

What Corruption is Most Harmful? Unbundling Citizen Perceptions

[Aaron Erlich](#)

McGill University

[Jordan Gans-Morse](#)

Northwestern University and IPR

[Simeon Nichter](#)

University of California, San Diego

[Arne Holverscheid](#)

Northwestern University

Version: January 13, 2025

DRAFT

Abstract

To combat corruption, many countries employ information campaigns aimed at citizens. When designing such campaigns, practitioners often consider citizen perceptions of corruption's harms, but typically lack data about two key questions. Which forms of corruption do citizens deem especially pernicious? And how do citizens' perceptions differ when considering distinct types of harms? This article introduces a diagnostic approach to investigate these questions, drawing on a conjoint experiment conducted in collaboration with Armenia's Corruption Prevention Commission. This approach maps citizen perceptions of corruption's consequences across four distinct types of harms: economic, political, moral, and personal. It not only identifies forms of corruption viewed as particularly damaging, but also reveals how findings may diverge across harms. For example, the findings suggest that Armenians perceive high-level embezzlement as especially harmful for all four types of harms the researchers examined. By contrast, they deem healthcare corruption to inflict more personal and moral harm—but less economic and political harm—than corruption in other sectors. While citizens' perceptions of corruption harms are context specific, the researchers' approach has broad applicability both for practitioners designing campaigns, and for scholars seeking to conceptualize corruption and its consequences.

We thank Haykuhi Harutyunyan, former chairwoman of Armenia's Corruption Prevention Commission, without whom this project would not have been possible. We are also grateful for input from Kirk Bansak, Vincent Arel-Bundock, James Druckman, Daniel Gingerich, Sarah Hummel, Marko Klačnja, Aram Simonyan, and attendees at the 2024 Association for Study of Nationalities Annual Convention, the "Voter Expectations, Corruption, and Social Welfare" panel at the 2023 American Political Science Association Annual Meeting, and the Politics & Political Economy of Eurasia Workshop at the 2023 Midwest Political Science Association Conference for their insightful comments and feedback.

Citizens throughout the world express considerable concern about corruption. According to the 2021 Gallup World Poll, a majority of respondents in 101 out of 127 participating countries perceive corruption in government to be widespread; in 44 countries, at least three out of four citizens perceive widespread corruption within their governments. Similarly, Transparency International’s Global Corruption Barometer finds that 85% of Latin Americans, 73% of Asians, and 62% of European Union citizens believe corruption to be a “fairly big” or “very big problem.” And, according to longitudinal polling by the public opinion research firm Ipsos, when citizens from 29 countries were queried about what issues they find “most worrying,” corruption was frequently the most mentioned issue before the COVID-19 pandemic, and has since continued to be among the top five (of 18) issues mentioned.¹

Corruption, however, means many different things to different people, just as individuals almost certainly have widely varying opinions about why corruption is problematic. What types of corruption do citizens consider to be especially pernicious, and how do their views differ when considering distinct types of harms (e.g., personal vs. societal harms)?

Understanding citizen perspectives about these distinct harms is important in part because it may bolster popular support for anti-corruption efforts and improve the chances of reforms’ success. Despite nearly two decades of extensive anti-corruption campaigns, citizens across the globe are overwhelmingly dissatisfied with their countries’ efforts to quash corruption: In 2017, the most recent year for which Transparency International compiled a global dataset for its Global Corruption Barometer, a majority of respondents in 76 of 117 participating countries perceived their government’s handling of the fight against corruption to be “fairly bad” or “very bad.”² Meanwhile, despite some success stories, recent studies have raised questions about activists’ and policymakers’ capacity to effectively transform

1. Cited statistics about corruption are from, respectively, the 2021 Gallup World Poll dataset (contact authors for data); Global Corruption Barometer Latin America & The Caribbean 2019, p. 10, Global Corruption Barometer Asia 2020, p. 10, and Global Corruption Barometer European Union 2021, p. 11 (available for download at: <https://www.transparency.org/en/gcb>); and Ipsos, “What Worries the World,” October 2024, p. 14 (available for download at: <https://www.ipsos.com/en-us/what-worries-world>).

2. Authors’ calculations based on 2017 Global Corruption Barometer dataset. Downloaded on 8/22/2023 from <https://bit.ly/45FZYCY>.

citizen attitudes and behaviors via anti-corruption educational and informational campaigns (see, e.g., Cheeseman and Peiffer 2022; Erlich and Gans-Morse 2023; Peiffer and Cheeseman 2023). The limited appeal of messaging campaigns, and the broader dissatisfaction with anti-corruption efforts, may in part reflect reformers' failure to consider what specific forms and harms of corruption citizens find most alarming. Additionally, because existing studies overwhelmingly focus on one specific type of corruption or rely on composite indices of aggregate corruption that do not distinguish among qualitatively different forms, policymakers are often left without guidance about which findings apply to which corruption types. Nuanced perspectives that disaggregate its many forms may improve policymakers' capacity to direct resources toward fighting corruption's most damaging forms.

This line of inquiry also has broader implications for the study of corruption. Scholars have long recognized that corruption takes many forms, and many have sought to refine the concept of corruption and classify its various subtypes (e.g., Ang 2020; Bussell 2015; Johnston 2005; Rose-Ackerman 1990; Truex 2011). But far fewer studies have examined empirically whether different types of corruption have distinct harms, and even fewer have analyzed how citizens' themselves associate distinct corruption forms with specific consequences.

These unresolved questions are not merely academic. Policymakers can benefit from such knowledge when designing anti-corruption information campaigns, as they often lack data about whether citizens perceive distinct harms from different forms of corruption. Beyond offering benefits for campaigns, this information may also help to improve prominent analytical frameworks employed by policymakers and scholars. On the one hand, classic studies of corruption as a principal-agent problem have provided important insights about the types of institutions required to monitor and sanction misbehaving public officials (e.g., Klitgaard 1988; Rose-Ackerman 1978). But successful institutional reforms often require substantial popular support, and developing a better understanding of the political economy of anti-corruption reform requires attention to citizen viewpoints. On the other hand, influential recent studies of corruption as a collection active dilemma have illuminated how

mutually reinforcing expectations about other citizens’ willingness to act corruptly can lock societies into high-corruption equilibria (Corbacho et al. 2016; Persson et al. 2013). But to better comprehend how some societies nevertheless escape such traps, it is key to understand how citizens’ perceptions of corruption harms may shape campaigns’ ability to undermine entrenched norms and stimulate adoption of new attitudes and behaviors.

To shed light on citizen perceptions of corruption features and the specific harms they cause, this article develops a diagnostic approach. We demonstrate this approach through a real-world application conducted in collaboration with Armenia’s Corruption Prevention Commission (CPC), which holds a mandate to conduct anti-corruption education, training, and information campaigns. To facilitate formulation of more effective messaging, we investigated citizen perceptions via a face-to-face conjoint experiment with a representative sample of 1,501 Armenians. Our experiment examined corruption’s distinct forms by presenting participants with corruption scenarios in which we randomly assigned variations of seven key attributes, such as corruption type (e.g., bribery vs. embezzlement), scale (e.g., high-level vs. low-level officials), and sector (e.g., police vs. healthcare), and then queried participants about the impact of each scenario on four distinct types of harms: effects on Armenia’s economy, on trust in political institutions, on moral norms in society, and on respondents and their families. We additionally asked participants to evaluate the relative prevalence of the forms of corruption presented in each scenario.

Our analyses suggest that Armenian citizens perceive three categories of corruption attributes: (1) those that broadly render corruption more harmful, (2) those that play little role in whether corruption is deemed harmful, and (3) those whose impact depends on the specific type of harm under consideration. With respect to the first category, we find clear evidence that Armenians perceive corruption involving high-level officials or large sums of money to be more harmful to the overall economy, to trust in the political system, to society’s moral norms, and to themselves personally. Similarly, respondents consider embezzlement to be universally more harmful than bribery and kickbacks. By contrast, the second cate-

gory consists of several attributes viewed as orthogonal to corruption’s harms, such as its purpose (e.g., self-enrichment vs. illicit contributions to political parties) and structure (e.g., individually corrupt officials vs. organized collusion among multiple officials). These aspects of corruption have no discernible influence on assessments of corruption’s harms, regardless of whether the focus is on consequences for the national economy, for political institutions, for moral norms, or for themselves personally.

The final category of attributes reveals that distinguishing between corruption harms is crucial to understanding citizen perspectives. Findings when evaluating one corruption harm may dissipate — or be altogether reversed — when evaluating another corruption harm. For example, our participants deemed healthcare corruption to inflict more personal harm and be more morally egregious than corruption in other sectors. Yet findings are strikingly different when investigating harms to the economy and political trust: Respondents perceive healthcare corruption as being *less* damaging than in other sectors. Similarly, respondents considered nepotism to be among the most harmful types of corruption for themselves and their families, but among the least damaging types for the national economy. More broadly, our findings suggest that practitioners and scholars who fail to distinguish among corruption’s distinct consequences may overlook important variation. Overall, participants in our study conveyed considerable nuance when assessing corruption harms: When presented with paired corruption scenarios, respondents deemed one scenario uniformly worse than the other with regards to all four types of harms in just one-third of paired scenarios shown.

Beyond ascertaining which specific corruption attributes are especially consequential for citizen perceptions in a given country, practitioners may find it valuable to understand how citizens perceive various *combinations* of attributes. After all, citizens do not experience corruption attributes in isolation; instead, they experience corruption scenarios in which they encounter multiple attributes simultaneously. For example, how might perceived harms from embezzlement by high-level officials in parliament compare to the perceived harms of bribery by low-level officials in the healthcare sector? As demonstrated below, an extension of our

diagnostic approach, which draws on simulations to facilitate multidimensional analyses, can offer insights into such questions. Our diagnostic framework may thus be especially useful to practitioners designing anti-corruption information campaigns, who often must evaluate the potential effects of numerous factors when deciding what to feature in campaign materials.

As such, our findings have important policy and scholarly implications. For activists and policymakers developing information campaigns, our diagnostic approach provides insights that can be used to tailor advertisements and materials to reflect citizens' perceptions of corruption harms. For example, if a civil society organization aims to launch an television advertisement depicting a corruption scenario that many Armenians would deem particularly harmful, our findings suggest that high-level embezzlement would resonate well. The findings also show the importance of recognizing when the perceived impact of corruption depends on the type of harm considered. If the civil society organization decided instead to launch an advertisement featuring a healthcare corruption scenario, for instance, it might only resonate as especially harmful if focusing on personal or moral harms. Meanwhile, our study advances the scholarly literature on corruption by offering novel empirical evidence of how citizens conceptualize corruption as a multi-dimensional phenomenon. The study also offers insights into the extent to which findings about citizen perceptions regarding specific corruption types and harms generalize to other corruption types and harms. Overall, although perceptions of corruption harms almost certainly are context specific, our approach has broad applicability both for practitioners designing campaigns and for scholars seeking to conceptualize corruption and its consequences.

Anti-Corruption Information Campaigns

To motivate our analyses, we first situate the policy relevance of our diagnostic approach by briefly discussing anti-corruption information campaigns. Such campaigns featured prominently in one of the most notable modern anti-corruption success stories: the Hong Kong's Independent Commission Against Corruption (ICAC) efforts to combat corruption in the

1970s (Klitgaard 1988, ch. 4). Hong Kong’s success led to emulation, and by the 2010s nearly 100 countries had created a specialized anti-corruption agency, many of which were explicitly modelled after the ICAC (Mungiu-Pippidi 2015, 103). Meanwhile, the 2004 United Nations Convention Against Corruption, an important plank of which emphasized raising the public’s awareness about corruption, piqued activists’ and policymakers’ interest in informational campaigns. Billboards, posters, and television advertisements subsequently became a common feature of anti-corruption efforts across the globe (Peiffer 2020, 1207).

Despite considerable promise, anti-corruption information campaigns often fall short of desired objectives. Although case studies and qualitative research have favorably evaluated such campaigns (e.g., Hira and Shiao 2016; Muñoz 2014; Werner 2000; see also the discussion in Gans-Morse et al. 2018, 181), recent experimental research has raised questions about their efficacy. Cheeseman and Peiffer (2022) and Peiffer and Cheeseman (2023) suggest that not only do many types of messaging fail to have their intended effect, but also that some informational campaigns may even “backfire”: By drawing attention to corruption’s prevalence, they may make citizens *more* inclined to engage in corruption or less willing to support efforts to fight corruption. On the other hand, a growing body of evidence indicates that certain types of campaigns, especially those employing norm-based messaging about declining levels or rising societal intolerance for corruption, can in fact be effective (Agerberg 2022; Blair et al. 2019; Erlich and Gans-Morse 2023; Köbis et al. 2015; Köbis et al. 2019). These diverging results most likely reflect the fact that, in line with broader theories of persuasion (Druckman 2022; Lasswell 1948; McGuire 1969), messaging’s persuasiveness depends on numerous factors, including the campaign’s source, message content, medium of distribution, and target audience.

Given such challenges, anti-corruption agencies often seek to improve their understanding of how citizens perceive corruption harms. The present article contributes to these efforts by developing a diagnostic approach that disaggregates citizen perceptions about distinct harms of corruption, as well as about different forms of corruption. When designing anti-corruption

information campaigns, agencies can improve their messaging content if they ascertain what specific corruption scenarios are deemed most egregious by citizens with respect to personal, economic, political and moral harms.³ Our conjoint experiment confirms the policy relevance of this approach through a real-world application conducted in collaboration with Armenia’s Corruption Prevention Commission. More broadly, unbundling perceptions of corruption harms can contribute beyond information campaigns; it can, for instance, help policymakers to bolster political support for anti-corruption reforms and can improve analytical frameworks.

Corruption and its Consequences

Disaggregating Corruption Harms

What types of corruption do citizens deem to be especially pernicious, and how do their views differ when considering distinct types of harms? To examine this issue, we focus on four potential consequences of corruption: (1) harm to the economy, (2) harm to trust in political institutions, (3) harm to moral norms in society, and (4) harm to oneself and one’s family. Existing corruption studies focus primarily on economic and political harms. Far less research has empirically investigated how citizens perceive corruption’s effects on moral norms in society, or crucially, the extent to which citizens distinguish corruption’s impact on themselves personally from its broader societal harms.

