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CAN CIVIL SOCIETY CURB CORRUPTION IN PUBLIC PROCUREMENT?

A comparative study of the conditional effect of societal accountability in EU regions

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ABSTRACT

Public procurement involves large sums of public funds and is major component of public sector fiscal activity. For this very reason, procurement is vulnerable to corruption, as it presents both motive and opportunities for corruption. The broader corruption literature has pointed to civil society as a key set of actors in monitoring and detecting corruption in the public sector, but whether it can and does so in procurement processes remains an open question. This study takes on this question, exploring claims put forth in previous research that the ability of civil society to bring corrupt officials to account is contingent on contextual factors. The study examines both the unconditioned relationship between civil society strength and corruption in procurement, as well as the relationship conditional upon levels of transparency, meritocracy, and local media in 175 EU regions. The results suggest that relationship between civil society strength and corruption in procurement is not monotonic, but, counter to findings in previous research, that the effect seems to exist where conditions are *less* favourable, rather than more favourable. Civil society exhibits a negative association with procurement corruption in regions with comparatively lower transparency and meritocracy. The results suggest that institutions not only affect the ability of civil society to demand accountability, but also its willingness to do so.

Keywords: civil society, public procurement, corruption, procurement corruption, societal accountability, EU regions, contextual conditions

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Introduction

Public procurement is one of the central government functions; instrumental in the provision of public goods and for the operation of the public sector (Basheka, 2008; Thai, 2008). Public procurement constitutes a sizeable part of most developed countries economies, comprising 13% of the EU's GDP in 2014 (DG GROW, 2016). Simultaneously, procurement¹ is one of the government activities most vulnerable to corruption; the considerable amounts of public funds involved present both opportunities and motives for corruption (Ware, et al., 2007). To combat corruption, researchers and anti-corruption practitioners typically prescribe increased accountability; allowing for the answerability and sanctioning of corrupt behaviour. The classic examples of accountability imagine the public exercising accountability via elections or government officials pursuing it through intra-government monitoring. However, civil society may also engage in societal accountability, complementing these more established forms of accountability (Peruzzotti & Smulovitz, 2006). A strong civil society, should, in theory, aid in monitoring and demanding accountability of corrupt public officials (Grimes, 2013). A number of case studies demonstrate that civil society indeed has succeeded in bringing to light corruption in government procurement (Ramkumar, 2008; Brown & Neumann, 2017) and the European Commission has launched pilot projects in which civil society actors participate in public procurement as external monitors (European Commission, 2018).

Although the inclusion of civil society may seem like a plausible and attractive means for controlling corruption, civil society strength varies tremendously from one setting to another, and does not operate in a vacuum. Lacking any powers of oversight and sanctioning of its own, civil society depends on the institutional mechanisms in place to effectively monitor and sound alarms, and by extension reduce corruption (Grimes, 2008; Fox, 2015). Thus, in addition to observing the correlation between civil society and procurement corruption, this study explores three contextual factors that are considered important for civil society to demand accountability: meritocracy in the public sector, transparency of procurement contracts and the credibility of local media.

This paper utilizes OLS regression analysis to examine the link between civil society strength and procurement corruption in EU regions. Most models include 175 regions from 20 different EU countries. The European subnational setting not only provides considerable variation, but also constitutes a new context for testing theories of societal accountability. The study compiles a unique cross-sectional dataset, including an objective measure of corruption constructed from procurement contract data (Fazekas & Kocsis, 2015).

The article makes several important contributions. First, it adds to the study of corruption in public procurement by examining whether non-state actors play a role. Previous literature on procurement corruption

¹ Procurement is used interchangeably with public procurement.

has focused on aspects of the bureaucracy and features of the procurement process that incentivize corruption (see e.g. Charron et al., 2017). Civil society involvement as a possible contributing factor has not been examined in large-N studies. Examining the link between civil society strength and procurement corruption also adds to the scholarship on societal accountability. Previous quantitative studies of societal accountability have employed measures such as the World Bank's Control of Corruption measure, or Transparency International's Corruption Perception Index (Lee, 2007; Grimes, 2013), both of which are which agglomerate all forms of corruption throughout a polity into a single perception-based indicator. Fluctuations in such measures may signal changes in corruption, but may also come about due to increased salience of corruption. A lack of change in the measure may also disguise improvements on one front and backsliding on another. Using an objective and more fine-grained indicator allows this paper to more reliably assess the accountability mechanisms at work. Finally, Fox (2015) and other influential scholars have highlighted the need to combine different forms of accountability to break a negative environment. Thus, this paper adds to the research field by empirically studying the interaction between civil society and other actors capable of exercising accountability.

In contrast to previous research, this study does not find an amplifying effect of institutional conditions on the ability of civil society to demand accountability. Instead, the results suggest that an increase in civil society strength is associated with a reduction in procurement corruption in regions characterized by low and medium levels of transparency and meritocracy, respectively. However, in the most well-performing regions, in terms of transparency and meritocracy, there is no significant effect of civil society. The article argues that these results complement the findings of previous research; suggesting that institutional conditions not only affect the ability to exercise societal accountability but also the willingness of civil society to demand accountability.

The paper first introduces the topic of procurement corruption and then presents the case for civil society involvement within the same; detailing the expectations of the results. Subsequent sections then discuss the case and the data, and present the results of the regression analysis along with robustness checks. The concluding discussion section deals with the results in more detail and draws several conclusions based on preceding sections.

Public Procurement and Procurement Corruption

Public procurement entails the purchase of goods and services by the government (Uyarra & Flanagan, 2010). All government sectors are dependent on the process; whether it relates to the purchase of necessary supplies or finding a contractor to undertake public works (Basheka, 2008). Furthermore, it constitutes a considerable portion of most countries' economies (Schapper, et al., 2006); data shows that EU countries spent between 6%-20% of GDP on procurement, the EU average being 13.4%, in 2016 (Kutlina-Dimitrova, 2018). The procurement process is complex, involving several different phases: from

design of tender to pre-bidding/bidding and evaluation of bids.² The regulation that applies depends on a number of factors, for example: contract value, procured good/service and procuring entity. Important in the discussion of applicable regulation are procurement thresholds. These effectively dictate the nature of the procurement process. Procurement above thresholds usually entails a more formal and open process as opposed to procurement below thresholds, where demands are usually less comprehensive (Grandia, 2017). The procurement process is meant to be characterized by principles of transparency, competition and fairness to ensure the best value for money (Thai, 2009; Fazekas & Kocsis, 2017). Nevertheless, several circumstances and strategies allow for circumventing these principles, presenting opportunities for corruption.

Corruption is typically understood as the misuse of public office for private gain (Persson, et al., 2013). Within the process of procurement, Fazekas and Kocsis (2017, pp. 1) define corruption as “*unjustified restriction of access to public contracts to favour a selected bidder*”. Corruption has extensive societal effects, contributing to misallocation and misuse of public funds (Lambsdorff, 2006; Mungiu-Pippidi, 2006). With respect to procurement corruption specifically, a relatively recent study of procurement in the EU estimates that corruption in procurement contributes to the loss of about five billion euros each year (Hafner, et al., 2016).³ Transparency International estimates that corruption increases the cost of procurement by up to 50% (Transparency International, 2018).

What, exactly, are the points of vulnerability in procurement procedures? Procurement corruption typically involves senior public officials with discretionary power to award contracts, or alternatively politicians who exert undue pressure on public officials (Ware, et al., 2007). Due to the seniority of actors and the considerable amounts of public funds in the process, scholars suggest procurement corruption as a proxy for high-level corruption (Fazekas & Kocsis, 2017). Furthermore, Ware et al. (2007) contend that the most common corruption schemes are characterized by kickbacks; corrupt public officials are awarded a share of the profits from the winning firm for having steered the procurement towards a certain bidder. It can also take on the form of over-billing, where public officials set procurement costs that significantly exceed the actual value of the procured goods to allow for extraction of rents (Rose-Ackerman & Palfika, 2016, pp. 99-109). Put simply, public procurement presents opportunities for corruption in all steps of the process: in designing the tender, officials can tailor requirements to fit a certain supplier and exclude others; in the pre-bidding/bidding stage, officials can demand/be offered bribes to provide specific bidders with inside information; in evaluating bids, non-quantifiable evaluation criteria can be used, creating opportunity for corrupt officials to more easily favour a pre-determined bidder (Søreide, 2002; Ware, et al., 2007; Rose-Ackerman & Palfika, 2016, pp. 103-109). The implication of this is that it can be hard to detect

² For a more detailed description of the procurement process see e.g. Thai (2009).

³ Across all 28 member states.

procurement corruption given the numerous ways available to tweak the rules and the subtlety of some of them.

That said, some procurement processes are more susceptible than others to corruption. Research suggests that large contracts increase the potential gain of corruption and, thus, the incentives for corrupt behaviour (Schultz & Søreide, 2008). In addition, when public officials have a high level of discretion over the procurement process, they are more able and thus likely to favour a certain bidder (Søreide, 2002; Ware, et al., 2007). Similarly, the degree of transparency influences opportunities for procurement corruption; greater transparency of the process allows more actors to be involved in monitoring and increases disincentives of engaging in corruption for public officials, as chance of detection is increased (Rose-Ackerman & Palfika, 2016, pp. 146-157; Fazekas & Kocsis, 2017). Thirdly, the risk of sanctioning has decisive influence on the incentives for public officials; if there is greater chance that corrupt behaviour is sanctioned, incentives for officials to engage in corruption are lower (Schultz & Søreide, 2008).

In addition to features of the procurement process that influence incentives, studies have focused on features of the bureaucracy that impact procurement corruption. Charron et al. (2017) study the effect of meritocracy in the public sector, i.e. requiring that recruitment and career opportunities are based on merit rather than connections. They argue that meritocracy presents several causal paths for impacting procurement risks. Firstly, meritocracy ensures that career opportunities of bureaucrats are not dependent on relationships with politicians; considering that a meritocratic system does not allow politicians to handpick public servants. The separation of career paths encourages monitoring between groups. Secondly, by affirming that hiring is done on the basis of documented qualifications, a more capable pool of candidates for civil service jobs is created. These candidates are likely more capable of resisting every-day pressure of corruption.

In summary, public procurement constitutes a significant process for governments but is simultaneously vulnerable to corruption. Due to the nature of public procurement, incentives for engaging in corruption are strong. Previous research has primarily focused on institutional conditions; features of the procurement process and bureaucracy that affect these incentives. Nevertheless, it is important to observe the feasibility of actors outside the bureaucracy and government to influence procurement corruption. Especially considering the enthusiastic view of civil society in anti-corruption research and the initiatives aimed at facilitating the inclusion of third parties in public procurement. As is demonstrated in the following section, civil society can be important in influencing incentives/disincentives for procurement corruption.

Civil Society, Societal Accountability, and Contextual Conditions

Before discussing how civil society fits into the case of procurement corruption, it is important to define what it entails. Civil society is often portrayed as a force capable of impacting a multitude of societal aspects. Nevertheless, what constitutes civil society tends to vary considerably, and the concept is by many accounts “fuzzy” (Heinrich, 2005). Empirical research frequently conceptualizes civil society as either an arena for collective action, the intermediate level between state and family or, simply, as embodied by voluntary associations (Howard, 2003, pp. 1-15; Heinrich, 2005; Torsello, 2012, pp. 27-49).

For empirical reasons, this study focuses on voluntary associations as constituting civil society. However, emphasis is put on a few organization types, with incentives to monitor and curb corruption in public procurement. Incentives to address corruption arise from the damaging effects of the phenomenon, creating a large group of “losers” who do not benefit from the prevailing corruption. Rather, this group stands to gain from organizing to curb corruption and the organizational structure of civil society facilitates action (Mungiu-Pippidi, 2013). In the case of procurement, civil society organizations have clear incentives to address corruption; considering that procurement constitutes the basis of public goods provision and comprises a majority of government spending (Basheka, 2008). Nonetheless, not all organizations have the same incentives to ensure that procurement is conducted properly, some might even exacerbate corruption in public procurement.⁴

In addition, Fox et al. (2016) contend that diverse types of organizations can be active in various phases of the procurement process and serve different purposes in the monitoring of procurement. For example, technically skilled organizations are useful to manage data processing and provide information but are aided by broad-based membership organizations that engage large shares of the population (Johnston & Kpundeh, 2005; Fox, et al., 2016). This study focuses on four types of organizations: welfare organizations, trade unions, local community action groups, and development/human rights groups. All of these may have incentives to ensure that public procurement and, by extension, public goods are provided as intended. However, the organizations can have diverse functions in addressing public procurement; e.g. local development organizations are suited to monitoring execution as well as delivery of local projects, whilst trade unions typically present more of a professionalized organization with other skills and access points (Fox, et al., 2016).

How might such organizations help to mitigate corruption? Civil society is a popular concept in contemporary anti-corruption literature (Mungiu-Pippidi, 2006), recognized as a source of accountability outside the traditional accountability mechanisms. To understand the possibility for civil society to demand accountability, it is necessary to first consider how accountability operates in general. Accountability is often divided into two dimensions: answerability, ability to demand answers; and sanctioning, the punishment of abusive

⁴ One example is the involvement of the mafia in procurement in Southern Italy (Caneppele & Martocchia, 2013)

behaviour (Fox, 2007). Although commonly used as a general term, different forms of accountability can be distinguished. The two most classical forms of accountability are vertical and horizontal. Vertical accountability usually envisages the electorate demanding accountability of rulers via elections, where voters have the possibility to sanction politicians based on performance or future policy. Horizontal accountability refers to intra-government monitoring and sanctioning that takes place between government agencies. Although these mechanisms are important to attribute blame and administer sanctioning, scholars argue that both are inherently flawed (Peruzzotti & Smulovitz, 2006; Przeworski, 2006). Consequently, research suggests societal accountability as an alternative or complement.

