Online Appendix

"Who Blames Corruption for the Poor Enforcement of Environmental Laws? Survey Evidence From Brazil"

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A1 Survey Questions

Question 1: As far as you know, what hinders the enforcement of environmental laws the MOST?

- Bad laws
- Inefficient oversight
- Corruption
- Economic growth
- Lack of environmental education
- Social inequality
- Other
- DK/DA

Question 2: When choosing whom to vote for, do you take into account the candidate's proposals on the environment?

- Always
- Frequently
- Sometimes
- Rarely
- Never
- DK/DA

Question 3: In your opinion, environmental legislation in Brazil is:

- Too rigorous
- Adequate
- Too lenient
- DK/DA

A2 Correlation Matrix

Table A1: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Corruption	1.00						
Education	0.04	1.00					
	(0.14)						
Age	0.04	-0.09	1.00				
	(0.22)	(0.00)					
Income	0.14	0.37	0.27	1.00			
	(0.00)	(0.00)	(0.00)				
Female Respondent	-0.11	0.04	0.05	-0.24	1.00		
	(0.00)	(0.24)	(0.09)	(0.00)			
Environment Matters for Vote Choice	-0.03	-0.13	-0.05	-0.05	-0.06	1.00	
	(0.36)	(0.00)	(0.08)	(0.08)	(0.04)		
Opinion on Env. Legislation	0.05	0.05	0.04	-0.01	0.11	-0.07	1.00
	(0.08)	(0.09)	(0.23)	(0.78)	(0.00)	(0.02)	

Note: P-values in parentheses

A3 Weights

In this section, we re-run the estimation using weights from the Brazilian census. The below results are in line with the main findings.

Table A2: Main Results (with sample weights)

	(1)	(2)	(3)	(4)	(5)	(6)
Income	0.328***	0.305**	0.308**	0.327***	0.323***	0.353***
	(0.115)	(0.126)	(0.126)	(0.124)	(0.125)	(0.128)
Education	-0.004	0.012	-0.005	-0.018	-0.017	-0.113
	(0.228)	(0.234)	(0.236)	(0.232)	(0.233)	(0.225)
Age	0.058	0.067	0.064	0.054	0.049	0.025
	(0.098)	(0.100)	(0.099)	(0.100)	(0.098)	(0.094)
Female Respondent		-0.137	-0.162	-0.214	-0.223	-0.287
		(0.294)	(0.290)	(0.295)	(0.295)	(0.305)
Env for Vote Choice			-0.099	-0.083	-0.085	-0.167
			(0.107)	(0.107)	(0.107)	(0.106)
Opinion on Env. Legislation				0.517**	0.497**	0.477**
				(0.218)	(0.217)	(0.226)
Constant	-1.783***	-1.720***	-1.480**	-2.883***	-2.603***	-3.378***
	(0.517)	(0.533)	(0.583)	(0.832)	(0.855)	(1.210)
Municipal Fixed Effects	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes
Observations	1072	1072	1072	1072	1072	1063

The dependent variable in all models is an indicator for whether the respondent thought corruption was the main reason for the lax implementation of environmental laws in Brazil. All the above models are logistic regressions. Huber-White (robust) standard errors reported in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A4 Multinomial Analysis

In order to gain a better understanding of how respondents thought about the role of corruption relative to other deficiencies in implementation, we present the results of a multinomial analysis that explicitly distinguish between different alternative views. Specifically, we create an alternative measure of our dependent variable where we differentiate between respondents who chose 'corruption', 'bad laws' and 'inefficient oversight' as the primary reason for the lax implementation of environmental regulations. These results suggest that the respondents perceive corruption as a distinct cause of enforcement failure. There is no evidence that inefficient oversight, as distinguished from corruption, would cause public concern.

Table A3: Robustness: Multinomial Analysis

	(1)		(2)		(3)		(4)	
Corruption								
Income	0.370***	(0.086)	0.388***	(0.091)	0.276***	(0.096)	0.273***	(0.096)
Education	-0.040	(0.117)	-0.056	(0.120)	0.027	(0.123)	0.025	(0.123)
Age			-0.033	(0.053)	-0.000	(0.055)	0.001	(0.054)
Female Respondent					-0.620***	(0.163)	-0.618***	(0.164)
Constant	-0.987***	(0.253)	-0.883***	(0.306)	-0.557*	(0.319)	-0.461	(0.343)
Bad Laws								
Income	0.355***	(0.137)	0.340**	(0.148)	0.253*	(0.153)	0.263*	(0.152)
Education	-0.190	(0.183)	-0.176	(0.190)	-0.113	(0.196)	-0.097	(0.197)
Age			0.025	(0.088)	0.050	(0.089)	0.046	(0.090)
Female Respondent					-0.481*	(0.257)	-0.496*	(0.258)
Constant	-2.045***	(0.458)	-2.125***	(0.545)	-1.861***	(0.547)	-2.017***	(0.613)
Inefficient Oversight								
Income	0.009	(0.089)	0.053	(0.095)	-0.036	(0.099)	-0.038	(0.099)
Education	0.041	(0.122)	0.004	(0.125)	0.066	(0.126)	0.065	(0.127)
Age			-0.081	(0.054)	-0.053	(0.055)	-0.053	(0.055)
Female Respondent					-0.494***	(0.167)	-0.493***	(0.166)
Constant	-0.413	(0.265)	-0.166	(0.311)	0.104	(0.325)	0.158	(0.354)
Municipal Fixed Effects	No		No		No		Yes	
Observations	1072		1072		1072		1072	
PseudoR-Squared	0.010		0.011		0.018		0.019	