The most established consequences of corruption pertain to *economic harms*. Of the numerous consequences examined in Rose-Ackerman and Palifka’s (2016, 27-36) authoritative volume, nearly half are economic factors, ranging from economic growth to inflation. Other consequences examined, such as increased tax evasion and lower quality public goods, also have significant implications for economic development. Although debate continues about whether certain types of corruption such as “speed money” — bribes given to cut through

3. In countries with substantial heterogeneity in corruption perceptions across subpopulations, agencies can also employ information from our diagnostic approach to customize messaging content across different audiences. As discussed below, we largely do not observe such heterogeneity in Armenia.

red tape and other bureaucratic hurdles — can have have salutary effects (see, e.g., Fisman et al. 2024), most economists agree that corruption slows growth and undermines development (for reviews, see Fisman and Golden 2017; Olken and Pande 2012; Svensson 2005). Corruption’s impact on *political trust* has also been well-established. Numerous studies have identified a negative correlation between citizen perceptions of corruption and evaluations of political systems’ performance, belief in political systems’ legitimacy, trust in politicians or civil servants, and confidence in public institutions (Anderson and Tverdova 2003; Ares and Hernández 2017; Beesley and Hawkins 2022; Clausen et al. 2011; Seligson 2002).

Beyond economic or political consequences, it is also possible that citizens have in mind damage to their community’s *moral and social norms* when expressing views on corruption harms. Although there is extensive evidence that in nearly all countries, even those facing endemic corruption, clear-cut majorities believe that corruption is wrong and unjustifiable (Agerberg 2022, 933; Fisman and Golden 2017, 146–149; Persson et al. 2013, 455–456), it may be the case that citizens perceive certain forms of corruption to be less morally egregious or more socially tolerable than others. For example, corruption aimed at gaining access to public services to which citizens are entitled but are difficult to obtain without bribes may be judged less harshly than corruption employed by citizens or firms seeking to gain unfair advantages. To the best of our knowledge, existing studies have not examined this issue, although there is a literature that investigates individual-level differences in tolerance of or willingness to condone corruption (Bauhr and Charron 2020; Hernandez and McGee 2013; Swamy et al. 2001; Torgler and Valev 2010; Truex 2011).

Another key consideration is the extent to which citizens are concerned about the *personal harm* that corruption inflicts on them and their families. Just as voters evaluate incumbents’ performance through a mixture of egotropic concerns about their household finances and sociotropic considerations about the overall economy (Kinder and Kiewiet 1981), citizens may distinguish between corruption’s impact on them personally and corruption’s broader effects on societal norms, the economy, or the political system. While several studies have

investigated related questions about the impact of individuals' own corruption encounters relative to the impact of perceived societal corruption on institutional trust or electoral support for incumbent politicians (Booth and Seligson 2009; Klašnja et al. 2016), we address a distinct set of issues: the extent to which citizens perceive specific forms of corruption to be harmful to them personally, to society as a whole, or to both. More broadly, our study advances the literature by simultaneously integrating all four of these corruption harms into our analyses.

Disaggregating Corruption

In addition to disaggregating corruption's harms, we also analyze how citizens' perceptions of consequences differ across distinct types of corruption scenarios. In particular, we examine corruption's type, scale, objectives, and structure, as well as the sector involved and corrupt officials' gender. With the exception of a small number of studies discussed below, this step is rarely undertaken in research on the consequences of corruption. At the macro-level, most cross-national analyses rely either on composite indices that offer quantitative measures of aggregate corruption without distinguishing among qualitatively different forms, or on indicators that focus narrowly on country-level bribe rates.⁴ At the micro-level, the challenge of rigorously measuring any form of corruption, least of all multiple types, understandably leads most researchers to focus on specific corruption types. And among empirical studies that do disaggregate corruption, they often focus on just one or two features. Yet as our findings emphasize, understanding citizen perspectives on corruption harms requires consideration of corruption's various forms.

Corruption, frequently defined as the abuse of public office or resources for private gain, takes many forms. To guide our investigation of forms that citizens might deem especially harmful, this section summarizes key attributes in the broader corruption literature that

4. Examples of the former include the World Bank's Controlling Corruption Index and Transparency International's Corruption Perception Index. Transparency International's Global Corruption Barometer is an example of the latter. Only recently has V-Dem introduced multi-dimensional country-level corruption indicators (see McMann et al. 2022 for details about these indicators and Uberti 2022 for a recent application of these indicators to the study of corruption's impact on economic growth).

have been hypothesized or shown to affect the severity of corruption’s consequences. While we draw on the existing literature, we emphasize that we depart from many studies in our focus on citizen perceptions. Especially when considering how specific forms of corruption affect harms to oneself or one’s family, political trust, or society’s moral norms, citizens’ subjective perceptions and attitudes are of fundamental importance. Meanwhile, when it comes to corruption’s impact on the economy, we recognize that citizens may hold views that diverge from social science predictions, or that are incongruent with existing evidence. Yet regardless of whether citizens’ assessments of corruption’s economic impact are well-founded, these perceptions have very real consequences, particularly in terms of citizens’ willingness to support and contribute to anti-corruption campaigns.

To examine the attributes that might affect how citizens perceive corruption harms, we first consider distinctions among basic *corruption types*. Particularly illuminating is Ang’s (2020, 8-9) distinction between corruption involving two-way exchanges versus corruption that amounts to straightforward theft (see also Fisman and Golden 2017, 37–39). Bribery is the paradigmatic example of the former; embezzlement, an illustrative case of the latter. In one of the few studies that not only disaggregates corruption but also empirically analyzes the relative harmfulness of corruption’s distinct forms, Ang (2020, 11–12), drawing on analysis of China’s recent economic growth, argues that corruption types involving theft are unequivocally “the most economically damaging as they drain public and private wealth,” whereas the “effects of exchange-based corruption are more ambiguous.”⁵ While we are not aware of studies examining the impact of different corruption types on political trust, Truex (2011) investigates the degree to which different corruption types violate social norms in Nepal. He finds that on average Nepalese citizens perceive nepotism to be more socially acceptable than bribery, although the acceptability of both types depends on factors such as the size of the bribe or the sector in which nepotism occurs. Building on these earlier studies, our conjoint experiment below analyzes five corruption types: two involving exchanges

5. Unlike the present study, Ang (2020) does not focus on citizen perceptions of corruption harms.

(bribery and procurement kickbacks) and three involving theft or other misappropriations of public resources (embezzlement, nepotism, and corrupt conflicts of interest).

A second key attribute that may affect citizen perceptions of corruption’s consequences is its *scale*, often referred to as a distinction between “petty” and “grand” corruption (Ang 2020, 8-9; Bussell 2015, 23-24; Fisman and Golden 2017, 37-28; Rose-Ackerman 1990). The former usually features lower-level officials and smaller sums of money; the latter features higher-level officials and larger sums.⁶ Given the actors and monetary stakes involved, it is tempting to expect grand corruption to be perceived as unambiguously more harmful. But Ang (2020, 12-19) argues that high-level corruption in contemporary China (and in the United States during the Gilded Age) was relatively conducive to growth, largely because it was limited to exchange-based types of corruption that aligned public and private interests in pursuing development projects. Kang (2002) makes a related argument about the persistence of high-level corruption during South Korea’s decades of extraordinary economic performance. Meanwhile, it is conceivable that citizens might perceive petty corruption to be more problematic precisely because it is the type of corruption that is “easier for ordinary citizens to observe and experience” (Rose-Ackerman and Palifka 2016, 11). Indeed, in one of the first studies to disaggregate the effects of petty versus grand corruption on trust in political institutions, Beesley and Hawkins’s (2022) survey experiment finds petty corruption far more damaging from the perspective of Peruvian citizens. On the other hand, Lewis (2021) examines the distinct effects of petty versus grand corruption on the outbreak of demonstrations and protests in African countries, an indicator that arguably reflects perceptions of personal harm and sense of norm violations, and finds a much stronger relationship between high-level corruption and protests. Truex’s (2011) study of corruption and social norms in Nepal also finds that citizens perceive grand corruption to be less normatively acceptable.

Our analysis of citizen perceptions of corruption harms also examines a third attribute:

6. Our conjoint experiment operationalizes scale by considering both *public officials’ rank* and the amount of money or other resources at stake, which we refer to as *corruption’s size*. While these two factors likely are highly correlated, officials’ ranks and monetary stakes are conceptually distinct, and little is known about citizens’ perceptions of either.

the *objectives* of corruption (i.e., why officials engage in corruption). Aside from self-enrichment, in many countries officials partake in corruption because ruling parties or political patrons expect public employees to utilize corrupt schemes for the sake of accumulating slush funds or redirecting government resources to support political campaigns. While citizens might not be expected to perceive a difference in the economic harms caused by corruption motivated by political as opposed to pecuniary objectives, they might plausibly expect the former to have more damaging effects on trust in the political system. On the other hand, as Martin (2021, 19) points out, citizens themselves may benefit when corruption proceeds are used to fund vote buying or other forms of clientelism, but they receive nothing when corruption proceeds are pocketed by officials. In one of the only studies to empirically investigate this issue, Martin (2021) examines how Ugandans assess the severity of different forms of corruption and subsequent eagerness to punish corrupt officials — and finds that citizens judge self-enrichment more harshly.⁷

A fourth factor that may affect citizen views of corruption’s harmfulness is the *structure of corruption*, particularly the extent to which corruption is centralized vs. decentralized. As proposed in Shleifer and Vishny’s (1993) classic study, theories of industrial organization imply that centralized corruption should be less damaging than decentralized corruption. High-level coordination aims to maximize a corrupt bureaucracy’s overall revenues and therefore seeks to avoid extorting firms and citizens to the point where they go out of business or stop seeking services from the state altogether. Decentralized corruption, on the other hand, in which individual public officials or smaller agencies acting independently of each other all maximize their own revenue at the expense of other competing corruption schemes, places fewer limits on officials’ predatory behavior (see also Fisman and Golden 2017, 101-106). Olken and Barron’s (2009) innovative empirical work based on bribes paid by Indonesian

7. A related but distinct attribute concerns whether a corrupt actor is an appointed or elected official. Truex (2011) finds that this distinction has no effect on Nepalese citizens’ evaluation of the acceptability of a corrupt act, but Martin (2021) finds Ugandans more willing to punish elected officials. Our conjoint experiment does not examine this attribute because the distinction between elected and appointed officials is not applicable to many of the sectors featured in our corruption scenarios.

truckers provides evidence supporting these propositions, while other scholars suggest that the distinction between centralized and decentralized corruption helps to explain divergent development trajectories in Russia and China (see, e.g., Larsson 2006; Sun 1999). Very little is known, however, about how citizens perceive the harms, economic or otherwise, imposed by these distinct forms of corruption. As just one example, citizens might plausibly view the broader collusion involved in centralized, coordinated corruption as especially harmful for trust in political institutions.

A fifth attribute of corruption examined by our diagnostic approach concerns the *sector* involved. Drawing on the broader corruption literature as well as prior evidence on the phenomenon in Armenia, our analyses below focus on healthcare, education, law enforcement, courts, the parliament, and tax authorities. According to Transparency International's Global Corruption Barometer, citizens in nearly all world regions perceive corruption to be most widespread within police forces and parliaments.⁸ But citizens' beliefs about corruption's *prevalence* across sectors need not correspond with their perceptions about the *severity* of harms caused. Moreover, citizens might also have different views about the damage caused by corruption in a given sector, depending on the specific type of harm they consider. We are unaware of any extant literature that analyzes different types of corruption harms across sectors, but it seems plausible that citizens would deem corruption involving the courts or tax authorities to be especially pernicious for the economy, while they might view legislative corruption as particularly damaging for trust in the political system. Meanwhile, scholars have argued that in many developing countries, bribe-taking in sectors such as education or healthcare are widely understood to be motivated by necessity, not by personal enrichment, given that salaries of teachers, nurses, and doctors are often below a living wage (Polese 2008; Rivkin-Fish 2005). If true, then citizens might be more forgiving when considering the

8. Global Corruption Barometer Africa 2019, p. 12; Global Corruption Barometer Middle East & North Africa 2019, p. 12; Global Corruption Barometer Latin America & The Caribbean 2019, p. 14; Global Corruption Barometer Asia 2020, p. 14; Global Corruption Barometer European Union 2021, p. 14.

morality of corruption in these sectors, even if they have serious concerns about its economic or political consequences.

Finally, we investigate the extent to which a sixth attribute influences citizen perceptions of corruption harms: the *gender* of public officials who engage in corrupt acts. Since the seminal works by Dollar et al. (2001) and Swamy et al. (2001) showing that women are less willing to condone bribe-taking and less likely to engage in bribery, and that corruption is lower in countries with more women in parliament and other high-level government positions, questions of gender have been a central focus of the corruption literature. Although many of these findings have withstood nearly two decades of scrutiny (see, e.g., Bauhr et al. 2019), scholars have only recently begun to investigate how citizens themselves perceive gender in the context of corruption. For example, conjoint experiments (Eggers et al. 2018; Erlich and Beauvais 2023) and survey experiments Brierley and Pereira (2023) show, respectively, that voters are not more likely to punish female politicians who face corruption allegations, and that citizens do not necessarily expect female bureaucrats to request fewer bribes.⁹ Our analyses below offer fresh evidence with respect to citizens’ viewpoints and expectations regarding gender and corruption.

As the preceding overview suggests, the existing literature, which focuses on features of corruption that social scientists and policymakers deem harmful, may provide a useful starting point for identifying features that citizens themselves find damaging. But studies have rarely empirically examined citizen corruption perceptions, despite these perceptions’ importance for formulating effective anti-corruption campaigns and for understanding the broader implications of analytical frameworks widely employed by scholars and policymakers. Additionally, existing studies of citizen perceptions have not rigorously assessed how distinct forms of corruption map to specific harms — such as how corruption affects the economy, political trust, moral and social norms, or individuals and their families. While a handful of excellent studies have made important contributions, these focus on the harms

9. Eggers et al. (2018) do, however, find noteworthy heterogeneity across respondents by gender, with female voters proving more willing to punish female politicians for allegations of corruption.

caused by a single corruption attribute, such as petty versus grand corruption, and usually investigate harm with respect to a single outcome, most frequently involving economic factors or political trust. By contrast, our study broadly advances the literature by providing a far more comprehensive investigation of: (1) the types of corruption that citizens deem to be especially pernicious and (2) how their views differ when considering distinct types of harms.

Corruption Trends in Armenia

These questions are of central importance in Armenia, a country where domestic anti-corruption reformers are proactively investigating how citizens view the problem of corruption. Understanding how Armenians perceive corruption harms may help the nation's policymakers to heighten anti-corruption campaigns' effectiveness and popular support.