Societal accountability refers to the on-going process of monitoring and holding public officials accountable by civil society. The monitoring aspect is relatively straightforward; organizations act as watchdogs, observing the work of the bureaucracy and the government to expose misconduct (Peruzzotti & Smulovitz, 2006). The aspect of societal accountability that has been questioned is the ability to sanction misbehaviour, as required by most definitions of accountability (Houtzager & Joshi, 2008). Mainwaring (2003) argues that societal accountability should not be classified as a legitimate form of accountability seeing as civil society does not possess formal powers of sanctioning. However, such an argument does not tell the whole truth. Although not directly engaging in formal sanctioning, civil society can alert formal control functions to the presence of abuse by triggering “fire alarms”. Thus, activating horizontal mechanisms of sanctioning. Sanctioning can also work through informal mechanisms, should government functions be unresponsive. In such a case, civil society can alert media to the existence of misconduct, accruing reputational costs to misbehaviour (Grimes, 2013). Additionally, more drastic measures are conceivable, for example, the mobilization of disruptive protests (Boulding, 2010; Machado, et al., 2011).

Societal accountability could, in theory, be exercised by citizens without the support of a civil society organization. However, considering that both monitoring and the administering of sanctioning require resources, it is facilitated when pursued by an organization rather than a single individual. Grimes (2013) concludes that societal accountability is more feasible in the context of a strong and vibrant civil society; it facilitates the coordination of demanding accountability through elections, increase public participation and has greater resources for monitoring compared to a weaker civil society. The same appears true in the case of procurement corruption; monitoring public procurement requires both knowledge of the process and technical skills to make sense of the available procurement documentation (Brown & Neumann, 2017; Berliner & Dupuy, 2018). Likewise, the ability for civil society to sanction misbehaviour is also dependent on available resources and strength of civil society. Strength of civil society dictates the possibility for mobilizing protests (Cornell & Grimes, 2015) and, consequently, the possibility for elites to ignore or act on reports of abuse (Behrend, 2006). The monetary resources, as well as the technical expertise to process and compile data, are more likely to be available within a strong civil society, one that engages a large portion of the public and encompasses different types of organizations. Through monitoring and sanctioning, civil society

can increase disincentives for public officials to engage in corruption. Considering that societal accountability contributes to increasing both risk of detection as well as the risk of sanctioning for public officials. By extension, reducing the incidence of procurement corruption. Consequently, the first hypothesis is:

H1: Strength of civil society is negatively associated with corruption in public procurement

Although civil society and the use of societal accountability has shown promising signs in addressing corruption (Grimes, 2013), the contemporary accountability literature emphasizes the need for interactions between different types of accountability. The argument is that different forms of accountability and actors capable of exercising accountability can enhance one another (Smulovitz & Peruzzotti, 2003; O'Donnell, 2006; Grimes, 2013; Fox, 2015). Even though the actions of a single actor in exercising accountability are important, it is the combination of pressures for accountability by several actors that is able to yield change. This notion is portrayed in Fox's (2015) "sandwich model", where he contends that the pressure from below garnered by civil society is aided by pressure simultaneously being applied from above by responsive government functionaries. Fox further argues that the effectiveness is created by combining the monitoring and advocacy functions of civil society with the capabilities of sanctioning from formal government institutions. Similarly, Ankamah (2016) argues that both societal accountability and horizontal accountability have been proven ineffective on their own, but the interaction between the two increases opportunities for demanding accountability. Without horizontal control mechanisms, civil society will not be able to access formal sanctioning; however, without civil society, corruption could go unnoticed (Ankamah, 2016).

Therefore, the role of civil society in demanding accountability is not implausible, but likely subject to contextual considerations as well as the presence of other actors capable and interested in exercising accountability. The research field suggests that both societal conditions and institutional conditions are important for civil society to demand accountability, although the specific mechanisms at work remain to be conclusively outlined. In general, the suggested mechanisms surface from individual case or in the best of cases, proposed by a few large-N studies. Consequently, there is considerable room to extend on these findings and to test new interactions. This article serves to substantiate the understanding of these mechanisms by studying the conditional effect of civil society dependent on transparency, meritocracy, and local media in EU regions.

Transparency appears crucial for civil society to be able to monitor and exercise societal accountability (Grimes, 2013). Although it is not a sufficient criterium for societal accountability, it is a necessary one. Without transparency, and, consequently, information, monitoring of government practices is made impossible (Fox, 2015; Rose-Ackerman & Palfika, 2016, pp. 395-411). EU procurement legislation requires both tenders and contract notices above certain thresholds to be published openly. Consequently, most major

contracts are available for public scrutiny, ensuring a fundamental level of transparency (Fazekas & Kocsis, 2017). Nevertheless, the information contained in each contract notice varies (Bauhr, et al., 2019). This affects the possibility for civil society to detect irregularities and to pursue accountability for said irregularities (De Simone & Shah, 2012). In a region characterized by more available information on procurement, i.e. greater transparency, civil society should be more capable of detecting and pursuing irregularities than in a region characterized by less transparency. The second hypothesis is, therefore:

H2: The effect of civil society on procurement corruption is amplified in regions characterized by a higher degree of procurement transparency.

Moreover, research suggests that aspects of the bureaucracy can facilitate societal accountability. Fox (2015) considers the interaction between society and state actors as contributing to the formation of pro-accountability coalitions; allowing pressure to be applied from several sources and, thus, increases the likelihood of success. An example of this can be seen in a case study from India, where civil society is aided by the presence of a “sympathetic bureaucrat” who provides access to needed documentation (Pande, 2008). This paper argues that meritocratic systems, which stands in contrast to systems where politicians appoint officials to the bureaucracy, contributes to creating sympathetic bureaucrats. Charron et al. (2017) argue that meritocracy separates careers and incentivizes monitoring between bureaucrats and politicians (Charron, et al., 2017). Consequently, meritocracy within the public sector should create bureaucrats that are independent of politicians; thus, hindering collusion between the two groups. It also implies that bureaucrats have less incentive of tolerating corruption in a meritocratic system than in one characterized by favouritism. By extension, meritocracy should provide reasons for officials to consider input from civil society to combat corruption, and allow officials to support civil society by granting access to information and opening up public space for scrutiny (Lemos-Nelson & Zaverucha, 2006). The third hypothesis of this article is:

H3: The effect of civil society on procurement corruption is amplified in regions characterized by a higher degree of meritocracy in the public sector.

Several scholars propose that the presence of a capable and credible media constitutes an important contextual condition for societal accountability (Peruzzotti, 2006; Peruzzotti & Smulovitz, 2006; Grimes, 2008; Fox, 2015). Case study evidence notes that media could be perceived as a watchdog in its own right (Brown & Neumann, 2017), but also capable of assisting civil society in monitoring (Peruzzotti, 2006; Peruzzotti & Smulovitz, 2006). Media can aid in administering sanctioning; enabling civil society to mobilize the public

in protest through both alerting the public to the issue and keeping it on the public agenda (Behrend, 2006). In addition, media is instrumental for societal accountability to be able to accrue reputational costs to misbehaviour; by publishing reports of corruption and, thus, tarnishing reputations of corrupt elites (Peruzzotti & Smulovitz, 2006). However, the facilitating effect of media depends on how free and credible the media platforms are (Grimes, 2013). If media outlets are merely voices of a corrupt regime, they are unlikely to facilitate civil society's fight against corruption (Behrend, 2006). Furthermore, considering that the study is focused on the regional level, it is important to note that it is local media that matters in the current case. National level media will matter less in the scrutiny of local and regional level corruption (Grimes, 2008). The credibility of local media is particularly crucial in the case of corruption within public procurement, considering the complex nature of the process; presenting an added challenge in communicating it effectively (Torsello, 2012, pp. 107-136). Consequently, the fourth hypothesis is:

H4: The effect of civil society on procurement corruption is amplified in regions characterized by a higher degree of local media credibility.

Case Selection

The units of analysis in the study are regions within the EU.⁵ Studying EU regions is suitable for several reasons. Firstly, the procurement regulation is decided by the EU, ensuring all member countries and regions are subject to the same regulation. Contracts exceeding certain thresholds are required to be advertised on a publicly available, and EU-common, procurement database (Fazekas & Kocsis, 2017). The fact that the data is openly available is important for civil society to be able to monitor (Grimes, 2013). However, as noted in the previous section, information available in the contract award notices varies extensively. In addition, considerable procurement takes place at the regional level (Decarolis & Giorgiantonio, 2015; OECD, 2015), providing both incentives and opportunities for local civil society organizations to address procurement corruption.⁶ Furthermore, there is generally large amounts of variation at the subnational level, which is overlooked in cross-country studies (Snyder, 2001). Studies show considerable regional differences within certain EU countries with regards to corruption (Charron, et al., 2017).

The case of civil society and procurement corruption in EU regions can be viewed as presenting both a most-likely and a least-likely case, i.e. both an “easy” and a “tough” test for the theory (Flyvbjerg, 2006). Easy in the sense that all the surveyed countries are democracies; and civil society, thus, should be facilitated in its existence (Howard, 2003, pp. 31-56). Consequently, results found here do not necessarily apply

⁵ See [Appendix I](#) for more information on the regions.

⁶ OECD estimates that about 63% of procurement spending is conducted at the local/regional level in OECD countries in 2015.

to settings of weaker democratic institutions; the sample accommodates some of the most well-performing regions in the world and findings should be considered significant of such contextual conditions. In addition, what motivates and mobilizes civil society likely differs between contexts; spurring opposition to corruption is likely easier if one believes corruption to be an acute issue, although not insurmountable, but unmanageable for the formal control functions alone. Therefore, the expectations developed in previous studies, who have included less-developed settings (see e.g. Grimes, 2013; Lee, 2007), might not necessarily hold in the current context; considering that these well-performing regions might offer other incentives for organizations to oppose corruption than in less developed settings. Therefore, studying societal accountability in EU regions should allow this article to draw new conclusions and extend previous understandings due to the scope of the sample. Nonetheless, there is a considerable amount of variation within the sample. Quality of government differs extensively between and within countries (Charron, 2013).

One could also argue that it presents a tough case for the theory given the nature of procurement and corruption within the same. Procurement is by all accounts a complex process, requiring knowledge of practices and regulations (Ware, et al., 2007). Therefore, civil society monitoring of the process is not entirely straightforward and communicating the presence of corruption to the public presents a challenge (Torsello, 2012, pp. 107-136). Many local organizations might not be capable of such a feat, considering it requires resources and capabilities that are not present in all local contexts. Following this line of reasoning, a negative relationship between civil society and procurement corruption found in this study should be applicable to other forms of corruption as well.

Data

This paper assembles a unique cross-sectional dataset from several data sources. Most models include 175 regions from 20 different EU countries.

Procurement corruption

The dependent variable is procurement corruption, which is problematic to observe due to the illegal nature of the phenomenon (Dahlström & Sundell, 2013). Nonetheless, studies of procurement corruption suggest that certain aspects of procurement signify clear risks of corruption and once aggregated can be used to approximate actual corruption within procurement (Fazekas & Kocsis, 2017). Fazekas and Kocsis (2017) argue that procurement risks serve as a proxy for high-level corruption, by tapping into strategies for the deliberate restriction of competition for high-value contracts. Following their work, the main indicator of corruption in public procurement in this study is the percentage of contracts with a single bidder. This paper constructs the measure from a database containing roughly 2 million procurement contracts from 28 EU countries (including Norway and excluding Malta) compiled over a five-year period, 2009-2013 (Fazekas &

Kocsis, 2017).⁷ Single-bidder contracts allow for awarding contracts above market price and for extraction rents. Single instances do not necessarily reflect corruption, but if occurring repeatedly in an otherwise competitive market, it gives an indication of corruption. As noted previously, corrupt procurement schemes take on different forms and can be made excessively complicated (Søreide, 2002; Ware, et al., 2007). Consequently, measures of corruption could be made equally complicated. Nonetheless, the suggested measure captures the simplest strategies of corrupt tampering. As long as the simplest strategies remain the cheapest strategies, the measure should be a valid estimator of procurement corruption (Fazekas & Kocsis, 2015). The measure also correlates highly with perception-based measures of corruption (Charron, et al., 2017).⁸ Higher percentage of single-bidder contracts reflect higher corruption level.

The measure constitutes an objective indicator of corruption. There are several benefits of objective indicators as opposed to commonly used perception-based measures. Firstly, perceptions of corruption can be distorted and must not necessarily be related to actual circumstances. Rather, media coverage of the issue can impact perceptions. Secondly, perceptions are slow-moving and do not always reflect the current situation (Rose-Ackerman & Palfika, 2016, pp. 24-27; Charron, et al., 2017). Thirdly, observing high-level corruption, which procurement corruption typically is classified as, based on perceptions is made even more difficult; considering that few have actual experiences with that type of corruption (Fazekas & Kocsis, 2017). Objective measures, on the other hand, are formed based on tangible data, procurement contracts in this case, which does not suffer from the same flaws as perceptions. Previous literature on societal accountability has to a large degree relied on aggregate and perception-based measures of corruption (see e.g. Lee, 2007; Grimes, 2013). Although important, it is made difficult to discern whether fluctuation or variation in corruption is due to holding officials accountable by civil society or due to increased focus on the issue. The work of civil society involves raising awareness of issues, which can affect the perceptions of said issues. This form of advocacy is undoubtedly important but should not be confused with accountability; in which civil society not only turns the spotlight on the issue but also targets it directly. Employing an objective and easily discernible proxy of procurement corruption facilitates this study to make such a distinction, given that the proxy foremost should be affected by accountability and not advocacy.

