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# Routledge Handbook of Public Procurement Corruption

Edited by Sope Williams and Jessica Tillipman

# ROUTLEDGE HANDBOOK OF PUBLIC PROCUREMENT CORRUPTION

The *Routledge Handbook of Public Procurement Corruption* showcases the most innovative and exciting research being conducted in this important area of study, providing a comprehensive go-to reference for all who are interested in the topic.

During the COVID-19 pandemic, the global race for health and ancillary goods amid global supply chain disruptions demonstrated that, when tested, all countries are incredibly vulnerable to fraud and corruption in public procurement, irrespective of their level of development. Yet despite the widespread nature of the problem, there remains a lack of in-depth, analytical, and cross-country investigations into public procurement corruption. This book addresses this gap by providing a comprehensive, multidisciplinary, geographically balanced treatise on corruption in public procurement. It combines country-specific studies to allow readers to easily compare differing perspectives and approaches and overarching thematic chapters to reflect on new and cutting-edge issues in procurement and their implications for procurement corruption. Key sectors such as healthcare and infrastructure are considered, as well as the role of new technologies, in both combatting and enabling procurement corruption.

This *Handbook* provides academics, practitioners, and graduate researchers of public administration, law, and anti-corruption with all of the tools they need to understand the nuances of public procurement corruption around the world.

**Sope Williams** is Professor of Public Procurement Law and Deputy Director of the African Procurement Law Unit at Stellenbosch University, South Africa.

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# ROUTLEDGE HANDBOOK OF PUBLIC PROCUREMENT CORRUPTION

*Edited by Sope Williams and Jessica Tillipman*

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# PREFACE

We conceived the idea for this book in early 2021, motivated in part by a surge in corruption stemming from the COVID-19 pandemic. Reports from international organizations such as the International Monetary Fund, the World Bank, and the Organization for Economic Cooperation and Development showed staggering amounts lost to fraud and corruption in government responses to this crisis around the world. This led to conversations among academics and practitioners regarding measures to address the corruption and fraud that undermined global recovery efforts – particularly in regard to public procurement spending.

In the wake of these discussions among the members of the global public procurement and anti-corruption communities, we realized there was a need to explore contemporary approaches to addressing corruption in public procurement, to understand how different countries were responding to public procurement corruption, and what lessons could be learned from their approaches. This *Handbook* presents the latest research on public procurement corruption, adopting an interdisciplinary, multi-sectoral, and multi-jurisdictional approach to these issues. It provides an analysis of different countries' approaches to corruption in public procurement and provides insight into how countries with different legal and political systems have designed procurement systems to mitigate corruption risks. The *Handbook* also provides information on how public procurement corruption is addressed in special sectors such as defence, infrastructure, and healthcare and explores the utility of artificial intelligence and data analytic tools to address procurement corruption. The chapters are generally up to date, and the authors have endeavoured to state the legal position in the countries up to 31 March 2023.

The *Handbook* is a multijurisdictional and interdisciplinary success story. It is the product of research by 53 authors from 26 countries across various disciplines, and we are grateful to all the people who made this *Handbook* possible. First, our immense thanks go to the contributors. It was a privilege to work with them on such a worthwhile project, and we learnt a lot from their scholarship. Second, we would like to thank the incredible team of research assistants from the George Washington and Stellenbosch universities, whose editorial assistance was invaluable to the success of the project. We would like to thank the following research assistants from the George Washington University Law School: Kendall Archer, Sarah Burns, Bryan Dewan, Landis Hagerty, Sophie Marsh, Allison Moors, Jacquelyn Sherman, and Wintana Yohannes. We would also like to thank Meg James from Stellenbosch University.

## *Preface*

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# **PART I**



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# 1

# AN OVERVIEW OF CORRUPTION AND PUBLIC PROCUREMENT

*Sope Williams and Jessica Tillipman*

## **Introduction**

Public procurement is the area of government spending that is most susceptible to corruption (Williams-Elegbe, 2012) because of the large sums involved, the discretion available to public officials, and the prevalence of information asymmetries, among other factors. The global procurement spend is estimated at US\$13 trillion a year (Open Contracting Partnership, 2020), with estimated losses of US\$1.5–US\$2 trillion annually from bribes and further costs in stunted economic growth, lost tax revenues, and sustained poverty (Lawder, 2016). In public procurement in particular, the literature estimates that bribes cost 8–25 per cent of the value of procured goods, services, or works (Bosio et al., 2020).

Although addressing corruption in public procurement has always been important, it has assumed a new urgency since the end of the COVID-19 pandemic, as corruption exacerbated the devastation wreaked by the pandemic on both developed and developing countries. Corruption heightened the physical, emotional, economic, and social consequences of the pandemic through the diversion and waste of public funds (Lardner, McDermott, and Kessler, 2023), thus damaging health and social outcomes and slowing recovery.

Beyond COVID-19, technological advances, climate emergencies, and man-made disasters around the world have highlighted new corruption risks in relation to public procurement. As the world grapples with ongoing and emerging challenges, the risk of corruption in procurement remains. This is unfortunate, as procurement corruption undermines the delivery of public services by wasting resources and supplies (Thorp, 2020) and may drive public mistrust (Morris and Klesner, 2010; Cho and Kirwin, 2007), slowing public sector responses during emergencies (World Bank, 2021). Procurement corruption also affects donor willingness to support beneficiary countries (Schultz and Søreide, 2008; David-Barrett et al., 2020) and may damage social cohesion, community resilience, and the social contract when it is needed the most (Jewett et al., 2021; Cheeseman and Peiffer, 2022).

Where it is systemic, procurement corruption can also breed political instability and social unrest, which serves extremists, and can lead to long-term insecurity (Chayes, 2016). Unfortunately, countries still struggle to prioritize and implement anti-corruption protocols to mitigate the occurrence and impact of procurement corruption, despite extensive evidence of the devastating consequences of that corruption (Cortese, 2020; Aikens, 2022).



Globally, there is an increasing awareness of the need for stronger and more efficient measures to address procurement corruption. These have taken the form of a focus on technology and the moral risks inherent in public procurement systems. A recent approach to understanding procurement corruption involved the creation of different risk indicators and proxies for procurement corruption that use data analytics tools to synthesize large datasets on corruption (Fazekas, Tóth, and King, 2016; Fazekas and Kocsis, 2017).

There is also a renewed focus on the need to use digital tools to track public sector spending to understand and mitigate corrupt financial flows. During COVID-19, the International Monetary Fund (IMF) imposed new requirements for tracking public spending on borrowers requiring assistance to combat the pandemic (Quinot et al., 2021). This and other factors were the impetus for the creation of COVID-19 fund trackers, dashboards, and observatories which traced the trajectory of public finances, spending, policies, and health outcomes (Adam and Fazekas, 2018). For example, countries like Nigeria and South Africa and some US states created public dashboards to increase visibility on pandemic-related contracts. Simultaneously, civil society also used digital tools to track public sector procurement spending.

New technologies have helped address procurement corruption. For example, digital technology can foster transparency, accountability, and citizen participation (Chêne, 2012) by reducing “information asymmetries, the automation of processes, the limitation of public officials’ discretion, and the reduction of intermediaries and red tape” (Adam and Fazekas, 2018). However, technology has also aided new and insidious forms of procurement corruption, which make it easier for unethical persons and companies to evade traditional anti-corruption controls and elude detection. Adam and Fazekas (2018) further highlight how technology increases access to information that can be manipulated and also reduces the information asymmetry for those seeking officials who are susceptible to bribery.

In addressing the moral risks or the human responsibility for corruption, there has been an increase in the reliance on behavioural tools to enhance ethical decision-making in the public service (OECD, 2017). These insights rely on the irrationality and contradictions in human decision-making to implement minimal changes in the decision-making environment (Parkinson, Eccles, and Goodman, 2014) and propel more ethical decisions in the public sector.

Globally, there is also greater recognition of the importance of promoting contractor ethics and compliance programmes as a means to prevent, detect, and mitigate public procurement corruption risks (Tillipman, 2022). Over the past several decades, a global consensus has developed regarding compliance best practices, which has heavily influenced government expectations regarding contractor internal controls and their willingness to do business with companies that eschew these anti-corruption measures.

These innovations and emerging trends in addressing corruption exist alongside the “traditional” means of addressing procurement corruption, such as prevention (transparency, contractor qualification, and process requirements), detection (including a procurement review system, whistleblowing frameworks, independent oversight, and monitoring), and punishment (such as criminal and administrative penalties, disgorgement through unexplained wealth orders, debarment, negotiated settlements, and personal cost orders) (Williams, 2023).

