*You accept bribes, we accept bribery: Conditional effects of corrupt encounters on evaluation of public institutions*

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Supplementary Material

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# Survey: Ethical principles

“Public Goods through Private Eyes” ERC-funded project (grant number StG240830, PI: Natalia Letki) was based on a face-to-face survey administered to nationally representative samples of adult citizens in fourteen countries of Central and Eastern Europe, which ensures representativeness of participant pool. Informed and voluntary consent was obtained from all participants, and the content of the survey and data collection process had no adverse effect on participants. Respondents were remunerated in accordance with the standard procedures of contractors. The research plan was approved by the funding agency (European Research Council) and prior to commencing the research implementation, all contractors were required to obtain a consent of relevant domestic authorities for the completion of research within the framework of this project, or, alternatively, demonstrate that no such consent was required for the performance of this contract. Data collected were fully anonymised at the individual and municipality level, which ensured the highest level of confidentiality of participants’ identities. Individual-level data were merged with census municipality-level data and Tender Electronic Daily municipality-level data.

# Survey: Sampling scheme

Face-to-face (CAPI) representative national samples, clustered at the level of Primary Sampling Units (municipalities), N1 (individuals) = 20,028; N2 (PSU) = 462; N3 (countries) = 11.

**Table A1. Sample sizes, response rates and fieldwork dates**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bulgaria**  RR:  N1:  N2:  Fieldwork: | 0.49  1,732  49  Nov 2013 - Feb 2014 | **Lithuania**  RR:  N1:  N2:  Fieldwork: | 0.51  1,596  37  Nov 2013 - Mar 2014 |
| **Croatia**  RR:  N1:  N2:  Fieldwork: | 0.59  1,615  25  Nov 2013 - Mar 2014 | **Poland**  RR:  N1:  N2:  Fieldwork: | 0.42  1,540  65  May 2013 - Aug 2013 |
| **Czech Republic**  RR:  N1:  N2:  Fieldwork: | 0.44  1,502  41  Nov 2013 - Feb 2014 | **Romania**  RR:  N1:  N2:  Fieldwork: | 0.47  1,608  63  Nov 2013 - Mar 2014 |
| **Estonia**  RR:  N1:  N2:  Fieldwork: | 0.42  1,501  6  Dec 2013 - Jul 2014 | **Slovakia**  RR:  N1:  N2:  Fieldwork: | .41  1,505  61  Feb 2014 - Apr 2014 |
| **Hungary**  RR:  N1:  N2:  Fieldwork: | 0.66  1,500  31  Nov 2013 - Mar 2014 | **Slovenia**  RR:  N1:  N2:  Fieldwork: | 0.52  1,532  56  Dec 2013 - Feb 2014 |
| **Latvia**  RR:  N1:  N2:  Fieldwork: | 0.44  1,521  28  Jan 2014 - Mar 2014 |  |  |

## Sampling of PSUs

Sample selection process was standardised across all countries covered by the study. Stratified clustered random sample was selected in every participating country. Primary Sampling Units (PSUs) were selected randomly in such a way as to ensure that they meet constraints with respect to regions and population size of the locality. For most of the PSUs, the PSU and the SP are identical. However, for large cities a PSU might have comprised a few SPs. At the same time, the overall number of SPs in very country is fixed and equal to 75. For the purpose of this analysis, SPs are aggregated to the level of a PSU, i.e. respondents are clustered at the PSU level. It was assumed that the number of 20 interviews in every SP would be achieved. Within every SP, households (Secondary Sampling Units) were first selected using a random route algorithm and taking into account the response rate declared by the company conducting fieldwork. Then, one respondent was selected in any of those households from among all the persons aged 15+ (18+ in Romania) using either Kish grid or the next (last) birthday principle. Sampling frames were prepared by the [identifying reference] research team based on the most recent Census available for each country. They were compiled at the level of LAU2 (municipalities).

## Principles of prelisting

The following principles were used to carry out prelisting of addresses:

- To minimize the homogeneity due to geographic proximity effects each SP was to be divided into interviewer quadrants (IQs), e.g. according to East-West and North-South axes, and the number of addresses to be prelisted was distributed equally among the quadrants.

- Prelisting could not be conducted by the person making a contact attempt (interviewer).

- A 7-step algorithm was used to prelist, where the lister selected every 3rd dwelling he/she passed, and in case of buildings with multiple staircases every staircase was treated as a separate building.

Pre-listed addresses were provided to the PGPE research team in the .csv format. The research team randomly drew 50% of households from those preselected in every SP. In households with more than one inhabitant, the interviewer randomly drew a person to give an interview (using next- or last-birthday method or Kish grid, constant for entire country).