Civil society

Civil society constitutes the main independent variable in the study. This study follows the strand of research that employs survey data in estimating strength of civil society (Paxton, 2002; Howard, 2003; Cornell & Grimes, 2015). Strength of civil society is constructed through voluntary organizational memberships. However, as mentioned, not all organizations are likely to have the same effect on procurement corruption

⁷ Appendix IV provides more information.

⁸ Appendix I displays these correlations.

(Paxton, 2002; Caneppele & Martocchia, 2013; Grimes, 2013). Therefore, this study focuses on four organization types: welfare organizations, trade unions, local community action groups and development/human rights groups. The study gathers data from the European Value Survey (EVS) conducted between 2008-2009 (EVS, 2016).⁹ The constructed measure captures strength of civil society by summing the number of voluntary organizational memberships for the concerned organization types of each respondent. This is aggregated to form an average number of organizational memberships for each region. Strength is held to increase with the number of memberships (Paxton, 2002).

Although commonly used in empirical research, there are limitations to the use of survey data. Firstly, questions can be interpreted differently in various settings (Paxton, 2002). Another related issue is that the approach does not provide the possibility to account for all relevant local organization types, which potentially can make cross-country comparisons problematic (Heinrich, 2005). Nevertheless, studies conclude that views of what constitutes a civil society organization are consistent throughout Europe (Howard, 2003; Torsello, 2012, pp. 27-50); thus, limiting the possibility of miscoding due to differences in interpretation. The most acute issue in using EVS data is the fact that the survey is not entirely adapted to the regional context; in certain regions, few respondents are sampled.¹⁰ To remedy this issue, the study introduces analytical weights as a robustness test. Lastly, despite the limitations of survey data, EVS provides good coverage for most regions. It also allows respondents to mark a wide number of organization types (EVS, 2016).

Moderating variables

The first moderating variable is transparency. Bauhr et al. (2019) divide transparency into two dimensions of ex-ante and ex-post transparency. They propose that ex-post transparency, i.e. hindsight information of the procurement process as found in contract award notices, is the most valuable for external actors, such as civil society organizations. Following a similar approach to that of Bauhr et al. (2019), this paper constructs a measure of procurement transparency based on key missing information in contract award notices; specifically, information that should be included and that is important for the assessment of a contract. The transparency of an individual contract is calculated according to the following formula:

$$\text{Transparency} = 1 - 1 \times ((\text{missing submission period} + \text{missing price weight} + \text{missing procedure} + \text{missing foreign winner})/4)."$$

⁹ A majority is gathered in 2008.

¹⁰ Table 1 includes the number of respondents.

¹¹ Appendix IV provides descriptions of components.

This is aggregated to an average transparency score for contracts at the regional level, where higher levels indicate more transparency. This paper gathers data from the database used in construction of corruption measure (DIGIWHIST, 2018a).

The second moderating variable is meritocracy. The study utilizes a measure of meritocracy in the public sector constructed from a survey representative at the regional level of 24 European countries, focusing on questions of governance and corruption. The survey asks respondents to rate two statements, on a scale from 1-10, regarding the importance of merit within the public sector: (1) *“in the public sector, most people can succeed if they are willing to work hard”* (2) *“hard work is no guarantee of success in the public sector for most people—it’s more a matter of luck and connections”*. Subsequently, the survey asks respondents regarding their sector of employment; upon which, only responses from respondents working in the public sector are kept.¹² Responses are aggregated to a mean score for each region.¹³ Validity is considered high as it presupposes experience working in the public sector (Charron, et al., 2017). Higher values indicate higher levels of meritocracy.

Lastly, credibility of local media constitutes the third moderating variable. This study operationalizes local media credibility as trust in media in reporting on matters of politics and public services in each region. The paper constructs local media from survey data from the European Quality of Government Index (EQI), gathered in 2013 (Charron, et al., 2015). The survey asks respondents to rank the following statement on a scale from 0-10: *“I trust the information provided by the local mass media in reporting on matters of politics and public services in my area”*.¹⁴ Responses are aggregated to a mean value for each region. The survey is adapted to the regional context, randomly surveying between 400-450 respondents in each region. Nonetheless, Annoni and Charron (2017) raise some concerns regarding the validity of the question in gauging local media. The results section revisits these concerns.

Control variables

This paper enlists several control variables to account for endogeneity but also to allow for the possibility of alternative explanations. Regarding civil society and procurement corruption, there is likely a larger risk of spuriousness than simultaneity; procurement corruption is unlikely to directly affect participation in civil society. However, certain variables could present linkages between the two.

¹² Roughly 20% of respondents report working in the public sector.

¹³ After transformation, the maximum range is 1-10.

¹⁴ 0 being strongly disagrees and 10 being strongly agrees. The measure used in this study has, however, been rescaled, ensuring that maximum range is 0-1.

Previous literature links social trust to participation in civil society, although the direction of causality is debated (Kumlin & Rothstein, 2005). In his classic work studying Italian regions, Putnam contends that participation in civil society fosters social trust, allowing citizens to practice positive reciprocity through involvement in voluntary associations (Putnam, et al., 1992). However, more recent research has challenged this position, arguing that it is more likely a matter of self-selection; high-trusting citizens participate in civil society to a greater extent than less-trusting members of society (Charron & Rothstein, 2018). In addition, Charron and Rothstein (2018) find that quality of government (QoG) is important in explaining variation in social trust in EU regions. A crucial aspect of QoG is the absence of corruption (Rothstein & Teorell, 2008). Since social trust is likely correlated with both focal variables, the models control for social trust with a measure from the EQI survey of 2013 (Charron, et al., 2015), asking respondents whether people, in general, can be trusted. Responses are aggregated to a regional average, higher values indicate higher levels of trust.

The study controls for level of economic development in each region using GDP per capita. Economic development is correlated with corruption, although the causality is debated (Treisman, 2007). In addition, more economically developed regions should feature more vibrant civil societies, considering that a certain degree of economic well-being is required for people to be able to allocate time for participation in voluntary associations (Howard, 2003, pp. 73-74). The study also controls for the demographic conditions of the regions using population density. Population density can affect the presence of available suppliers, which in turn can affect the likelihood of single-bidder contracts. Moreover, population density should influence participation in civil society. Studies suggest that people in densely populated areas are less likely to participate in civil society (Howard, 2003, pp. 87-88). The paper collects data from Eurostat and uses the mean value of both variables for 2009-2013 (Eurostat, 2019).

The study introduces two dichotomous control variables. The first is whether or not the region is politically relevant.¹⁵ Political relevance stems from the presence of a directly elected local government. It also implies that these regions are to varying degrees in charge of service provision (Charron, et al., 2015), which necessitates the use of procurement. Consequently, it is reasonable to expect the use of procurement to be somewhat different in a politically relevant region than in one of mere statistical nature. Moreover, civil society should be more active in these regions given that regions to a larger degree are directly responsible for service provision, creating incentives to organize in civil society.

Secondly, this article controls for whether the region lies in a post-Communist country. Studies suggest that civil society participation is distinctly lower in post-Communism contexts compared to contexts without such a background within the EU (Howard, 2003, pp. 57-91). Moreover, post-communist regions demonstrate higher levels of corruption than other parts of Europe (Grødeland & Aasland, 2011).

¹⁵ Not all regions in the sample are politically relevant, i.e. not existing administrative units, but some are merely statistical products. See Appendix I for more information.

Lastly, to allow for the possibility of two alternative explanations to variation in corruption; women in parliament and EU-funds are included in some models. Several authors link the presence of women in local parliaments to lower levels of corruption (Grimes & Wängnerud, 2012; Sundström & Wängnerud, 2016; Esarey & Schwindt-Bayer, 2018). Although causality is debated (see e.g. Wängnerud, 2012), this study expects a negative correlation between women in local parliaments and corruption. Data is from Sundström (2013).¹⁶

The use of EU-funds in public procurement can contribute to wasteful behaviour and increase procurement corruption in institutionally weak settings. EU-funds increase the amount of funds available for rent extraction and the number of procurements carried out; creating more opportunities for corruption to take place (Fazekas, et al., 2013). Therefore, the study controls for the percentage of contracts in a region that involves EU-funds. The study gathers data from the contract database provided by DIGIWHIST (2018a).

The table below presents descriptive statistics for the variables above.

TABLE 1. DESCRIPTIVE STATISTICS

	Observations	Mean	Standard deviation	Minimum	Maximum
Percentage single-bidder	175	0.177	0.135	0	0.691
Civil society	175	0.225	0.235	0	1.071
Transparency	175	0.807	0.0530	0.494	0.965
Meritocracy	175	4.092	0.670	2.212	5.563
Local media	175	0.484	0.0623	0.261	0.645
Social trust	175	0.429	0.183	0.0638	0.802
GDP per capita (ln)	175	9.929	0.634	8.126	11.03
Population density (ln)	175	4.981	1.123	1.519	8.862
Politically relevant region	175	0.686	0.466	0	1
Post-Communist region	175	0.286	0.453	0	1
Women in local parliaments	175	27.45	8.165	10	44.97
EU funds	175	0.108	0.128	0	0.691
Respondents EVS	175	172.9	151.4	8	791

¹⁶ See Appendix IV for more information.

Results

The study observes both the unconditional relationship between civil society and procurement corruption as well as the relationship conditional upon transparency, meritocracy and local media. Starting with the unconditional relationship, the regression table below includes five models, the first shows the bivariate relationship and each subsequent model includes more variables. Robust standard errors clustered at the country level are used throughout all regressions in the study.

TABLE 2. UNCONDITIONAL MODEL, PERCENTAGE SINGLE-BIDDER AS DEPENDENT VARIABLE

	(1) Percentage single-bidder	(2) Percentage single-bidder	(3) Percentage single-bidder	(4) Percentage single-bidder	(5) Percentage single-bidder
Civil society	-0.236** (0.062)	-0.121 (0.079)	-0.073 (0.078)	-0.069 (0.070)	-0.069 (0.072)
Social trust		-0.314 (0.154)	-0.167 (0.142)	-0.096 (0.079)	-0.141 (0.075)
GDP per capita (ln)			-0.049 (0.048)	-0.022 (0.041)	-0.014 (0.046)
Population density (ln)			-0.004 (0.008)	-0.011 (0.009)	-0.013 (0.010)
Politically relevant region			0.018 (0.042)	0.021 (0.035)	0.012 (0.037)
Post-Communist region			0.066 (0.074)	0.032 (0.058)	0.032 (0.054)
Transparency				-0.224 (0.169)	-0.157 (0.174)
Meritocracy				-0.085** (0.024)	-0.075** (0.020)
Local media				-0.009 (0.240)	-0.064 (0.253)
Women in local parliaments					-0.002 (0.002)
EU funds					-0.065 (0.124)
Intercept	0.230*** (0.039)	0.338*** (0.062)	0.744 (0.475)	1.020* (0.481)	0.978 (0.534)
Observations	175	175	175	175	175
Adjusted R ²	0.164	0.302	0.401	0.511	0.523

Note. Robust standard errors clustered at the country level in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Model 1 presents the bivariate relationship. It shows a significant and negative correlation between strength of civil society and percentage of single-bidder contracts. Moving from the lowest strength of civil society to the highest in the sample is associated with a decrease in percentage of single-bidder contracts by roughly 25.3 percentage points. Nonetheless, in subsequent extended models, civil society is insignificant. Although

the inclusion of more explanatory variables improves the fit of the model, meritocracy is the only variable to achieve statistical significance in the final two models. Consequently, this study replicates the results of previous research (see e.g. Grimes, 2013) with the use of an objective indicator of corruption and with a different sample; giving further weight to the notion that societal accountability does not occur in all settings.

Next, the paper tests the hypothesis that the effect civil society on procurement corruption is conditional on transparency (H2). The table below specifies five separate interaction models using transparency, each subsequent model includes more control variables.