Prior to the 2018 Velvet Revolution, Armenia had similarly high levels of corruption as its neighbors. According to Transparency International's Corruption Perceptions Index, for example, Armenia was rated as marginally less corrupt than Azerbaijan and Ukraine and on par with Moldova. All four of these countries considerably trailed Georgia, which undertook notable anti-corruption reforms in the mid-2000s but more recently has experienced substantial backsliding (McDevitt 2015). Corruption was one of the main issues that instigated the 2018 popular uprising that removed Serzh Sargsyan from power (Lanskoy and Suthers 2019), and the revolution was followed by a series of anti-corruption reform efforts, some of which drew inspiration from Georgian and Ukrainian reforms introduced, respectively, in the wake of the 2003 and 2014 Rose and Maidan revolutions. The creation of Armenia's Corruption Prevention Commission in 2019 was part of these reforms (Bak 2020; OECD 2022).

More than half a decade after the revolution, corruption most certainly persists, and there are questions about whether reform momentum has stalled. But some positive trends are apparent. In 2016, the latest year for which the Transparency International's Global Corruption Barometer collected data in Armenia, 24% of respondents reported having paid

a bribe in the past 12 months.¹⁰ By contrast, a 2021 USAID survey produced a comparable figure of around 5%. This positive trend, however, was not apparent in respondents' perceptions in the same survey: 75% of respondents reported that bribery is common in Armenia. Other corruption types were also perceived as common by a majority of respondents, ranging from 60% for kickbacks to 82% for nepotism. And yet, the same respondents who perceived corruption to be widely prevalent also perceived its impact to be relatively moderate: When asked, "How big is the impact of corruption on you and your surroundings / community?", 37% of respondents indicated "rather big" or "very big," compared to 59% who indicated "rather little" or "insignificant."¹¹

These types of survey questions are frequently used to gather baseline data in preparation for anti-corruption campaigns, and while they offer valuable insights, they also illustrate the limitations of the data often collected about corruption perceptions. For example, when citizens respond to a question about corruption's impact, what specific impact do they have in mind? To motivate why this issue is important to investigate more deeply, consider stark differences observed in three non-experimental questions in our Armenia survey (discussed below). We asked citizens about the extent to which corruption harms themselves and their families, harms Armenia's economy, and reduces their trust in Armenia's political system.¹² All responses were elicited on a 7-point scale, where 1 represents "not at all harmful" and 7 represents "extremely harmful." Whereas only 28% of citizens responded that corruption is "extremely harmful" for themselves and their families, 62% responded that corruption is "extremely harmful" for the economy (as did 52% for political trust). These figures suggest that aggregate questions about corruption's impact may fail to capture important nuances. For instance, they may generate answers about whatever type of harm is most salient for respondents at a given moment, force respondents to average across societal and

10. Global Corruption Barometer Europe & Central Asia 2016, p. 18.

11. Under 1% responded that "corruption does not exist," and 4% declined to answer. USAID, Armenia: Corruption Perception Survey, February 2022.

12. Our conjoint experiment discussed below investigates these three harms, along with moral harms.

personal harms when providing answers, or lead to conflation of respondents' views about the prevalence and severity of a given type of corruption.

Conjoint Experiment Design

Even if a survey disaggregates corruption harms in the manner discussed in the preceding section, an unresolved issue is that citizens may assess harms differently depending on the type of corruption they have in mind. In theory, a survey could include a battery of questions asking respondents to assess the effects of various corruption types. But for analysts seeking to account for both multiple forms of corruption and multiple types of harms, this approach quickly becomes unwieldy. To collect data on the effects of each of the corruption attributes introduced above, each of which in turn has multiple levels (e.g., bribes vs. embezzlement, high-ranking vs. low-ranking officials, etc.), on four different types of harms would require dozens of highly repetitive survey items if relying on a traditional survey format. By contrast, the multidimensional conjoint experiment design we employ below makes such analyses tractable. Our approach also induces respondents to think about corruption in a far more realistic way. In real life, individuals do not exhibit attitudes when considering a single dimension of corruption in isolation, as respondents are encouraged to do when presented with a traditional survey question. Rather, as in our research design, they face more complex situations involving corruption and exhibit attitudes based on the simultaneous consideration of numerous features and potential harms.

Our conjoint experiment was conducted with a representative sample of 1,501 adult Armenians, drawn using multistage cluster stratified sampling (see Online Appendix [A](#) for additional details). Data collection consisted of face-to-face interviews carried out by the survey research firm CRRC-Armenia between January and June of 2023.

We utilized a paired conjoint design, in which respondents view and compare two profiles shown side-by-side, a design that has been demonstrated to perform well with respect to external validity (Hainmueller et al. 2015). The experiment sequentially showed each partic-

Table 1: Attributes & Levels for Corruption Scenario Profiles

Type of Corruption

- Official takes bribes
- Official takes kickbacks
- Official steals public resources
- Official gives corrupt favors to family members
- Official uses public resources to benefit own firm

Official's Rank

- Low-level official
- High-level official

Size of Corruption

- Small amount of money
- Large amount of money

Corruption's Objective: How official uses corrupt funds

- To obtain money for personal use
- To obtain money for political candidates or parties

Corruption's Structure: Whether official acts alone

- Keeps all corrupt funds
- Shares corrupt funds with officials of same rank
- Shares corrupt funds with higher ranking official

Sector in which official works

- Healthcare
- Education
- Law enforcement
- Courts
- Parliament
- Tax authority

Official's Gender

- Male
 - Female
-















ipant in the study five screens; for each screen, participants viewed and answered questions about a table providing a head-to-head comparison of two corruption scenarios. Each corruption scenario profile showed randomly assigned permutations of the levels for the corruption attributes in Table 1, which operationalize those discussed above in the “Disaggregating Corruption” section.¹³ To mitigate potential order effects, we randomized the order of attributes between respondents, while holding the order constant across all five screens presented to a given respondent to facilitate comparison and reduce cognitive burden. This paired conjoint design produced a possible 15,010 observations ($N = 1501 \times 5 \times 2$), of which 14,834 were complete and usable for analysis.

As shown in the conjoint experiment screenshot in Figure 1, enumerators introduced each pair of profiles with the following statement: “In this table you can see two scenarios in which the public official resorted to a corrupt action. Please study the information presented in detail, after which I will ask a few questions about which of the scenarios you think is the most damaging.” After participants reviewed the information and indicated they were ready, enumerators then asked: “Which of the scenarios is more likely to harm you and your family: Scenario A or Scenario B?” Similar questions were posed regarding which scenario is more likely to “harm Armenia’s economy,” which scenario is more likely to “reduce your trust in Armenia’s political system,” and in which scenario “is the official’s action more morally wrong?” Respondents were also asked to indicate which scenario they believe to be more common in Armenia. Overall, our research design featuring a conjoint experiment with multiple outcome questions facilitates unusually detailed and multi-dimensional analyses of numerous corruption forms and harms.

13. Per Hainmueller et al. (2014), we use constrained attribute randomization to ensure that participants were not presented with illogical combinations of attributes. For example, profiles displaying the corruption type attribute of nepotism (“official gives corrupt favors to family members”), which frequently involves non-pecuniary exchanges, never displayed either of the “shares corrupt funds” levels for the corruption’s structure attribute. Analyses presented below properly adjust for these randomization constraints.

**Figure 1: Screenshot of Conjoint Experiment Profiles
(English-Language Translation)**

In this table you can see two scenarios in which a public official resorted to a corrupt action. Please study the information presented in detail, after which I will ask a few questions about which of the scenarios you think is the most damaging.

	Scenario A	Scenario B
Type of corruption:	 Official steals public resources	 Official takes bribes
How official uses corrupt funds:	 To obtain money for political candidates or parties	 To obtain money for personal use
Size of corruption:	 Large amount of money	 Small amount of money
Whether official acts alone:	 Shares corrupt funds with higher ranking official	 Shares corrupt funds with officials of same rank
Official's rank:	 Low-level official	 High-level official
Sector in which official works:	 Law enforcement	 Education
Official's gender:	 Male	 Female

Which scenario is more likely to harm you and your family, Scenario A or B?

Which scenario is more likely to harm Armenia's economy, Scenario A or B?

Which scenario is more likely to reduce your trust in Armenia's political system, Scenario A or B?

In which scenario are the official's actions more morally wrong, Scenario A or B?

Main Results

This section presents our primary results. All analyses are based on OLS regressions of the four outcome variables — harm to the national economy, harm to political trust, harm to society's moral norms, and harm to the respondent and their family — on sets of indicator variables for each level of each attribute. Circles represent point estimates; lines represent 95% confidence intervals. Attribute levels without estimates and confidence intervals serve as reference categories. Standard errors are clustered at the respondent level.

Following standard practice, the primary estimates we present are average marginal com-

ponent effects (AMCEs), which reflect the average effect taken over all possible combinations of the other attributes in the corruption scenario (Bansak et al. 2023; Hainmueller et al. 2014). Given our paired-conjoint design in which respondents indicated which of two corruption scenarios would be more harmful, the AMCEs in Figure 2 estimate the change in probability that a respondent identifies a profile as more harmful when the profile includes the specified attribute level instead of its baseline reference category. To provide additional insight about interpreting AMCEs for attributes with multiple categorical levels, we also present supplementary analyses using marginal means in Figure 3 (Leeper et al. 2020). These marginal means represent the predicted probability that a respondent identifies a profile as as more harmful when the profile includes the indicated attribute level, averaging over all other combinations of attributes.¹⁴

We find that in Armenia, citizens perceive three distinct categories of corruption attributes: (1) those that broadly render corruption more harmful, (2) those that have little impact on whether corruption is deemed harmful, and (3) those whose perceived impact varies across the types of harms under consideration. We discuss each in turn.¹⁵

Attributes Deemed Broadly Harmful

Our first set of findings demonstrates that in Armenia, there are certain forms of corruption that are broadly deemed more harmful than others. As discussed more extensively below, these findings have important implications for practitioners seeking to understand which specific corruption attributes citizens consider most consequential.

First, we examine how differences in corruption’s *scale* affect citizen perceptions of its harmfulness. As noted, the delineation between petty and grand corruption commands

14. Because we use constrained attribute randomization (see footnote 13 above), marginal means in our study average over all permissible combinations allowed by the randomization constraints.

15. To further confirm the robustness of our results, in Online Appendix D.1 we present diagnostics tests suggested by Hainmueller et al. (2014) to assess the identification assumptions of the AMCE estimator. Analyses confirm that the order in which subjects view profiles in a scenario does not affect our AMCE estimates; that is, we find no evidence of carryover effects. Respondents had a tendency to choose profiles on the left side of the screen, but robustness tests in Online Appendix D.1 show that estimates of AMCEs are unaffected. We also investigate the potential for subjects’ inattentiveness to affect our findings. As shown in Online Appendix D.2, results are robust to excluding the fastest 10 percent of respondents from our analyses.

central attention in the academic literature. But there is slim empirical evidence with mixed results comparing their harmfulness: grand corruption has been shown in some contexts to be more compatible with growth (Ang 2020; Kang 2002) and less damaging to trust in political institutions (Beesley and Hawkins 2022), but also more likely to elicit protest movements (Lewis 2021) and be perceived as normatively unacceptable (Truex 2011).

In the case of Armenia, the top panel of Figure 2 shows that citizens unambiguously consider grand corruption to be more harmful than petty corruption. Per the preceding section, our experiment operationalizes the distinction between grand and petty corruption using two different attributes: whether the corruption scenario involves a high-level or low-level official, and whether it involves a large or small amount of money. Respondents perceive corruption involving high-level officials or large amounts of money to be more detrimental to the national economy, to trust in the political system, to society’s moral norms, and to themselves personally. Across all four outcomes, estimates for both the “official’s rank” and “corruption size” attributes are statistically significant.¹⁶ For instance, with respect to whether citizens perceive officials’ actions as morally wrong, respondents were nearly 6 percentage points more likely to perceive a corruption scenario committed by a high-level official as more egregious.

In addition to these findings regarding scale, there are specific *types* of corruption that respondents consistently regard as especially harmful. In line with Ang’s (2020) distinction between corruption involving one-sided theft versus two-way exchanges, Figure 2 shows that Armenians broadly view theft-based corruption — namely, embezzlement (i.e., “official steals public resources”) and corrupt conflict of interests (i.e., “official uses public resources to benefit own firm”) — as more damaging than exchanged-based corruption, such as bribery and kickbacks. As with perceptions of grand corruption, these concerns about theft-based corruption are apparent across all four outcomes, and all estimates of the greater harm caused by embezzlement and corrupt conflicts of interest are statistically significant relative to bribery

16. All mentions of statistical significance refer to p -values below .05 employing two-tailed tests. As noted, figures show 95% confidence intervals.

(the reference level employed in Figure 2 for this attribute). Many are also of a substantial magnitude. For example, compared to bribery, respondents were more than 9 percentage points more likely to perceive a corruption scenario as more damaging to the economy if it involved embezzlement, and 12 percentage points more likely if it involved the use of public resources to benefit one’s own firm. To provide additional insight about harms across corruption types, we next consider marginal means. Since marginal means are interpretable without specifying a reference level (e.g., bribery), they may help clarify patterns of interest especially when attributes have more than two levels (Leeper et al. 2020).¹⁷ Notably, for corruption type, the marginal means presented in Figure 3 show that while embezzlement and corrupt conflicts of interest are perceived to be more harmful for the economy than for other outcomes, the opposite is true for the other three types of corruption. Indeed, for bribery, nepotism, and kickbacks, citizens perceive economic harms to be less of a concern than some or all of the other types of harms analyzed.

One possibility to consider is that citizens in Armenia may perceive high-level, theft-based corruption as particularly harmful yet relatively rare. The fact that citizens have more personal interactions with lower-level everyday corruption, and particularly with bribe requests, is why some analysts have suggested or found evidence of petty corruption being perceived as more problematic (Beesley and Hawkins 2022; Rose-Ackerman and Palifka 2016, 11). Yet as shown in Online Appendix C.1, this is not the case in Armenia. Citizens consider grand corruption to be more prevalent than petty corruption. More specifically, respondents were approximately 2 percentage points more likely to perceive a corruption scenario committed by a high-level official as more common than one committed by a low-level official, and also 2 percentage points more likely to perceive a corruption scenario involving large amounts of money as more common than one involving small amounts of

17. For attributes with greater than two categorical levels, statistical significance depends on the choice of reference level. Figure 4 below provides information about the proportion of pairwise comparisons that are statistically significant for each attribute.

money.¹⁸ In addition, theft-based types of corruption such as embezzlement and using public resources to benefit one’s own firm are deemed to be at least as prevalent as exchange-based types of corruption such as bribery.

