

# Locus of Control and Prosocial Behavior

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Milan, August 24, 2022

## The paper in brief: What we do

We investigate how Locus of Control (LOC) beliefs affect pro-social behavior and the private provision of public goods.

- Develop a conceptual framework
- Analyse eight different outcomes (from climate change, to donations, to voting)
- Using data sets from Germany and the U.S., we draw on primary and secondary data on stated as well as revealed preferences



One example: Do individuals with a higher LOC donate more?

## The paper in brief: What we find

- Individuals with high internal LOC beliefs are more likely to contribute to public goods
- They are more likely to contribute to
  - climate change mitigation
  - donate money to charitable causes
  - share money & in-kind gifts with others
  - donate blood
  - cast a vote in parliamentary elections
- Comprehensive evidence that locus of control beliefs affect prosocial behavior.



LOC Beliefs -

Predictor of prosocial behavior and public good provision

# Motivation

## Motivation and Research Question

- Many people spend considerable amounts of money and time on the provision of public goods - while others give nothing
- Conventional explanations for this heterogeneity:
  - non-contributors free-ride on others' efforts
  - contributors experience a "Warm-Glow of Giving"
- Our proposed complementary explanation is: Some individuals generally do not think that they can make a difference - while others do

**Is the generalized belief in the own ability to make a difference (Locus of Control) a determinant of voluntary contributions to public goods?**

# Locus of Control (LOC)

- LOC: generalized attitude, belief or expectation on how strongly one's own behavior causally influences consequences (Rotter 1966)
- **Internal LOC:** Consequences are caused by own behavior
  - "I must not have studied enough. I can do better next time."
- **External LOC:** Consequences are due to external factors
  - "The test was flawed. There's no way to do well."



LOC Example -

Bad grades in School

## Relation to the Literature

- LOC has been shown to be associated with economic outcomes regarding **private goods**
  - Human Capital Investment (Coleman and DeLeire, 2003; Hadsell, 2010)
  - Job Searching Efforts (Caliendo et al., 2015; McGee and McGee, 2016)
  - Savings (Cobb-Clark et al., 2016)
  - Healthy Habits (Cobb-Clark et al., 2014)
- Our study is the first to explore the relationship between LOC and **pro-social behavior and public good provision**

# Theoretical Motivation

Assume a simple utility function

$$U_i(g_i, G_{-i}) = b(l_i g_i + G_{-i}) - c_i g_i,$$

- $g_i$ :  $i$ 's own contribution
- $G_{-i}$ : contributions of others
- $b$ : marginal benefit from the public good
- $c_i$ : marginal cost of the public good
- $l_i$ :  $i$ 's control beliefs (as measured by LOC)



# Theoretical Motivation

- Possibility to provide one unit of  $g$  at cost  $c$   
⇒  $i$  will provide if:

$$U_i(g_i = 1, G_{-i}) \geq U_i(g_i = 0, G_{-i})$$
$$\Rightarrow \quad \quad \quad bl_i \geq c_i$$

- Control beliefs ( $l_i$ ) affect the perceived marginal benefit of giving to the public good  
⇒ Hypothesis: Internal LOC positively influences the probability of contributing

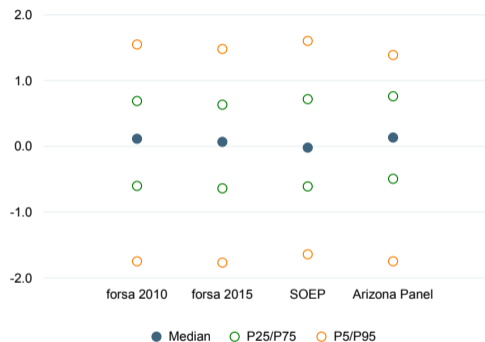
# Data Overview and Empirical Approach

# Data Overview

- We combine data from **three distinct data sources** to test the association between LOC and public goods provision
- Each dataset contains information about pro-social behaviors and measures of LOC
  - Dataset 1: Primary data (Germany), surveys and experiments about green electricity and carbon offsetting  
→ “*forsa*-Panel”
  - Dataset 2: Primary data (US), survey and experiment about charitable giving  
→ “Arizona Project”
  - Dataset 3: Secondary survey data (Germany) about voting, blood donations, and giving  
→ “German Socio-Economic Panel (SOEP)”