TABLE 3. CONDITIONAL MODEL, TRANSPARENCY AS MODERATING VARIABLE AND PERCENTAGE SINGLE-BIDDER AS DEPENDENT VARIABLE

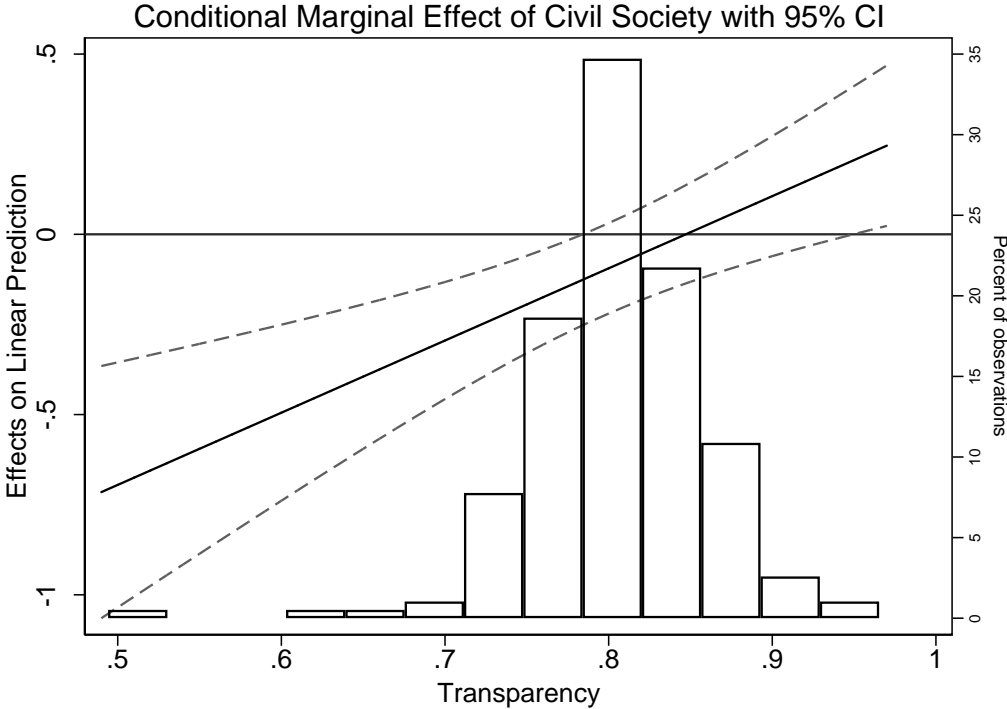
	(6) Percentage single-bidder	(7) Percentage single-bidder	(8) Percentage single-bidder	(9) Percentage single-bidder	(10) Percentage single-bidder
Civil society	-2.495** (0.770)	-2.409*** (0.620)	-2.117** (0.609)	-1.697** (0.458)	-1.696*** (0.409)
Transparency	-1.009* (0.362)	-0.926** (0.301)	-0.847** (0.259)	-0.617* (0.222)	-0.560* (0.227)
Civil society # Transparency	2.783** (0.901)	2.814*** (0.723)	2.511** (0.727)	2.003** (0.557)	2.002*** (0.508)
Social trust		-0.302* (0.143)	-0.171 (0.131)	-0.108 (0.078)	-0.156 (0.078)
GDP per capita (ln)			-0.053 (0.044)	-0.023 (0.041)	-0.016 (0.046)
Population density (ln)			-0.008 (0.008)	-0.013 (0.009)	-0.015 (0.010)
Politically relevant region			0.018 (0.036)	0.019 (0.033)	0.008 (0.034)
Post-Communist region			0.048 (0.068)	0.026 (0.056)	0.027 (0.052)
Meritocracy				-0.080** (0.023)	-0.071** (0.018)
Local media				-0.007 (0.229)	-0.060 (0.244)
Women in local parliaments					-0.002 (0.001)
EU funds					-0.090 (0.119)
Intercept	1.046** (0.310)	1.084*** (0.256)	1.489* (0.529)	1.347* (0.518)	1.327* (0.563)
Observations	175	175	175	175	175
Adjusted R ²	0.231	0.360	0.447	0.528	0.540

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The variable of most interest is the interaction term: *Civil society # Transparency*. The term as well as its components are statistically significant throughout all models, demonstrating the existence of an interaction effect. However, the sign of the interaction effect is not as expected. A negative interaction was hypothesized, considering the surveyed literature suggests that transparency enhances the effect of civil society. Apart from the previously mentioned variables only meritocracy consistently achieves statistical significance.

To better grasp the interaction effect and facilitate substantive interpretation, the study presents the results in a marginal effects plot below. The figure presents the marginal effect of civil society based on the regression results of the fully-specified *model 10*. All variables except the moderator are kept at their mean. The figure includes a histogram, which enables viewing the distribution of observations in terms of transparency.

FIGURE 1. MARGINAL EFFECT OF CIVIL SOCIETY ON PERCENTAGE SINGLE-BIDDER GIVEN DIFFERENT LEVELS OF TRANSPARENCY



Note. The dashed lines represent the 95% confidence intervals. The left-hand Y-axis shows the marginal effect of civil society, whilst the X-axis shows the range of transparency in the sample. The Y-axis on the right corresponds to the histogram, showing the percent of observations. Code for layout of figure is from Povitkina & Bolkvadzė, 2019.

The figure displays that for relatively low levels of transparency¹⁷, the marginal effect of civil society is both negative and statistically significant. This implies that an increase in the strength of civil society at these levels of transparency is associated with a decrease in the percentage of single-bidder contracts.¹⁸ However, for higher values of transparency, the model estimates lower marginal effect of civil society and for values of about 0.78 the marginal effect is insignificant. The figure illustrates that most cases are concentrated around 0.8 in terms of transparency, around the threshold for when the effect becomes insignificant. Consequently, it is in a smaller number of cases that the effect of civil society is significant and with a substantial as well as negative impact on corruption.¹⁹ Lastly, the model estimates a positive marginal effect of civil society at the highest levels of transparency, i.e. 0.95 or greater. Nonetheless, only one observation in the sample achieves such a level.

The results demonstrate the opposite of what was hypothesized; civil society appears more effective when access to information is lower. This article interprets the results to suggest a substitution effect between transparency and civil society; wherein the absence of institutional conditions that provide transparency, civil society monitoring plays an important role in ensuring the availability of information. In contexts of greater transparency, the role of civil society in ensuring transparency is less acute and organizations are presented with fewer incentives for monitoring. This line of reasoning provides somewhat different answers to the motivations of civil society in pursuing accountability compared to previous research. Rather than viewing transparency as a determinant of the ability for societal accountability, this paper interprets the results as suggestive of transparency affecting the willingness of civil society to engage in monitoring.

The third hypothesis (H3) of this study concerns the moderating effect of meritocracy.

¹⁷ Roughly between 0.49 and 0.78.

¹⁸ For example, the model predicts the marginal effect of civil society at roughly -0.295 when transparency is 0.7.

¹⁹ About 23% of cases.

TABLE 4. CONDITIONAL MODEL, MERITOCRACY AS MODERATING VARIABLE AND PERCENTAGE SINGLE-BIDDER AS DEPENDENT VARIABLE

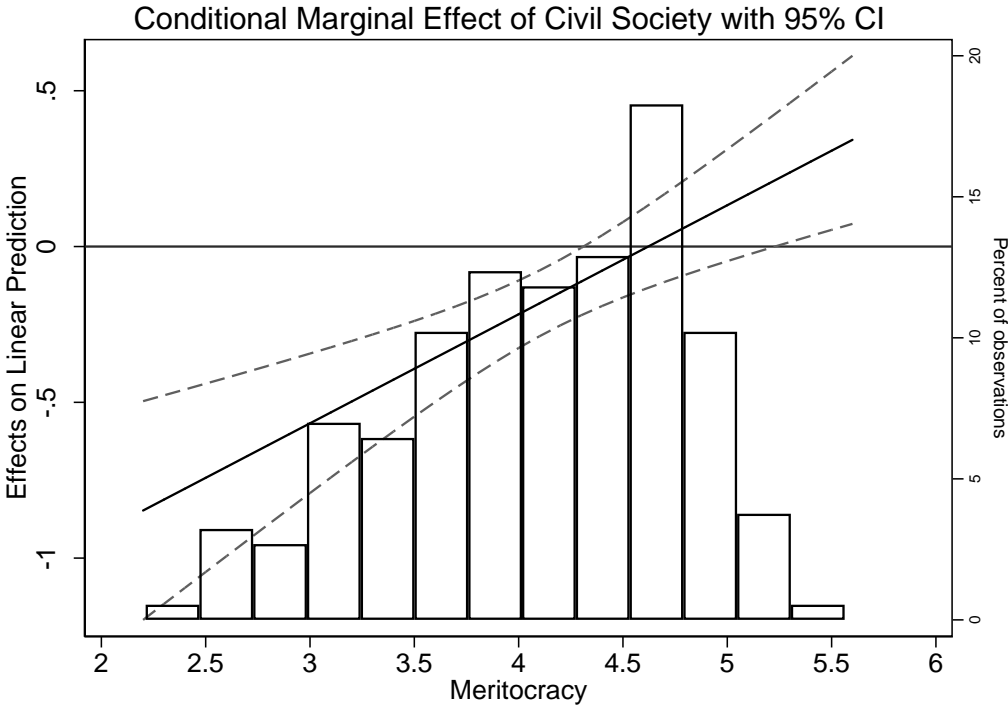
	(11) Percentage single-bidder	(12) Percentage single-bidder	(13) Percentage single-bidder	(14) Percentage single-bidder	(15) Percentage single-bidder
Civil society	-1.605*** (0.347)	-1.687*** (0.347)	-1.578*** (0.371)	-1.562*** (0.357)	-1.617*** (0.344)
Meritocracy	-0.163*** (0.024)	-0.149*** (0.022)	-0.136*** (0.029)	-0.132*** (0.030)	-0.122*** (0.027)
Civil society # Meritocracy	0.335*** (0.079)	0.364*** (0.081)	0.342*** (0.087)	0.338*** (0.084)	0.350*** (0.082)
Social trust		-0.162 (0.105)	-0.130 (0.103)	-0.134 (0.082)	-0.178* (0.078)
GDP per capita (ln)			-0.028 (0.034)	-0.031 (0.037)	-0.022 (0.042)
Population density (ln)			-0.006 (0.007)	-0.006 (0.008)	-0.007 (0.009)
Politically relevant region			0.025 (0.027)	0.027 (0.031)	0.021 (0.032)
Post-Communist region			0.011 (0.053)	0.008 (0.052)	0.006 (0.048)
Transparency				-0.202 (0.180)	-0.121 (0.180)
Local media				0.035 (0.215)	-0.022 (0.228)
Women in local parliaments					-0.003 (0.001)
EU funds					-0.040 (0.121)
Intercept	0.880*** (0.101)	0.882*** (0.092)	1.101** (0.371)	1.256* (0.448)	1.198* (0.497)
Observations	175	175	175	175	175
Adjusted R ²	0.516	0.544	0.553	0.554	0.569

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Again, the term of interest is the interaction term between civil society and meritocracy. In all models, the interaction term, as well as its components, are significant above the 99% confidence level. The components, i.e. civil society and meritocracy, are both negatively correlated with percentage single-bidder. However, the interaction term shows a positive interaction. Previous literature suggests a negative correlation, considering that the variables were thought to reinforce one another in addressing procurement corruption. Apart from the mentioned variables, only social trust achieves significance in *model 15*.

The figure below presents the marginal effect of civil society based on the regression results from *model 15*. All variables are kept at their mean except for meritocracy.

FIGURE 2. MARGINAL EFFECT OF CIVIL SOCIETY ON PERCENTAGE SINGLE-BIDDER GIVEN DIFFERENT LEVELS OF MERITOCRACY



Note. The dashed lines represent the 95% confidence intervals.

From the figure, it is possible to discern that for low and medium levels of meritocracy²⁰, the marginal effect of civil society is statistically significant and negative. For example, if meritocracy is held at 3.5, the model estimates the marginal effect of civil society to about -0.39. The effect should be considered highly substantial given that percentage single-bidder ranges from 0% to 69.05%. At the average value of meritocracy (about 4.1), the estimated marginal effect of civil society is -0.182. The marginal effect of civil society on percentage single-bidder is lower for higher values of meritocracy; the effect is insignificant for values between about 4.3 and 5.3. For meritocracy values above 5.3 the effect is statistically significant, but at that level the model estimates a positive marginal effect of civil society. Even so, only one observation in the sample achieves such a meritocracy score. Finally, most observations, roughly 55%, have meritocracy scores below 4.3, for which the model estimates a significant and negative marginal effect of civil society.

²⁰ Between 2.2 and 4.3

This study interprets the results to imply that in regions characterized by low levels of meritocracy, bureaucrats are less adept as well as interested in detecting and addressing corruption in procurement. In these contexts, civil society can play an important role in reducing monitoring costs and assist in the detection of procurement corruption as well as in demanding accountability. However, in regions characterized by a high degree of meritocracy, bureaucrats can be expected to be both more competent and more interested in detecting as well as combatting corruption; consequently, the need for civil society monitoring and triggering of fire alarms is reduced, given that bureaucrats themselves should deal with the issue of procurement corruption more forcefully.

The fourth hypothesis (H4) concerns the moderating effect of local media.