Efforts to address corruption in developing and developed countries continue to highlight, and in some instances exacerbate, the inherent tension between the growing use of anti-corruption tools and fundamental procurement objectives (Schooner, 2002). Many common anti-corruption tools can successfully reduce corruption risks, but they do so at the expense of administrative efficiency and cost savings. Striking a balance between these oft-competing goals is a significant challenge, even for the most mature public procurement systems.

The COVID-19 pandemic has reminded us of the critical role governments play in providing social and economic value to the public through the purchase of goods and services. When procurement systems are mired in corruption, it not only undermines the foundational goals of the systems (i.e., competition, efficiency, integrity) but also impedes the ability of governments to meet the basic needs of the populations they govern. Although no country can completely eliminate corruption from its procurement system, continued efforts to reduce integrity risks by strengthening anti-corruption tools and systems, building capacity to address corruption through enforcement, and incentivizing anti-corruption compliance will better prepare countries to face emergencies and threats in the future.

### **Objectives of the *Routledge Handbook of Public Procurement Corruption***

The creation of the *Handbook* was motivated by a need to understand contemporary approaches to addressing corruption in public procurement. The *Handbook* presents the latest research on procurement corruption, adopting an interdisciplinary, multi-sectoral, and multi-jurisdictional approach to these issues. It provides an analysis of different countries' approaches to corruption in public procurement and an insight into how countries with different legal and political systems have designed procurement systems to mitigate corruption risks. In-depth and analytical perspectives from countries selected for their geographical and political importance will assist academics, practitioners, and graduate researchers in comparing and understanding different countries' approaches to procurement corruption as well as existing vulnerabilities.

The *Handbook* also provides a survey of new technologies being used as a lever to redesign procurement systems to promote greater efficiency, reduce the risks of corruption and non-compliance, and increase public utility. It also highlights the effects of corruption and possible solutions to it in crucial sectors such as healthcare, defence, and infrastructure procurement. Traditional anti-corruption tools such as debarment and whistleblowing are considered alongside newer anti-corruption tools such as beneficial ownership transparency and behavioural insights.

### **Scope of the *Handbook***

The *Handbook* is divided into three parts. Part I includes this overview and a treatise on the concept of corruption by Alexandra Wrage and Joshua Birenbaum, which details the difficulties in defining corruption and the limitations of existing and globally accepted definitions of corruption. In addressing procurement corruption, they present a useful approach that views procurement corruption as any “skewed transactions in the sale of goods and provision of services to governments – circumstances where bad private or public sector actors distort the procurement process to benefit themselves, rather than the public at large.” This is useful as it covers “bribery or collusion during the bidding process as well as behaviour carried out in advance or after the tender that creates or compounds problematic transactions, such as purchasing inside bid information or renegotiating contract terms in bad faith.” Wrage and Birenbaum explain the disastrous consequences of procurement corruption and also provide a useful taxonomy for the ways in which procurement corruption manifests, covering the pre-bid, bid, and post-bid phases of the procurement process.

Part II of the *Handbook* contains chapters that consider procurement corruption from a thematic and sectoral lens. First, there are two chapters which consider the impact of technologies such as artificial intelligence (AI) and data analytics on procurement corruption. Albert Sanchez-Graells cautions us to be circumspect about the use of AI as an anti-corruption tool, arguing that the expectations around the use of AI to address procurement corruption “need to be tamed.” For instance,

even when AI can be faster, more consistent, and more accurate than human decision-makers, most AI applications, such as robotic process automation of anti-corruption checks or machine learning aimed at predicting corruption risk, cannot perform cognitive functions. In his view, although AI can contribute to current anti-corruption efforts in procurement, it cannot substitute for “traditional” anti-corruption tools such as oversight and anti-corruption enforcement architecture. AI is thus not an anti-corruption magic bullet; it simply enhances the efficiency of existing anti-corruption tools, relieving human officials from these administrative burdens so they can focus their efforts on activities involving judgement and discretion.

Viktoriia Poltoratskaia and Mihály Fazekas approach the growing reliance on data analytics as an anti-corruption tool with the same reservation. They highlight the most promising and feasible uses of data analytics for anti-corruption and investigate how data analytics can best support anti-corruption efforts in public procurement. They reveal that data analytics is more useful in addressing petty rather than grand corruption and can assist civil society and oversight bodies in monitoring public spending. This limits its utility, given that in public procurement, grand corruption is often more prevalent than petty corruption. Both chapters offer a balanced view of the opportunities and challenges of employing AI and data analytics in the fight against procurement corruption, relying on practical examples which show how these challenges may be overcome to more effectively reduce corruption.

The next two chapters address corruption in emergencies, focusing on COVID-19 procurements and emergency contracting. Geo Quinot asserts that COVID-19 corruption exposed the weaknesses and gaps in procurement frameworks, making visible the underlying structural issues in public procurement systems that make it vulnerable to corruption. His chapter considers COVID-19 procurements through a broad lens, determining that all procurement related to a government’s handling of and response to the COVID-19 pandemic constituted a COVID-19 contract, including purchases directly related to the pandemic itself (such as personal protective equipment (PPE), medical equipment, services, and vaccines), as well as procurements relating to the broader management of conditions created by the pandemic (such as online learning materials in the wake of school closures or food parcels to feed vulnerable groups in lockdown conditions). The chapter reveals that corruption tainted COVID-19 contracts in all countries and further synthesized the trends that have since emerged in response to these pandemic-related integrity failures, including transparency, increased use of electronic procurement, changes to whistleblowing frameworks, and measures to address the involvement of politically exposed persons in procurement. It draws these themes from country case studies across developed and developing countries.

In a related chapter, Gabriella M. Racca and Christopher Yukins review how public procurement systems operate during emergencies and how emergencies often create systemic failures that make procurement more vulnerable to corruption. Their chapter illustrates how digitalization is emerging as a critical solution to corrupt failings in emergency procurement, primarily because transparency fosters social pressure more effectively when corruption is exposed in a procurement system. Both chapters highlight that in any crisis, digital tools may address the weak points created by a lack of transparency and the circumvention of procurement processes.

The next three chapters consider corruption in the critical sectors of health, defence, and infrastructure procurement. In their chapter on healthcare, Gul Saeed and Jillian Clare Kohler show that weak governance, characterized by a lack of transparency and accountability, is the leading cause of corruption in the healthcare procurement process. They highlight the consequences of corruption in this sector, such as shortages of critical medical supplies, waste of financial resources,

inflated drug prices, and the distribution of fake and substandard medicines in the global supply chain, among others. They note that the

complexities of the health sector require tailored governance approaches to identify vulnerabilities to corruption, mismanagement, and fraud. Anticorruption measures, if designed and implemented appropriately, can minimize corruption risks in the procurement process and ultimately save public monies, improve access to medical supplies, and above all, save lives.

Relying on country case studies, they highlight the risks of corruption in healthcare procurement at various stages of the bidding cycle and conclude with an assessment of tools for addressing corruption in healthcare procurement, which include digital tools, increasing social accountability, whistleblowing mechanisms, and emergency procurement protocols.

Daniel Schoeni considers defence procurement and asserts that secrecy, high costs, and the absence of normal market competition exacerbate the risks of corruption in defence procurement. Relying on the US defence procurement system as a case study, he draws a link between the pursuit of innovation in the defence industry and corruption, given that innovation “entails uncertainty, uncertainty causes information asymmetries, and such asymmetries create corruption risks.” Given the large sums involved in defence procurement, he illustrates that the scale of defence procurement corruption can be financially staggering and compromise national security. He further highlights some of the measures used in the US system to stem defence procurement corruption as an example of measures that could be adopted by other jurisdictions.

Infrastructure procurement reveals many of the same corruption problems as other sectors, as George Nwangwu highlights in his examination of corruption in public–private partnerships (PPPs). He argues that procurement through PPPs can serve to reduce procurement corruption, as the PPP risk allocation process disincentivizes corruption by limiting the involvement of public officials in the commercial activity of running public infrastructure and utilities. However, PPPs may be susceptible to corruption due to the incomplete nature of PPP contracts. There could also be corruption risks in the design and implementation of PPPs, especially where they are subject to renegotiations. In all three chapters, we see similarities in the corruption risks when procurement corruption is examined from a sectoral lens. These risks arise from the peculiarities of the sector; the information asymmetries; and the need for secrecy, innovation, and unique risk allocation models, which are all proxies for procurement corruption in the sectors examined.

The *Handbook* then focuses on procurement and corruption in relation to “special groups” such as the multilateral development banks (MDBs), women, and small and medium enterprises (SMEs). In relation to the MDBs, Collin Swan and Belita Manka examine measures to address procurement corruption using the World Bank as a case study. They provide a detailed assessment of the World Bank Group’s efforts to combat fraud and corruption in its operations, with an emphasis on funded procurements, evaluating the Bank’s procurement framework, and anti-corruption measures. They also analyse the Bank’s sanctions system, including the harmonization of sanctions standards that have been adopted by other multilateral development banks, resulting in the mutual recognition of sanctions decisions across the major MDBs.