## Additional addresses

Whenever fieldwork companies encountered problems with reaching declared response rates (as happened in Hungary, where RRs were overestimated by the fieldwork companies), additional addresses were released. They were drawn randomly from the remaining 50% of the pre-listed addresses. They were released proportionally in each SP (i.e. if additional 3 addresses were required in one SP, 3 addresses were added to every SP in the sample), resulting in the increase of the sample size.

## Contact and interviewing

The contact with the household drawn was made in person; the minimum number of contacts required before the address was considered inaccessible was 4. Informed consent was acquired in cases. All interviews were carried out as CAPI. Some companies used additional mechanisms such as a phone call or a letter to make an initial, pre-interview contact, and incentivised respondents (small gifts, game of chance).

# Question wording for the dependent variable (evaluation of public institutions)

D08. Now I'm going to read a list of various public institutions. Please, tell me which of them you have dealt with within the past 12 months? By ‘dealing with an institution’ I mean visiting it, contacting its representatives in person or on the phone, or exchanging letters or e-mails.

***...READ OUT...***

1. Any national government ministry
2. Local authorities
3. Tax office
4. [Social security agency]
5. Police
6. Courts
7. State hospitals and other public healthcare system institutions (doctor's practices, rehabilitation centres)
8. Public educational establishments (preschools, schools, universities)

1. Yes 2. No (998 Don't know) (999 Refusal)

D10. You have said that you have dealt with the [Institution]\*. I would like to know, based on your experiences from the last 12 months, what you think about the [Institution]. Using this card please tell me to what extent you agree or disagree with the following statements:

***...READ OUT...***

1. People working at the [Institution] treated me politely and with respect.
2. They tried hard to do what was best for me.
3. They acted as I expected.
4. Overall I was treated fairly.
5. They were competent and efficient.
6. They took into account my needs and the situation I was in.
7. I am happy with the result of my contacts with [Institution].

1. Strongly Agree 2. Rather agree 3. Neither agree nor disagree 4. Rather disagree 5. Strongly disagree (998 Don't know) (999 Refusal), scale reversed for the purpose of regression analysis.

\* Institutions were drawn at random from the list based on D08.

# Question wording for the independent variable (experience of corruption)

D15. Within the last couple of years was there a situation when you or a member of your family had to give a bribe?

1. Yes 2. No 3. It happened that I/my family member was asked for a bribe, but did not give it. (998 Don't know) (999 Refusal),

(3) recoded together with (1).

# Single-bidding measure construction

Yearly data for 2009-2014 (2012-2014 in the case of Croatia) was taken from <https://ted.europa.eu/> Yearly proportion of tenders with only one bidder was calculated at the municipality level. The single-bidding measure is a yearly average of this score.

# Descriptive statistics

**Table A2.** Variables: Descriptive statistics

|  |  |  |
| --- | --- | --- |
| Variable | Mean/Proportion of 1’s | Standard deviation |
| *Individual-level (N=8,371)* | | |
| Evaluation of institutions (dependent variable, 1-5 scale) | 4.038 | 0.811 |
| Corruption experience | 0.196 | - |
| Female | 0.613 | - |
| Age (in years) | 52.165 | 18.039 |
| Degree | 0.219 | - |
| Religiosity (1-8 scale) | 3.413 | 2.288 |
| Ethnic minority | 0.124 | - |
| Children at home | 0.225 | - |
| Self-reported bad health | 0.116 | - |
| Length of living in the locality (in years) | 30.482 | 20.128 |
| Unemployed | 0.062 | - |
| Business owner | 0.066 | - |
| Employed in public sector | 0.452 | - |
| *Municipality-level (N=392)* | | |
| Proportion single bidding | 0.268 | 0.164 |
| Number of tenders | 3205.8 | 10305.0 |
| Urban area | 0.607 | - |
| Unemployment rate  (in %) | 10.705 | 6.228 |
| Population (log) | 9.978 | 1.744 |

**Table A3.** Evaluations and corruption measures per country

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Evaluations of public institutions (mean on a 1-5 scale, N=8,371)** | | **Corruption experience (percent, N=8,371)** | **Prevalence of single bidding (proportion, N=389)** | |
| **Mean** | **Standard deviation** | **Mean** | **Mean** | **Standard deviation** |
| Bulgaria | 4.080 | 0.956 | 11.9 | 0.222 | 0.155 |
| Croatia | 4.011 | 0.813 | 10.6 | 0.373 | 0.230 |
| Czech Republic | 4.187 | 0.672 | 17.4 | 0.226 | 0.148 |
| Estonia | 4.238 | 0.718 | 6.4 | 0.164 | 0.080 |
| Hungary | 3.765 | 0.934 | 34.4 | 0.270 | 0.119 |
| Latvia | 4.192 | 0.759 | 15.9 | 0.239 | 0.176 |
| Lithuania | 4.027 | 0.796 | 38.9 | 0.267 | 0.148 |
| Poland | 3.918 | 0.793 | 16.5 | 0.446 | 0.120 |
| Romania | 3.915 | 0.906 | 28.1 | 0.176 | 0.066 |
| Slovakia | 4.087 | 0.678 | 23.7 | 0.341 | 0.184 |
| Slovenia | 3.975 | 0.773 | 4.5 | 0.184 | 0.084 |
| **Total** | **4.038** | **0.811** | **19.6** | **0.268** | **0.164** |