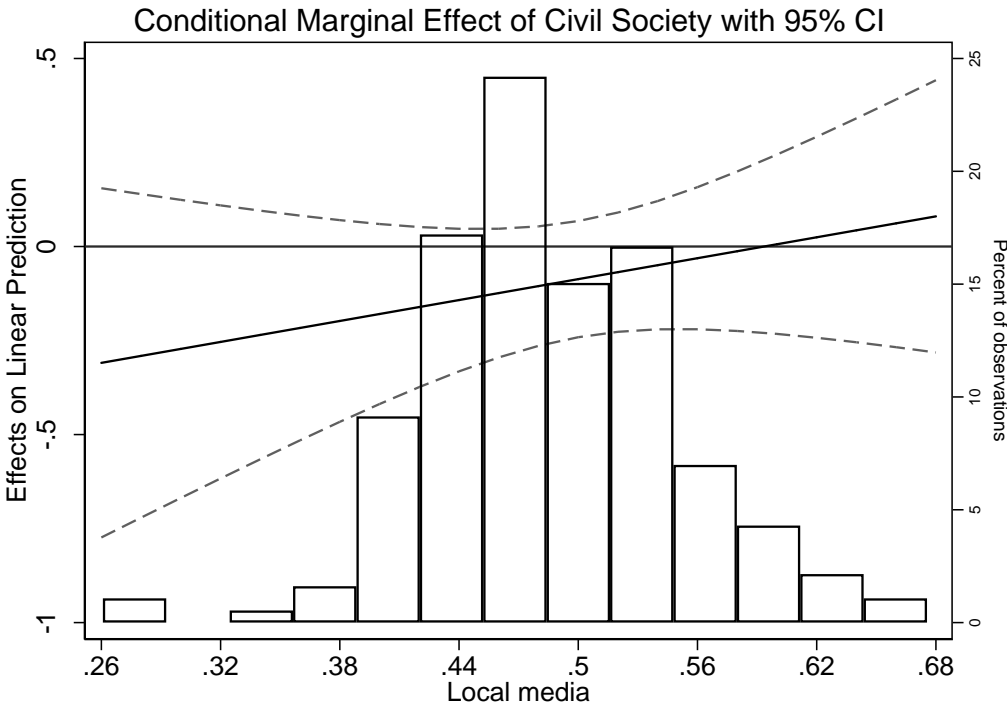
TABLE 5. CONDITIONAL MODEL, LOCAL MEDIA AS MODERATING VARIABLE AND PERCENTAGE SINGLE-BIDDER AS DEPENDENT VARIABLE

	(16) Percentage single-bidder	(17) Percentage single-bidder	(18) Percentage single-bidder	(19) Percentage single-bidder	(20) Percentage single-bidder
Civil society	-0.832 (0.763)	-0.390 (0.690)	-0.389 (0.532)	-0.222 (0.393)	-0.550 (0.442)
Local media	-0.406 (0.581)	0.024 (0.404)	-0.217 (0.473)	-0.069 (0.360)	-0.261 (0.370)
Civil society #	1.180 (1.441)	0.506 (1.299)	0.620 (1.051)	0.295 (0.788)	0.928 (0.871)
Social trust		-0.325* (0.141)	-0.146 (0.109)	-0.094 (0.078)	-0.139 (0.072)
GDP per capita (ln)			-0.054 (0.051)	-0.024 (0.042)	-0.017 (0.046)
Population density (ln)			-0.003 (0.007)	-0.011 (0.008)	-0.012 (0.009)
Politically relevant region			0.015 (0.049)	0.021 (0.035)	0.012 (0.036)
Post-Communist region			0.063 (0.074)	0.031 (0.058)	0.030 (0.053)
Transparency				-0.227 (0.171)	-0.156 (0.170)
Meritocracy				-0.084** (0.024)	-0.071** (0.020)
Women in local parliaments					-0.003 (0.002)
EU funds					-0.071 (0.120)
Intercept	0.426 (0.286)	0.335 (0.209)	0.888 (0.625)	1.058 (0.534)	1.092 (0.565)
Observations	175	175	175	175	175
Adjusted R ²	0.167	0.298	0.397	0.509	0.524

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Unlike the two previously tested interactions, the interaction between civil society and local media is not significant in any of the models. The only two independent variables that reach significance are meritocracy as well as social trust in different models.

FIGURE 3. MARGINAL EFFECT OF CIVIL SOCIETY ON PERCENTAGE SINGLE-BIDDER GIVEN DIFFERENT LEVELS OF LOCAL MEDIA CREDIBILITY



Note. The dashed lines represent the 95% confidence intervals.

As made evident by the figure, the effect of civil society is insignificant regardless of the value of local media credibility; illustrated by the confidence intervals constantly overlapping 0. However, as mentioned briefly, Annoni & Charron (2017) find, in an evaluation of the EQI data, that the measure could be problematic; producing suspicious results (Charron & Lapuente, 2018). One potential issue could be that the survey question is relatively broad and as such permits different interpretations. Nonetheless, regardless of the potential issues with the measure, it was necessary to include a measure of local media due to its theoretical importance. In this sense, the EQI measure of local media provided the best coverage for the purposes of this study. However, as a consequence of the potential issues with the measure, drawing conclusions regarding the interaction between civil society and media is made difficult. Consequently, this article leaves it up to future research to further explore the contextual impact of local media on societal accountability.

In summary, two of the three contextual factors are statistically significant when interacted with civil society. None of the two, however, demonstrate the hypothesized amplifying interaction effect. Rather, both show the opposite interaction effect, where civil society is estimated to have a more substantial effect in contexts of low transparency and meritocracy respectively. Finally, meritocracy, when treated as a control, is the only other independent variable to consistently achieve significance. A popular explanation such as women in local parliaments is not correlated with procurement corruption in the regressions. Although the results remain with the inclusion of control variables, which reduces the likelihood of spurious relationships and other endogeneity-related problems, further tests of robustness are warranted. The following paragraphs briefly outline four such tests.²¹

Firstly, the data section notes that one flaw with the measure of civil society strength is that it is not adapted to the regional context; in certain regions, few respondents are surveyed. Consequently, the concern is that in some regions, the average number of organizational memberships is driven by few respondents that diverge from the general population. To account for this, analytical weights based on the number of respondents in each region are included in one version of the models.

Secondly, control variables account for spuriousness and differences between regions/countries that could affect the observed relationship. Nonetheless, it is hard to capture all aspects that are important to control for; consequently, there is always a risk of omitted variable bias. To further alleviate such a risk, the second robustness test entails including country fixed effects.

Thirdly, not all of the regions included in the sample are politically relevant. Although the aim is to observe variation at the regional level, regardless of whether observing existing administrative units or not; it can, nonetheless, be important to see if results hold when only observing politically relevant regions (Charron, et al., 2017). Consequently, the third robustness test entails estimating the models for the 120 regions that are politically relevant.

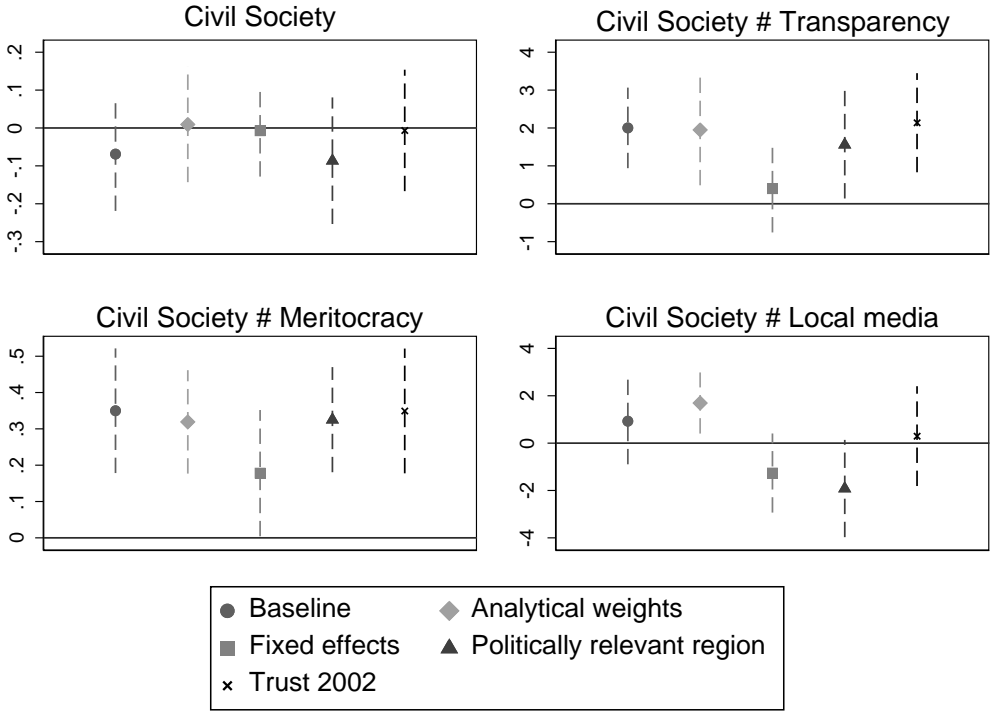
Finally, this study accounts for endogeneity issues by ruling out counterarguments and ensuring Granger causality. However, dismissing reverse causality altogether is difficult. To further ensure that result can be interpreted causally, social trust measured in 2002 is included as a fourth robustness test in the models. Previous research that argues in favour of corruption affecting civil society suggests that it does so via social trust (Charron & Rothstein, 2018). Consequently, by controlling for social trust from a previous period, it is possible to partly account for reverse causality.

The graph below summarizes the results from all four robustness tests. Considering that the coefficients of interest are the interaction terms as well as the coefficient of civil society in the unconditional model, these

²¹ Appendix II provides more thorough descriptions of the tests.

are in focus in the figure. The tests are based on the fully-specified models shown in *Table 2,3,4 and 5*, those estimations are also included and referred to as the “Baseline”. Regression tables for all robustness tests in their entirety are placed in [Appendix II](#).

FIGURE 4. ROBUSTNESS TESTS, PERCENTAGE SINGLE-BIDDER AS DEPENDENT VARIABLE IN ALL REGRESSION MODELS



Note. Each graph illustrates how the term in focus behaves in each of the robustness tests and should be compared to the baseline. The dashed lines passing through each dot represent the 95% confidence intervals.

Firstly, the unconditional effect of civil society remains insignificant in all four robustness tests. Secondly, *Figure 4* displays that the interaction between civil society and transparency is significant and positive throughout all robustness tests, except for when including fixed effects. The study finds similar robust results for the interaction with meritocracy, consistent throughout all robustness test and with an estimated significant effect applicable to most observations. Finally, regarding local media, the conclusion that can be drawn from these tests is that there does not seem to exist a clear interaction effect.

In conclusion, the robustness tests give further weight to the significant results found. In addition, by providing both theoretical argument and accounting for endogeneity in several steps, this study presents results that suggest a causal relationship between civil society and procurement corruption. Despite these efforts, it is not possible to definitively state that the study observes a causal relationship. If future research

can gauge the causal mechanisms of societal accountability directly, it would enable to say with more certainty that civil society affects corruption and not the other way around.

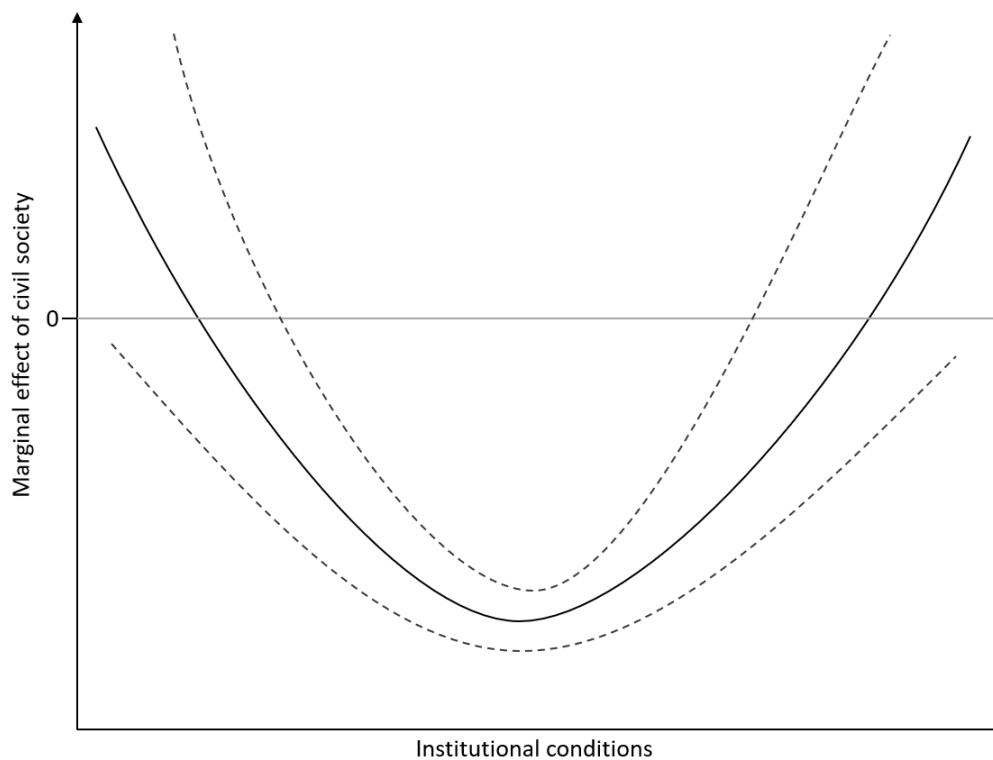
Discussion

Even though civil society does not demonstrate an unconditional correlation with procurement corruption, the study finds that it has a substantial and negative association with procurement corruption at low levels of both transparency and meritocracy. In contrast to previous research, the analyses presented here do not find that societal accountability is more likely to occur under the most favourable conditions, but instead under the least favourable conditions. Consequently, this discussion seeks to further explain these result and to consider how they extend previous understandings of societal accountability.

Transparency of procurement and meritocracy in the public sector are both consequences of the institutional conditions in a region and are referred collectively as such. The results suggest that in the most institutionally sound regions in terms of transparency and meritocracy, civil society does not contribute to curbing corruption. These results seemingly contradict previous research, which has instead argued that favourable institutional features enable and enhance the effectiveness of societal accountability. Nonetheless, the divergent results between this study and previous are likely due to differences in the observed sample.

Although the data, shows empirically that considerable variation can be found throughout the regions of Europe, it should be recognized that the sample, nonetheless, contains some of the most well-governed regions in the world. Consequently, the current sample likely favours units at the very end of the spectrum in terms of institutional conditions, more so than previous studies that have built on a global sample. In such settings the need for a watchdog civil society is likely limited; considering that the institutional arrangement to deal with procurement corruption likely is in place and civil society is more probable to organize around matters other than corruption. Thus, the strength of civil society will not be a deciding factor for controlling procurement corruption. Furthermore, at the far other end of the spectrum, in the poorest institutional conditions, the necessary conditions for successful use of societal accountability are likely absent. As convincingly argued by other scholars, civil society requires both access to information and responsive government control functions to be successful. Both of which are absent in the most poorly governed contexts. Subsequently, at both ends of the spectrum, civil society seems incapable, unwarranted or possibly even unmotivated to monitor and combat corruption. However, as suggested here and in previous research, civil society can have a substantial impact on corruption in certain contexts. Combining the findings of this study with previous research, this article suggests that the marginal effect of civil society on corruption is dependent on the institutional context and, in general, can be represented by a U-shaped curve.

