

Main result

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December 6, 2024

1 Paper

The replicated paper is the following:

Berkouwer, Susanna B., and Joshua T. Dean. 2022. "Credit, Attention, and Externalities in the Adoption of Energy Efficient Technologies by Low-Income Households." *American Economic Review*, 112 (10): 3291–3330.

2 Heterogeneity with respect to level of education

Berkouwer and Dean used the following specification to evaluate the causal effect of credit and attention on Willingness-to-pay for energy-efficient technology:

$$WTP_i = \alpha_0 + \alpha_1 Credit_i + \alpha_2 Attention.to.benefits_i + \alpha_3 Attention.to.costs_i + \alpha X_i + \varepsilon_i$$

Where $Credit_i$ is a dummy variable for having received a credit offer for an individual, $Attention.to.benefits_i$ the dummy to receive attention-to-benefit treatment, $Attention.to.costs_i$ the dummy to receive attention-to-cost treatment, and X_i is a set of control variables that include baseline savings, income, risk aversion, credit constraint, and the number of adults and children.

Heterogeneity analysis helps us understand how different groups react to interventions, by looking at how the impact varies across different subgroups. In this case, analyzing how education levels affect willingness to pay (WTP) is relevant because education shapes how people perceive the value of technologies. Those with higher education may better understand the long-term benefits and savings of energy-efficient options, making them more willing to invest. On the other hand, individuals with lower education levels might focus more on the immediate costs or not fully recognize the future savings. This analysis can guide policymakers in designing strategies.

A two-sided mean comparison across education levels reveals that the mean WTP differs between individuals with completed primary education and those without, but remains the same when comparing individuals with some secondary education to those with no secondary education, as well as between individuals with completed secondary education and those without.

To investigate the variation in willingness to pay (WTP) for energy-efficient technology across different education levels, dummies for primary education, some secondary education, and secondary education are introduced, along with their interactions with Credit. This approach allows for an assessment of how the effect of the treatment—whether an individual received the credit intervention—differs depending on the individual's education level.

$$WTP_i = \alpha_0 + \alpha_1 Credit_i + \alpha_2 Attention.to.benefits_i + \alpha_3 Attention.to.costs_i + \beta_1 Level.of.education_i + \beta_2 Level.of.education_i * Credit + \alpha X_i + \varepsilon_i$$

3 Result

The estimation shows that the level of education does not have an impact on WTP. The treatment effect is not different between different levels of education. Someone who has completed primary education

Table 1: Causal impact of credit and attention on WTP using Stata

	(1)	(2)	(3)	(4)
Credit	12.54*** (0.67)	11.48*** (1.19)	12.06*** (0.87)	12.74*** (0.78)
Attention to benefits	0.44 (0.83)	0.45 (0.83)	0.45 (0.83)	0.46 (0.84)
Attention to costs	-0.27 (0.77)	-0.20 (0.77)	-0.23 (0.77)	-0.23 (0.77)
Completed primary		-0.20 (1.18)		
Completed primary x credit		1.54 (1.44)		
Some secondary			0.36 (1.11)	
Some secondary x credit			1.30 (1.36)	
Completed secondary				0.73 (1.22)
Completed secondary x credit				-0.65 (1.52)
Observations	955	953	953	953
Control Mean				
Sample	Full	Full	Full	Full

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

has a similar WTP to someone who has not when they have both received the credit treatment. Same for people who have some secondary and completed secondary compared to people that have not started or completed secondary.