Anna Petherick addresses the interrelated issues of gender, procurement, and corruption, revealing that procurement measures that aim to reduce the risk of corruption, and simultaneously serve to advance gender equality, can lead to both synergies and friction within the procurement system. She discusses the role of gendered collusive networks as creating barriers to women’s economic advancement and evaluates how transparency measures in procurement may either support gender-equality provisions or pose a risk to gender-equality outcomes by sparking

accountability that operates through a prism of traditional gender stereotypes. David Robbins, Sati Harutyunyan, and Michelle Onibokun examine corruption in SMEs, including their susceptibility to corruption and the unique challenges of addressing corruption in SMEs, given that they are unable to dedicate adequate resourcing to anti-corruption and compliance measures that can prevent and detect corruption. Their chapter further provides practical tools that SMEs may use to address the risks of fraud and corruption. The chapters on gender and SMEs reveal some similarities in the nature of the challenges facing these groups, given that many women-owned businesses operate as SMEs, and underscore the need to tailor anti-corruption approaches to the needs of these special groups.

The next four chapters consider varied means of detecting, preventing, and punishing procurement corruption, such as beneficial ownership transparency, behavioural insights, whistleblowing, and debarment. Tymon Kiepe traces the use of beneficial ownership registries, from their use in addressing money laundering and financial crime to their use as an anti-corruption tool. He explains that improving beneficial ownership transparency through the use of registries can help mitigate corruption and improve procurement, and he discusses the legal, policy, and technological considerations for this to be effective. He undertakes a review of case studies by early adopters to identify the initial impact of these registries and concludes that beneficial ownership information may detect conflicts of interest between public officials and private companies and may target the proceeds of corruption.

Frédéric Boehm and Alexandra Liedtke discuss how behavioural insights can enrich anti-corruption in public procurement. In their chapter, they explain why a behavioural insights lens can be helpful in explaining why well-intentioned anti-corruption policies sometimes fail to achieve their desired outcome or, worse, why they occasionally fail and lead to undesired consequences. In their view, applying behavioural insights to the formulation of public policy can guide policy-makers in the design and implementation of procurement anti-corruption policies. Tom Devine, Samantha Feinstein, and John A. Kolar consider whistleblowing from a US perspective and contend that whistleblowers are more effective than auditors, compliance officers, and law enforcement combined at detecting fraud and corruption. Their chapter reviews the history and substance of whistleblower protections in the United States, illustrating the practical implementation of the relevant statutes with case studies, which highlight the weaknesses and shortcomings of the legal framework.

In their chapter on debarment, Tina Søreide, Erling Hjelmeng, and Theresa Geyer examine the justification for debarment as an anti-corruption measure in public procurement, discuss debarment's use within public procurement systems, and consider whether debarment is fit for purpose. Relying on case studies, they analyse how debarment may reduce the risk of corruption in procurement markets and discuss the friction between debarment systems and criminal law enforcement. What can be gleaned from these chapters on detection, prevention, and punishment is that countries require a tailored suite of approaches to address procurement corruption. These approaches must be suitable to the country context and its legal and enforcement culture.

The final part of the *Handbook* considers how several countries with different legal and cultural traditions approach corruption in public procurement. The countries covered by the *Handbook* are Australia, Brazil, Colombia, France, Hungary, India, Israel, Italy, Kenya, Mexico, Nigeria, Russia, Tanzania, South Africa, Ukraine, the United Kingdom, and the United States. These countries were selected for their political importance, geographical significance, and, in some cases, unique approaches to addressing procurement corruption.

The authors of the country chapters come from a wide range of backgrounds, including economics, law, public policy, criminology, political science, public administration, data, and health

sciences. These differing backgrounds brought a unique and multidisciplinary approach to the research in this *Handbook*.

In considering procurement corruption in Australia, Adam Graycar, Stuart Macintyre, and Ashlee Joyce reveal the extent to which procurement corruption exists in Australia. Using corruption case studies, they examine the kinds of corrupt activity that occur in Australian public procurement as well as the measures that have been used to address it. Research on Brazil is conducted by Cesar Pereira and Mayara Gasparoto Tonin, and they trace the current anti-corruption framework to Operation Car Wash in 2014, which provided the impetus for Brazil to address procurement corruption and create new legislation, including the Government Contracts Act of 2021. They reveal that Brazil's debarment and exclusion system is misconduct-based but includes a process for negotiated settlements.

In her chapter on Colombia, Ana Victoria Christoff reviews Colombia's anti-corruption approach in public procurement focusing on the legislation, anti-corruption agencies, and the modernization of Colombia's public procurement system. She discusses electronic procurement and open contracting data systems, which have resulted in an increase in competition, cost savings, and efficiency. In discussing France, Emmanuel Breen highlights the tension between the French procurement system, which is governed by European Union (EU) procurement laws, and its criminal law, which is governed by domestic laws. This tension is exacerbated by the dual nature of the legal system, divided into public and private laws, which creates additional challenges for anti-corruption enforcement. Tünde Tátrai undertakes research on Hungary and reveals the increasingly problematic nature of procurement corruption in Hungary despite the expansion of the anti-corruption framework. She notes that there is an increase in the number of non-competitive procedures and in the participation of cartels in procurement, and that current anti-corruption measures are inadequate to address these issues.

Sandeep Verma tackles India and introduces India's legal and public procurement systems, including its oversight legislation and institutions tasked with addressing procurement fraud and corruption. He considers in detail India's complex anti-corruption legislation and institutions, including recent changes to the anti-corruption architecture. In examining Israel, Hadas Peled, Ayelet Simon-Vekslar, and Shira Spierer focus on the legal framework applicable to procurement corruption in Israel. They review the penal law and the public procurement law as well as the requirements for transparency in public procurement. In examining procurement corruption in Italy, Federica Marconi reveals that Italy engaged in legal and structural reforms in public procurement to address public sector corruption. Her chapter also considers the challenges and weaknesses of the Italian anti-corruption framework.

Stephen Magu reviews the anti-corruption architecture and the procurement system in Kenya and highlights the nature of public procurement corruption as well as the inefficacy of measures to address it. Bonnie J. Palifka and Diego Cuellar Lasso examine Mexico and discuss Mexico's transparency initiatives designed to address procurement corruption, among other ills. These include the creation of the CompraNet procurement portal in 1996 and the passage of the Freedom of Information Act in 2002. Since experiencing a democratic transition in 2000, Mexico has implemented a series of reforms that have improved transparency and anti-corruption, culminating in the National Anti-Corruption System, the National Transparency Portal, and the National Digital Portal. Despite these reforms, corruption in procurement persists, and for a short while, Mexico engaged the United Nations Office for Public Services (UNOPS) to oversee public tenders and consolidate medical purchases. Palifka and Lasso further underscore the contradiction in Mexico's apparent dedication to transparency and the ongoing lack of accountability in public procurement.



In her chapter on Nigeria, Sope Williams provides an evaluation of the legal and institutional framework against procurement corruption, revealing that Nigeria's anti-corruption architecture is quite convoluted, with multiple laws and organizations addressing corruption generally and procurement corruption in particular. She investigates the obstacles to the fight against procurement corruption and finds that the lack of capacity, corruption in the criminal justice system, a lack of political will to fight corruption, a deliberate weakening of the anti-corruption framework, and poverty are militating against the enforcement of anti-corruption laws in Nigeria. Her work suggests that despite a myriad of anti-corruption activities, enforcement is limited as a way of protecting the political elite.

The chapter on Russia by Leslie Holmes reiterates that Russia is regarded as a highly corrupt country based on perception and corruption surveys, with procurement being one of the leading sources of corruption. His chapter considers the meaning and scale of corruption in Russia and discusses the Russian anti-corruption framework. He concludes that a general culture of corruption and the lack of both political will and transparency in increasingly authoritarian Russia are major factors explaining the high levels of procurement corruption in Russia.

The perspective on South Africa by Jonathan Klaaren, Florencia Belvedere, Ryan Brunette, and Nomtha Gray emphasizes that anti-corruption has been treated as a secondary rather than a primary objective in the post-apartheid reform and design of the public procurement system. The anti-corruption framework takes the form of criminal or administrative penalties, with little coherence between the two systems. The authors argue that the lack of attention to the creation of synergy between both regimes has created the potential for continued growth of corruption in public procurement. Emmanuel Maliganya examines Tanzania and discusses its procurement corruption and the measures undertaken in the past three decades to mitigate it. He provides an overview of the legal and political system and concludes that addressing public procurement corruption effectively will require a holistic approach that involves enhancing the entire public sector governance system and instilling accountability at all levels.

