

Essays on Environmental and Behavioral Economics

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ACADEMIC THESIS

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Encouraging adoption of fuel-efficient vehicles: A policy evaluation from Ethiopia

The extent of vehicle ownership is increasing in many developing countries. Most of the increase takes place through import of second-hand vehicles that are usually fuel-inefficient and have poor emissions standards. This is creating enormous environmental pressures, since most developing countries also lack the necessary policies to regulate the sector. This study investigates the effect of a recent policy reform in Ethiopia that aimed at encouraging adoption of cleaner vehicles. In March 2020, Ethiopia introduced a new vehicle excise tax that linked the excise tax rate to engine size and age of vehicles, imposing lower rates on 'fuel-efficient' vehicles and higher rates on 'fuel-inefficient' ones. Exploiting the quasi-experimental nature of the reform and employing a difference-in-differences design, the study investigates the reform's effect on vehicle ownership and composition of the vehicles, and in reducing CO2 emissions. The results show that while the reform has no significant effect on total vehicle ownership, it has a significant effect in increasing the adoption of newer vehicles. We also find no significant increase in the adoption of smaller-engine vehicles. The reform led to no significant reduction on CO2 emissions intensity of the vehicles. The reform, however, significantly increased adoption of small-engine but new vehicles - relatively the most 'fuel-efficient' alternatives. The results are robust to various robustness checks. The study discusses the policy implications of the results, especially for developing countries.

Keywords: transportation, environment, policy instruments, developing countries, vehicle excise tax

JEL Classifications: H23, Q40, Q58

Cost of Power Outages for Manufacturing Firms in Ethiopia: A Stated Preference Study

A reliable supply of electricity is essential for an operation of a firm. Nevertheless, in most developing countries electricity supply is highly unreliable. In this study, we estimate the cost of power outages for micro, small, and medium-sized enterprises in Addis Ababa, Ethiopia, using a stated preference survey. We find that the willingness to pay, and thus the cost of power outages, is substantial. The estimated willingness to pay for a reduction of one power outage corresponds to a tariff increase of 16 percent. The willingness to pay for reducing the average length of a power outage by one hour corresponds to a 33 percent increase. The compensating variation for a zero-outage situation corresponds to about three times the current electricity cost. There is, however, considerable heterogeneity in costs across sectors, firm sizes, and levels of electricity consumption. Policy makers could consider this observed heterogeneity when it comes to aspects such as where to invest to improve reliability and introduce differentiated electricity contracts.

Keywords: power outages, willingness to pay, choice experiment, firms, Ethiopia

JEL Classifications: D22, Q41

Positional Concerns Across Generations

People compare themselves to others and their degree of positional concern determine how much such comparisons will influence their well-being. We investigate the intergenerational persistence of positional concern and how the intergenerational transmission of positional concern shapes children's preferences in urban Ethiopia. By using a survey experiment, we elicit degree of positionality with respect to various goods that possess different characteristics: (i) material versus non-material, and (ii) visible versus non-visible. Our results show that children's level of positionality is significantly explained by the positional concerns of parents; in particular, by the positional preferences of their mothers. Our results are robust to alternative checks including omitted variables and marital assortment. We discuss possible transmission channels. We also discuss the implications of our findings with respect to development policy.

Keywords: positional concerns, intergenerational transmission, survey experiment

JEL Classifications: C60; C90

Measuring Trust in Institutions

Trust in institutions is important for economic prosperity. We present results from a field study where we compare stated trust in institutions in general, stated trust in employees at institutions, and amount sent to employees at institutions using a trust game. Including more than 250 entrepreneurs in Addis Ababa in Ethiopia, we examine levels of trust towards entrepreneurship development agency, district administration, tax authority and electric utility. There is a positive and sizeable significant correlation between stated trust and trust game. Furthermore, we find that generalized trust is weakly correlated with trust in specific institutions both compared to stated trust, and trust game. Given the large heterogeneity in levels of trust to specific institutions, we argue it is important to elicit institution-specific levels of trust.

Keywords: experiment, institutional trust, generalized trust, trust game

JEL Classifications: C90, D01, D02, O43.

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