# LOC Measures

- There exist several psychometric instruments to measure LOC with statements like:
  - I have little control over the things that happen to me.
  - What happens to me in the future mostly depends on me.
- LOC standardized to LOC index to facilitate interpretation



Moments of the  
standardized LOC indices

## Empirical Strategy

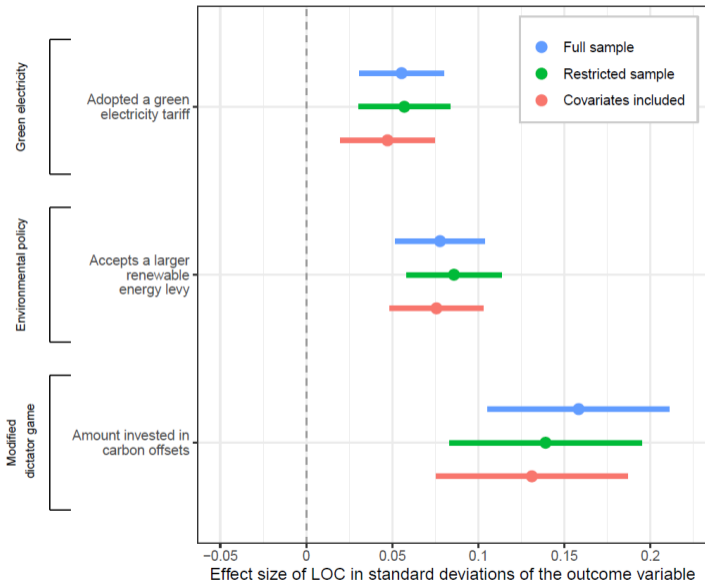
- To facilitate a common interpretation of results, the analysis follows an identical approach for all eight studies
- LOC measures and outcomes are standardized
- Baseline specification estimated using OLS:

$$Y_i = a + b LOC_i + e_i$$

- $\hat{b}$  reflects the marginal effect of a one-standard deviation increase in LOC index,
- In addition, we extend the baseline specification with socio-economic characteristics

# Results

## Results Summary: *forsa*-Panel



- Markers represent point estimates of standardized LOC on the respective standardized outcomes
- Whiskers represent 95% confidence intervals

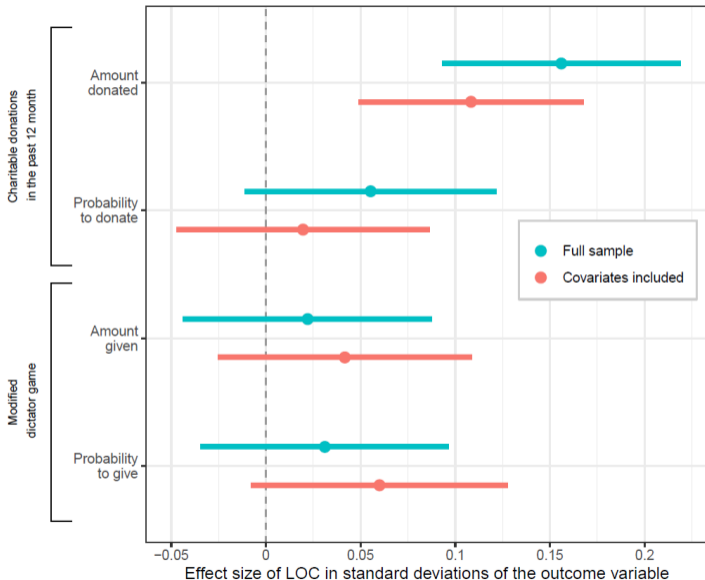
## OLS Results: *forsa*-Panel - Outcomes in levels