In summary, whether focusing on economic and political consequences, or on personal harms and normative considerations, Armenians in our survey perceive high-level, theft-based corruption to be especially pernicious. Along with other considerations, these findings suggest that anti-corruption practitioners in this particular context should pay careful attention to corruption’s types and scale when evaluating citizen perceptions.

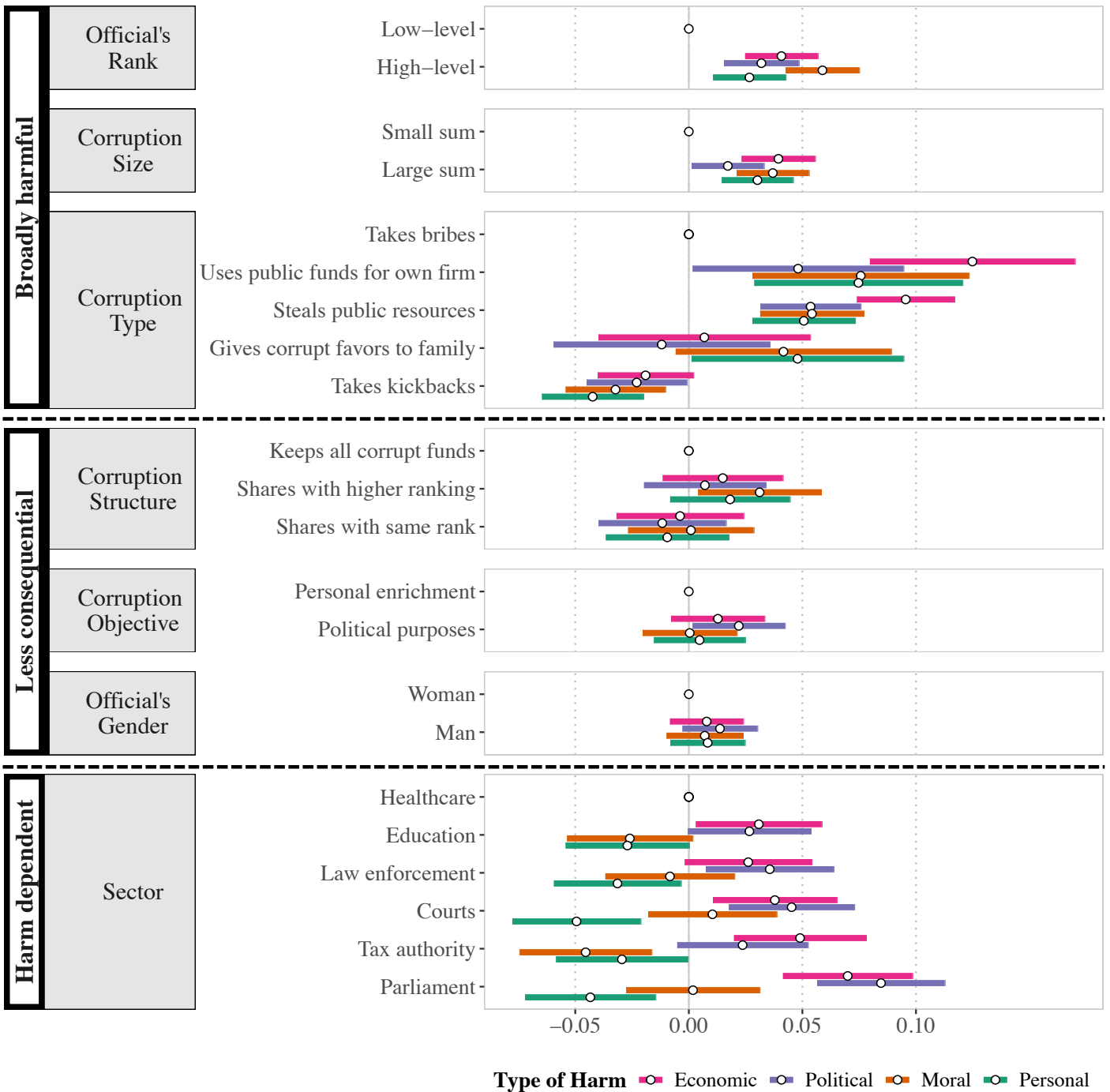
Attributes Deemed Less Consequential

In contrast to corruption’s scale and type, a second category of corruption attributes consists of factors that have far less of an impact on Armenian perceptions of corruption’s severity, regardless of which harms are considered. These include factors such as whether corruption involves individuals acting alone or in collusion with others (i.e., its *structure*), whether the motivation for corruption is self-enrichment or the illicit funding of political parties and politicians (i.e., its *objective*), and the *gender* of public officials who engage in corruption.

As discussed earlier, influential social science theories suggest that centralized and collusive forms of corruption are relatively less economically harmful (Fisman and Golden 2017; Shleifer and Vishny 1993), a claim for which there is at least some empirical support (Larsson 2006; Olken and Barron 2009; Sun 1999). The results presented in the middle panel of Figure 2 suggest that Armenians’ perceptions diverge from those academic studies. With respect to economic, political, and personal harms, respondents perceive no difference between schemes involving individually corrupt actors and those involving collusion. Respondents do perceive corruption in which proceeds are shared with higher ranking officials to constitute a moderately more severe violation of moral norms, relative to corruption in which an official keeps all illicit proceeds. But the fact that this distinction appears only for centralized corruption involving collusion with higher-level officials — and not for centralized corruption involv-

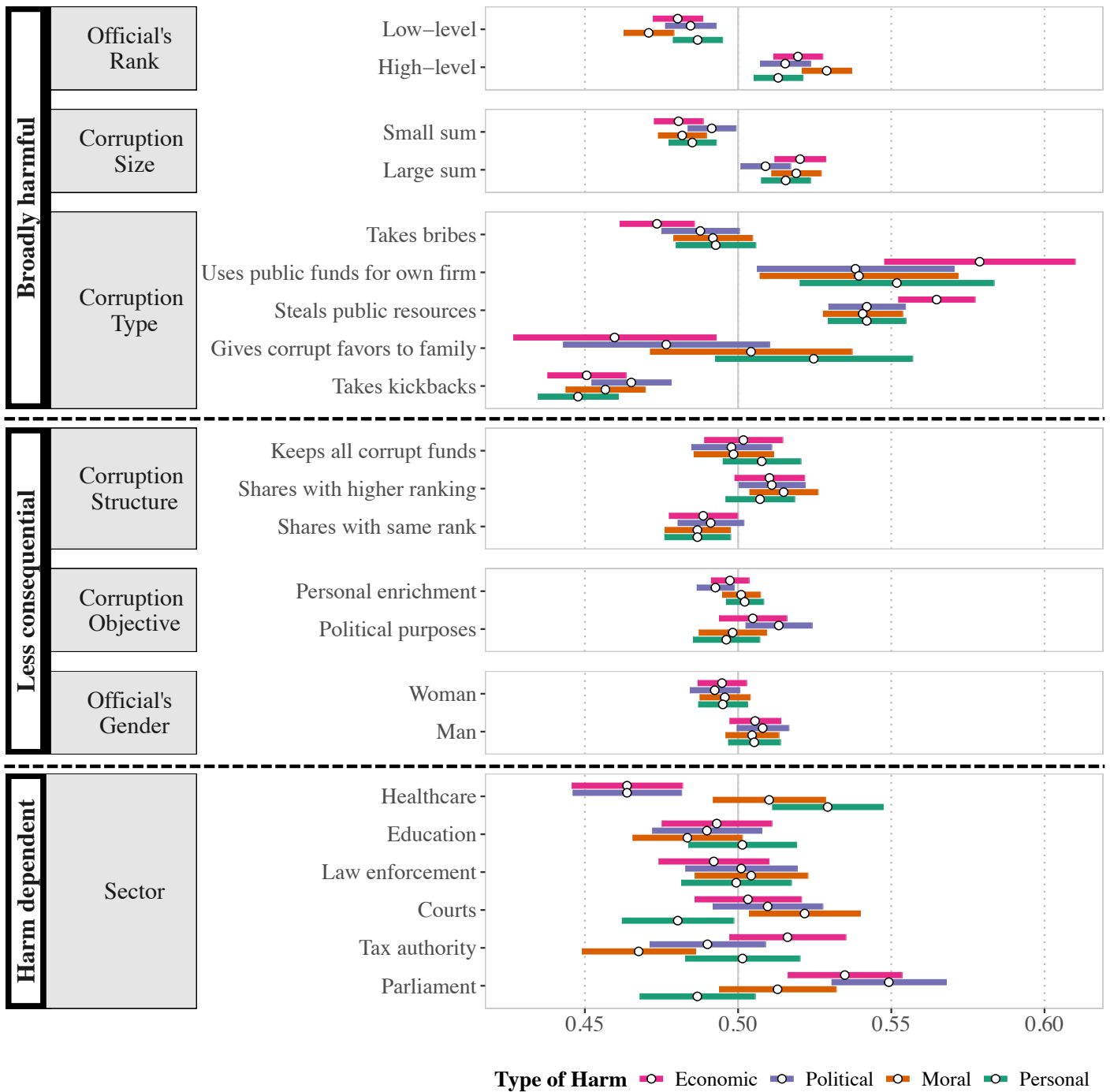
18. As shown in Figure C.1 in Online Appendix C.1, these findings are both statistically significant.

Figure 2: Conjoint Experiment Results (AMCE Estimates)



Note: Average marginal component effects (AMCEs) estimate the change in probability that a respondent identifies a profile as more harmful when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals. Points without bars denote attribute values serving as the reference category.

Figure 3: Conjoint Experiment Results (Marginal Means)



Note: Marginal means represent the predicted probability that a respondent identifies a profile as more harmful when the profile includes the indicated attribute level, averaging over all other permissible combinations of attributes. Bars represent 95% confidence intervals.

ing collusion with officials of equal rank — might suggest that these results reflect similar attitudes to those discussed in the previous section: Respondents broadly view *higher-level* corruption as more damaging and odious.

Relative to other attributes discussed above, the *objectives* of corruption have been subject to far less theoretical or empirical investigation. But as noted, in at least one recent study conducted in Uganda, participants were found to judge public officials engaging in corruption for the sake of personal pecuniary gain more harshly than those acting corruptly to finance clientelism and patronage (Martin 2021). The perspectives of our Armenian respondents were quite different. With respect to harm to trust in the political system, Figure 2 shows that respondents deemed corruption motivated by personal enrichment to be *less* harmful than corruption for political purposes. Meanwhile, for all other types of harms we examined, the motivations underlying a given form of corruption had no bearing on participants’ evaluation of its consequences.

As discussed above, *gender* has been a central focus of the corruption literature. Figure 2 shows that the gender of officials involved in corruption has no discernible effects on Armenians’ perceptions of corruption harms. This finding conforms with emerging research by Eggers et al. (2018) and Erlich and Beauvais (2023), which suggests that voters are not more likely to punish female politicians who face corruption allegations. By contrast, when we consider the perceived prevalence of various corruption scenarios, we find evidence consistent with prominent earlier work discussed above (Dollar et al. 2001; Swamy et al. 2001): Respondents were moderately more likely to perceive a scenario involving a male official as more common than one involving a female official (see Figure C.1 in Online Appendix C.1).

Overall, findings for these three attributes are starkly different than those for corruption’s scale and type. In the case of Armenia, corruption’s structure and objective, as well as the gender of officials engaging in corruption, do not appear to be consequential for citizens’ perceptions of corruption harms. Nevertheless, in at least some contexts such “null findings” might be of use to anti-corruption practitioners. For instance, if citizens fail to recognize a

specific form of corruption about which policymakers have significant concerns as harmful, then this might be an issue worth targeting in educational anti-corruption campaigns.

Harm-Dependent Corruption Attributes

Both categories presented above focus on attributes for which respondents' perceptions are largely invariant across corruption harms: The first category of attributes is broadly viewed as harmful, and the second category has little impact on whether corruption is deemed harmful. We now present a third category for which citizen perceptions depend on the particular harm considered. For practitioners formulating anti-corruption campaigns, and for scholars developing research designs, these findings draw attention to the importance of disaggregating the distinct types of harms caused by various forms of corruption.

The most noteworthy evidence of such harm-dependent perceptions involves the *sector* in which corruption occurs. Our participants deemed healthcare corruption to inflict more personal harm than any other sector — but findings are quite different when considering other types of harms. Consider the bottom panel of Figure 2, which employs healthcare as the reference category. With regards to personal harm, observe that the bottom estimates for each of the five other sectors (in green) are all negative and statistically significant; that is, respondents express more concern about how healthcare corruption affects themselves and their families than they do for all other sectors. In stark contrast, when considering harm to the national economy and political trust, respondents perceive healthcare corruption as being *less* damaging than in other sectors (see the top two estimates estimates for each sector, in pink and purple, respectively). More specifically, all point estimates for harms to the economy and political trust are positive for the other five sectors when compared to healthcare; seven of these ten estimates are significant at the 5% level. Moreover, some other results for healthcare reveal yet another way that perceptions are harm-dependent: Whereas respondents viewed healthcare as less pernicious for the economy and political trust, they found it *more* morally egregious than corruption in two other sectors (see the estimates in orange). In particular, they deemed healthcare corruption more immoral than corruption in

the tax authority and education. These findings and others are especially apparent in Figure 3, where the marginal means for healthcare can be compared to the marginal means for other sectors. Figure 3 also makes evident how the perceived harms of parliamentary corruption are the inverse of those for healthcare corruption: Citizens see parliamentary corruption as particularly damaging to political trust and the economy, but far less damaging on a personal level. As a final point, it is worthwhile to note that whereas our conjoint experiment reveals these harm-dependent perceptions, it also suggests that participants did not view corruption as being relatively more prevalent in any particular sector.¹⁹

Also included in this harm-dependent category are findings that hold with some harms but not others. As just one example, returning to the discussion of corruption type presented in the top panel of Figure 2, respondents believe that nepotism (“giving corrupt favors to family members”) inflicts greater personal harm and is more morally egregious than bribery. But at the same time, they perceive nepotism to be neither more nor less damaging for economic outcomes and trust in political institutions.

Such harm-dependent findings are illuminating in part because they serve to warn researchers and practitioners of potential pitfalls when investigating citizen perspectives about corruption harms. Studies that neglect to distinguish among corruption’s distinct consequences may overlook significant variation. Indeed, respondents uniformly considered one of the scenarios to be worse than the other with regards to *all* four types of harms in only 34.1% of paired scenarios shown in our conjoint experiment. For example, in 40.4% of their assessments of paired scenarios, respondents perceived that one scenario would be more damaging for their families, but the other scenario would be more harmful for political trust. Even the harms assessed most similarly — economic and moral harms — had distinct scenarios chosen as worse in 33.6% of paired scenarios. In turn, this variation can have important analytical consequences. As shown above, findings when evaluating one corruption harm may evaporate — or be altogether reversed — when evaluating another corruption harm.