FIGURE 5. MARGINAL EFFECT OF CIVIL SOCIETY ON CORRUPTION GIVEN DIFFERENT INSTITUTIONAL CONDITIONS



Note. The figure is an illustration of the hypothesized conditional relationship.

Figure 5 presents a graphic representation of the arguments above, structured similar to the marginal plots in the results section. The left side illustrates the point civil society may be ineffective where institutional conditions are the least favourable, as where transparency is too low to allow and information asymmetries therefore too high for non-state actors to monitor government operations. At the right end of the spectrum, the strength of civil society is also unlikely to contribute to further reduction in corruption for an entirely different reason: because the perceived need to do so is quite low; civil society at that level is likely to defer the accountability institutions in place. Rather, it is in between these extremes that the findings suggest civil society is effective as a force of accountability; where the minimal contextual prerequisites are satisfied, whilst the institutional arrangements are not robust enough to counter corruption on its own, disincentivizing civil society engagement. The sample of this study should be considered representative of the middle to right side of *Figure 5*; encompassing some of the most well-governed regions in the world and not including the worst institutional conditions. The U-shaped relationship presents the general picture, but the same curvilinear marginal effect cannot be seen in the current sample.²²

²² Appendix V test this statement and finds no such relationship.

In summary, this study suggests that not only do institutions impact the *ability* of civil society to exercise societal accountability, as argued by previous research, institutions also affect the *willingness and need* for civil society to demand accountability. In poor institutional contexts, the ability aspect is the most decisive; considering that civil society should be willing to limit corruption but is not facilitated in doing so by the institutional conditions. In strong institutional conditions, the decisive factor is the willingness and need for civil society engagement; the institutional conditions should ensure the ability to exercise accountability, but the incentives for civil society to engage in monitoring are lower as institutions are more able to cope on their own. Between these two positions, civil society should be both able and willing to demand accountability; considering that the necessary institutional prerequisites are in place, whilst not robust enough to reduce the need and, thus, the willingness of civil society to demand accountability. Consequently, this study suggests that despite its contextual reliance, civil society can play an important role in improving both procurement and corruption. However, the greatest impact of civil society is not found in the most well-governed contexts, but rather in transitioning countries.

To further improve understanding of societal accountability, future research should evaluate initiatives for formal inclusion of civil society in monitoring procurement. If civil society can become a part of the formal monitoring functions, it might present a more direct pathway in which it can influence the procurement process and other government functions. Finally, this study follows a promising line of research, in observing procurement corruption through objective indicators. The methodology not only allows to more accurately capture variation in corruption, but it is well-suited to replication in other settings. Future research should continue to build on this methodology.

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APPENDICES

Appendix I – Descriptive statistics

EU regions are coded according to the NUTS nomenclature, which presents three levels of territorial units and where each subsequent level is a disaggregation of the previous. NUTS1 constitutes the largest division of regions, whilst NUTS2 regions are disaggregations of the regions offered by NUTS1 and so on.²³ The focus is NUTS2 regions, however, when data is not available for NUTS2, data on NUTS1 regions is used.²⁴ The classification favours existing administrative units/politically relevant regions within countries, e.g. *Bundesländer* at NUTS1 level in Germany and *Regioni* at NUTS2 in Italy (Eurostat, 2018). The political relevance stems from the fact that these regions are governed by popularly elected regional governments that have a certain degree of autonomy from the central government. It also implies that these regions are, to varying degrees, directly responsible for local service provision (Charron, et al., 2015). The current sample includes politically relevant regions as far as possible. Nevertheless, in some cases, especially in highly centralized countries, it is not possible to observe politically meaningful regions, and the sample then includes regions without political relevance.²⁵ However, the aim is not exclusively to look at separate polities. Instead, it is of interest to observe all regional variation, which is present even in highly centralized countries (Charron, 2013). Nonetheless, politically relevant regions is used as a control in the regressions.

The sample consists of 175 regions from 20 EU countries. The table below provides information on the countries and regions used in the study.

²³ As an example, Sweden is divided into three regions at NUTS1 level, these are disaggregated into eight regions at NUTS2 level.

²⁴ In the analysis, there is no overlap of using both NUTS1 and NUTS2 regions within a single country.

²⁵ In certain countries and at specific NUTS levels, there are no existing administrative unit. NUTS regions are then constituted by aggregations/disaggregations of existing administrative units.

TABLE 6. COUNTRIES AND REGIONS IN THE STUDY

Country	Country code	Number of regions	NUTS level	Politically relevant regions
Austria	AT	9	2	9
Belgium	BE	3	1	3
Bulgaria	BG	6	2	0
Czech Republic	CZ	8	2	0
Denmark	DK	5	2	5
Finland	FI	4	2	0
France	FR	21	2	21
Germany	DE	16	1	16
Greece	GR	4	1	0
Hungary	HU	3	1	0
Ireland	IE	2	2	0
Italy	IT	19	2	19
Netherlands	NL	12	2	12
Poland	PL	16	2	16
Portugal	PT	4	2	0
Romania	RO	8	2	0
Slovak Republic	SK	4	2	0
Spain	ES	16	2	16
Sweden	SE	3	1	0
United Kingdom	UK	12	1	3*
Total		175		120

* Only Scotland, Northern Ireland and Wales are politically relevant.

Secondly, the table below shows the correlations between the variables presented in *Table 1*, excluding the number of respondents, measured by Pearson's R.

TABLE 7. CORRELATION MATRIX

	Percentage single-bidder	Civil society	Social trust	GDP per capita (ln)	Population density (ln)	Politically relevant region	Post-communist region	Transparency	Meritocracy	Local media	Women in local parliaments	EU funds
Percentage single-bidder	1											
Civil society	-0.411***	1										
Social trust	-0.525***	0.469***	1									
GDP per capita (ln)	-0.574***	0.442***	0.551***	1								
Population density (ln)	-0.149*	0.0806	0.0727	0.347***	1							
Politically relevant region	-0.172*	0.142	0.180*	0.383***	0.132	1						
Post-communist region	0.550***	-0.362***	-0.534***	-0.775***	-0.0761	-0.362***	1					
Transparency	-0.198**	0.0169	0.0931	0.0524	-0.0756	0.0889	-0.145	1				
Meritocracy	-0.662***	0.343***	0.520***	0.597***	0.0236	0.249***	-0.603***	0.207**	1			
Local media	-0.207**	0.330***	0.431***	0.0275	-0.0524	-0.243**	-0.0934	0.123	0.167*	1		
Women in local parliaments	-0.370***	0.0614	0.0272	0.338***	0.0103	0.154*	-0.323***	0.257***	0.419***	-0.159*	1	
EU funds	0.361***	-0.274***	-0.519***	-0.514***	-0.182*	-0.486***	0.509***	-0.164*	-0.435***	-0.111	-0.185*	1

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

Lastly, the table below presents the correlation between percentage single-bidder and two perception-based measures of corruption, observed in both 2010 and 2013.

TABLE 8. CORRELATION BETWEEN PERCENTAGE SINGLE-BIDDER AND PERCEPTION-BASED MEASURES OF CORRUPTION

	Percentage single-bidder	Observations
EQI 2013	-0.669***	173
EQI Corruption pillar 2013	-0.709***	173
EQI 2010	-0.689***	173
EQI Corruption pillar 2013	-0.710***	173

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

EQI, as mentioned previously, stands for the European Quality of Government Index. It measures quality of government based on survey data, encompassing three different pillars of quality of government: quality, impartiality, and corruption (Charron, et al., 2015). The EQI measure is suggested as the most comprehensive of its kind (Charron, et al., 2017). In the table above, EQI scores for 2013 and 2010 along with the corruption pillar of EQI for the same years, are correlated against the percentage of single-bidder contacts. Due to some slight differences in regional coding, 173 observations are included above.

Appendix II – Robustness tests

The study conducts four robustness tests that are included in the analysis. The first of which is the use of analytical weights to account for the number of respondents surveyed in each region. Analytical weights are suitable to use when observations are averages of a population and allow the models to account for the number of components that make up the average (Mehmetoglu & Jakobsen, 2017, pp. 331-333; Dupraz, 2013). In this study, the number of components is the number of respondents

in each region. Consequently, using analytical weights results in regions with more surveyed respondents to be weighted higher than those with fewer respondents (Mehmetoglu & Jakobsen, 2017, pp. 331-333). The table below presents four regression models, one for each of the four hypotheses. Each model is based on the fully-specified models found in *Table 2,3,4 and 5*.

TABLE 9. ROBUSTNESS TEST, ANALYTICAL WEIGHTS

	(5a) Percentage single-bidder	(10a) Percentage single-bidder	(15a) Percentage single-bidder	(20a) Percentage single-bidder
Civil society	0.00928 (0.0728)	-1.590* (0.563)	-1.415*** (0.281)	-0.877** (0.305)
Social trust	-0.193 (0.0929)	-0.223* (0.0936)	-0.249* (0.0907)	-0.182 (0.0894)
Population density (ln)	-0.0116 (0.00934)	-0.0149 (0.00920)	-0.00811 (0.00835)	-0.0101 (0.00850)
GDP per capita (ln)	-0.0274 (0.0329)	-0.0240 (0.0324)	-0.0277 (0.0294)	-0.0319 (0.0327)
Politically relevant region	-0.00993 (0.0326)	-0.0162 (0.0316)	0.000136 (0.0281)	-0.00551 (0.0309)
Post-communist region	0.0190 (0.0485)	0.0209 (0.0460)	0.000365 (0.0436)	0.0170 (0.0448)
Meritocracy	-0.0447* (0.0204)	-0.0413* (0.0195)	-0.0874** (0.0249)	-0.0409 (0.0199)
Local media	-0.373 (0.248)	-0.315 (0.237)	-0.258 (0.215)	-0.682* (0.262)
Transparency	-0.208 (0.210)	-0.618* (0.263)	-0.211 (0.208)	-0.187 (0.201)
Women in local parliaments	-0.00325 (0.00188)	-0.00286 (0.00179)	-0.00348 (0.00170)	-0.00353 (0.00177)
EU funds	-0.0469 (0.110)	-0.0859 (0.101)	-0.0423 (0.103)	-0.0448 (0.104)
Civil society # Transparency		1.949* (0.698)		
Civil society # Meritocracy			0.319*** (0.0680)	
Civil society # Local media				1.694* (0.616)
Intercept	1.205** (0.412)	1.492** (0.419)	1.351** (0.379)	1.366** (0.415)
Observations	175	175	175	175
Adjusted R ²	0.638	0.651	0.676	0.649

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The results are similar to those of previous models without analytical weights. Civil society is insignificant in the unconditional model. Both the interaction with transparency and meritocracy are statistically significant, and with the same signs as in previous models. The result that stands out from the regression table above is the significant interaction between civil society and local media. The inclusion of analytical weights provides a better fit of the models than previous models.

The second robustness test involves the use of country fixed effects, introducing country dummies in the regressions. Although fixed effects are typically associated with panel data, it can be used in the current setting as the data has two dimensions; considering that regions are nested within countries, it is possible to control for country-specific factors. Thus, by introducing dummy variables for each country, the models control for factors that vary between countries, whilst still allowing the models to explain variation between regions within countries. The drawback of the method is that it is not possible to know exactly what is being controlled for, and a lot of variation is removed from the models; potentially causing problems with finding significant results (Mehmetoglu & Jakobsen, 2017, pp. 240-249). Similar to the previous robustness test, four models are estimated based on the fully specified models in *Table 2,3,4 and 5*. The dummy variables for each country are suppressed in the output.

TABLE 10. ROBUSTNESS TEST, COUNTRY FIXED EFFECTS

	(5b) Percentage single-bidder	(10b) Percentage single-bidder	(15b) Percentage single-bidder	(20b) Percentage single-bidder
Civil society	-0.00730 (0.0578)	-0.331 (0.446)	-0.798* (0.371)	0.624 (0.403)
Social trust	0.107 (0.0896)	0.101 (0.0962)	0.0816 (0.0996)	0.0872 (0.0847)
Population density (ln)	-0.00332 (0.0132)	-0.00346 (0.0133)	-0.00140 (0.0129)	-0.00318 (0.0135)
GDP per capita (ln)	-0.0142 (0.0445)	-0.0145 (0.0451)	-0.0291 (0.0439)	-0.00992 (0.0443)
Politically relevant region	0.0247* (0.0115)	0.0258* (0.0122)	0.0308* (0.0125)	0.0248* (0.0109)
Post-communist region	0.0102 (0.0143)	0.00973 (0.0144)	0.00380 (0.0130)	0.0108 (0.0141)
Meritocracy	-0.0133 (0.0110)	-0.0130 (0.0110)	-0.0408* (0.0162)	-0.0133 (0.0103)
Local media	0.0339 (0.288)	0.0442 (0.289)	0.0483 (0.280)	0.308 (0.345)
Transparency	-0.155 (0.0956)	-0.225 (0.135)	-0.113 (0.0822)	-0.152 (0.0988)
Women in local parliaments	-0.000910 (0.00251)	-0.000953 (0.00254)	-0.00102 (0.00263)	-0.000592 (0.00249)
EU funds	-0.160 (0.0895)	-0.161 (0.0903)	-0.175 (0.0899)	-0.154 (0.0865)
Civil society # Transparency		0.399 (0.552)		
Civil society # Meritocracy			0.178* (0.0830)	
Civil society # Local media				-1.264 (0.798)
Intercept	0.326 (0.412)	0.386 (0.448)	0.565 (0.432)	0.142 (0.428)
Observations	175	175	175	175
Adjusted R ²	0.746	0.745	0.755	0.749
Country fixed effects	YES	YES	YES	YES

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Firstly, the introduction of country fixed effects increases the explanatory power of the models and suggest that all models explain around 75% of the variation in the dependent variable. The only model to showcase significant results, for the coefficients of interest, is *model 15b* and the interaction between civil society and meritocracy. It presents results similar to those of the baseline model. The

interaction between civil society and transparency is no longer statistically significant. Pinpointing the exact cause of why it becomes insignificant when introducing fixed effects is difficult. One possibility is that the inclusion of country fixed effects removes variation to such a degree that achieving significance for the other coefficients is made difficult. The rest of the results are in line with previous models, except for political relevance, which is statistically significant and positively correlated with percentage single-bidder.

