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A choice experiment

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Boosting long-term-oriented thinking to promote home energy retrofit: A choice experiment

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Abstract

In the built environment sector, enhancing energy efficiency through energy retrofitting is a key strategy to mitigate climate change. Despite the efforts made by local municipalities to offer technical and financial support, the rate of home energy retrofit remains low. The decision to undertake home energy retrofit is complex for homeowners. It involves high upfront financial and nonfinancial costs, as well as various benefits over the long term. Substantial costs and ambiguous benefits may prevent homeowners from investing in retrofit measures. Moreover, existing research and policy interventions have rarely accounted for the nonfinancial costs of energy retrofitting. Therefore, this study aims to understand homeowners' evaluation of nonfinancial transaction costs against financial upfront investment costs. To this end, we design a discrete choice experiment, in which recruited homeowners are presented with a series of decision-making scenarios where they must choose their preferred investment option from two alternatives, alongside the option to maintain the current status quo (no investment). For each retrofit package, we provide information on five attributes: upfront investment cost, time investment, disruption during implementation, energy bill savings, and energy independence. Furthermore, we investigate whether scalable behavioural interventions can be designed to boost homeowners' long-term-oriented thinking, thereby increasing their tolerance to short-term costs. A treatment is designed to emphasise long-term financial and nonfinancial benefits of energy retrofitting. We expect that boosting long-term thinking will reduce the negative effects of upfront investment cost, time investment, and disruption on individual utilities, thus increasing homeowners' preferences for energy retrofit investments.

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