Who Cares About Corruption? Corruption Perceptions, Exposure, and their Interaction in the Study of Political Behavior

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Abstract

Interest in survey measures of corruption has prompted growth in research on corruption's effect on political behaviors and attitudes. The two dominant measures of peoples' evaluations of corruption in public opinion surveys ask respondents to assess their perceptions of and exposure to corruption. I argue that existing survey measures of corruption, if used independently of one another, are inadequate for understanding peoples' evaluations of corruption and their behavioral responses to corruption. Using the two most recent wave of the Life in Transitions survey data, I show that conditioning corruption perceptions on exposure reveals unique behavioral outcomes: 1) those who have not experienced corruption are more likely to protest but less likely to vote as their perceptions of corruption grow, and 2) those who have experienced corruption are less likely to protest but more likely to vote as their perceptions of corruption grow. These findings imply that the way people respond to their corrupt environments encompasses at least their perceptions of and exposure to corruption.

While the recent proliferation of anti-corruption protests might suggest that people act upon their concerns with corruption, empirical evidence on this matter is unclear. The reason for this lack of clarity is a disagreement about whether researchers should study peoples' perceptions of or exposure to corruption. I argue that the two are related insofar as exposure to corruption conditions the effect of corruption perceptions on political behavior.

Many researchers show that *corruption perceptions* — a person's evaluation of corruption levels in their countries or governments — and *corruption exposure* — a person's experience with corruption (often bribery) — incentivize political participation. Some show that people disappointed by corruption in their countries are more likely to participate elections (Tavits 2007; Kostadinova 2009; Pop-Eleches 2010). People upset about corruption may also protest, strike, or engage in other unsanctioned anti-government activities in hopes of changing the status quo (Bratton and Walle 1992; Gingerich 2009; Thomas and Louis 2014). Some studies also show that exposure to corruption also encourages electoral participation (Klasnja and Tucker 2013; Klasnja, Tucker, and Deegan-Krause 2016) and protest mobilization (Gingerich 2009; Machado, Scartascini, and Tommasi 2011). These findings suggest a *corruption mobilization hypotheses*: people who perceive corruption to be more widespread — or experience more corruption — are more likely to participate in political activities.

Others, however, find that corruption demobilizes individuals by depleting agency. For example, scholars find that corruption perceptions depresses voter turnout (McCann and Domınguez 1998; Stockemer, LaMontagne, and Scruggs 2013; Chong et al. 2014) and protest participation (Davis, Camp, and Coleman 2004). These findings suggest *corruption demobilization hypotheses*: people who perceive corruption to be more widespread — or experience more corruption — are less likely to participate in political activities. Additionally, some studies show that dire corruption perceptions

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have no discernible effect on protest participation (Pilati 2011; Moseley 2015).

I argue that, when used independently of one another, perception and exposure survey measures of corruption cannot capture how people evaluate corruption. I demonstrate why researchers should consider the interaction between perceptions and exposure in the study of political behavior, a trivial undertaking given the widespread availability of both kinds of questions in existing surveys.

I test interaction effects between corruption perceptions and exposure measures using the two most recent waves of the Life in Transition survey. I find that corruption perceptions and exposure, independently, mobilize protest participation but demobilize electoral participation. When I interact perceptions and exposure measures, however, I find that the previous story is incomplete. Among those who have not experienced corruption, worse corruption perceptions encourage protest participation but reduce electoral participation. Among those who have experienced corruption, worse corruption perceptions discourage protest participation but encourage electoral participation.

These findings imply that individual corruption evaluations are multidimensional, encompassing perceptions of and exposure to corruption. In turn, mass mobilization efforts and electoral participation drives oriented around the issue of corruption must consider how people evaluate corruption based on their impressions *and* experiences.

1   Issues in Survey-Based Corruption Evaluations

Behavioral studies of corruption rely on two classes of survey questions that ask for 1) corruption assessments of societies, countries, or governments; and 2) corruption experiences. I present a sample of these questions in Table 1. Perceptions questions ask respondents to estimate corruption's frequency, spread, and fluctuation. In general, surveys use these questions to elicit information

Class	Question	Source
Perception	How widespread do you think corruption such as bribe taking is amongst politicians in [country]?	Comparative Study of Electoral Systems (Module 2)
	Is corruption widespread throughout the government in this country, or not?	Gallup World Poll
	For each of the following problems, please tell me if you think it will get better, get worse or stay the same in the next five years....Corruption	Pew Research Center
Exposure	In the last 12 months, did any government employee as you for a bribe?	AmericasBarometer
	Have you or any member of your household paid a bribe to a public official in the previous 12 months?	Transparency International Global Corruption Barometer
	During [the past year] has any government official, for instance a customs officer, police officer or inspector in your own country, asked you or expected you to pay a bribe for his services?	United Nations International Crime Victims Survey

Table 1: Examples of survey corruption questions by class

about individual concerns with aggregate levels of corruption.