For the third robustness test, the models are run for the regions that are politically relevant. Consequently, the number of observations drops to 120 as opposed to 175 in previous models. Considering that the sample only deals with politically relevant regions, political relevance serves no purpose as a control variable.

TABLE 11. ROBUSTNESS TEST, POLITICALLY RELEVANT REGIONS

	(5c) Percentage single-bidder	(10c) Percentage single-bidder	(15c) Percentage single-bidder	(20c) Percentage single-bidder
Civil society	-0.0864 (0.0738)	-1.358* (0.485)	-1.533*** (0.272)	0.905 (0.449)
Social trust	-0.000779 (0.0793)	-0.0206 (0.0802)	-0.0498 (0.0779)	0.0143 (0.0780)
Population density (ln)	-0.000488 (0.0158)	0.000671 (0.0161)	0.00541 (0.0145)	0.000970 (0.0159)
GDP per capita (ln)	-0.156* (0.0530)	-0.158* (0.0552)	-0.156** (0.0453)	-0.162* (0.0524)
Post-communist region	0.0162 (0.0423)	0.00306 (0.0438)	-0.0171 (0.0314)	0.0170 (0.0429)
Meritocracy	-0.0537 (0.0264)	-0.0491 (0.0270)	-0.104** (0.0292)	-0.0589* (0.0247)
Local media	0.327 (0.351)	0.308 (0.349)	0.358 (0.310)	0.779 (0.446)
Transparency	0.00855 (0.133)	-0.306 (0.166)	0.0384 (0.145)	0.0230 (0.133)
Women in local parliaments	-0.000307 (0.000953)	-0.000532 (0.000942)	-0.000843 (0.000930)	0.000628 (0.000763)
EU funds	-0.604** (0.150)	-0.583** (0.157)	-0.577** (0.127)	-0.580** (0.152)
Civil society # Transparency		1.559* (0.628)		
Civil society # Meritocracy			0.325*** (0.0640)	
Civil society # Local media				-1.918 (0.908)
Intercept	1.866** (0.502)	2.150** (0.596)	2.058** (0.444)	1.674** (0.509)
Observations	120	120	120	120
Adjusted R ²	0.532	0.546	0.586	0.544

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

All models display results in line with the previous models for the variables of interest. Apart from these results, the models show that both the coefficients of GDP and EU funds are statistically significant throughout all four models.

The last of the four robustness tests concerns the inclusion of a control variable measuring social trust in 2002. The data is gathered from the European Social Survey conducted in 2002-2003 (ESS, 2002). Similar to the EQI variable of social trust, the survey asks respondents whether most people can be trusted²⁶. Responses are aggregated to a mean value of trust for each region. Due to limitations in the coverage of the ESS data, the number of observations is reduced to 133 when including social trust from 2002.

²⁶ They are asked to rate it on a scale from 0-10, same as the EQI measure.

TABLE 12. ROBUSTNESS TEST, SOCIAL TRUST FROM 2002

	(5d) Percentage single-bidder	(10d) Percentage single-bidder	(15d) Percentage single-bidder	(20d) Percentage single-bidder
Civil society	-0.00647 (0.0752)	-1.744** (0.474)	-1.553*** (0.369)	-0.159 (0.488)
Social trust	-0.124 (0.0810)	-0.167* (0.0758)	-0.191* (0.0775)	-0.118 (0.0771)
Social trust 2002	-0.168 (0.173)	-0.199 (0.188)	-0.164 (0.149)	-0.178 (0.180)
Population density (ln)	-0.00852 (0.0112)	-0.0112 (0.0105)	-0.00655 (0.0101)	-0.00877 (0.0115)
GDP per capita (ln)	-0.0849 (0.0495)	-0.0809 (0.0496)	-0.0774 (0.0423)	-0.0839 (0.0503)
Politically relevant region	-0.0226 (0.0327)	-0.0214 (0.0310)	-0.0166 (0.0292)	-0.0231 (0.0331)
Post-communist region	0.00541 (0.0398)	-0.00200 (0.0377)	-0.0166 (0.0329)	0.00590 (0.0395)
Meritocracy	-0.0821** (0.0221)	-0.0738** (0.0233)	-0.134** (0.0340)	-0.0815** (0.0224)
Local media	-0.220 (0.242)	-0.220 (0.232)	-0.156 (0.201)	-0.282 (0.385)
Transparency	0.0356 (0.142)	-0.382* (0.164)	0.0727 (0.156)	0.0306 (0.148)
Women in local parliaments	-0.00191 (0.00115)	-0.00186 (0.00107)	-0.00205* (0.000954)	-0.00195 (0.00123)
EU funds	-0.236* (0.0943)	-0.256* (0.0912)	-0.225* (0.0832)	-0.235* (0.0932)
Civil society # Transparency		2.139** (0.614)		
Civil society # Meritocracy			0.349*** (0.0806)	
Civil society # Local media				0.296 (0.989)
Intercept	1.711** (0.490)	2.026** (0.545)	1.818*** (0.415)	1.737** (0.517)
Observations	133	133	133	133
Adjusted R^2	0.578	0.601	0.630	0.575

Note. Robust standard errors clustered at the country level in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The inclusion of social trust from 2002 increases the explanatory power of all four models compared to the baseline models, although the coefficients do not achieve statistical significance in any of the models. The results for the moderating effect of transparency and meritocracy hold when including the new measure of social trust.

Appendix III – Diagnostic tests

The study performs several diagnostic tests to ensure that the models are not affected by various issues that lead to the breach of one or several of the assumptions of OLS.

Firstly, heteroskedasticity and spatial autocorrelation are both likely to be affecting the models; considering that the sample includes relatively many observations and that the regions are nested within regions, such issues are probable to arise. Nonetheless, the use of clustered robust standard errors alleviates the risk that these problems affect the results (Mehmetoglu & Jakobsen, 2017, pp. 231-235).

Secondly, the use of interaction terms typically causes the models to showcase multicollinearity. Consequently, when estimating an interaction model, controlling for the presence of multicollinearity can seem futile. Nonetheless, if the components that make up the interaction term are mean centred, i.e. transformed to have a mean of 0, it is possible to test for multicollinearity amongst the independent variables in a meaningful way (Mehmetoglu & Jakobsen, 2017, pp. 129-130). The fully-specified models are re-run with mean centred variables, except for the unconditional model, which does not require the use of mean centring. Variance Inflation Factor (VIF) measures the correlation between independent variables and the mean VIF score is estimated for each model.

TABLE 13. DIAGNOSTIC TEST, MULTICOLLINEARITY

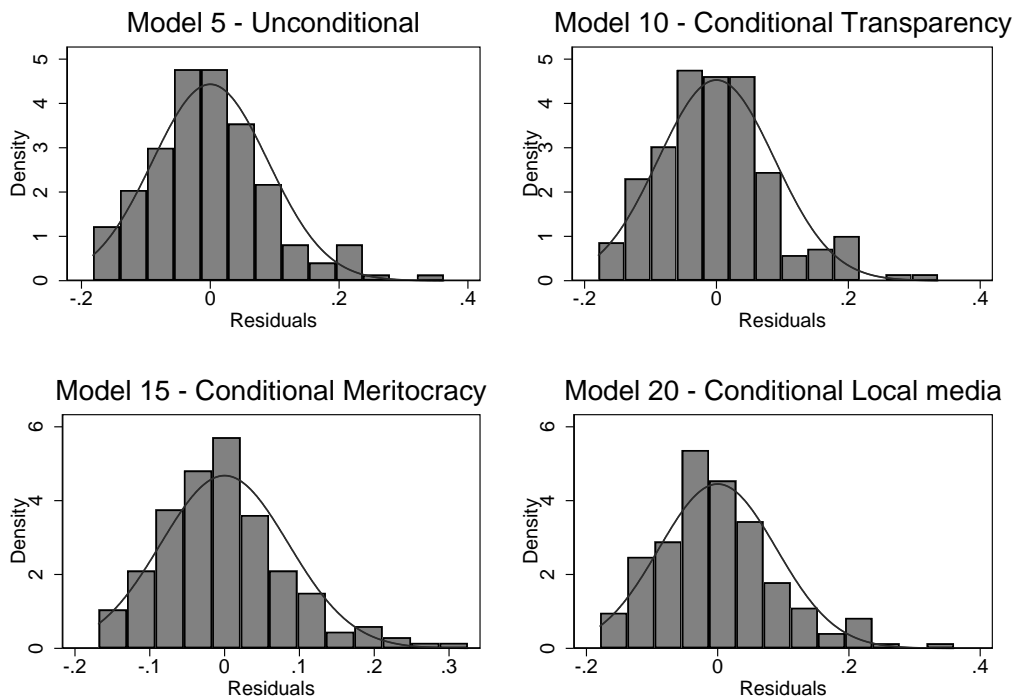
	Model 5	Model 10 (centred)	Model 15 (centred)	Model 10 (centred)
Mean VIF	2.03	1.97	2.18	2.11

There is no agreed-upon cut-off value for when multicollinearity constitutes an issue, but varied approaches can be seen depending on the source that is consulted. Mehmetoglu and Jakobsen (2017, pp. 146-147) suggest using 5 as the cut-off value, above which estimates are considered to be affected by multicollinearity. None of the models produce VIF values close to 5 and none of the independent variables in any of the models reach this level either, although GDP produces VIF values of around

4.2 in all models. Consequently, this paper concludes that multicollinearity does not affect the estimates in any of the models.

Another assumption of OLS concerns the distribution residuals, requiring them to be normally distributed for the models to produce the most accurate p-values. Nonetheless, this is typically an issue for small samples (Mehmetoglu & Jakobsen, 2017, pp. 151-153), and should not present too much of an issue in the current study. In any case, the study tests the distribution of residuals in all four fully-specified models to ensure that they conform to a normal distribution.

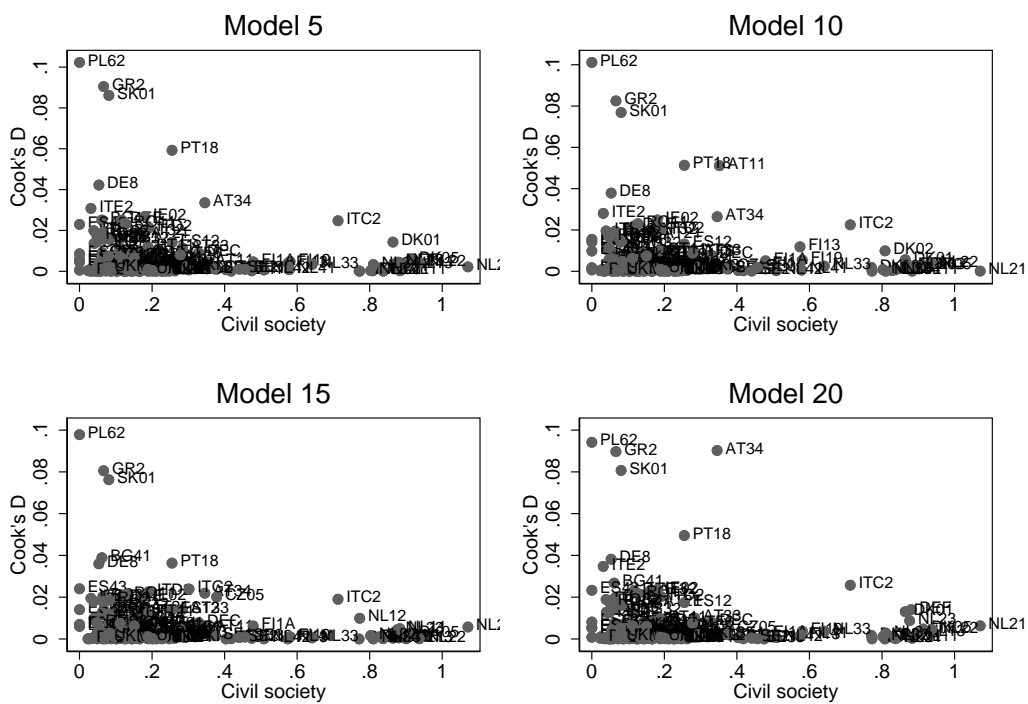
FIGURE 6. DIAGNOSTIC TEST, DISTRIBUTION OF RESIDUALS



From the figure above, it appears as though residuals are normally distributed in all models, seen by the fact that the distributions of residuals conform relatively well to the normal distribution curve inserted in each of the four graphs. Consequently, this study concludes that non-normal distribution of residuals should not constitute a problem in the regression models.