In writing on Ukraine, Andrii Biletskyi traces the history of anti-corruption reforms in Ukraine to the 2014 Revolution of Dignity. This led to pressure to reform the public procurement system and the creation of the now-famous electronic procurement system: Prozorro. He evaluates Ukraine's public procurement system and examines how Prozorro has impacted public procurement corruption. Michael Bowsher considers the UK's approach and juxtaposes the UK's procurement framework based on EU procurement legislation with the domestic framework against corruption. Like Italy and France, he exposes the tension between the multilateral regulation of procurement under the previous EU regime and domestic regulation of procurement corruption. His chapter underscores that procurement corruption has received limited attention in UK legislation, and there is also limited enforcement, making it difficult to understand the scale and nature of the problem.

Finally, Jessica Tillipman's chapter on the United States provides an in-depth analysis of the US anti-corruption framework. In relation to public procurement, she considers the tools designed to promote transparency and oversight, the laws created to prevent and punish actual impropriety and the appearance of impropriety, the rules intended to promote competition and deter anti-competitive conduct, the systems for promoting the disclosure of wrongdoing, policies aimed at excluding unqualified or unethical contractors from doing business with the government, and policies incentivizing or mandating that contractors adopt their own ethics and compliance policies and procedures. This detailed exposition highlights the best practices, the challenges, and the tensions inherent in developing a reactionary, complex, and convoluted architecture to address corruption.

The country chapters show that despite differing income levels, all countries grapple with similar issues in relation to procurement corruption. While the legal and institutional frameworks

are often robust, anti-corruption enforcement remains a challenge. In many countries, a paradox exists in the form of public procurement abuse committed by the same public officials who make public commitments to integrity. Countries that are also subject to multilateral procurement regulations also suffer from the friction arising from the implementation of different legal systems for addressing public procurement and anti-corruption. All the chapters note that increasing the use of technology and open data in procurement is an important measure to counter procurement corruption.

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## 2

# CONCEPTS IN CORRUPTION

*Alexandra Wrage and Joshua Birenbaum*

### **What is corruption?**

Corruption is not a uniquely modern phenomenon. Descriptions of corruption are as old as written history. When poet Dante Alighieri took readers on a tour of Hell in the fourteenth century, he placed the corrupt near the very bottom of the underworld – eighth circle, fifth ditch, next to the sorcerers (Alighieri, 1954, pp. 174–187), well below murderers, warmongers, and tyrants (Alighieri, 1954, pp. 110–115). Dante described corrupt politicians being pulled under the surface of a lake of boiling pitch by a hundred hooks: “Graft all you can there: no one checks your books,” the devils shouted as the corrupt officials went under (Alighieri, 1954, p. 184). Notably, Dante himself was sentenced to death *in absentia* for corruption, only to be sheltered in exile by political patrons.

Given the serious nature of corruption and its consequences, it’s important to establish a clear definition. Unfortunately, corruption has proven surprisingly difficult to define. The Organization for Economic Cooperation and Development’s (OECD) definition of corruption is typically murky:

Corruption does not have a universally recognized definition since it is defined by laws applicable to respective jurisdictions. However, commonly recognized actions include “active or passive misuse of the powers of public officials (appointed or elected) for private financial or other benefits”. Corruption can be classified as “grand”, “petty” and “political” and it can take many forms including: bribery, extortion, nepotism, embezzlement and fraud. Corruption is also a precursor of money laundering.

(OECD, 2020, p. 5)

As the United Nations Office on Drugs and Crime (UN, 2004b, p. 10) points out in its Anti-Corruption Toolkit, “[a]ttempts to develop such a definition invariably encounter legal, criminological and, in many countries, political problems.”

Most definitions of corruption in the literature are immediately followed by caveats that point out the impossibility of defining the concept. As Michael Johnston (2005, p. 12) writes, “I define corruption as *the abuse of public roles or resources for private benefit*, but emphasize that ‘abuse,’ ‘public,’ ‘private,’ and even ‘benefit’ are matters of contention in many societies and of varying degrees of ambiguity in most.” Robert Klitgaard is more direct: “I will not spend much time on

definitions. . . . The boundaries of corruption are hard to define and depend on local laws and customs” (Klitgaard, 1988, Preface to the Paperback Edition, p. xi).

Anti-corruption organization Transparency International’s definition, “the abuse of entrusted power for private gain” (Transparency International, no date-a; Kühn and Sherman, 2014, p. 7), is widely cited but presents some difficulties. When dictators seize both power and the contents of the national treasury, no one “entrusted” them with their power (Rose-Ackerman and Palifka, 2016, p. 10). In addition, “private gain” turns out to be a fairly broad concept for Transparency International, encompassing “gains accruing to the government official, his or her family members, close friends, political party, favourite charity, hometown or a corporate or other entity in which the official or the official’s family or close friends have a financial or social interest” (Kühn and Sherman, 2014, p. 7).

Even the term “abuse” can give rise to confusion: Does that indicate a violation of law, even where laws may be written by corrupt officials? Or a violation of norms and customs, which can easily spiral into meaningless relativism (Johnston, 2005, p. 11; see also Williams-Elegbe, 2012, p. 9)?

The World Bank’s definition, “the abuse of public office for private gain” (The World Bank Group, no date; The World Bank, 2020), is similarly succinct, but it suffers from similar deficiencies. Warlords may not hold public office, but they may certainly still be corrupt. Other definitions are less concise: J.S. Nye (1967, p. 419) defines it as “behavior which deviates from the formal duties of a public role because of private-regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence.”

Some scholars have treated corruption as a simple mathematical formula. Robert Klitgaard argued that “corruption equals monopoly *plus* discretion *minus* accountability” (Klitgaard, 1998, p. 4). As he explained, “one will tend to find corruption when an organization or person has monopoly power over a good or service, has the discretion to decide who will receive it and how much that person will get, and is not accountable” (Klitgaard, 1998, p. 4). While one may “tend” to find corruption in those situations, they do not *always* give rise to corruption. Sometimes, monopolies plus discretion minus accountability just give rise to monopolies (i.e., Singapore). In other cases, bad actors are “accountable” but act corruptly anyway and get caught or slip through the enforcement net. Finally, corruption is frequently an opportunistic crime, where a bribe secures an unjust outcome through dumb luck, even in the absence of either monopoly or discretion. In other words, while Klitgaard provides an insightful way to think about the problem, it is not exactly a definition.

Veering away from the mathematical, some experts correctly point out that defining corruption is particularly difficult because it is socially situated and often culturally specific (Søreide, 2002, p. 2). “[A]lthough corruption might offend inherent (and possibly universal) values of morality and ethics, it is also to some extent, culturally specific, with a dichotomy between western and non-western conceptualisations of corruption” (Williams-Elegbe, 2012, p. 7). What is considered corrupt varies from place to place, and the approbation attached to it can also vary. Yet while one social context may attach different meanings to, say, a New Year’s gift than another, virtually all cultures share a wide overlap in conduct that they consider problematically corrupt. Moreover, cultural differences are frequently inappropriately used by corrupt actors in a way to deflect criticism from unambiguously crooked behavior.

In the end, we resort to “you know it when you see it.” Many people have a clear instinct that corruption broadly encompasses a range of nefarious acts by both public officials and private actors to unfairly co-opt common resources for their own benefit. “Implicit in that notion is the idea that while wealth and power have accepted sources and uses, limits also apply” (Johnston,

2005, p. 11). Bribery is the archetypal example of corruption, but the concept can also refer to acts of extortion, favoritism, nepotism, cronyism, clientelism, exchange of favors, abuse of discretion, embezzlement, illicit enrichment, money laundering, collusion, kickbacks, conflicts of interest, kleptocracy, influence peddling, and fraud (Rose-Ackerman and Palifka, 2016, pp. 8–9; UN, 2004a, pp. 17–20, 2004b, pp. 13–16; Williams-Elegbe, 2012, p. 1).

Corruption can be grand (presidents) or petty (traffic cops), private (company to company) or public (company to officials), passive (asking for money) or active (offering money); its scale can be trivial (50 rupees) or tremendous (US\$50 million); it can be loudly demanded or silently implied; it might be opportunistic and rare, or systemic and inescapable. Some corrupt actors are dictators in the world's poorest countries; others are lawyers in the world's richest ones.

Some scholars, like Johnston (2005, pp. 60–185, 2017, pp. 5–6), break corruption into broad categories such as oligarchs or moguls, who compromise whole systems, and business elite or lobbyists, who sway policy from within the system by peddling influence and controlling markets. Johnston argues that corruption is not a singular thing but several phenomena that are related but unconnected (Johnston, 2017, pp. 3–4). “It makes little sense to conclude that corruption is the same thing in Denmark and, for example, Bangladesh, with Denmark just having less of it. Yet that view implicitly underlies much of what we think we know about corruption” (Johnston, 2017, p. 4).