Perceptions questions suffer from two contextual issues. First, perceptions might simply reflect partisanship, especially where corruption is non-systemic (Anduiza, Gallego, and Munoz 2013). Thus, corruption assessments may be clouded by partisan leanings, leading to corruption's over-estimation under unpopular leaders. Second, in countries facing systemic corruption, corruption is often emblematic of cultural practices and social norms, which can lead to underestimated corruption levels, particularly in repressive contexts (Jensen, Li, and Rahman 2010) and when corruption represents an efficient way to attain goods and services (Nye 1967). Indeed, countries with systemic corruption often develop terms, such as *blat*, *guanxi*, and *wasta* to refer to more culturally acceptable corrupt practices.

Researchers worried about the inability of perceptions measures to provide contextual information about corruption have turned to measures of corruption exposure, sometimes referred to as corruption victimization (Seligson 2006; Gingerich 2009) or experience (Rose and Mishler 2010).

Corruption exposure questions disclose peoples' corruption experiences rather than abstract beliefs about corruption.

While corruption exposure questions are contextually informative, they also suffer from limitations. First, corruption exposure questions may suffer from under-reporting given the sensitive and illegal nature of the bribery. Focus groups, however, suggest under-reporting is unlikely to be systematic (Seligson 2006), and observational studies indicate that exposure questions reflect *a priori* expectations (Charron 2016). Second, researchers cannot use exposure questions to determine how survey respondents who experience corruption feel about their experience. Indeed, not all who experience corruption are necessarily angered by it (Meon and Weill 2010).

Whereas corruption perceptions measures fail to provide context, corruption exposure measures do not provide information about responses to corruption experiences. Given these limitations, I propose a solution that involves conditioning corruption perceptions on exposure measures to gauge behavioral outcomes. Conditioning the effects of perceptions on exposure relies on statistical interactions, which illustrate how the effect of one variable on an outcome is conditional on a third variable. This strategy addresses the lack of environmental context in perception measures and lack of reflection on experience with corruption in exposure measures. The proposed solution uses existing measures to address each others' limitations: exposure measures provide context, while perceptions measures detail a person's reaction to their corruption experiences.

In contentious politics scholarship, research on relative deprivation provides an avenue for a conditional approach to studying corruption and its behavioral outcomes. Gurr (1970) describes relative deprivation as the difference in what an individual believes they should be able to achieve and what they can achieve. Political psychology research supports the treatment of corruption evaluations as an expression of relative deprivation, finding that corruption damages mental health

(Van Deurzen 2017) and subjective well-being (Tavits 2008). Therefore, corruption may contribute to relative deprivation, which cannot be comprehensively measured using existing corruption measures independently of one another.

Moreover, interacting perceptions and exposure variables provides additional benefits to researchers. First, the interaction strategy moves scholars beyond unidimensional interpretations of corruption evaluations. Although corruption measures are often unidimensional, corruption scholars generally agree that people evaluate corruption multidimensionally (Von Alemann 2004; Bukovansky 2006; Rose and Mishler 2010). Despite calls for multidimensional corruption measurements, most surveys continue to address corruption unidimensionally. The approach detailed here, however, provides two dimensions to interpreting corruption evaluations based on peoples' perception of and exposure to corruption.

Second, the approach is straightforward enough for replication with surveys in other regional contexts. In fact, the Life in Transitions Survey, AmericasBarometer, Asian Barometer, and Afro-Barometer all include corruption perceptions and exposure questions, allowing researchers to study corruption's effect on behavioral outcomes in the former Soviet Union, Western Europe, Latin America, North America, East Asia, and Africa. Therefore, survey questionnaires that ask both classes of questions cover much of the world, allowing scholars to replicate findings across regional contexts. In the section that follows, I apply this approach to the study of protest and electoral participation with Life in Transitions survey data in post-communist countries.

2 Cross-National Survey Data to Test the Influence of Corruption Evaluations Measures on Political Behavior

I use the European Bank for Reconstruction and Development's Life in Transition Survey (LITS) data to study how corruption influences protest and electoral participation. LITS is a collection of repeated, nationally representative, cross-sectional country-wide surveys from mostly post-Soviet countries. Although three survey waves are available (2006, 2010, and 2016), I only use the two most recent waves, which ask relevant and comparable questions. After describing the data, I explain variable coding decisions with descriptive statistics available in Appendix 1.

I only include data from 28 countries with communist legacies, leaving 45,242 survey respondents of the original approximately 90,000 respondents after dropping missing observations (a list of total respondents per wave by country is available in Appendix 2). I only include countries with communist legacies to account for the systematic differences between postcommunist and other countries. For instance, of the 13,688 non-postcommunist respondents, just 560 experienced corruption (4 percent of respondents), yet of the 72,192 post-communist respondents, 12,173 experienced corruption (18 percent of respondents). These differences are related to institutional, cultural, and historical factors (Pop-Eleches and Tucker 2017) that are difficult to account for with available data. Post-communist countries, however, also offer variation in variables of interest, such as corruption perceptions (Linde 2012), corruption exposure (Diaby and Sylwester 2015), and political behavior (D'Anieri 2006).

