



Environmental Benefits of Forms of Innovations in French Manufacturing Firms

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Abstract

This paper aims at studying the benefits of forms of innovations on the environment. Using two waves of Community Innovation Survey - CIS datasets, we are able to investigate the impact of four forms of innovations (Product, Process, Organizational and Marketing) during the 2004-2006 period on two types of environmental benefits (for the firm and for the end user) during the period 2006-2008. Our findings indicate that product innovation has no significant impact on environmental footprint whereas three other forms: process, organizational and marketing innovations have a positive and significant impact. Companies that implement specific procedures dedicated to measure and control their environmental impact are more prone to reduce their negative outcomes on the environment.

Key words: Environmental Innovation; Forms of Innovation; Determinants; Empirical analysis; France.

JEL codes: Q55; D22; C10.

Introduction

Firms have received a lot of pressure from different market actors (e.g. customers, stockholders, governments, etc.) to improve their impact on the environment. One of the major components by which firms could act in harmony with the environment is through investment to different kinds of environmental innovations. Currently, environmental innovations seem to have increased in quantity and quality. Many (overlapping) reasons could explain these phenomena such as - increasing consciousness regarding the impact of economic activities on the "ecological" environment, - regulations such as constraints and/or incentives to develop greener innovations, - internal incentives and strategies like cost reductions and/or market opportunities enabling to develop new eco-friendly products and increase sales and revenues. Moreover, investment in environmental innovation is often seen as the fastest and most cost-effective way to achieve competitive advantage on the market (e.g. Porter and van der Linde, 1995). Not surprisingly, environmental innovation and its policy implications has become a rich field of investigation.

This previously mentioned literature underlines the importance of environmental innovation investment. However, there are relatively few studies that capture empirically the features that increase a firm's probability to invest in environmental innovation. Our research aims to answer the following questions: Which forms of innovations lead to which kind of environmental benefits? Is there a time lag between forms of innovations and environmental benefits?

It is important to investigate the policies that encourage investment in environmental innovation in order to reduce the impact on the environment since these policies may differ from "traditional" innovations (Horbach, 2008). To answer empirically these questions we include in our analysis those factors that have been recorded in the relevant literature as possible incentives of environmental innovation investment. Then we turned to the literature on forms of innovations (product, process, organizational, marketing) and their associated environmental benefits for the firm and for the end-users.