	Green electricity Adopted a green electricity tariff			Environmental policy Accepts a larger renewable energy levy			Modified dictator game Amount invested in carbon offsets		
	I	II	III	IV	V	VI	VII	VIII	IX
LOC <sup>stand</sup>	0.023*** (0.005)	0.024*** (0.006)	0.020*** (0.006)	0.039*** (0.007)	0.043*** (0.007)	0.038*** (0.007)	5.606*** (0.953)	4.906*** (1.006)	4.624*** (1.003)
Socio-Economic controls			✓			✓			✓
Obs. with missing controls excluded		✓	✓		✓	✓		✓	✓
No. obs.	5,899	5,118		5,548	4,859		1,383	1,243	

Put the effects into perspective: A one standard deviation increase in LOC increases the number of households with a green electricity tariff by around 800k

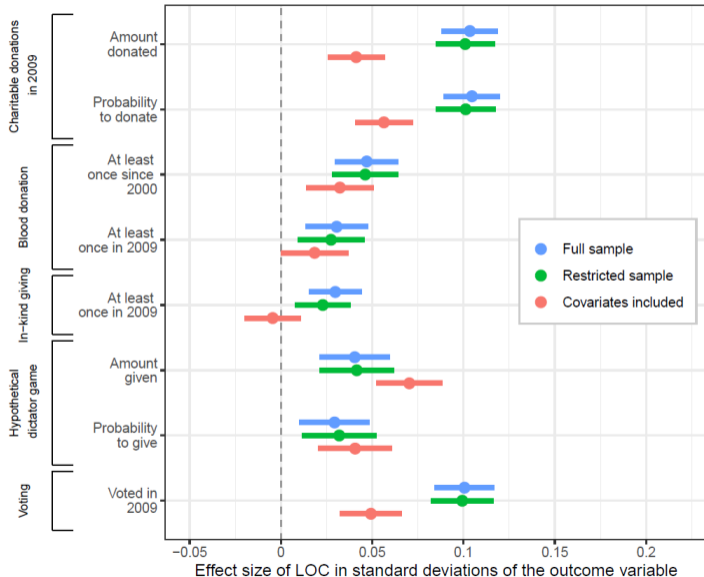


# Results Summary: Arizona Project



- Markers represent point estimates of standardized LOC on the respective standardized outcomes
- Whiskers represent 95% confidence intervals

# Results Summary: SOEP-Panel



- Markers represent point estimates of standardized LOC on the respective standardized outcomes
- Whiskers represent 95% confidence intervals

Are our estimates plausible?

## Putting the Findings Into Perspective

Comparison of the average effect (in terms of standard deviations of the outcomes) with standardized effects in other studies examining LOC and private economic outcomes

	Mean over all std. coefs.	Effect range
Prosocial behavior (summary of our results)	0.069	[-0.004 – 0.158]
Healthy habits (Cobb-Clark et al., 2014)	0.029	[-0.041 – 0.084]
Weekly job search hours (McGee, 2015)	0.046	[0.038 – 0.054]
Educational attainments (Coleman and DeLeire, 2003)	0.070	[-0.012 – 0.219]
Technology adoption by Ethiopian farmers (Abay et al., 2017)	0.089	[0.045 – 0.202]
Probability to own financial equity (Salamanca et al., 2020)	0.111	[0.051 – 0.157]

# Conclusions

## Conclusions

- Individuals with high internal locus of control (LOC) beliefs, i.e. those who perceive themselves as having control over events in life, are more likely to contribute to public goods
- Holds true i.a. for climate change mitigation, charity & blood donations and voting
- Results are robust to controlling for socio-economic characteristics
- Comprehensive evidence that LOC beliefs affect pro-social behavior...
- Future work: potential to impact LOC through early childhood interventions?

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Working Paper 30359

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August 2022

# Appendix



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