

What Affects Industrial Energy Efficiency Implementations: Evidence from Turkey?

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Abstract

This paper investigates barriers to and motivations for energy efficiency implementations in the industry. We developed a questionnaire based on a broad approach to modeling the determinants of energy efficiency improvements by taking into account all possible barriers and drivers proposed by the literature so far. By using it, we surveyed all Turkish industrial enterprises which have received state support at least once for Efficiency Improvement Project (EIP)s since 2009 and applied the PLS-SEM methodology to the primary data. The results of this study might be used by a party of the Paris Agreement to achieve its net-zero emissions target and in fighting against climate change. In particular, this study reveals that increasing awareness, improving techno-economic capability, reinforcing subsidies and incentives, mitigating economy, information, and competence-related issues would result in improving energy efficiency. Alleviating high market risks and energy price uncertainties and coping with less profit perception might create a good climate for energy efficiency investments. If the performances of energy efficiency projects, sectoral experiences, and good practices about them, energy conservation opportunities through them are shared among the firms, energy efficiency improves. Training technical personnel and subsidizing the education costs of employees also remove several barriers to energy efficiency implementations.

Keywords: Industrial energy efficiency, Barriers, Motivations, Drivers, SMLEs, PLS-SEM

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