The dependent variable is a categorical variable for whether the respondent thought either corruption, bad laws or inefficient oversight were the main reason for the lax implementation of environmental laws in Brazil. All the above models are multinomial logistic regressions. The excluded category is Others. Huber-White (robust) standard errors reported in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Testing the IIA Assumption

The multinomial logistic regression used above assumes the Independence of Irrelevant Alternatives (IIA). In order to check whether this assumption is violated, we provide three sets of tests: (1) Hausman test, (2) suest-based Hausman test, and (3) Small-Hsiao test. From the results of these tests, we can conclude that the use of multinomial logistic regression is valid.

Table A4: Robustness: Multinomial Analysis (IIA)

	Model 1		
Prob > chi2	Hausman	Suest	Small-Hsiao
Corruption	1.000	0.969	0.055
Bad Laws	—	0.381	0.228
Inefficient Oversight	—	0.901	0.591
	Model 2		
Prob > chi2	Hausman	Suest	Small-Hsiao
Corruption	1.000	0.994	0.763
Bad Laws	—	0.546	0.685
Inefficient Oversight	—	0.776	0.622
	Model 3		
Prob > chi2	Hausman	Suest	Small-Hsiao
Corruption	—	0.996	0.089
Bad Laws	1.000	0.638	0.826
Inefficient Oversight	—	0.729	0.039
	Model 4		
Prob > chi2	Hausman	Suest	Small-Hsiao
Corruption	1.000	0.999	0.681
Bad Laws	1.000	0.869	0.668
Inefficient Oversight	—	0.868	0.973

A5 Placebo

In this section, we present a placebo test where we show that income does not determine a respondent's environmental policy preference. For the dependent variable, we use a continuous variable that represents the frequency with which the respondent takes a candidate's environmental proposals into account before voting as the dependent variable, and show that income is not a significant predictor of such environmental policy preferences. This lends support to the theory that income affects the respondent's perception due to corruption exposure rather than political preferences.

Table A5: Placebo

	(1)	(2)	(3)	(4)	(5)	(6)
Income	-0.027	-0.002	0.000	0.002	-0.000	-0.002
	(0.043)	(0.046)	(0.046)	(0.046)	(0.046)	(0.047)
Age	0.058**	0.051*	0.051**	0.049*	0.051**	0.050*
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Education	0.258***	0.241***	0.240***	0.235***	0.226***	0.220***
	(0.058)	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)
Female Respondent		0.135*	0.132*	0.118	0.125	0.171**
		(0.078)	(0.078)	(0.078)	(0.078)	(0.080)
Bad Laws			-0.038	-0.045	-0.044	-0.025
			(0.077)	(0.077)	(0.077)	(0.078)
Opinion on Env. Legislation				0.128*	0.136*	0.144**
				(0.070)	(0.070)	(0.072)
Constant	2.379***	2.308***	2.317***	1.995***	1.939***	2.016***
	(0.147)	(0.152)	(0.153)	(0.234)	(0.247)	(0.389)
Municipal Fixed Effects	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes
Observations	1072	1072	1072	1072	1072	1072

The dependent variable in all models is the frequency with which the respondent takes a candidate's environmental proposals into account before voting. All the above models are linear regressions.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A6 Multicollinearity

Since it is possible that collinearity between the various independent variables might affect our results, we calculate the Variance Inflation Factor (VIF) of the different independent variables to confirm that multicollinearity does not overturn support for the income hypothesis. In the below table, we perform a linear regression of the full model (with both municipal and state fixed effects and robust standard errors) and present the VIF for all our variables and the entire model. Particularly, the VIF scores for income and education are 1.52 and 1.31, respectively. With a VIF scores of 2.87 for the aggregate model this indicates some correlation, but not one that is high enough for multicollinearity to overturn our results. This finding aligns well with the rather small correlation coefficient of $r = 0.37$ between income and education.

Table A6: Main Results (with VIF)

	(1)	VIF Score
Income	0.061***	1.52
	(0.018)	
Education	-0.006	1.31
	(0.022)	
Age	0.002	1.22
	(0.010)	
Female Respondent	-0.078**	1.17
	(0.030)	
Env for Vote Choice	-0.011	1.06
	(0.012)	
Opinion on Env. Legislation	0.055**	1.08
	(0.026)	
Constant	0.025	
	(0.143)	
Municipal Fixed Effects	Yes	
State Fixed Effects	Yes	
Mean VIF		2.87
Observations	1072	1072

The dependent variable is an indicator for whether the respondent thought corruption was the main reason for the lax implementation of environmental laws in Brazil. The above models is a logistic regression with Huber-White (robust) standard errors reported in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$