For the purposes of this volume, we should think of “procurement corruption” as narrowly relating to skewed transactions in the sale of goods and provision of services to governments – circumstances where bad private or public sector actors distort the procurement process to benefit themselves, rather than the public at large. Sometimes, this may involve direct bribery or collusion during the bidding process. It may also refer to behavior carried out in advance or after the tender that creates or compounds problematic transactions, such as purchasing inside bid information or renegotiating contract terms in bad faith.

### **How does corruption manifest in the procurement context?**

Corruption occurs across industries and regions, but public procurement is particularly susceptible, thanks to its massive contracts, its reliance on public officials as decisionmakers, its poorly supervised budgets, and its asymmetry of access to information (Williams-Elegbe, 2012, p. 25). More than half of foreign bribery cases addressed under the OECD Anti-Corruption Convention between 1999 and 2013 involved public procurement (Rose-Ackerman and Palifka, 2016, p. 94). Frequently, procurement involves the purchase of goods that are used up after the sale, making them an attractive target for corruption because of the difficulty in subsequently determining whether the appropriate amount and quality of goods were actually provided (Rose-Ackerman and Palifka, 2016, p. 99). In addition, the need to evaluate complex, technologically advanced, or non-standard goods and services can make the procurement process opaque to outsiders and difficult to monitor (Burguet and Che, 2004, p. 51; Rose-Ackerman and Palifka, 2016, p. 104).

Returning to Klitgaard's insight, “[t]he combination of monopoly power and discretion – so often involved in the public sector – invites various forms of ‘rent seeking’ or ‘directly unproductive profit seeking activities’” (Klitgaard, 1988, p. 47). Finally, procurement accounts for a large percentage of overall economic activity, particularly in the developing world, where it accounts for more than 30 percent of GDP (Amundsen, no date). Consequently, for those looking to hide payments, steal funds, or inflate amounts, public procurement has the enormous budgets that are well suited to facilitate corrupt activity.

Bosio et al. (2020, p. 7) list the following corruption-related challenges in public procurement: bid-rigging, cost overruns, politically connected favoritism, lack of transparency, and collusion.

These, and similar, challenges can present bad actors with opportunities for corruption in different stages of the procurement process.

### ***Structuring the bid***

#### *Bid-rigging*

Before a tender is even announced or a bidding auction opens, companies and public officials can taint the process by rigging the bid so that the highest briber is guaranteed to win. This may involve giving the bribe offeror early or unilateral access to specifications that help that party craft a bid proposal to guarantee success.

More subtle forms of corruption occur when bribes are used to manipulate budget allocations and project selection, even before the contracting process begins, through the manipulation of eligibility criteria in the tender documents or having technical specifications that are biased and without merit.

(Kühn and Sherman, 2014, p. 6)

Even if not directly “rigging” the outcome, early access to bid specifications or bid coaching can give one party more time or greater insights for bid preparation. Inside information, secured with payoffs and bribes, gives a party tremendous advantage over its competitors (Amundsen, no date). “The first and simplest case is one where the basic parameters of the deal – both cost and characteristics – are known ahead of time” (Rose-Ackerman and Palifka, 2016, p. 99). As an illustrative example, a sting by the U.S. Federal Bureau of Investigation uncovered that U.S. Navy officials had disclosed technical specifications for procurement bids to ten companies in return for cash and job offers (Rose-Ackerman and Palifka, 2016, p. 95). This inside information can easily form the difference in bid selection. In other circumstances, inside information can allow a bidder to maximize the amount of money it can seek under its proposal. In one country, the winning bid for a road project was just US\$1 under the purported secret cost estimate conducted by the government (Rose-Ackerman and Palifka, 2016, p. 105). Bid-rigging is a common practice within public procurement. One study commissioned by the European Union found bid-rigging in nearly half of the suspicious cases examined (Wensink and de Vet, 2013, p. 26).

Corrupt officials engaged in bid-rigging can also precisely craft the tender terms or evaluation criteria to favor one bribe offeror (Williams-Elegbe, 2012, p. 26). Procurement officials can “tailor-make elements of the process that fits their company and find ways to create unfair biases when procurers evaluate bids” (Amundsen, no date). Rose-Ackerman and Palifka (2016, p. 106) cite a Hungarian government call for bids to provide cars to the National Tax and Customs authority, where the tender terms “specified the cars length within three centimeters; the engine and trunk size were also designed to eliminate competitors.”

### ***The bidding process***

#### *Eliminating competition*

The easiest way to make sure that one specific company wins a tender is to only allow that company to participate in the process (Williams-Elegbe, 2012, p. 26). Sometimes, in order to bolster a certain bidder’s chances, the government injects additional discretion into the evaluation process,

allowing a compromised official to select the bribing candidate – or inversely, removing discretion in a way that eliminates competing options and forces the hand of honest government agents (UNODC, 2020). This can be done through no-bid contracts and direct awards, also called “sole source procurements,” frequently exploiting or generating some emergency circumstances that purportedly justifies it – or by only inviting a limited number of firms, many of which might be poorly qualified to compete, also called “shortlisting” (Wensink and de Vet, 2013, p. 129). “[O]nce a project has been proposed, a firm may pay to be included in the list of prequalified bidders and to limit competition” (Rose-Ackerman and Palifka, 2016, p. 105).

Sometimes, restricting the bid to invited parties is not even necessary. An official might ensure the success of a particular company by publishing the tender information in an obscure place, where legitimate competing firms are unlikely to find it (Amundsen, no date). As a functional matter, non-preferred firms can also be eliminated through the opacity of the bid process, a lack of clarity regarding required specifications, or an “oversight” in disclosing the necessary conditions for fulfilling the contract. Such restrictions are often paired with an imprecise scoring or evaluation methodology and inadequate justification for selection after the award (Wensink and de Vet, 2013, p. 130).

### *Collusion*

Collusion and bid-rigging are not always separate processes, as rigging a bid frequently involves collusion between the bidding parties or collusion between a bidding party and a public official (Wensink and de Vet, 2013, p. 56). There are, however, other collusive practices that are conceptually distinct from classic bid-rigging. For example, bidding parties may agree among themselves to schemes that inflate prices or eliminate competitive practices, often without the active cooperation of a public official. As the United Nations explains, there are a number of ways in which parties may collude, including

the use of complementary bids (i.e. the submission of “fake” bids to give the illusion of competition), bid rotation (conspiring to alternate bids), bid suppression (agreeing to withdraw a previously submitted bid or to refrain from bidding) or market division (refraining from competing in a designated portion of the market, e.g. among certain geographic areas or customers).

(UNODC, 2020)

So, one party might make a high but technically legitimate bid, according to the terms of the tender, while all of the other colluding parties might submit bids that contain onerous or objectionable terms or amounts (Wensink and de Vet, 2013, p. 57). In some cases, a party may submit an expensive bid designed to come in second place to a cheaper bid. After the award, the colluding cheaper party will withdraw from the contract, leading to the second-place firm’s selection. The two parties can then both take a cut from the profits on the inflated price (Rose-Ackerman and Palifka, 2016, p. 107).

### *Self-dealing and conflicts of interest*

As indicated earlier, collusion can occur when bidding firms agree among themselves to corrupt the procurement process, even in the absence of involvement by a government official. Conversely, government officials can also corrupt the process in the absence of involvement by an independent

private sector firm. In this situation, a public official might engage in self-dealing: influencing the outcome so a company in which they have a financial interest is selected.

This type of public corruption may not always involve another individual and occurs when a public official wrongly secures for himself or an associate the privileges which rightly belong to the public, by bypassing or manipulating the formal procedures necessary for the award of these privileges.

(Williams-Elegbe, 2012, p. 26)

Normally, conflict of interest rules prohibit public officials from overseeing tenders in which they have an interest. “A ‘conflict of interest’ involves a conflict between the public duty and private interests of a public official, in which the public official has private-capacity interests which could improperly influence the performance of their official duties and responsibilities” (Wensink and de Vet, 2013, p. 58). Self-dealing officials circumvent or ignore such rules to collect benefits for themselves. Sometimes, the self-dealing is discreet, such as when a close friend or political ally is the owner of the winning bid (Wensink and de Vet, 2013, p. 146). On other occasions, the public official might brazenly hold a direct position or ownership interest in the bidding firm (Wensink and de Vet, 2013, p. 146).

### ***Contract terms and execution***

#### *Bribes and kickbacks*

The most straightforward way in which parties corrupt the procurement process is through the payment of direct cash bribes to decisionmakers to influence their selection (Amundsen, no date). Similarly, bribes allow companies to negotiate advantageous terms after the bid is won. “Private companies have strong incentives to bribe public officials to increase payments, to cut out competitors, or to accept inferior quality” (Bosio et al., 2020, p. 2). Sometimes, companies reach into their own pockets to bribe officials. At other times, the parties hide bribes in inflated project budgets or opaque consultancy fees (Rose-Ackerman and Palifka, 2016, p. 99).