19. For example, respondents were neither more nor less likely to perceive a corruption scenario involving healthcare as more common than one involving any other sector (see Figure C.1 in Online Appendix C.1).

While not a primary focus of the present study, our diagnostic approach also allows practitioners to examine another source of variation: heterogeneity across subpopulations. As shown in Online Appendix C.2, subgroup analysis yields more nuanced insights. For example, younger respondents view corruption by male officials as more harmful for political trust than corruption by female officials. By contrast, gender has no discernible effects when examining older respondents, or the overall sample (as discussed above). Such information could prove useful to an anti-corruption agency that targets youth on social media, as it suggests the value of field testing whether youth would be more responsive to some vignettes featuring corrupt male officials. Notwithstanding such differences, findings from subgroup analyses are predominantly similar to those presented above, suggesting considerable treatment effect homogeneity in Armenia.²⁰

Summary of Results for Corruption Attributes

To provide an overview, Figure 4 synthesizes results for all three categories discussed above. Each row corresponds to one of the seven corruption attributes examined in our conjoint experiment. The four middle columns reflect how consequential each attribute is for citizens' perceptions of each of the four corruption harms. Corresponding to the first category discussed above, attributes deemed broadly harmful are shown in the first three rows of the figure. For binary attributes such as corruption size and corrupt officials' rank, the black shading indicates that harm perceptions between the attribute's two levels are statistically significant. For example, as discussed above, citizens perceive corruption involving large monetary sums to be more pernicious across all four harms than corruption involving small sums. For attributes with multiple levels, the black shading indicates the share of levels that are significantly different from other levels. For instance, there are 10 pairwise comparisons for an attribute such as corruption type with five levels. The third row of Table 4 shows that

20. Omnibus F-tests, which examine whether there are overall differences across subgroups when considering all randomized attributes, suggest no differences across respondent gender or urban/rural status for any of the four harms. For respondent age, such tests find significant differences for political and personal harms, but not for economic or moral harms.

Figure 4: Overview of Findings

	Does Attribute Have Significant Effect on Perceived Harms?				Do Effects Differ Across Harms?
	Economic Harm	Political Harm	Moral Harm	Personal Harm	
Official's Rank (2 levels)	●	●	●	●	◐
Corruption Size (2 levels)	●	●	●	●	◐
Corruption Type (5 levels)	◐	◐	◐	◐	◐
Corruption Structure (3 levels)	○	○	◐	◐	○
Corruption Objective (2 levels)	○	●	○	○	◐
Official's Gender (2 levels)	○	○	○	○	○
Sector (6 levels)	◐	◐	◐	◐	◐

Note: The second through fifth columns summarize whether respondents' perceptions of each type of harm depend on an attribute's level. For binary attributes, circles are shaded black if the difference in harm perception across the two levels is statistically significant at the .05 level and unshaded otherwise. For attributes with more than two levels, the black shading indicates the share of levels that are significantly different from other levels. For example, "Corruption Type" has five levels, so we conduct tests of differences in perceived personal harms for each of the 10 pairs of levels and find that 7 of these are significant. The sixth column summarizes whether effects differ across different harm types for each attribute. Based on seemingly unrelated regressions, black shading in this column indicates the share of pairwise comparisons (personal vs. economic, personal vs. political, etc.) for which effects differ at a statistically significant level.

the corruption type attribute has a significant effect on perceived personal harm in seven of these 10 pairwise comparisons.

The next three rows show the attributes deemed broadly to be less consequential. As can be seen in Figure 4, the gender of corrupt officials has no effect on corruption's perceived impact across all four harms examined. With respect to corruption's objectives, whether officials engage in corruption for personal gain or to support political parties and politicians affects only perceptions of political harm. For the corruption structure attribute, sharing corrupt funds with higher-level officials is viewed as morally worse than sharing with officials

of the same rank or keeping all funds for personal gain — but these distinctions have no effect on perceptions of economic or political harms.

Turning to the sector in which corruption occurs, the bottom row of Figure 4 summarizes the finding that sectoral distinctions matter more for perceptions of economic and political harms than for perceptions of personal or moral harms. There are statistically significant differences in perceived economic and political harms for approximately half of the pairwise sector comparisons. Significant differences are apparent for only around one-third of pairwise comparisons for moral harms, and one-quarter of comparisons for personal harms.

A final consideration concerns the extent to which effects differ across harms. Note that in the discussion above, columns with identical shading across the same row do not necessarily have similar effect sizes; one may be far larger than another even though both effects are significantly different from zero. To examine this issue, the sixth column of Figure 4 summarizes results from seemingly unrelated regressions. The black shading for this column indicates the share of pairwise comparisons (e.g., economic vs. political harms, economic vs. moral harms, etc.) for which there is a statistically significant *difference* in effect sizes. For corruption size, a third of pairwise comparisons differ significantly; for official’s rank and corruption type, half of pairwise comparisons differ significantly. Variation is most apparent for the sectoral attribute: 83% of pairwise comparisons differ significantly.

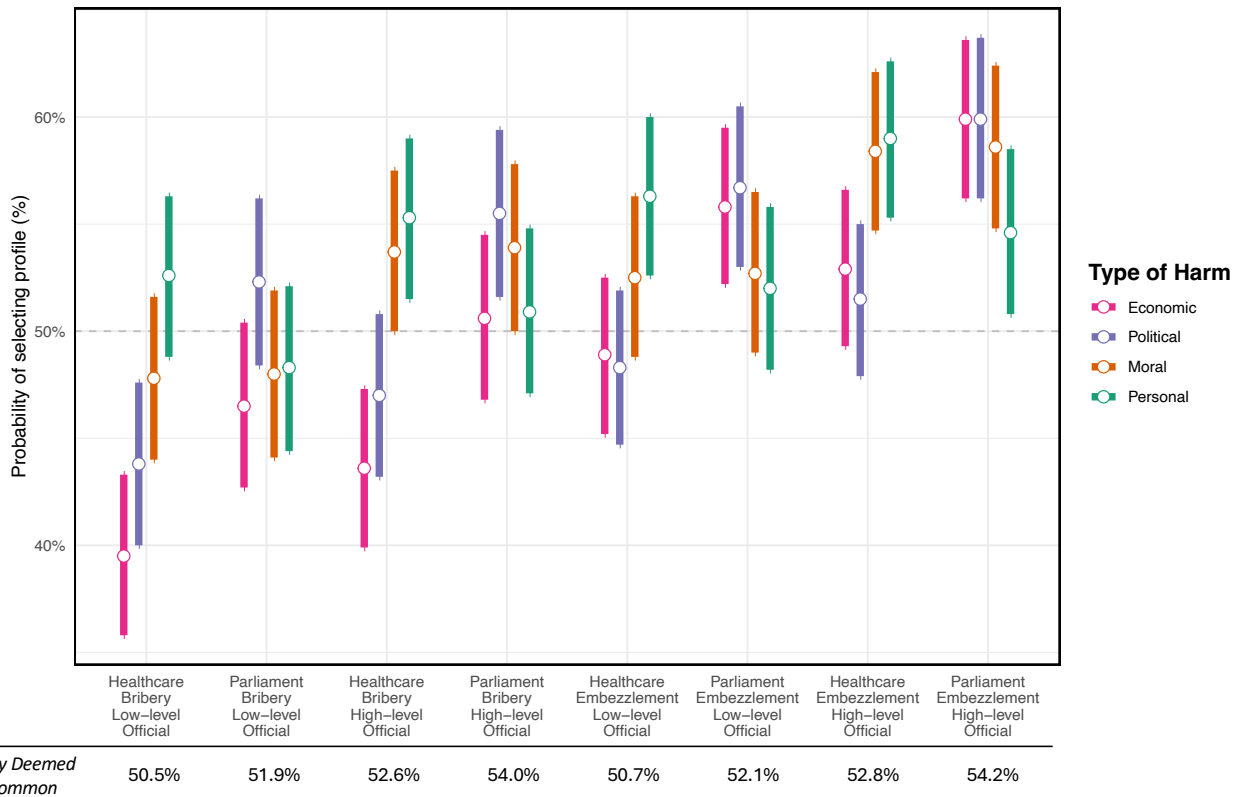
Stepping back, Figure 4 emphasizes that Armenians not only draw distinctions about the relative harmfulness of different corruption attributes (as shown by comparing rows vertically), but also have nuanced views about the distinct *types* of harms each respective attribute is likely to cause (as shown by comparing columns horizontally). For practitioners designing campaigns, these findings suggest the importance of considering both corruption types and harms. For scholars, these findings make clear that caution is warranted when generalizing from findings based on a single type of harm; more disaggregated and holistic approaches are needed for a fuller comprehension of corruption’s consequences.

Simulations for Anti-Corruption Campaigns

As shown thus far, our diagnostic approach sheds light on citizen perceptions about the harms of seven different attributes of corruption. The preceding analyses demonstrate how our approach can offer important insights for practitioners or scholars seeking to ascertain which specific corruption attributes are consequential for citizen perceptions in a given country. But, as noted above, in reality citizens do not experience corruption attributes in isolation; rather, they experience corruption scenarios in which they encounter *multiple* attributes simultaneously. Fortunately, extensions of our approach facilitate such multidimensional analyses. These analyses may be especially of value for practitioners designing anti-corruption information campaigns, who often must evaluate the potential effects of numerous factors when deciding what to feature in campaign materials. For example, a television advertisement might focus on bribery by low-level officials in the healthcare sector, or it might alternatively focus on embezzlement by high-level officials in parliament.

To investigate further, Figure 5 presents simulations of how Armenians in our survey would perceive the harms of illustrative scenarios. To simplify exposition, we consider eight scenarios involving three attributes identified to be consequential — sector, corruption type, and official’s rank. For each, we consider two levels: healthcare vs. parliamentary corruption, bribery vs. embezzlement, and corruption by low- vs. high-ranking officials. The vertical scale represents the predicted probability that a citizen will choose the scenario of interest as more harmful than another randomly chosen scenario. As shown, scenarios on the right are substantially more likely to be deemed harmful than those on the left. For instance, Armenian respondents viewed embezzlement by high-level officials in parliament (the scenario on the far right) to be particularly harmful for the economy. The probability they would identify that scenario as more economically damaging was 20.4 percentage points higher than the probability they would do so for bribery by low-level healthcare officials (the scenario on

Figure 5: Comparing Illustrative Corruption Scenarios



Note: The figure above shows the predicted probabilities of perceiving a corruption scenario as more harmful when corruption takes place in the healthcare sector or in parliament, involves bribery or embezzlement, and is conducted by a low-level or high-level official, marginalizing across all other attributes in the conjoint experiment.

the far left).²¹ The simulation also reveals that citizens have different views about distinct harms resulting from different types of scenarios, consistent with the analyses of individual attributes above. For example, even though Armenians in our sample perceived bribery by low-level healthcare officials as relatively less damaging for the country’s economy (see the estimate in pink for the scenario on the far left), they perceived this scenario as particularly damaging for themselves personally (see estimate in green). As Figure 5 demonstrates, the probability that citizens would identify that scenario as more pernicious was 13.1 percentage points higher when evaluating harm to themselves and their families than when evaluating harm to the country’s economy.

21. Analogously, they were 0.2, 16.1 and 10.8 percentage points more likely to identify the former scenario as harmful for themselves personally, for political trust, and for moral harm, respectively.

Of course, citizens’ perceptions of harms are unlikely to be practitioners’ only considerations when designing advertisements. Among various other considerations, they may wish to avoid featuring scenarios that citizens consider to be relatively rare. To this end, the simulation also provides insights regarding the relative frequency of scenarios. Using the same method discussed above, we analyze a follow-up question asked in each of the five screens in the conjoint experiment: “Which of these two scenarios do you think is more common in Armenia?” More specifically, we estimate the predicted probability that a citizen will choose the scenario of interest as more common than another randomly chosen scenario. As shown, among the vignettes in Figure 5, Armenians perceive embezzlement by high-level officials in parliament to be somewhat more prevalent. The probability they would identify that scenario as more common was 3.7 percentage points higher than the probability they would do so for bribery by low-level healthcare officials. All in all, this stylistic example shows how our diagnostic approach can provide a useful tool to practitioners developing anti-corruption information campaigns.

Discussion

The diagnostic framework employed in this article enables practitioners and scholars to deepen their understanding of citizen perceptions of corruption harms in various contexts. Understanding citizen perspectives about corruption’s distinct harms is important in part because it can enhance the effectiveness of anti-corruption information campaigns, bolster popular support for anti-corruption efforts, and improve analytical frameworks. While citizens’ perceptions of corruption harms are context specific, this article demonstrates the value of our diagnostic approach through a real-world application conducted in collaboration with Armenia’s Corruption Prevention Commission. To help this anti-corruption agency develop more effective information campaigns, we investigated citizen perceptions using a face-to-face conjoint experiment with a representative sample of 1,501 Armenians. We examine the types of corruption that citizens deem to be especially pernicious, and investigate how

their views differ when considering distinct types of harms. Specifically, we focus on four potential consequences of corruption: harm to the economy, harm to trust in political institutions, harm to moral norms, and personal harms. Beyond ascertaining which specific corruption attributes are especially consequential for citizen perceptions across harms, our framework sheds light on how citizens perceive various *combinations* of attributes. These multidimensional analyses may be especially useful to practitioners, who must often evaluate the potential effects of numerous factors when designing anti-corruption information campaigns.

Just as our diagnostic approach provides valuable information to practitioners, so it advances the scholarly literature on corruption. Although existing studies recognize that corruption takes many forms and offer insightful typologies to conceptualize corruption’s subtypes, very few provide empirical evidence about the distinct consequences of corruption’s various forms. Fewer still analyze how citizens themselves perceive specific harms of distinctive forms of corruption. Our analyses suggest that in Armenia, citizens perceive three categories of corruption attributes: (1) those that broadly render corruption more harmful, (2) those that play little role in whether corruption is deemed harmful, and (3) those whose impact depends on the specific type of harm under consideration. For the first category, we observe that Armenians perceive grand corruption to be more damaging than petty corruption with respect to all four harms. Likewise, respondents view embezzlement to be universally more harmful than bribery and kickbacks. For the second category, several attributes have minimal impact on perceptions of corruption’s harms, including the purpose and structure of the corrupt act, as well as the corrupt official’s gender. For the third category, we show that findings for one harm may disappear, or even be reversed, when evaluating another corruption harm. Participants perceived healthcare corruption to be more personally damaging and morally egregious — but less harmful for the economy and political trust — than corruption in other sectors.