2.1 Measuring Protest Participation

I construct the first dependent variable, *protest participation*, by referring to LITS questions that ask about whether survey respondents had previously participated in a lawful demonstration or strike.

Question phrasing and coding details for all variables are available in Appendix 3. I include strikes because in many of the authoritarian contexts in which surveys were collected, strikes serve as an alternative option for citizens wishing to publicly air their grievances with the regime (Alam 1995).

About 9 percent of included respondents participated in a lawful demonstration or a strike. Spatial differences in protest participation are shown in Appendix 4. This value represents a conservative estimate of protest participation, as some respondents may have participated in unlawful demonstrations. Careful question wording is necessary, however, in countries with political repression and censorship. At the very least, these questions present an opportunity for conservative tests of corruption evaluation's effect on protest participation.

2.2 Measuring Electoral Participation

I also develop a measure of *electoral participation* that captures the number of different recent elections in which a respondent has voted to test how corruption influences voting behavior. Specifically, LITS asks survey respondents to state whether they voted in the most recent local-level, parliamentary, and/or presidential elections. I assign a 1 to those who voted in any recent election and a 0 otherwise. Just over 77 percent of respondents voted in recent elections. Spatial differences in electoral participation are shown in Appendix 4.

2.3 Measuring Corruption Perceptions

My corruption perceptions measure relies on a LITS survey question that asks individuals about their corruption perceptions on a 5-point scale in different contexts: road police, obtaining official documents, civil courts, public education, medical treatment, unemployment benefits, and social security. I sum each respondent's perception answers to derive a corruption perceptions scale where higher values indicate belief that corruption is more widespread. The average value is just

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over 8, a relatively clean appraisal of corruption compared to a maximum of 40.

2.4 Measuring Corruption Exposure

I measure corruption exposure with a question that asks respondents whether they or a household member had made an unofficial payment or provided a gift when in contact with any of the following services: road police, obtaining official documents, civil courts, public education, medical treatment, unemployment benefits, and social security. I then sum each respondent's values across sectors to create a corruption exposure scale where higher values indicate more exposure to corruption. The mean value is less than 1 with a maximum of 8 (corruption experiences in all scenarios) and minimum of 0 (no corruption experiences).

While this comparably lower figure may be a result of under-reporting by survey respondents who are uncomfortable with disclosing their participation in corrupt activities, this is unlikely to be an issue for a couple of reasons. First, the LITS exposure questions asks individuals an indirect question about their or their family's exposure rather than a direct question about their exposure. This indirect phrasing does not implicate respondents in criminal behavior but still affords researchers an understanding about exposure to corruption. Second, corruption researchers find that exposure survey questions tend to provide portrayals of personal experiences with corruption that are consistent with reality (Seligson 2006; Gingerich 2009). A separate concern may relate to multicollinearity between exposure and perceptions measures; their correlation coefficient is, however, just 0.34.

2.5 Control Variables

First, I control for respondents' sociopolitical attitudes. I control for *political satisfaction* to capture how poor institutions undermine political engagement (Putnam, Leonardi, and Nanetti 1994);

contact with government services, which may demobilize political participation (De Kadt and Lieberman 2017); *government trust* to control for the negative relationship between institutional trust and political behavior (Braun and Hutter 2016); *civic activity* to control for how prior activism encourages future activism (Smyth 2018); and *life satisfaction*, which encourages political engagement (Flavin and Keane 2012).

I also include demographic controls. I control for education because higher levels of education incentivizes political participation (Dalton, Van Sickle, and Weldon 2010); *female* identification to capture gender differences in political participation (Schlozman, Burns, and Verba 1994); residence in *urban* areas, which provide symbolic elements favorable to protest actions (Slater 2010) but may alienate voters (Clem and Craumer 1997); *age* to account for over-representation of younger individuals in protests (Schussman and Soule 2005) but under-representation in elections (Rubenson et al. 2004); and *wealth*, which may deplete (or encourage) protest participation (Lipsky 1968) and depress voter turnout (Kasara and Suryanarayan 2015).