Bribes may be paid at the selection phase of procurement to ensure that the bribing firm wins the contract, but bribes are frequently also paid during the administration of the contract to incentivize inspectors to overlook substandard work or to bureaucrats who might turn a blind eye to cost overcharges or quality control issues (Rose-Ackerman and Palifka, 2016, p. 108; UNODC, 2020; Amundsen, no date). Bribes might also be necessary to reverse negative administrative decisions or to ensure positive decisions on permits, exporting, or taxation.

One type of bribery arrangement is the kickback, which rewards public officials with jobs or with the ability to skim funds off the top of a project, rather than with direct cash payments. Boeing, for example, was fined US\$600 million for providing a job to a U.S. Air Force official who had just been responsible for negotiating a US\$23 billion aircraft purchase from the company (Rose-Ackerman and Palifka, 2016, p. 95).

#### *Bad-faith renegotiation*

Contract renegotiation, after the procurement is awarded or underway, is another part of the process susceptible to corruption. In fact, corruption vulnerabilities during renegotiations may exceed



those in the bid selection phase, given that “post-tender corruption is monitored less effectively by judges, authorities and the media” (Campos, 2019, p. 6).

During renegotiation, corrupt parties can substantially alter the size of the project, the payment terms, the specifics, or the timing in ways that extraordinarily increase its value or decrease its quality and usefulness. Unlike the bidding process, renegotiations take place in the absence of competition and often with outsized leverage on one side of the negotiations, leading to extensions, generous price changes, or the elimination of contractual terms to benefit a corrupt party (Amundsen, no date). “[O]nce a firm wins the contract, it may pay to get inflated prices, to do ‘extra’ (allegedly unanticipated) work, or to skimp on quality” (Rose-Ackerman and Palifka, 2016, p. 108).

Of course, many corrupt bids are made with renegotiation in mind. Through bid manipulation or bribery, a winning bid might be artificially low, with the expectation that the company can make up the difference later by demanding additional payments after the contract is signed (Rose-Ackerman and Palifka, 2016, p. 109). Alternatively, the bidder can substitute inferior products or, more easily, simply deliver nothing at all (Rose-Ackerman and Palifka, 2016, p. 109).

### **The impact of corruption**

Governments and multilateral organizations, in their attempts to convince the public at large to care about corruption, often generate a long, numbing list of the ills that it contributes to. In the foreword of the *United Nations Convention Against Corruption*, for instance, then Secretary-General Kofi Annan (UN, 2004a, p. iii) wrote:

Corruption is an insidious plague that has a wide range of corrosive effects on societies. It undermines democracy and the rule of law, leads to violations of human rights, distorts markets, erodes the quality of life and allows organized crime, terrorism and other threats to human security to flourish.

He was not wrong. Corruption does indeed directly contribute to terrorism, human rights violations, and the decline of democratic institutions. But it can be challenging for some to connect discrete, individual payments to government officials to an abstract concept like the death of democracy.

In the procurement sphere in particular, bribes are sometimes viewed as productive ways to slice through bureaucratic red tape or move a project forward. This section focuses on tracing the more concrete impacts of corruption specific to procurement.

### ***Corruption causes death***

Corrupt procurement practices can directly lead to death from insufficient quality, undelivered contracts, and inadequate enforcement of regulations. Corruption in infrastructure projects is widespread, leading to substandard buildings and inadequate inspection or maintenance. As noted by Ambraseys and Bilham (2011, p. 153) in their aptly titled article “Corruption Kills,” “83% of all deaths from building collapse in earthquakes over the past 30 years occurred in countries that are anomalously corrupt.”

In China, corruption and negligent inspections on its flagship bullet train line, “the world’s largest, fastest, and newest high-speed railway,” caused a crash that killed 40 (Osno, 2012). In



India, corrupt and ineffective building inspections have caused multiple fatal building collapses (Williams-Elegbe, 2012, p. 13). In Ukraine, corrupt procurement practices prevented state-run hospitals from getting essential life-saving supplies, requiring patients to pay bribes for the medicine they need or die without it (Bullough, 2015; Shapiro, 2014). “Corruption entering and influencing the public procurement process . . . increases the likelihood that services and goods will be poor quality, potentially putting sustainability, the environment and human life at risk” (Kühn and Sherman, 2014, p. 8).

Corruption can also compound upon itself, causing a perfect storm of corrupt inputs that makes fatal incidents far more likely. “Poorly constructed roads are made even more dangerous by drivers who obtain their licenses through bribery” (Rose-Ackerman and Palifka, 2016, p. 34). Indirectly, corruption pulls resources from needed public health work, contributing to infant mortality by around 140,000 additional global deaths a year (Hanf et al., 2011).

### ***Corruption undermines the rule of law and destabilizes countries***

When government officials themselves deviate from the laws, it sends a message that laws are not meaningful. Corrupt procurement practices go one step further: because corruption in procurement specifically involves stealing from the common good – rather than, say, a politician’s traffic or vice offenses – corrupt acts concretely demonstrate to citizens that no one is guarding public interests. In such situations, government is failing at its one true function – to protect the commons – and citizens cannot trust that resources invested in the state, including taxes, fees, private investment, and military service, won’t be co-opted for the personal benefit of rulers and bureaucrats (Johnston, 2005, p. 1).

The social contract breaks. As Klitgaard (1988, p. 47) puts it:

Corruption . . . breaks down trust, confidence, and the rule of law. The social costs of particular corrupt acts can be particularly high when they create safety and environmental hazards, undermine merit systems, or otherwise threaten a broad public interest.

This has wide-ranging societal impacts, but even from a purely financial perspective, the absence of a viable social contract makes economic investments unstable and ultimately less profitable. For the poor and powerless within the country, it makes political – and sometimes social – participation impossible or dangerous. “[W]here corrupt connections guide decision-making, democratic values and participation become irrelevant and opportunities are denied to many who need them most” (Johnston, 2005, p. 25).

Because corruption, by necessity, undermines confidence in government (Rose-Ackerman and Palifka, 2016, p. 34; Kühn and Sherman, 2014, pp. 4, 10), it also frequently leads to the chaos of regime instability (Klitgaard, 1988, p. 46). It can foment violence and revolt, as demonstrated by the Arab Spring in the Middle East and the Orange Revolution in Ukraine, or it can lead to citizen disengagement and disaffection, and as Johnston (2005, p. 29) puts it, “dropping out of politics or the mainstream economy” (see also Klitgaard, 1988, p. 46).

### ***Corruption depresses growth and distorts markets***

Even from a purely economic perspective, corruption undermines the very investment companies are attempting to make when they bribe in the procurement context – by depressing overall growth, injecting unpredictability in the market, and undermining the economic drivers needed for

return on investment. Rose-Ackerman and Palifka (2016, p. 28) list the following direct economic consequences to corruption: low economic growth, low investment, inflation, monetary devaluation, tax evasion, high inequality, low trust, poor education, low-quality infrastructure, high crime rates, trafficking, greater environmental harms, and increased health and safety risks.

In addition, because bribery favors the best briber, not the best provider of goods and services, corruption warps incentives, rewarding inefficient firms and unscrupulous, ineffective public officials.

Corruption in public procurement makes the officials or the politicians in charge purchase goods or services from the best briber, instead of choosing the best price-quality combination. The result may be construction projects several times as costly as necessary, or the acquisition of goods not actually needed.

(Søreide, 2002, p. 1)

As Johnston (2005, p. 24) puts it:

Bribes that win public contracts for an incompetent bidder, for example, reward inefficiency and may discourage efficient firms from entering a country's economy. "Speed money" paid to bureaucrats does not break down administrative bottlenecks; instead, it tells other officials that they too can make money by dragging their feet.

Corruption also acts as a tax on foreign direct investment (Johnston, 2005, p. 27), disincentivizing companies from putting their resources at risk and inhibiting potential growth opportunities (Williams-Elegbe, 2012, p. 12). In the face of unpredictability and inefficiency, competent companies exit the market, and overall foreign direct investment declines.

Investment in a corrupt country's infrastructure, especially infrastructure upon which private firms rely to transport their goods, is inevitably distorted to favor expensive, substandard, and poorly maintained short-term projects over investments that are most likely to support productive growth. "Corrupt high-level officials support too much unproductive public investment and undermaintain past investments" (Rose-Ackerman and Palifka, 2016, p. 32). A new but empty airport in a politician's home district far from population centers, for example, can boost reelection prospects but doesn't help companies or citizens contribute to the economy (Larmer, 2017).