**Figure A1.** Municipality-level distribution of single-bidding per country.



# Alternative model specifications

**Table A3.** Predictors of respondents’ evaluations of public institutions: alternative model specifications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Heckman selection model | | 3-level models with random-effects | |
| Variables | Model A1a | Model A1b  (selection) | Model A2 | Model A3 |
|  |  |  |  |  |
| Corruption experience | -0.559\*\*\* |  | -0.354\*\*\* | -0.531\*\*\* |
|  | (0.090) |  | (0.076) | (0.117) |
| Proportion single bidding | -0.305\* |  | -0.112 | -0.212 |
|  | (0.151) |  | (0.101) | (0.121) |
| Corruption experience\*proportion single bidding | 0.633\* |  |  | 0.590\* |
| (0.256) |  |  | (0.247) |
| Number of tenders (in thousands) | -0.002 |  | -0.003 | -0.003 |
|  | (0.002) |  | (0.002) | (0.002) |
| Female | 0.075\* | 0.147\*\* | 0.061\* | 0.059\* |
|  | (0.032) | (0.052) | (0.026) | (0.025) |
| Age | 0.004\*\* | -0.006\*\*\* | 0.003\*\*\* | 0.003\*\*\* |
|  | (0.001) | (0.002) | (0.001) | (0.001) |
| Degree | -0.054 |  | -0.075\* | -0.078\* |
|  | (0.040) |  | (0.036) | (0.037) |
| Unemployed | -0.039 | -0.227\*\* | -0.039 | -0.037 |
|  | (0.069) | (0.096) | (0.089) | (0.091) |
| Business owner | -0.051 | 0.409\*\*\* | -0.073\*\* | -0.073\*\* |
|  | (0.054) | (0.086) | (0.027) | (0.027) |
| Employed in public sector | 0.004 |  | 0.008 | 0.009 |
|  | (0.044) |  | (0.023) | (0.024) |
| Religiosity | 0.015 |  | 0.013 | 0.014 |
|  | (0.008) |  | (0.008) | (0.009) |
| Ethnic minority | -0.036 |  | -0.068 | -0.068 |
|  | (0.067) |  | (0.046) | (0.047) |
| Length of living in the locality | 0.001 |  | 0.002 | 0.002 |
|  | (0.001) |  | (0.001) | (0.001) |
| Urban area | -0.054 |  | -0.006 | -0.006 |
|  | (0.076) |  | (0.036) | (0.036) |
| Municipality’s unemployment rate | -0.001 |  | -0.001 | -0.001 |
|  | (0.005) |  | (0.007) | (0.007) |
| Municipality’s population (log) | -0.020 |  | -0.021 | -0.020 |
|  | (0.021) |  | (0.019) | (0.019) |
| Self-reported bad health |  | 0.317\*\*\* |  |  |
|  |  | (0.086) |  |  |
| Children at home |  | 0.223\*\*\* |  |  |
|  |  | (0.057) |  |  |
| Ath rho | 0.101 |  |  |  |
|  | (0.076) |  |  |  |
| Ln sigma | -0.242\*\*\* |  |  |  |
|  | (0.021) |  |  |  |
|  |  |  |  |  |
| Constant | 4.167\*\*\* | 0.718\*\*\* | 4.093\*\*\* | 4.120\*\*\* |
|  | (0.218) | (0.111) | (0.174) | (0.172) |
| *Variance components* |  |  |  |  |
| Country |  |  | 0.008 | 0.008 |
|  |  |  | (0.005) | (0.005) |
| Municipality |  |  | 0.073 | 0.072 |
|  |  |  | (0.020) | (0.019) |
| Individual |  |  | 0.551 | 0.550 |
|  |  |  | (0.034) | (0.034) |
| *Number of cases* |  |  |  |  |
| Respondents | 8,346 | 11,719 | 8,371 | 8,371 |
| Municipalities | 389 | 392 | 389 | 389 |
| Countries | 11 | 11 | 11 | 11 |

Note: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05. Model A1a contains country dummy variables (coefficients not reported).