3 Results

I present results in two sections. I first test the independent and conditional effects of corruption perceptions and exposure on protest participation. I then test the independent and conditional effects of corruption perceptions and exposure on electoral participation. My baseline estimation strategy entails a fixed effects logistic regression with country and survey wave effects (full results available in Appendices 5 and 6). I also provide conditional logistic regression results in Appendices 7 and 8.
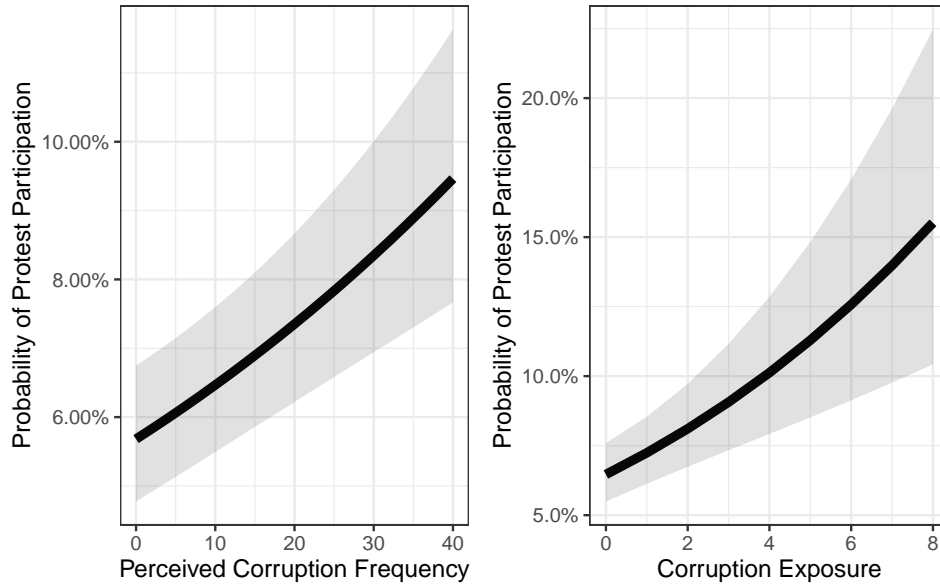
Figure 1: Independent effects of corruption perceptions and exposure on protest participation

Note: 95 percent confidence intervals shown. Heteroscedasticity-consistent standard errors used.

Figure 2: Conditional effects of exposure on perceptions in predicting protest participation

Note: 95 percent confidence intervals shown. Heteroscedasticity-consistent standard errors used. Corruption exposure levels coded as the following number of bribery experiences: "None" equals 0, "Low" equals 1, "Medium" equals 4, and "High" equals 8.

3.1 Testing Conditional Corruption Effects on Protest Participation

In Figure 1, I present predicted probabilities associated the independent effects of corruption perceptions and exposure on protest participation. The results show that 1) as corruption perceptions rise, the probability of protesting increases by almost 5 percent; and 2) as corruption experiences rise, the probability of protesting increases by about 15. The findings support the literature's mobilization hypotheses alongside the expectation that conditional effects provide a more comprehensive account: higher corruption perceptions lower protest participation among those who experience corruption but improve protest participation among those who do not experience corruption.

In Figure 2, I present results for my test of how corruption exposure conditions the effect of corruption perceptions on protest participation. I differentiate among levels of corruption exposure based on bribery experiences: no exposure, low exposure (1 experience), medium exposure (4 experiences), and high exposure (8 experiences). I find that the effect of corruption perceptions on a person's probability of participating in protests is conditioned on that person's exposure to corruption.

People who have not experienced much corruption have a generally low probability of participating in protests, but as they perceive corruption to be more common, their probability of participating in protests grows. The probability of participating in a protest increases by about 5 percent from not believing that corruption is common to believing that corruption is very common. As corruption exposure grows, however, heightened perceptions of corruption reduce a person's probability of protest participation. Although the combination of high corruption exposure and low corruption perceptions contributes to up to a 40 percent increased probability of protest participation, growing belief that corruption is common reduces the probability of protest participation to below 10 among these groups. Among those experiencing high levels of corruption, belief that corruption is

widespread reduces their protest participation by almost 35 percent. In the next section, I turn to the electoral participation results.

3.2   Testing Conditional Corruption Effects on Electoral Participation

I now test how corruption exposure conditions the effects of corruption perceptions on electoral participation, measured as the number of times a respondent voted. The findings here contradict those related to protest participation. In short, I find support for the literature's demobilization hypotheses alongside the following conditional effects: higher corruption perceptions raise electoral participation among those who experience corruption but depress electoral participation among those who do not experience corruption.

I present the first set of results in Figure 3, where I consider the independent effects of corruption exposure and perceptions on electoral participation. The results show that as corruption perceptions and experiences rise, the probability of voting declines by nearly 10 percent, which supports the demobilization hypothesis.