Lowered private investment, unproductive public investment, decreased international aid, and distorted market incentives all lead directly to lower economic growth (Rose-Ackerman and Palifka, 2016, p. 31; Johnston, 2005, p. 18). Conversely, studies have found that effective anti-corruption efforts can boost local economic growth, making the link between corruption and economic growth even stronger. "[T]he fact that anticorruption efforts increase local economic activity suggests that theories of corruption hampering economic growth are at play" (Colonnelli and Prem, 2020, p. 3).

This begs a question: If companies contribute to the cycle of corruption in the markets where they operate, consequently further depressing economic growth and poorly functioning markets, are they undermining the return on their own investment?

### ***Corruption increases opacity and decreases predictability***

We have just seen that corruption hampers economic investment, development, and growth. But possibly worse from a corporate perspective, corruption introduces unpredictability and risks.

Companies facing these risks must either exit high-risk markets or take “unproductive preventive measures” to mitigate them (Klitgaard, 1988, p. 46).

Even the most aggressive mitigation tactics, however, are no match for the fickle tendencies of corrupt rulers and bureaucrats, who, by definition, have little allegiance to anything but themselves. As Johnston (2005, p. 27) explains:

[C]orruption is a risky and unreliable form of influence: officials powerful enough to create monopolies and resist accountability are also powerful enough to renege on their side of a deal. Corrupt deals place the payers outside the protection of the law and create a trail of incriminating evidence that can be used to impose further pressure.

In other words, a bribe today doesn’t guarantee that your factory won’t be seized and nationalized tomorrow. Bribes also beget further bribe demands. Once companies pay a bribe, it can be nearly impossible to placate public officials, who are generally quick to recognize the lucrative money-making possibilities.

In addition to the uncertainty that comes from depending on the whims of corrupt officials, corruption, by nature, operates in opaque circumstances that are difficult for companies to navigate. Corrupt and off-book transactions and motivations are often exceptionally difficult to decipher, even for the participants in the bribe transaction. Corruption-induced opacity harms a firm’s ability to recognize and prepare for risks and to make sound business decisions. Ultimately, opacity undermines efficiency, growth, and investment (Kurtzman, Yago, and Phumiwasana, 2004).

### ***Corruption causes waste***

The cost of even seemingly small or petty corruption can be enormous.

The total economic and social effects of corrupt actions might be very costly and out of proportion to the bribes received by corrupt officials in terms of resources wasted, the opportunity cost of resources misused, and the inefficiencies introduced in the system.

(Tanzi, 1998, p. 121)

Of all the ways corruption exacerbates inefficiencies, its contribution to the waste – of government resources for other social needs, of company resources, of taxes, of human capital, and of time (Klitgaard, 1988, p. 46) – may be the most economically harmful.

It is obvious that bribes add costs, often astronomically inflating the amount governments pay for infrastructure and goods. According to Transparency International, corruption can sometimes add as much as 50 percent to the cost of public procurement (Transparency International, no date-b). Klitgaard (1988, p. 39) puts the number even higher: “[A] typical finding is that because of corrupt procurement policies, governments in developing countries pay from 20 to 100 percent more than the price they would pay under noncorrupt conditions.” The 2014 Sochi Winter Olympic Games cost more than three times their projected budget, in large part because of procurement-related corruption, with as much as US\$30 billion out of the US\$50 billion price tag stolen by corrupt actors (Taylor, 2014).

Huge amounts of taxpayer funds are lost to procurement corruption – funds that could otherwise have been invested in the country. “Even using the most conservative estimate from the existing empirical literature, 8% of the value of procurement contracts (or approximately US\$880 billion) – more than 5 times developmental aid disbursed in 2019 – is lost to corruption” (Bosio,

2021). Again, some sources place the figures much higher. “According to Organisation for Economic Co-Operation and Development (OECD) estimates, money drained through corruption amounts to between 20 per cent and 25 per cent of the procurement budget, that is around US\$2 trillion annually” (Kühn and Sherman, 2014, p. 4). That stolen money is not used productively but simply siphoned out of the system to be laundered into condos in Miami or mansions in Kensington Park.

In an obvious sense, corruption constitutes a direct waste of public resources. Corruption inevitably leads to goods that are too expensive, goods that are not needed, and goods that are subpar (Kühn and Sherman, 2014, p. 9; Wensink and de Vet, 2013, p. 20). In some cases, such waste can be tangibly measured, as Rose-Ackerman and Palifka (2016, pp. 101–102) point out, by looking at a country’s demand for cement.

In Nigeria in 1975 the military government ordered cement that totaled two-thirds of the estimated needs of all of Africa and that exceeded the productive capacity of Western Europe and the Soviet Union. The price exceeded the international market price by a wide margin, presumably to make room for kickbacks. . . . In Italy the annual per capita consumption of cement has been double that of the United States and triple that of Germany and Britain. A review of the “Clean Hands” corruption case in Italy reveals that many construction projects were poorly conceived, overpriced, and had a little or no justification beyond the ability to produce kickbacks.

It is much easier to fold bribe payments into large, expensive construction projects than to try and extract a bribe in conjunction with educational ventures, which makes an unnecessary bridge a lot more profitable for a corrupt official than a crucial school or clinic (Johnston, 2005, p. 27). As a result, when a government wastes its resources on needless, cement-intensive infrastructure projects, it necessarily diverts funding from public health, schooling, and public safety needs (Williams-Elegbe, 2012, p. 12; Kühn and Sherman, 2014, p. 10).

The waste, however, is not merely of money but of people and their talents, incentivizing a country’s educated workforce away from productive occupations and instead toward economically pointless and destructive rent-seeking. “As corruption spreads, officials and citizens waste their potentially productive energies on the pursuit of corrupt rents” (Klitgaard, 1988, p. 47).

Corruption also wastes the resources of companies. Again, this relates not only to the money spent on bribes but also the time and energy needed to maintain the illegal behavior. Renegotiating unenforceable contracts, for instance, is incredibly time-consuming and costly for businesses. On top of that, the secrecy systems needed to avoid massive international fines place a drag on operations that undermine the benefits gained.

### ***Corruption is self-perpetuating***

One of the largest dangers of corruption is the way that it leads to self-perpetuating cycles: the appropriately named “corrupt trap.” Discrete corrupt inputs drive forward systemic instabilities that, once begun, are very difficult for companies or countries to escape.

A country may be caught in a corruption trap where corruption breeds more corruption and discourages legitimate business investment. Corruption limits growth and destroys trust in government, and low growth and distrust of the state fuel and seems to justify corruption.

(Rose-Ackerman and Palifka, 2016, pp. 35–36)

As Tina Søreide (2002, p. 9) describes the problem:

[C]orruption may lead the economy into a vicious circle, ending up in kleptocratic circumstances under which corruption is the standard, where honesty is too costly, with a general disregard of law and a higher level of criminal activity, and where each individual is busy making the most for him/herself, feeling no obligations for the country.

Vicious cycles are compounded by the fact that corruption introduces uncertainty and risks that are difficult or impossible to mitigate. As a result, legitimate companies are quick to move out of risky, corruption-prone regions, propelling fragile economies into a death spiral and leaving shady actors to fight over suspect projects.

In addition, because corruption necessarily involves opacity, it generates prisoners' dilemmas, where firms bribe officials out of fear that their competitors might be doing so, without knowing whether or not that is true. Thus, the mere possibility of corruption can actually *cause* corruption.

In the end, once an economy reaches a certain threshold of corrupt behavior, it is very difficult to escape the corrosive, gravitational pull of corruption upon the economy, the political system, the foundational institutions, and the society at large.

### **Conclusion**

Corruption, through many means, devastates individuals and communities. Public procurement is particularly susceptible to its influence. Given the nexus of public officials and private actors and the enormous amounts of money in play, public procurement represents a major driver of corruption worldwide.

Conversely, clean and transparent procurement practices, if implemented broadly, have the potential to substantially diminish the power corruption holds over countries and their citizens. These efforts begin with governments taking steps to improve the transparency and effectiveness of the procurement process by streamlining bureaucratic processes, including through the use of e-government services; cross-blacklisting corrupt suppliers; clarifying evaluation processes and scoring criteria; and reducing red tape, barriers to entry, and the discretion wielded by individual public officials.

Multilateral organizations, such as the World Trade Organization and the United Nations, can do their part by sponsoring transnational transparency initiatives; promulgating best practices and standards for addressing corruption risks; and acting as a repository for intelligence on corrupt actors, politically exposed persons, and hidden beneficial owners known to be operating in the procurement sphere.

The private sector, as the first line of defense against corruption, must implement robust practices to safeguard their procurement-related operations. Companies should be on the front lines, advocating for and utilizing new, transparent procurement procedures with competitive bidding and clear guidelines. Multinational companies are legally responsible for building robust compliance systems to monitor and improve employee behavior. They must also send a clear message to governments and corporate peers that they stand for fair competition and transparent markets.