Our study thus demonstrates not only how our diagnostic approach can be useful to

policymakers, but also how it is crucial to unbundle citizen perceptions of corruption harms. Indeed, its results suggest the importance, both for practitioners and scholars, of empirically disaggregating both corruption’s numerous forms and the diverse types of harms they may cause. Given that we focus on Armenia, further research is of course necessary to establish whether our more specific findings generalize to other countries or contexts. Replicating our conjoint experiment elsewhere would facilitate useful comparisons and reveal broader insights. There also are numerous potentially fruitful extensions of the approach introduced here. For example, to better understand the relative impacts of different forms of corruption to the economy, the conjoint experiment could be adapted to focus on the types of corruption that business owners and managers — instead of citizens — perceive to be most harmful. Furthermore, it would be useful to conduct qualitative research such as focus groups and interviews to probe why citizens or firms are especially concerned with certain forms of corruption when considering distinct types of harms.

Overall, the diagnostic approach we introduce has broad applicability, particularly for activists or policymakers seeking to design anti-corruption campaigns, as well as for researchers seeking to understand the complicated and nuanced ways in which corruption harms society.

References

- Agerberg, Mattias. 2022. “Messaging about corruption: The power of social norms.” *Governance* 35 (3): 929–950.
- Anderson, Christopher J., and Yuliya V. Tverdova. 2003. “Corruption, political allegiances, and attitudes toward government in contemporary democracies.” *American Journal of Political Science* 47 (1): 91–109.
- Ang, Yuen Yuen. 2020. *China’s gilded age: The paradox of economic boom and vast corruption*. Cambridge University Press.
- Ares, Macarena, and Enrique Hernández. 2017. “The corrosive effect of corruption on trust in politicians: Evidence from a natural experiment.” *Research & Politics* 4 (2): 1–8.
- Bak, Mathias. 2020. “Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine: Overview of corruption and anti-corruption.” U4 Anti-Corruption Resource Centre Report.
- Bansak, Kirk, Jens Hainmueller, Daniel J. Hopkins, and Teppei Yamamoto. 2023. “Using conjoint experiments to analyze election outcomes: The essential role of the average marginal component effect.” *Political Analysis* 31 (4): 500–518.
- Bauhr, Monika, and Nicholas Charron. 2020. “Do men and women perceive corruption differently? Gender differences in perception of need and greed corruption.” *Politics and Governance* 8 (2): 92–102.

- Bauhr, Monika, Nicholas Charron, and Lena Wängnerud. 2019. "Exclusion or interests? Why females in elected office reduce petty and grand corruption." *European Journal of Political Research* 58 (4): 1043–1065.
- Beesley, Celeste, and Darren Hawkins. 2022. "Corruption, institutional trust and political engagement in Peru." *World Development* 151:105743.
- Blair, Graeme, Rebecca Littman, and Elizabeth Levy Paluck. 2019. "Motivating the adoption of new community-minded behaviors: An empirical test in Nigeria." *Science Advances* 5 (3): eaau5175.
- Booth, John A., and Mitchell A. Seligson. 2009. *The legitimacy puzzle in Latin America: Political support and democracy in eight nations*. Cambridge University Press.
- Brierley, Sarah, and Miguel M. Pereira. 2023. "Women bureaucrats and petty corruption: Experimental evidence from Ghana." *Research & Politics* 10 (1): 20531680231161161.
- Bussell, Jennifer. 2015. "Typologies of corruption: A pragmatic approach." In *Greed, corruption, and the modern state*, edited by Susan Rose-Ackerman and Paul Lagunes, 21–45. Edward Elgar Publishing.
- Cheeseman, Nic, and Caryn Peiffer. 2022. "The curse of good intentions: Why anticorruption messaging can encourage bribery." *American Political Science Review* 116 (3): 1081–1095.
- Clausen, Bianca, Aart Kraay, and Zsolt Nyiri. 2011. "Corruption and confidence in public institutions: Evidence from a global survey." *The World Bank Economic Review* 25 (2): 212–249.
- Corbacho, Ana, Daniel W Gingerich, Virginia Oliveros, and Mauricio Ruiz-Vega. 2016. "Corruption as a self-fulfilling prophecy: Evidence from a survey experiment in Costa Rica." *American Journal of Political Science* 60 (4): 1077–1092.
- Dollar, David, Raymond Fisman, and Roberta Gatti. 2001. "Are women really the "fairer" sex? Corruption and women in government." *Journal of Economic Behavior & Organization* 46 (4): 423–429.
- Druckman, James N. 2022. "A framework for the study of persuasion." *Annual Review of Political Science* 25:65–88.
- Eggers, Andrew C., Nick Vivyan, and Markus Wagner. 2018. "Corruption, accountability, and gender: Do female politicians face higher standards in public life?" *The Journal of Politics* 80 (1): 321–326.
- Erlich, Aaron, and Edana Beauvais. 2023. "Explaining women's political underrepresentation in democracies with high levels of corruption." *Political Science Research and Methods* 11 (4): 804–822.
- Erlich, Aaron, and Jordan Gans-Morse. 2023. "Can norm-based information campaigns reduce corruption?" Northwestern Institute for Policy Research (IPR) Working Paper (WP-23-33), <https://www.ipr.northwestern.edu/our-work/working-papers/2023/wp-23-33.html>.
- Fisman, Raymond, and Miriam Golden. 2017. *Corruption: What everyone needs to know*. Oxford University Press.
- Fisman, Raymond, Sergei Guriev, Carolin Ioramashvili, and Alexander Plekhanov. 2024. "Corruption and firm growth: evidence from around the world." *The Economic Journal* 134 (660): 1494–1516.
- Gans-Morse, Jordan, Mariana Borges, Alexey Makarin, Theresa Mannah-Blankson, Andre Nickow, and Dong Zhang. 2018. "Reducing bureaucratic corruption: Interdisciplinary perspectives on what works." *World Development* 105:171–188.
- Hainmueller, Jens, Dominik Hangartner, and Teppei Yamamoto. 2015. "Validating vignette and conjoint survey experiments against real-world behavior." *Proceedings of the National Academy of Sciences* 112 (8): 2395–2400.

- Hainmueller, Jens, Daniel J. Hopkins, and Teppei Yamamoto. 2014. "Causal inference in conjoint analysis: Understanding multidimensional choices via stated preference experiments." *Political analysis* 22 (1): 1–30.
- Hernandez, Teresa, and Robert W. McGee. 2013. "Ethical attitudes toward taking a bribe: A study of three Latin American countries." *International Journal of Business and Economics Perspectives* 8 (1): 142–167.
- Hira, Anil, and Kai Shiao. 2016. "Understanding the deep roots of success in effective civil services." *Journal of Developing Societies* 32 (1): 17–43.
- Johnston, Michael. 2005. *Syndromes of corruption: Wealth, power, and democracy*. Cambridge University Press.
- Kang, David C. 2002. *Crony capitalism: Corruption and development in South Korea and the Philippines*. Cambridge university press.
- Kinder, Donald R., and D. Roderick Kiewiet. 1981. "Sociotropic politics: The American case." *British Journal of Political Science* 11 (2): 129–161.
- Klašnja, Marko, Joshua A. Tucker, and Kevin Deegan-Krause. 2016. "Pocketbook vs. sociotropic corruption voting." *British Journal of Political Science* 46 (1): 67–94.
- Klitgaard, Robert. 1988. *Controlling corruption*. University of California Press.
- Köbis, Nils C., Marleen Troost, Cyril O. Brandt, and Ivan Soraperra. 2019. "Social norms of corruption in the field: Social nudges on posters can help to reduce bribery." *Behavioural Public Policy*, 1–28.
- Köbis, Nils C., Jan-Willem Van Prooijen, Francesca Righetti, and Paul Van Lange. 2015. "Who doesn't? – The impact of descriptive norms on corruption." *PloS One* 10 (6): 1–14.
- Lanskoy, Miriam, and Elspeth Suthers. 2019. "Armenia's Velvet Revolution." *Journal of Democracy* 30 (2): 85–99.
- Larsson, Tomas. 2006. "Reform, corruption, and growth: Why corruption is more devastating in Russia than in China." *Communist and Post-Communist Studies* 39 (2): 265–281.
- Lasswell, H.D. 1948. "The structure and function of communication in society." In *The Communication of Ideas*, edited by L. Bryson. New York: Haper / Brothers.
- Leeper, Thomas J., Sara B. Hobolt, and James Tilley. 2020. "Measuring subgroup preferences in conjoint experiments." *Political Analysis* 28 (2): 207–221.
- Lewis, Jacob S. 2021. "Corruption perceptions and contentious politics in Africa: How different types of corruption have shaped Africa's third wave of protest." *Political Studies Review* 19 (2): 227–244.
- Martin, Lucy. 2021. "All sins are not created equal: The factors that drive perceptions of corruption severity." *Journal of Experimental Political Science* 8 (1): 15–25.
- McDevitt, Andrew. 2015. "State of corruption: Armenia, Azerbaijan, Georgia, Moldova, and Ukraine." Transparency International Report.
- McGuire, W. 1969. "The nature of attitudes and attitude change." In *The Handbook of Social Psychology*, edited by G. Lindzey and E. Aronson. Reading: Addison-Wesley Publishing Co.
- McMann, Kelly, Daniel Pemstein, Brigitte Seim, Jan Teorell, and Staffan Lindberg. 2022. "Assessing data quality: An approach and an application." *Political Analysis* 30 (3): 426–449.
- Mungiu-Pippidi, Alina. 2015. *The quest for good governance: How societies develop control of corruption*. Cambridge University Press.
- Muñoz, José-María. 2014. "Making contracts public in Ngaoundéré, Cameroon." *City & Society* 26 (2): 175–195.

- OECD. 2022. “Anti-corruption Reforms in Armenia: Pilot 5th round of monitoring under the OECD Istanbul Anti-Corruption Action Plan.” Report by the Organization for Economic Cooperation and Development.
- Olken, Benjamin A., and Patrick Barron. 2009. “The simple economics of extortion: Evidence from trucking in Aceh.” *Journal of Political Economy* 117 (3): 417–452.
- Olken, Benjamin A., and Rohini Pande. 2012. “Corruption in developing countries.” *Annual Review of Economics* 4 (1): 479–509.
- Peiffer, Caryn. 2020. “Message received? Experimental findings on how messages about corruption shape perceptions.” *British Journal of Political Science* 50 (3): 1207–1215.
- Peiffer, Caryn, and Nic Cheeseman. 2023. “Message misunderstood: Why raising awareness of corruption can backfire.” U4 Anti-Corruption Resource Centre, U4 Brief 2023:1.
- Persson, Anna, Bo Rothstein, and Jan Teorell. 2013. “Why anticorruption reforms fail – systemic corruption as a collective action problem.” *Governance* 26 (3): 449–471.
- Polese, Abel. 2008. “‘If I receive it, it is a gift; if I demand it, then it is a bribe’: On the local meaning of economic transactions in post-Soviet Ukraine.” *Anthropology in Action* 15 (3): 47–60.
- Rivkin-Fish, Michele. 2005. “Bribes, gifts and unofficial payments: Rethinking corruption in post-Soviet Russian health care.” In *Corruption: Anthropological Perspectives*, edited by Dieter Haller and Cris Shore, 47–64. Pluto Press London.
- Rose-Ackerman, Susan. 1978. *Corruption: A study in political economy*. New York, NY: Academic Press.
- . 1990. *Corruption and government: Causes, consequences, and reform*. First edition. Cambridge University Press.
- Rose-Ackerman, Susan, and Bonnie J. Palifka. 2016. *Corruption and government: Causes, consequences, and reform*. Second edition. Cambridge University Press.
- Seligson, Mitchell A. 2002. “The impact of corruption on regime legitimacy: A comparative study of four Latin American countries.” *Journal of politics* 64 (2): 408–433.
- Shleifer, Andrei, and Robert W. Vishny. 1993. “Corruption.” *The Quarterly Journal of Economics* 108 (3): 599–617.
- Sun, Yan. 1999. “Reform, state, and corruption: Is corruption less destructive in China than in Russia?” *Comparative Politics*, 1–20.
- Svensson, Jakob. 2005. “Eight questions about corruption.” *Journal of Economic Perspectives* 19 (3): 19–42.
- Swamy, Anand, Stephen Knack, Young Lee, and Omar Azfar. 2001. “Gender and corruption.” *Journal of Development Economics* 64 (1): 25–55.
- Torgler, Benno, and Neven T. Valev. 2010. “Gender and public attitudes toward corruption and tax evasion.” *Contemporary Economic Policy* 28 (4): 554–568.
- Truex, Rory. 2011. “Corruption, attitudes, and education: Survey evidence from Nepal.” *World Development* 39 (7): 1133–1142.
- Uberti, Luca J. 2022. “Corruption and growth: Historical evidence, 1790–2010.” *Journal of Comparative Economics* 50 (2): 321–349.
- Werner, Cynthia. 2000. “Gifts, bribes, and development in post-Soviet Kazakstan.” *Human Organization* 59 (1): 11–22.

Online Appendix

What Corruption is Most Harmful? Unbundling Citizen Perceptions?

Aaron Erlich, Jordan Gans-Morse, Simeon Nichter, and Arne Holverscheid

A	Sampling & Descriptive Statistics	1
B	Power Analyses	2
C	Supplementary Analyses	3
	C.1 Perceived Prevalence	3
	C.2 Subgroup Analyses	4
D	Robustness Checks	7
	D.1 Diagnostics	7
	D.2 Analyses Dropping “Speeders”	10

A Sampling & Descriptive Statistics

The survey was conducted by the research firm CRRC-Armenia using multistage cluster stratified sampling designed to be representative of the Armenian population 18 and older. In the first stage, proportional stratification by population size was conducted according to settlement type (urban, rural, Yerevan), based on data provided by the Armenian National Statistical Committee (2021 estimates). For the second stage, primary sampling units (clusters) in each urban/rural stratum were randomly selected. Next, in the fourth stage, random selection of households in urban/rural strata in each cluster was conducted on the basis of GIS cadastral data. Finally, for the fifth stage, adults from each household were randomly selected using the last birthday method. Two regions (*marzes*) along the Azerbaijani border were excluded from the sample for security reasons along with all villages under 10 households. Data collection was conducted between January and June of 2023.