In Figure 4, I present the results of the conditional effects model. The results show that among those with low perceptions of corruption, exposure to corruption reduces the probability of voting. Yet, as the perceptions of corruption worsen, exposure to corruption activates electoral participation. At low perceptions of corruption, those who have not experienced corruption are almost 20 percent more likely to vote compared to those who have experienced corruption. When corruption perceptions are at their worst, high exposure to corruption contributes to approximately a 10 percent higher probability of voting. Rising corruption perceptions increase the probability of voting among those who experience corruption but lower the probability of voting among those who do not experience corruption.
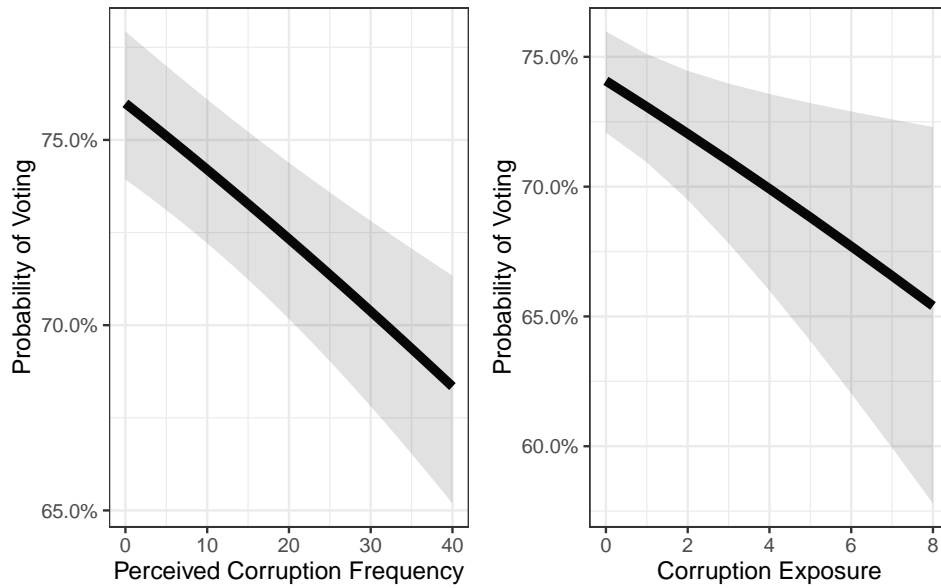
Figure 3: Independent effects of corruption perceptions and exposure on electoral participation

Note: 95 percent confidence intervals shown. Heteroscedasticity-consistent standard errors used.
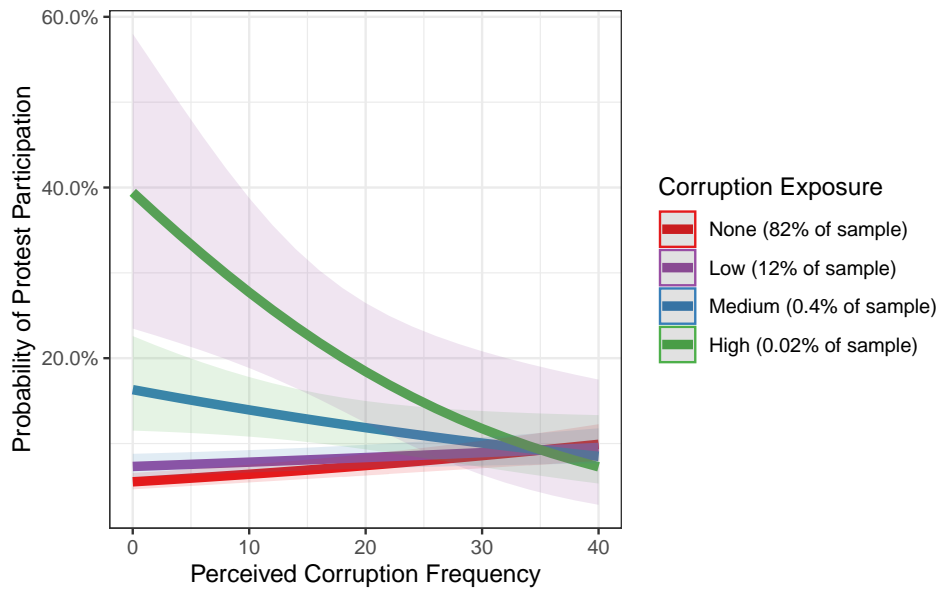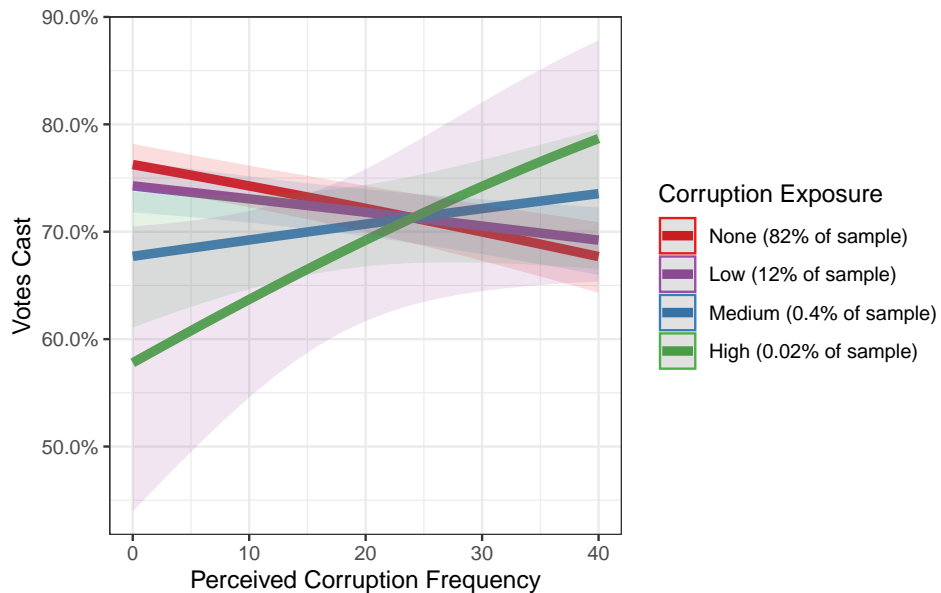

