

Energy efficiency for the poor: Varying subsidies and procedures in a refrigerator replacement program*

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May 18, 2022

Abstract

We study the effects of varying the subsidy level and program procedures on the performance of a national refrigerator replacement program targeted at improving energy efficiency in low-income households in Germany. Successful participation for eligible households, screened via a home energy audit, has two stages: an enrolment stage that leads to a replacement voucher and the voucher redemption stage following replacement. Exploiting two exogenous temporal discontinuities in voucher value (subsidy), enrolment and redemption procedures, we examine the replacement decisions of 77,000 eligible households. Increasing the subsidy by 50 percent raises the rate of replacement among eligible household by 9 to 16 percentage points. Changing procedures – from automatic to elective enrolment and from a three-month renewable to a two-month non-renewable voucher – raises the success rate by 4 to 10 percentage points. We conclude that low-cost changes in procedures that target the behavioral responses of low-income households represent unexploited economies in program design.

Keywords: Energy efficiency, low-income households, durable replacement, energy poverty, technology adoption.

JEL classification: C25, D15, H23, O33, Q20

*This research has been funded by the Fritz Thyssen Foundation. The authors thank Peter Heindl for his support in the initiation of this cooperation. Correspondence: bettina.chlond@awi.uni-heidelberg.de.