Table A.1: Descriptive Statistics

Characteristic	Unweighted	Weighted
	N = 1,501 ¹	N = 2,230,277 ²
Sex		
Female	977 (65%)	(55%)
Male	524 (35%)	(45%)
Age		
18-35	404 (27%)	(31%)
36-55	515 (34%)	(35%)
56+	582 (39%)	(33%)
Income		
Low	522 (40%)	(38%)
Medium	672 (51%)	(51%)
High	119 (9.1%)	(10%)
Education		
Basic	69 (4.6%)	(5.0%)
Secondary	564 (38%)	(39%)
Professional/Technical	368 (25%)	(23%)
Higher	499 (33%)	(33%)
Settlement		
Rural	536 (36%)	(37%)
Urban	387 (26%)	(26%)
Yerevan	578 (39%)	(37%)

¹n (%)

²(%)

Note: The table above shows summary sample statistics and the data weighted to the joint probability of gender and age of the adult population of Armenia. Population data are extrapolations based on the 2011 census and were provided by the survey research firm CRRC-Armenia.

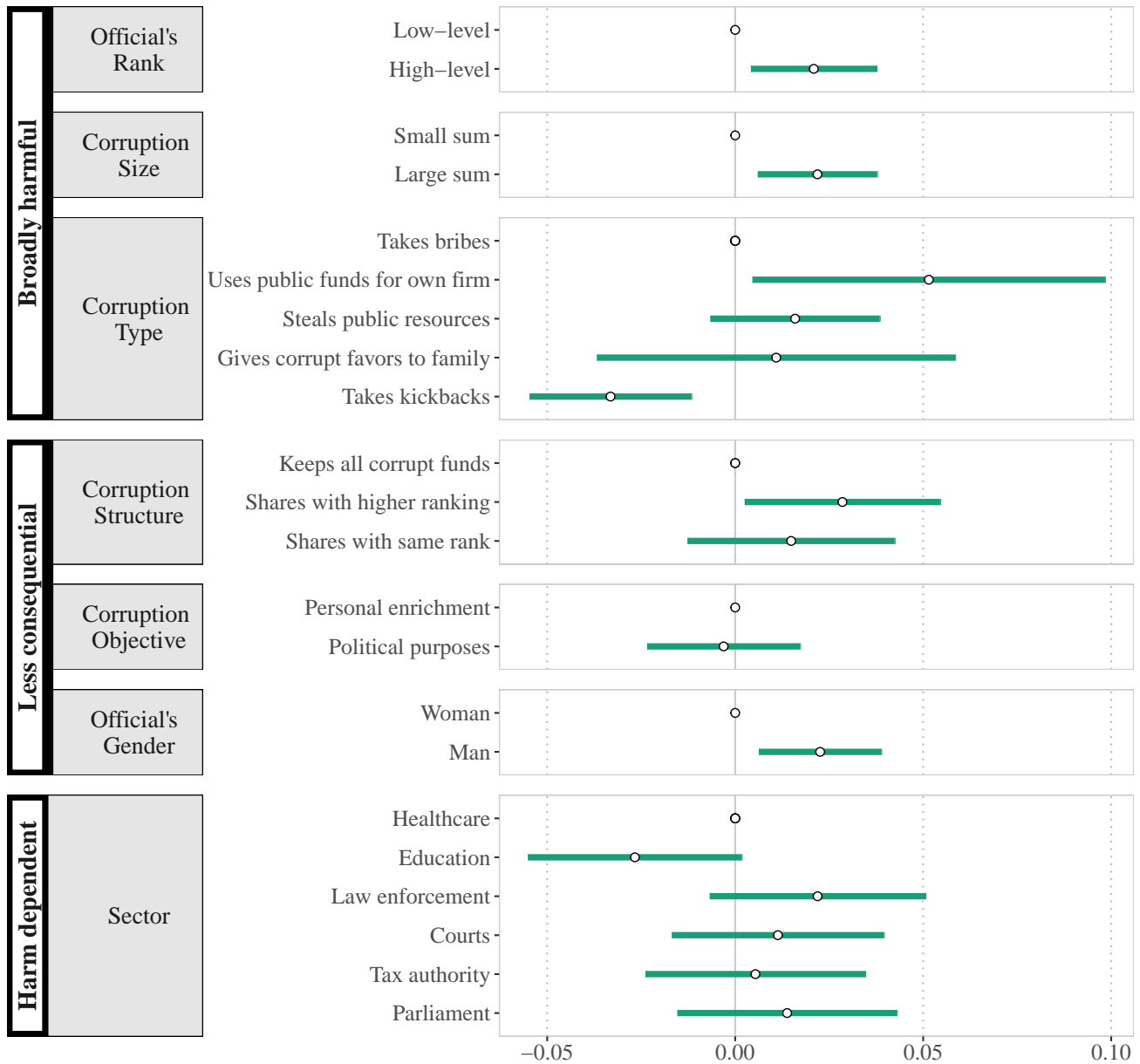
B Power Analyses

Our sample size was determined by the budget of our partner organization. Using Schuessler and Freitag (2020)'s algorithm with five tasks, two profiles per task, and 1,500 subjects, our study is adequately powered at .8 with an $\alpha = .05$ to detect an AMCE of .043 or greater for the attribute with the greatest number of levels (i.e., the sector attribute, with seven levels). For attributes with fewer levels, we are well-powered to detect smaller effect sizes: for example, we are adequately powered to detect an AMCE of .023 or greater for binary attributes.

C Supplementary Analyses

C.1 Perceived Prevalence

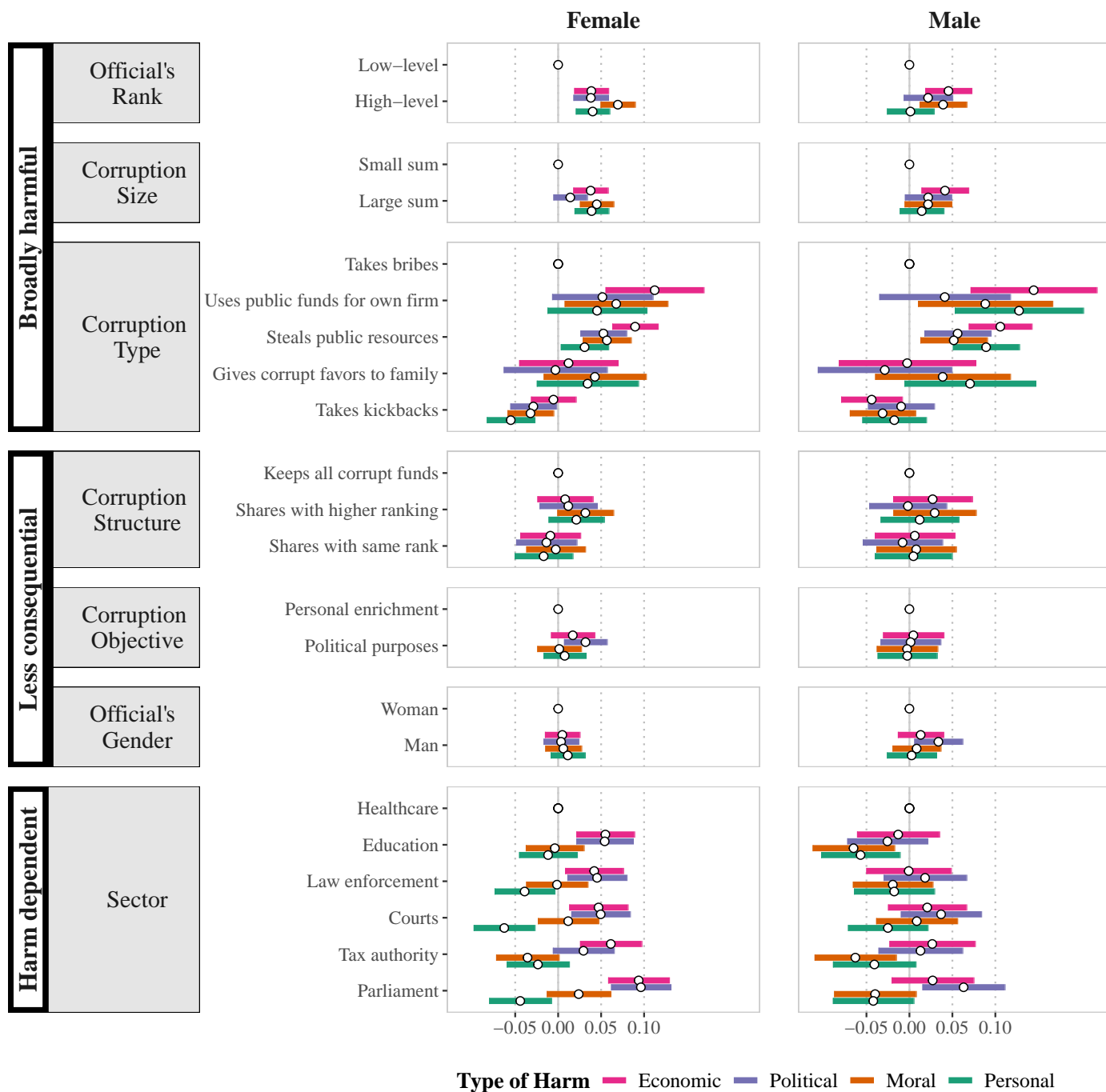
Figure C.1: AMCE Estimates of Corruption Scenarios' Perceived Prevalence



Note: Average marginal component effects (AMCEs) estimate the change in probability that a respondent identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals. Points without bars denote attribute values serving as the reference category.