Figure 4: Conditional effects of exposure on perceptions in predicting electoral participation

Note: 95 percent confidence intervals shown. Heteroscedasticity-consistent standard errors used. Corruption exposure levels coded as the following number of bribery experiences: "None" equals 0, "Low" equals 1, "Medium" equals 4, and "High" equals 8.

4 A More Complete Story of Corruption's Effect on Political Behavior

Independent studies of perceptions and exposure provide an incomplete, perhaps misleading, illustration of how corruption relates to political behavior. My results suggest that political behavior depends on how people perceive corruption perceptions *and* experience it. Those who corruption incentivizes into protest participation are different from those who corruption incentivizes into electoral participation. High corruption perceptions discourage electoral participation but encourage protest participation for those who have not experienced corruption. At the same time, high corruption perceptions encourage electoral participation but discourage protest participation for those who have experienced corruption. Recognizing these intricacies in peoples' evaluations of corruption may help uncover how corruption perceptions and exposure work together to both build and unravel the behavioral element of political accountability.

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1 Descriptive Statistics

Table 1: Descriptive statistics for categorical variables

Variable	N	Values	N by Value
Protest Participation	45242	Did not participate in protest	41460
		Participated in protest	3782
Electoral Participation	45242	Did not vote	10349
		Voted	34893
Urban	45242	Does not live in urban area	19934
		Lives in urban area	25308
Female	45242	Male	19329
		Female	25913
Survey Year	45242	2010 survey wave	18374
		2016 survey wave	26868

Table 2: Descriptive statistics for continuous variables

Variable	N	Mean	SD	25th Percentile	50th Percentile	75th Percentile
Corruption Perceptions	45242	8.63	8.55	0	8	13
Corruption Exposure	45242	0.27	0.68	0	0	0
Services Contact	45242	1.47	1.35	0	1	2
Civic Activity	45242	0.19	0.64	0	0	0
Age	45242	46.52	17.07	32	45	60
Education	45242	4.3	1.38	3	4	5
Life Satisfaction	45242	3.19	1.09	2	3	4
Political Satisfaction	45242	2.57	1.15	2	2	4
Government Trust	45242	2.67	1.29	2	3	4
Wealth	45242	4.49	1.68	3	5	5

Note: Civic activity is a zero-inflated variable with most respondents not participating in any activities.

2   Life in Transition Survey Data Coverage for Baseline Estimations

Table 3: Country-year coverage

	LITS II (2010)	LITS III (2016)
Poland	1240	1109
Hungary	0	812
Czech Republic	0	1268
Slovakia	611	1144
Albania	600	835
Montenegro	657	970
Macedonia	844	976
Croatia	673	1155
Serbia	1098	1011
Bosnia and Herzegovina	910	1187
Kosovo	652	577
Slovenia	795	1047
Bulgaria	647	926
Moldova	565	0
Romania	922	898
Russia	887	1045
Estonia	0	537
Lithuania	678	1229
Ukraine	1075	1325
Belarus	469	1188
Armenia	706	777
Georgia	507	1167
Azerbaijan	617	859
Tajikistan	514	895
Kyrgyzstan	754	1344
Uzbekistan	859	0
Kazakhstan	648	1231
Mongolia	446	1356

