. Policymakers in the EU region countries should also invest more in information and communication technology of the bioenergy industry to improve its production and availability. The government of the EU region can similarly focus on technical efficacy, productivity, and sustainability of information and communication technology to achieve bioenergy growth, security, and sustainable development.

Keyword: Bioenergy industry; ICT; Sustainability; EU countries