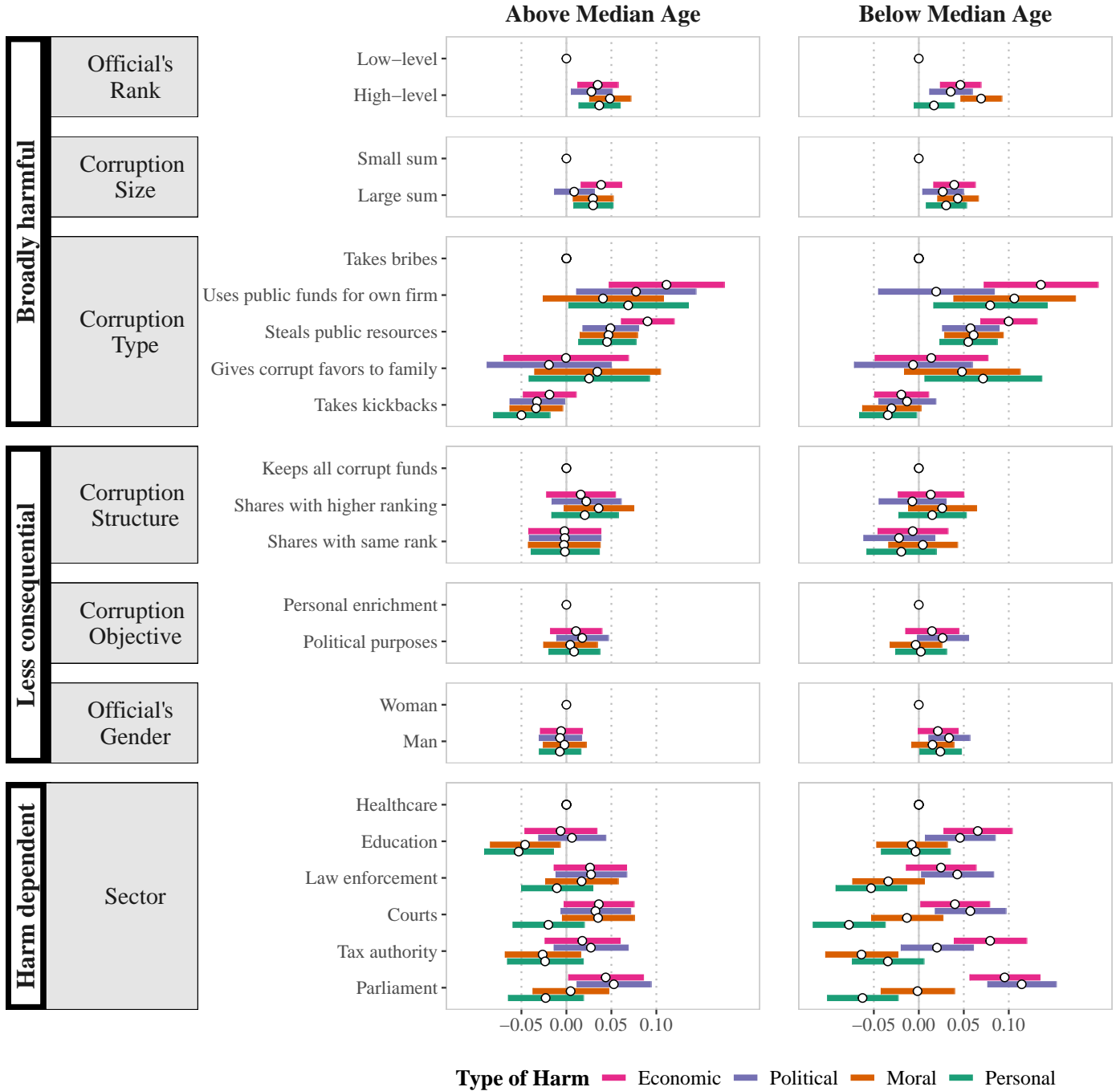
C.2 Subgroup Analyses

Figure C.2: AMCE Estimates Conditional on Gender



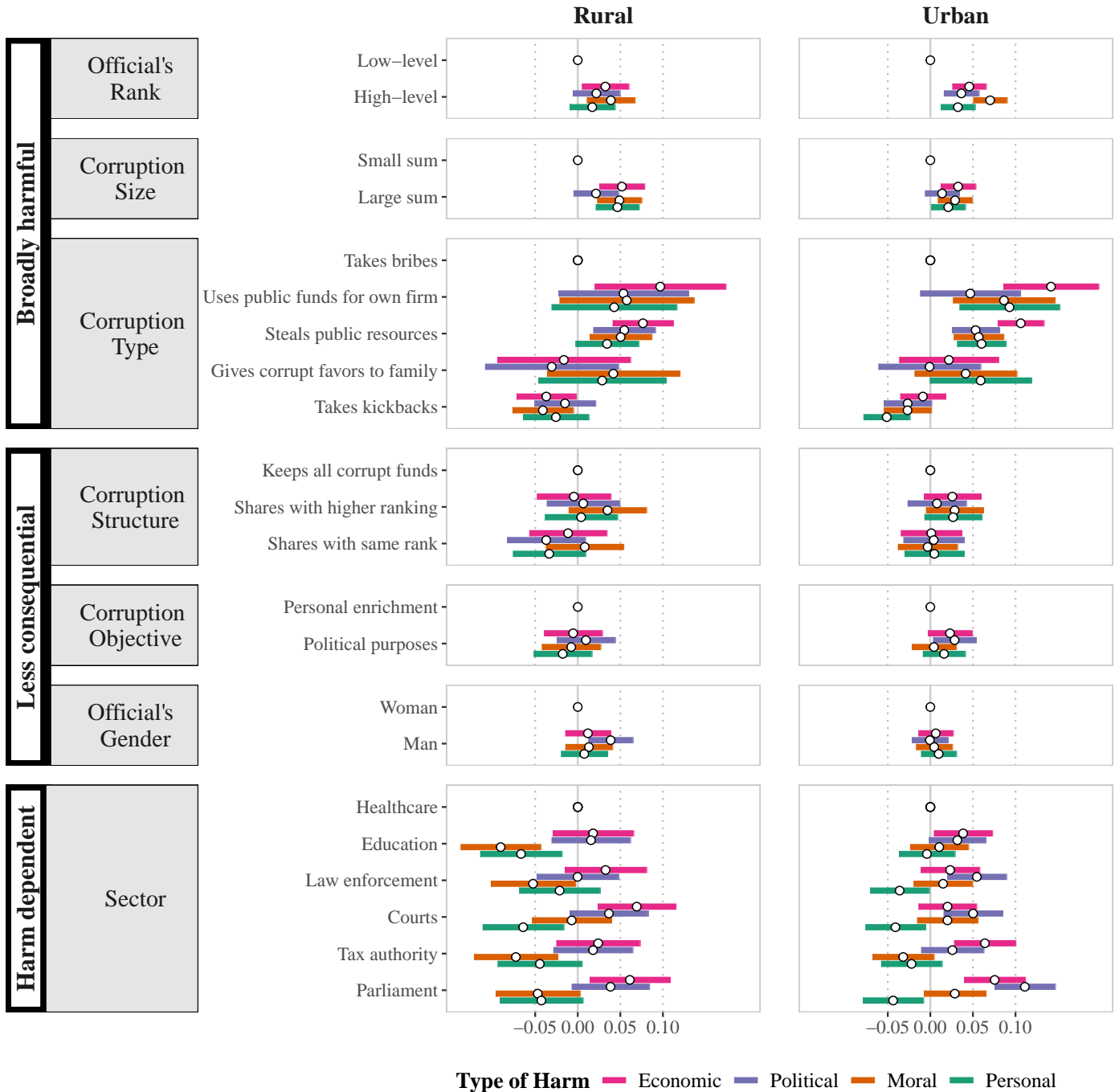
Note: Conditional AMCEs estimate the change in probability that a female (male) respondent identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals. Points without bars denote attribute values serving as the reference category.

Figure C.3: AMCE Estimates Conditional on Age



Note: Conditional AMCEs estimate the change in probability that a respondent who is above (below) the sample median age of 48 identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals. Points without bars denote attribute values serving as the reference category.

Figure C.4: AMCE Estimates Conditional on Urban vs. Rural



Note: Conditional AMCEs estimate the change in probability that a respondent residing in a rural (urban) area identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals. Points without bars denote attribute values serving as the reference category.

D Robustness Checks

D.1 Diagnostics

Following Hainmueller et al. (2014), we conduct diagnostic tests for the identification assumptions of the AMCE estimator. First, we analyze whether the order in which subjects view pairs of profiles across the five tasks (i.e., the five pairs of scenarios shown to each subject) affects responses. Results of ANOVA tests in Table D.1 show no evidence of such carryover effects.

Table D.1: ANOVA Tests for Carryover Effects

Outcome	F	Pr(>F)
Harm to Economy	0.746	0.801
Harm to Political Trust	0.794	0.744
Morally Wrong	0.669	0.880
Personal Harm	0.920	0.572
More Common	0.621	0.918

Note: The table above presents the results of ANOVA tests showing no evidence that the ordering of the five tasks (i.e., the five pairs of corruption scenarios shown to each subject) affects AMCE estimates for any of the outcomes in the conjoint experiment.

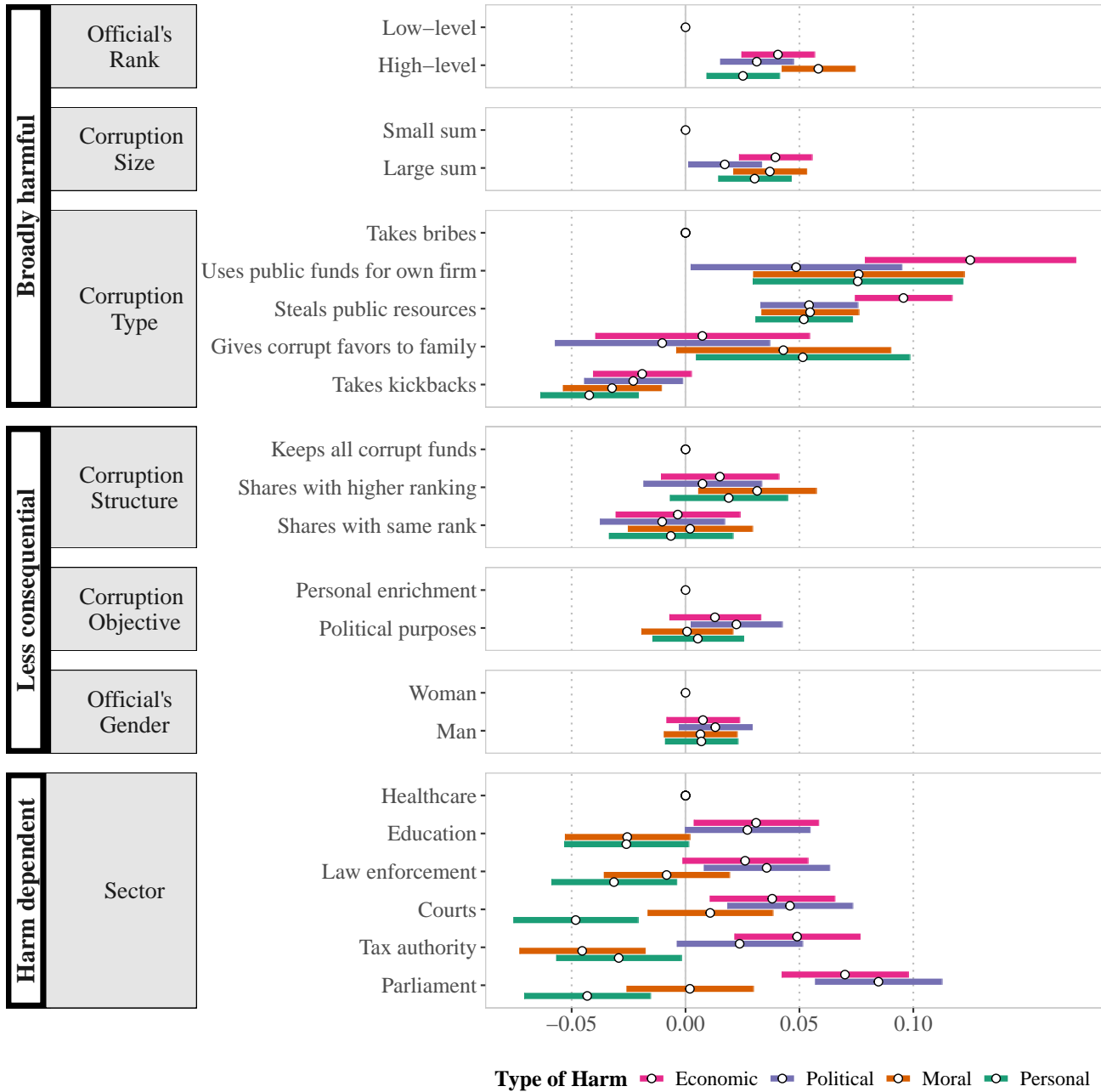
Second, we investigate whether profiles' placement (i.e., whether profiles appear on the left or right side of the screen of enumerators' tablets on which subjects viewed the conjoint experiment) affects responses. We observe that respondents were several percentage points more likely to choose scenario A (the left side of the screen), whereas given full randomization of attribute levels and their placement, scenarios A and B should (in expectation) be chosen with equal probability. Reassuringly, further analyses confirmed that to a significant extent, this pattern resulted from the least attentive respondents. Removing speeders (the fastest 10 percent of respondents in the sample) and subjects who straight-lined the outcome variable survey items mitigated the tendency to choose scenario A. More importantly, as shown in Table D.2, ANOVA tests show no evidence of statistically significant differences in AMCE estimates resulting from profile placement once a dummy variable for profile is included in the model. In other words, the tendency to choose scenario A shifts marginal means by some constant, but does not affect the *difference* between the marginal mean of a given level and the marginal mean of the reference level. (Note that for our main model specifications, this difference in marginal means is equivalent to the AMCE estimate.) Moreover, as we show in Figure D.1, all findings discussed in the article are robust to inclusion of these profile fixed effects.

Table D.2: ANOVA Tests for Profile Effects (With Profile Fixed Effects)

Outcome	F	Pr(>F)
Harm to Economy	1.056	0.389
Harm to Political Trust	0.636	0.902
Morally Wrong	0.980	0.487
Personal Harm	0.645	0.895
More Common	0.900	0.596

Note: The table above presents the results of ANOVA tests showing no evidence that the placement of profiles (i.e., on the left or right of the tablet screen) affects AMCE estimates for any of the outcomes in the conjoint experiment when a dummy variable for profile is included in the model specification.

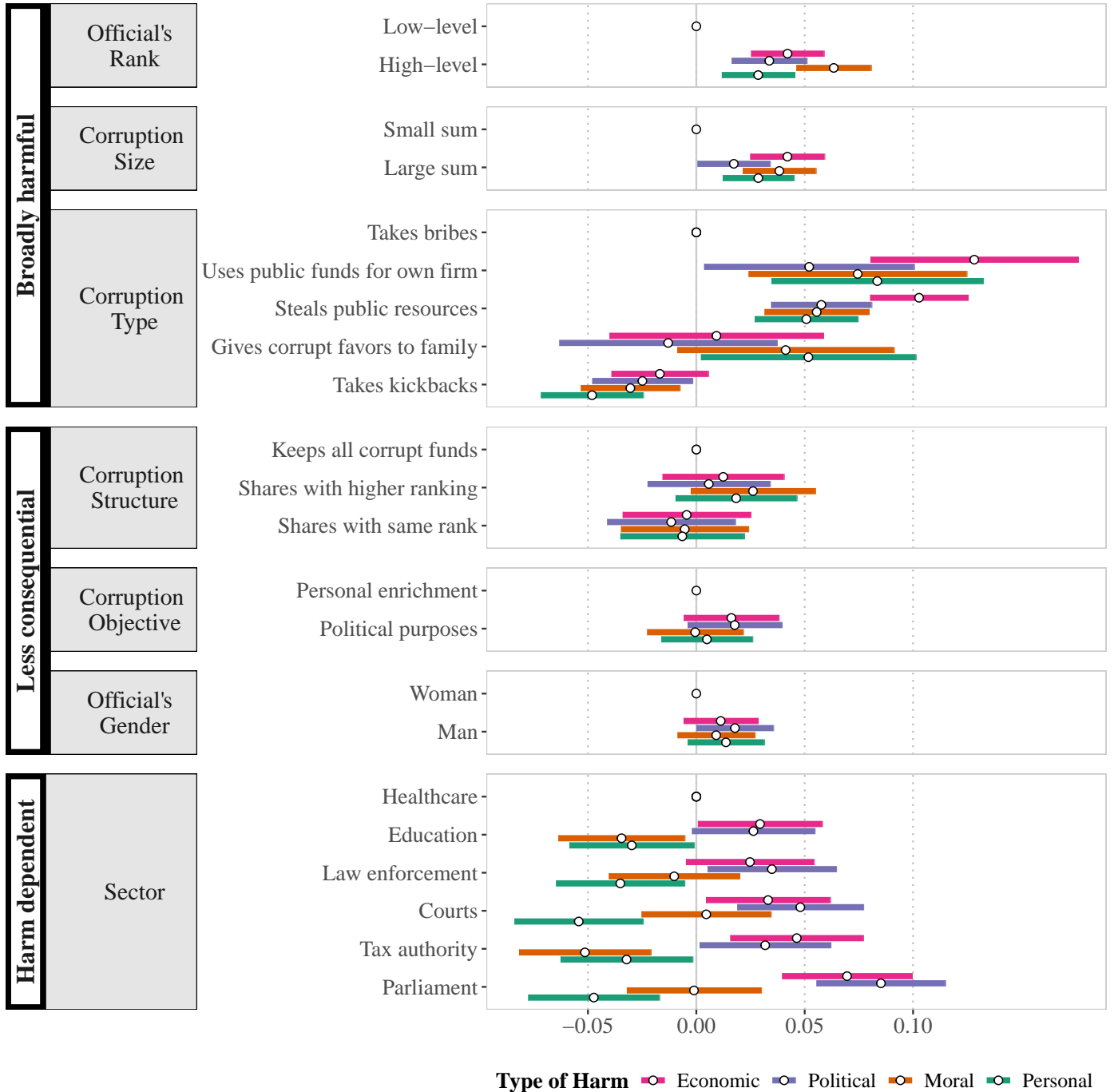
Figure D.1: AMCE Estimates With Profile Fixed Effects



Note: The figure above shows that results are robust to including profile fixed effects in the model specification. As before, average marginal component effects (AMCEs) represent the change in probability that a respondent identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals.

D.2 Analyses Dropping “Speeders”

Figure D.2: AMCE Estimates Excluding “Speeders”



Note: The figure above shows that results are robust to removing the fastest 10 percent of respondents from our sample. As before, average marginal component effects (AMCEs) represent the change in probability that a respondent identifies a profile as more common when the profile includes the indicated attribute level instead of its baseline level. Estimates based on OLS regressions with standard errors clustered at the respondent level. Bars represent 95% confidence intervals.

References

- Hainmueller, Jens, Daniel J. Hopkins, and Teppei Yamamoto. 2014. “Causal inference in conjoint analysis: Understanding multidimensional choices via stated preference experiments.” *Political analysis* 22 (1): 1–30.
- Schuessler, Julian, and Markus Freitag. 2020. “Power analysis for conjoint experiments.” OSF Preprint, <https://osf.io/preprints/socarxiv/9yuhp/>.