Lastly, the study tests for the presence of influential observations that might be driving the observed relationships. In order to measure an observation's influence on a model, Mehemtoglu and Jakobsen (2017, pp. 155-157) suggest using Cook's Distance. Similar to the discussion of cut-off values with regards to VIF test, no single value is agreed to indicate the presence of influential observations. Nonetheless, Mehmetoglu and Jakobsen (ibid) suggest using 1 as the cut-off.

FIGURE 7. DIAGNOSTIC TEST, INFLUENTIAL OBSERVATIONS



As made evident by the figure above, no observation in any of the four models comes close to a Cook's D value of 1. Hence, influential observations should not constitute an issue in the study.

Appendix IV – Data

This appendix includes some extra information on a few of the variables presented in the data section.

DIGIWHIST provides the procurement contract database, from which several measures are constructed. DIGIWHIST processes data from the EU procurement database, TED (DIGIWHIST, 2018a). However, to fit the purposes of this study and to ensure the accuracy of the corruption measure, some of the contracts are dropped. Firstly, contracts with values below the mandatory publication threshold are dropped. In general, if supply/service contracts exceed values of roughly 140 thousand euros, then an open procurement process is required and the procurement needs to be published.²⁷ Secondly, for the measure of single-bidder contracts to accurately capture procurement corruption, it relies on the assumption of a competitive market. In an uncompetitive market, single-bidder contracts are likely to occur, given that few actors will be able to supply the sought good. To ensure that markets²⁸ are in fact competitive, the measure is only constructed from contracts in markets where the number of awarded contracts is more than 10²⁹ during the observed period. This is done to avoid less competitive markets such as defence (Charron, et al., 2017; Fazekas & Kocsis, 2017). All variables constructed from the procurement database are subject to these steps of excluding certain contracts.

The study estimates procurement transparency on the basis of missing fields in Contract Award Notices (CAN). The paper applies the following formula to calculate transparency of an individual contract:

$$\text{Transparency} = 1 - 1 \times ((\text{missing submission period} + \text{missing product} + \text{missing price weight} + \text{missing procedure} + \text{missing foreign winner})/5)$$

Table 14 below explains what each of the components that make up the transparency score entails.

²⁷ More information on thresholds: https://ec.europa.eu/growth/single-market/public-procurement/rules-implementation/thresholds_en

²⁸ Markets are defined based on procured good/service, according to CPV codes, and NUTS region. One market consists of a particular CPV code in a region.

²⁹ By studying the UK procurement market, Fazekas & Kocsis (2017) find that excluding markets with less than 10 contracts significantly decreases the risk of tapping into a market with only a single possible supplier.

TABLE 14. DEFINITION OF TRANSPARENCY COMPONENTS

Transparency component	Definition
Missing submission period	Information regarding the length of the submission period for bids is missing from the CAN (0: Not missing, 1: Missing)
Missing price weight	Information regarding the weight applied to the price in evaluating bids is missing from the CAN (0: Not missing, 1: Missing)
Missing procedure	Information regarding the type of procurement process conducted, e.g. open or restricted, is missing from the CAN (0: Not missing, 1: Missing)
Missing foreign winner	Information regarding whether or not the winning bidder is from another country is missing from the CAN (0: Not missing, 1: Missing)

CANs are required to include all of the fields above, and the exclusion of this information provides less hindsight information on the procurement process. The exclusion of price weight makes it difficult to know on what grounds a winner has been selected; if the procedure is missing, it is not possible to make out what type of process that has been carried out; if the submission period is missing, it is not possible to evaluate whether or not the period was long enough to enable competition; if the information regarding the country of origin of the winner is missing, it is not possible to evaluate if e.g. the firm is based in a tax haven, which typically is a clear red flag with regards to corruption. Consequently, all four fields are important for external monitors to assess procurement contacts.

With regards to data on women’s political representation, Sundström (2013) collects data on the gender ratio of local councillors for NUTS regions. No official figure of this distribution exists for the regional level; consequently, Sundström gathers and combines data from various national sources. In the cases when the NUTS regions do not correspond to politically relevant regions, the figures constitute aggregations of the distribution in administrative entities at a lower level. See Sundström (2013) for more details on data sources.

Appendix V – Test of curvilinearity

Figure 5, in the discussion section, presents a curvilinear relationship that illustrates the hypothesized marginal effect of civil society on corruption dependent on institutional conditions. At the same time, the study argues that the sample of this study does not encompass the entire spectrum of institutional conditions, hence curvilinearity should not be present in the current sample to any greater extent. Consequently, the sample of this study can be illustrated by the following figure that elaborates *Figure 5*.

FIGURE 8. MARGINAL EFFECT OF CIVIL SOCIETY ON CORRUPTION GIVEN DIFFERENT INSTITUTIONAL CONDITIONS, INCLUDING CURRENT SAMPLE

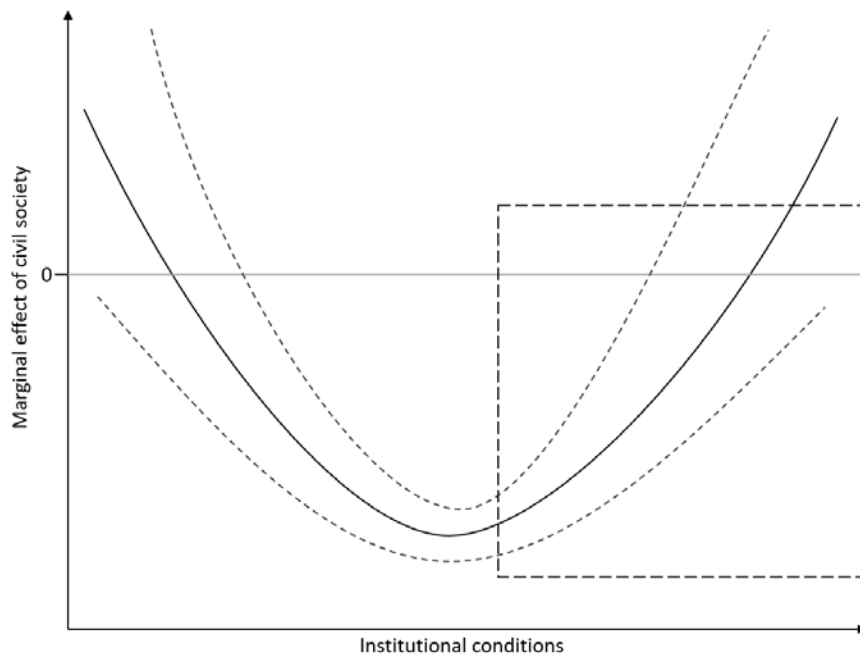


Figure 8 illustrates how the current sample is argued to fit into the general picture, exemplified by the dashed square. If this assumption holds, modelling curvilinearity on the current data sample should not produce results that differ from those provided in the results section.

Modelling curvilinearity in interaction models is not entirely straightforward. However, Hainmueller et al. (2019) present a tool that allows interactions to take on forms other than linear without the need to transform the data. Using Kernel smoothing technique, the method allows for flexibility in

the shape of the conditional marginal effect as it does not assume a bilinear distribution. It estimates a series of local effects, which enables the conditional marginal effect to take on different functional forms for various values of the moderating variable (Hainmueller, et al., 2019). Applying this statistical technique to *models 10 and 15* results in the following two marginal effects plots.

FIGURE 9. MARGINAL EFFECT OF CIVIL SOCIETY ON PERCENTAGE SINGLE-BIDDER GIVEN DIFFERENT LEVELS OF TRANSPARENCY, NON-LINEAR INTERACTION

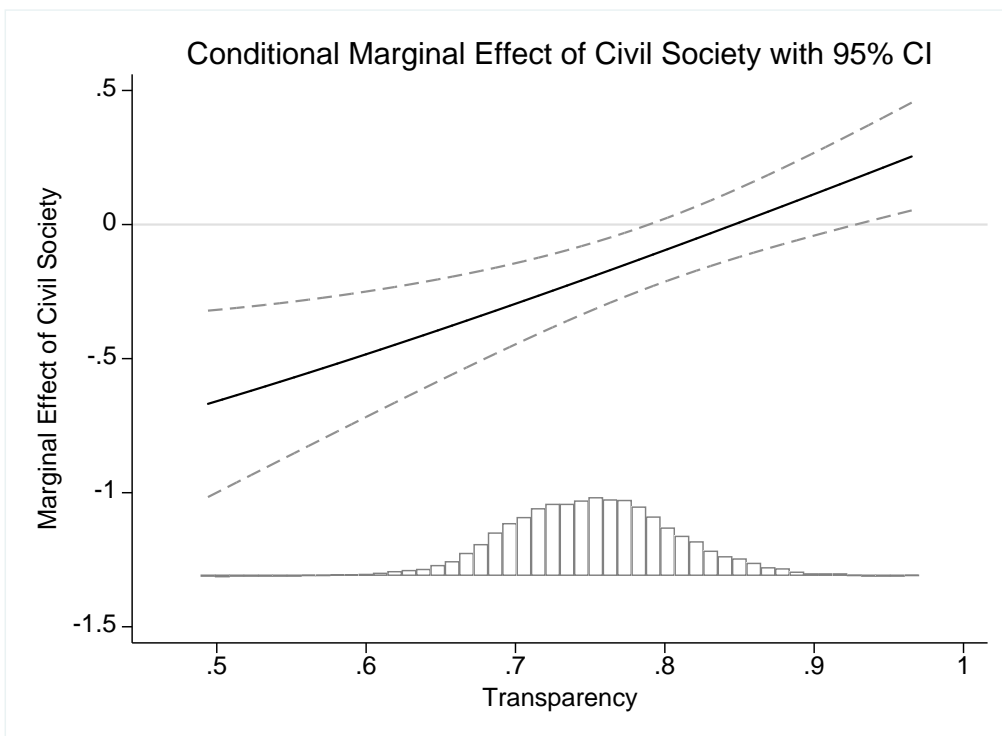
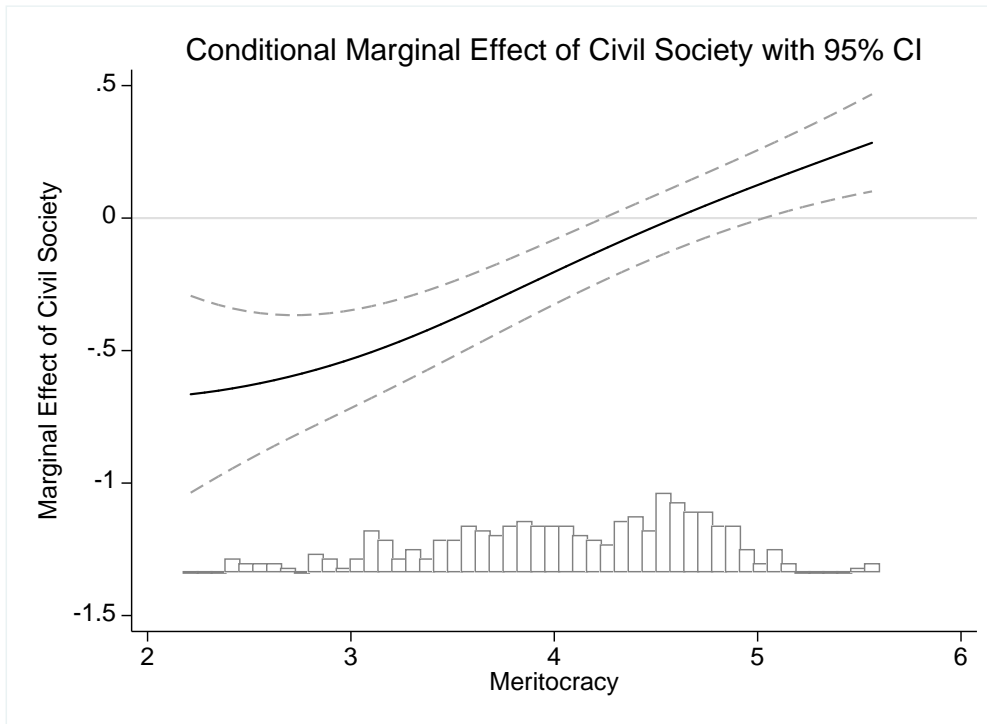


FIGURE 10. MARGINAL EFFECT OF CIVIL SOCIETY ON PERCENTAGE SINGLE-BIDDER GIVEN DIFFERENT LEVELS OF MERITOCRACY, NON-LINEAR INTERACTION



The structure of the two marginal plots is similar to that of the previous marginal plots that are presented in the results section. The thing that differs is that the technique used to estimate these figures allows the moderating effect to take on other forms than strictly bilinear.

Starting with *Figure 9* concerning transparency, the graph is very similar to that of *Figure 1* in the results section. This implies that there does seem to exist a bilinear interaction effect. Moving on to the moderating effect of meritocracy in *Figure 10*, the figure again shows a quite similar interaction effect to that demonstrated by the corresponding *Figure 2* in the results section. Nonetheless, the marginal effect does seem to plateau for low values of meritocracy. Such a curve fits well into the pictured painted by *Figure 8*. In summary, these results show that no distinct curvilinear interaction effect is present in the current sample and further enables making the argument that the sample constitutes the right side of *Figure 5*. However, considering that the sample is limited, it is not possible to shed any further light of the presence of a U-shaped interaction effect in the general case.