3 Variable Coding Descriptions

Variable	LITS Survey Question	Answers	Coding
Protest Participation	How likely are you to attend a lawful demonstration [or participate in a strike]?	Have done, might do, or would never do	1 = Have done, 0 = other answers
Electoral Participation	Did you vote in the most recent [local-level, parliamentary, presidential elections]?	Yes, No	1 = Yes, 0 = No
Corruption Perceptions	In your opinion, how often do people like you have to make unofficial payments or gifts in these situations? During the past 12 months have you or any member of your household used these services? [Interact with road police; Request official documents from authorities; Go to courts for civil matter; Receive public education (primary or secondary); Receive public education (vocation); Receive medical treatment in public health system; Request unemployment benefits; Request other social security benefits]	Never, Seldom, Sometimes, Usually, Always	0 = Never ... 4 = Always
Corruption Exposure	Did you or any member of your household make an unofficial payment or gift when using these services over the last past 12 months? During the past 12 months have you or any member of your household used these services? [Interact with road police; Request official documents from authorities; Go to courts for civil matter; Receive public education (primary or secondary); Receive public education (vocation); Receive medical treatment in public health system; Request unemployment benefits; Request other social security benefits]	Yes, No	1 = Yes, 0 = No
Services Contact	During the past 12 months have you or any member of your household used these services? [Interact with road police; Request official documents from authorities; Go to courts for civil matter; Receive public education (primary or secondary); Receive public education (vocation); Receive medical treatment in public health system; Request unemployment benefits; Request other social security benefits]	Yes, No	1 = Yes, 2 = No
Political Satisfaction	The political situation in your country is better today than around 4 years ago.	Strongly disagree, Disagree, Neither disagree nor agree, Agree, Strongly agree	1 = Strongly disagree... 5 = Strongly agree
Government Trust	To what extent do you trust the following institutions? [The government]	Complete distrust, Some distrust, Neither trust nor distrust, Some trust, Some distrust	1 = Complete distrust... 5 = Complete trust

Civic Activity	[P]lease indicate, whether you are an active member, an inactive member, or not a member of that type of organization. [Church and religious organizations; Sport and recreational organizations; Art, music or educational organizations; Labor unions; Environmental organizations; Professional organizations; Humanitarian or charitable organizations; Youth associations; Women's groups (only third wave); Farming cooperatives (only third wave)]	Active member, Passive member, Not a member	1 = active member, 0 = other members
Life Satisfaction	All things considered, I am satisfied with my life right now.	Strongly disagree, Disagree, Neither disagree nor agree, Agree, Strongly agree	1 = Strongly disagree... 5 = Strongly agree
Education	What is the highest education level [NAME] has completed?	No education, Primary, Lower secondary, Upper secondary, Post-secondary non-tertiary, Tertiary (no diploma), Bachelor's degree or more, Master's degree/PhD	1 = no education... 8 = Master's degree/PhD
Female	Is [NAME] male or female?	Male, Female	1 = male, 2 = female
Urban	In what type of settlement does [NAME] live?	Urban, Rural, Metropolitan	1 = urban or metropolitan, 0 = rural
Wealth	Please imagine a ten-step ladder where on the bottom, the first step, stand the poorest 10% people in our country, and on the highest step, the tenth, stand the richest 10% people in our country. On which step of the ten is your household today?	10%—100%	1 = 10%... 10 = 100%
Age	What is [NAME]'s age? (As of last birthday)	Raw value	Raw value

4 Spatial Distributions in Dependent Variables
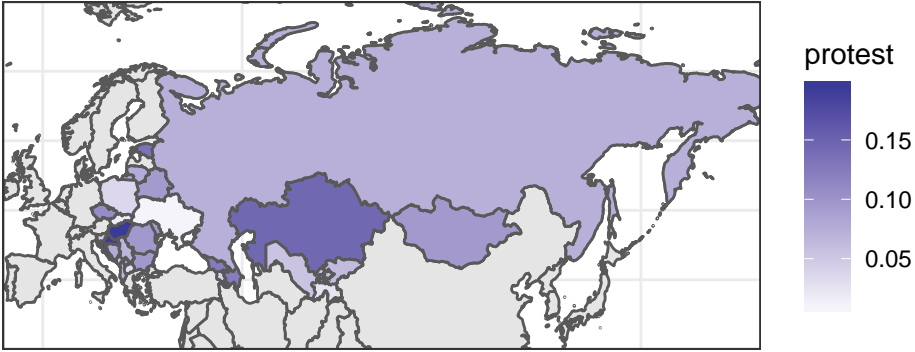
Figure 1: Map of protest participation in sample

Figure 2: Map of electoral participation in sample

5 Protest participation full results

Table 5: Protest participation full results (logit)

	Model 1	Model 2	Model 3	Model 4
Intercept	−4.14***	−3.80***	−3.80***	−4.00***
	(0.14)	(0.14)	(0.14)	(0.14)
Perception	0.01***			0.02***
	(0.00)			(0.00)
Exposure		0.19***	0.19***	0.30***
		(0.03)	(0.03)	(0.05)
Perception*Exposure				−0.01***
				(0.00)
Government Contact	0.11***			
	(0.01)			
Government Trust	−0.08***	−0.08***	−0.08***	−0.08***
	(0.02)	(0.02)	(0.02)	(0.02)
Political Satisfaction	−0.05*	−0.05*	−0.05*	−0.05*
	(0.02)	(0.02)	(0.02)	(0.02)
Civic Activity	0.31***	0.31***	0.31***	0.31***
	(0.02)	(0.02)	(0.02)	(0.02)
Life Satisfaction	0.01	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Education	0.24***	0.25***	0.25***	0.25***
	(0.01)	(0.01)	(0.01)	(0.01)
Wealth	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Female	−0.37***	−0.37***	−0.37***	−0.37***
	(0.04)	(0.04)	(0.04)	(0.04)
Age	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
AIC	23759.25	23812.71	23812.71	23784.15
BIC	24108.04	24152.78	24152.78	24141.66
Log Likelihood	-11839.63	-11867.35	-11867.35	-11851.07
Deviance	23679.25	23734.71	23734.71	23702.15
Num. obs.	45242	45242	45242	45242
Unit FE	✓	✓	✓	✓
Time FE	✓	✓	✓	✓

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$. Heteroscedasticity-consistent standard errors used.

