

Determinants of Energy Efficiency levels and Economic Performance: Empirical evidence from Italian Manufacturing Sector

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This paper examines the determinants of energy efficiency and the relationship between this peculiar form of eco-innovation and productivity for a sample of Italian manufacturing firms. Scant attention from literature has been devoted to the differences in firms energy structure, whereas on the productivity side estimate results are often ambiguous or contrasting. In our analysis we employ an innovative energy efficiency indicator based on firms energy consumption. We carry out the econometric analysis by using both OLS and 2SLS regressions on an original data set built by us by merging data from several databases, taking advantage of the energy audits data collected by Enea (Italian National Agency for New Technologies, Energy and Sustainable Economic Development); this study represents the first attempt to use these energy related data. We also focus on the role of firms dimension and networking activities designed to help them in overcoming barriers related to their size. Our empirical results show that determinants of energy efficiency are shared in common between energy intensive and non-intensive firms. Estimates also emphasised the role of companies size in determining energy efficiency levels, reinforcing the literature that stress the needs of cross-cutting policies to remove obstacles to better energy performance for SMEs (see e.g. Veugelers, 2012; Costa-Campi et al., 2015). Furthermore, we find a positive relationship between energy efficiency and firms labour productivity, together with this latter and both energy and environmental oriented firms behaviours, whereas from our results, networking activities do not play a key role.