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“Determinants of eco-innovation from a European-wide perspective – an analysis based on the Community Innovation Survey (CIS)”

Abstract

Eco-innovations lead to less environmental impacts or to a reduction of energy use and are therefore crucial for climate protection. They help to remedy negative external environmental effects of economic activities. In many cases, these negative external effects have to be internalized by regulation measures so that the corresponding eco-innovation activities are not realized because of market opportunities. On the other side, especially young and dynamic eco-innovation fields such as the development of renewable energies are also economically benign because these eco-innovations may lead to cost-savings. Recently, the determinants of eco-innovation activities have been widely explored for single countries but there is still a lack of country comparisons mainly because of data restrictions.

In 2009, a special module on eco-innovation has been included in the Community Innovation Survey (CIS) allowing a comparison of the determinants of eco-innovation in 19 different European countries. Firstly, our analysis shows the specialization of these countries with respect to nine different eco-innovation fields. In a second step, the determinants of these different eco-innovation activities in the involved countries are analyzed using adequate econometric methods. Do different policy styles are important, which influence does the sector structure play, how important is the availability of information sources for eco-innovation, do different development levels affect eco-innovation activities?

Our analysis especially focuses on Eastern European transformation countries because the determinants of eco-innovation in these countries have not yet been systematically analyzed. Some first and interesting results show that especially Hungary and the Czech Republic seem to use the chances of eco-innovation. Hungary specializes in eco-innovation activities within firms to reduce energy use and in replacing materials with hazardous substances. The Czech Republic seems to specialize in recycling activities. The Baltic countries, Bulgaria and Romania are still much less eco-innovative compared to the European average. For all considered East-European countries cooperation activities and subsidies seem to be more important compared to the European average. Furthermore, eco-innovations in Eastern European countries are much more regulation-driven compared to the European average whereas except Hungary, market demand plays a less important role.

The detailed analysis of eco-innovation determinants by countries and different eco-innovation fields can be used to derive country-specific policy recommendations aiming at the improvement of the eco-innovation performance in the respective countries.

Keywords: eco-innovation, probit models, country analysis

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