6 Electoral participation full results

Table 6: Electoral participation full results

	Model 1	Model 2	Model 3	Model 4
Intercept	−1.94***	−2.06***	−1.95***	−1.94***
	(0.10)	(0.09)	(0.10)	(0.10)
Perception	−0.01***		−0.01***	−0.01***
	(0.00)		(0.00)	(0.00)
Exposure		−0.05*	−0.03	−0.11**
		(0.02)	(0.02)	(0.04)
Perception*Exposure				0.00*
				(0.00)
Government Contact	0.16***	0.16***	0.16***	0.16***
	(0.01)	(0.01)	(0.01)	(0.01)
Government Trust	0.16***	0.16***	0.16***	0.16***
	(0.01)	(0.01)	(0.01)	(0.01)
Political Satisfaction	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)
Civic Activity	0.19***	0.19***	0.19***	0.19***
	(0.03)	(0.03)	(0.03)	(0.03)
Life Satisfaction	0.10***	0.10***	0.10***	0.10***
	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.18***	0.18***	0.18***	0.18***
	(0.01)	(0.01)	(0.01)	(0.01)
Wealth	−0.00	−0.00	−0.00	−0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Female	−0.07**	−0.07**	−0.07**	−0.07**
	(0.02)	(0.02)	(0.02)	(0.02)
Age	0.03***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)
AIC	45341.54	45362.68	45341.28	45336.58
BIC	45690.33	45711.47	45698.79	45702.81
Log Likelihood	-22630.77	-22641.34	-22629.64	-22626.29
Deviance	45261.54	45282.68	45259.28	45252.58
Num. obs.	45242	45242	45242	45242
Unit FE	✓	✓	✓	✓
Time FE	✓	✓	✓	✓

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$. Heteroscedasticity-consistent standard errors used.

7 Protest participation results using conditional logit estimation

Table 7: Conditional logit protest participation models

Perception	0.01***		0.01***	0.01***
	(0.00)		(0.00)	(0.00)
Exposure		0.17***	0.14***	0.23***
		(0.02)	(0.02)	(0.04)
Perception*Exposure				−0.01**
				(0.00)
Government Trust	−0.08***	−0.08***	−0.07***	−0.07***
	(0.02)	(0.02)	(0.02)	(0.02)
Political Satisfaction	−0.04*	−0.04*	−0.04*	−0.04*
	(0.02)	(0.02)	(0.02)	(0.02)
Civic Activity	0.26***	0.25***	0.25***	0.25***
	(0.01)	(0.01)	(0.01)	(0.01)
Life Satisfaction	0.02	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Education	0.23***	0.23***	0.23***	0.23***
	(0.01)	(0.01)	(0.01)	(0.01)
Wealth	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Female	−0.35***	−0.35***	−0.35***	−0.35***
	(0.03)	(0.03)	(0.03)	(0.03)
Age	0.00***	0.00***	0.00***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
AIC	54914.28	54901.19	54883.07	54877.61
R^2	0.02	0.02	0.02	0.02
Max. R^2	0.71	0.71	0.71	0.71
Num. events	3782	3782	3782	3782
Num. obs.	45242	45242	45242	45242

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

8 Electoral participation results using conditional logit estimation

Table 8: Conditional logit electoral participation models

	Model 1	Model 2	Model 3	Model 4
Perception	−0.00**		−0.00***	−0.00***
	(0.00)		(0.00)	(0.00)
Exposure		0.03**	0.03***	0.01
		(0.01)	(0.01)	(0.02)
Perception*Exposure				0.00*
				(0.00)
Government Trust	0.06***	0.06***	0.06***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
Political Satisfaction	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Civic Activity	0.06***	0.06***	0.06***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
Life Satisfaction	0.04***	0.04***	0.04***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.07***	0.07***	0.07***	0.07***
	(0.00)	(0.00)	(0.00)	(0.00)
Wealth	−0.00	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Female	−0.03**	−0.03*	−0.03*	−0.03*
	(0.01)	(0.01)	(0.01)	(0.01)
Age	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
AIC	477121.86	477118.99	477108.68	477105.77
R^2	0.03	0.03	0.03	0.03
Max. R^2	1.00	1.00	1.00	1.00
Num. events	34893	34893	34893	34893
Num. obs.	45242	45242	45242	45242

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.