Civil society and private individuals also have a role to play, keeping attention and pressure on both governments and companies to establish fair and open practices that result in the efficient and effective use of taxpayer resources. Journalists, NGOs, monitoring organizations, watchdogs, consumers, shareholders, and voters can all exert their own unique influence on private and public

decisionmakers – pushing officials and board rooms toward integrity and clean procurement procedures.

Finally, public officials are, by necessity, at the center of public procurement and must work to implement and monitor better procurement practices. When they fail to do that, they must be held accountable, either by their government or by the enforcement agencies of other countries that are willing to take meaningful steps to criminalize so-called demand side bribery.

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## **PART II**





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# 3

## PROCUREMENT CORRUPTION AND ARTIFICIAL INTELLIGENCE

### Between the potential of enabling data architectures and the constraints of due process requirements

*Albert Sanchez-Graells*

#### **Introduction**

As part of the broader development of AI-based anti-corruption tools (AI-ACT) (Wirtz and Müller, 2019; Köbis, Starke, and Rahwan, 2021; Rusch, 2021), the deployment of AI solutions can support the fight against corruption in public procurement (Adam and Fazekas, 2019; Petheram, Pasquarelli, and Stirling, 2019; European Parliament, 2021). However, at the current stage of technological development and with still limited piloting of use cases (Ubaldi et al., 2019; Mackey and Cuomo, 2020; Odilla, 2021; Adam and Fazekas, 2021), there are both high expectations and limited practical experience with the effectiveness of different solutions to guide regulatory approaches. This creates significant difficulties for policymakers in deciding to what extent to dedicate scarce resources to the resource-intensive development of digital technology tools, as well as a risk of ‘hype’-driven investments by policymakers not wanting to fall behind the quickly accelerating pace of transition towards new modes of digital public governance – with blockchain perhaps reflecting the most extreme case in that regard (Sanchez-Graells, 2019; *cfr* Benítez-Martínez et al., 2022).

In this chapter, I argue that the expectations around the deployment of AI as an anti-corruption tool in procurement need to be tamed. Even if, under the right conditions, AI can be faster, more consistent and more accurate than human decisionmakers (Wang et al., 2020; Aarvik, 2019), most narrow AI applications (e.g. robotic process automation of anti-corruption checks, or machine learning aimed at predicting corruption risk) cannot perform cognitive functions that humans would not also be able to carry out given sufficient time. As such, AI can contribute incrementally to current anti-corruption efforts in procurement, but it cannot significantly alter (or substitute for) existing oversight and enforcement architectures. To put it simply, AI can deliver *more screening* for potential corruption and discharge human officials from that administrative burden so that they can reorient their efforts to more value-added activities (see, e.g., Chirico and Burchill, 2020), but that screening cannot be based on rules or information that would not be available to a human anti-corruption official. Consequently, AI *cannot generate a revolution* in the way corruption is prevented, identified and sanctioned. It can only generate an increase in the volume of anti-corruption checks that are carried out, as well as speed them up, which can also allow for

earlier interventions. Of course, these are desirable improvements, but they should induce lower levels of expectation than the hopes for an AI-based *transformation* of anti-corruption mechanisms (e.g. Santiso, 2019).

Moreover, the extent to which AI can deliver such improvements is highly dependent on existing limitations in data availability and quality. Advanced forms of AI (e.g. unsupervised machine learning, including natural language processing techniques) currently cannot be adequately developed (*cf.* Nanda et al., 2019, which exemplifies existing limitations) or, rather, trained on the basis of existing procurement and other relevant data, and, even if enhanced data architectures were created, there are significant questions around the possibility of deploying them in unbiased ways that do not perpetuate current social, economic and political structures that could entrench, or even worsen, anti-corruption efforts (Kohl, 2021; Adam and Fazekas, 2021). It should be stressed that building AI solutions based on past data carries the inherent risk of extending the shortcomings of existing oversight and enforcement architectures into the future and, what is worse, insulating them from appropriate scrutiny due to the aura of objectivity and infallibility that can be ascribed to AI (Osoba and Welsner, 2017). It should also be stressed that new AI solutions in turn create new corruption risks (e.g. data poisoning or adversarial attacks) that may be difficult to identify and remedy, which need to be dealt with at the design stage and also be balanced against their potential contribution to anti-corruption efforts at the point of making a decision whether or not to implement them (Adam and Fazekas, 2021).

Finally, even if the general obstacles concerning procurement data could be overcome, given the need to embed AI anti-corruption approaches into existing legal frameworks, it should be stressed that there are fundamental due-process-based constraints that will continue to limit the potential use cases of AI (Pasquale, 2021). Some of the main constraints result from the duty to provide reasons in administrative law contexts, as well as the more stringent requirements for the imposition of (criminal) sanctions resulting from corruption in procurement. In the absence of as-yet unlikely developments in the explainability of AI, legal requirements will continue to demand the presence of a ‘human-in-the-loop’ or, at the very least, an actively involved ‘human-over-the-loop’ in all AI anti-corruption procurement solutions (Chesterman, 2021, pp. 109–110). This requires close consideration of the AI–human interaction (Alon-Barkat and Busuioc, 2022) and the ways in which it will be necessary to create additional ‘dead-driver’ vigilance devices to prevent the mindless rubberstamping of AI-generated proposed decisions, as well as the creation of undesirable feedback loops and perverse dynamics in the adjustment of the algorithms supporting human decision-making (Sun, Nasraoui, and Shafto, 2020). And, of course, for as long as there are human officials making AI-supported decisions or with the power to override AI-proposed decisions, the traditional risks of corruption will continue to demand oversight and enforcement, and these will have to be adapted to new corruption risks derived from the AI implementations.

All of this leads to two main conclusions for policymakers considering the deployment of AI-based anti-corruption solutions in a procurement context: first is that prioritizing improvements in procurement data capture, curation and interconnection is a necessary but insufficient step. Second is that existing anti-corruption oversight and enforcement architectures need to be maintained or even expanded, and there is a need to ensure that the training and upskilling required to make use of AI solutions do not come at the cost of core capabilities. In that regard, investment in anti-corruption AI cannot be seen as a substitute for traditional investment in these efforts because existing and foreseeable AI solutions can act as a complement but not a substitute for current approaches to the prevention, detection and sanction of corruption in public procurement.

### **What could AI (not) do for anti-corruption in procurement?**

To substantiate the earlier claims and preliminary analysis, it may be useful to go back to the basic question of what AI can do to prevent or detect corruption in procurement, and what is beyond its reach. To answer that question, I need to first establish what I mean by AI. Following Odilla's approach, it is useful to consider AI for anti-corruption procurement efforts as

the application of non-human practices, often in the form of machine intelligence purely software-based or embedded in hardware devices that operate with some degree of autonomy, to fight corruption mainly by, but by no means limited to, increasing control, improving answerability, and/or promoting integrity. This type of application implies the analysis of a given environment based on a set of predefined rules before taking action. As it stands, it has the potential to work both autonomously or collaboratively with other machines and/or humans.

(Odilla, 2021, p. 2)

This is a functional approach that matches a pair of functional insights that support its utility in this context, despite it not necessarily adhering to canonical definitions of AI and not addressing the boundary issue of what is 'mere' software and what is AI (in the sense of machine learning).

The first functional insight is that all digital technology applications that are relevant from the perspective of anti-corruption efforts in procurement are information-dependent and that, in direct relation to their level of sophistication, all of them are significantly affected by problems in the availability, quality and representativeness of the information they rely on. This is true across a range of applications, going from relatively basic robotic process automations of information aggregation and checks to the development of complex machine learning solutions to generate corruption risk scores and including intermediate solutions such as automated screening of deviations based on pre-defined business process pathways (e.g. in the context of rigid eProcurement systems enabling embedded compliance through a set of pre-defined rules and with no or very limited permissions to deviate from them).

The second insight is that all digital technology applications that are relevant from the perspective of anti-corruption efforts in procurement are subject to due process constraints to the extent that they form part of administrative decision-making processes and/or inform decisions leading to the imposition of (criminal) sanctions. Therefore, from this perspective, there is also no need to adopt more discriminating taxonomies of the underlying technologies. While due process rights would be directly and severely strained by autonomous decisions adopted by, for example, a machine learning solution that triggered procurement debarment, in particular if the algorithm (e.g. a neural network) was incapable of generating a (humanly comprehensible) explanation for the decision, there is also a risk that requires due process and good administration safeguards in the simpler automated extraction of information from existing databases to generate a report aimed at supporting a debarment decision.

For those reasons, I take a broad and functional approach to digital technologies and label them as AI in this chapter, which allows me to focus on the tasks that AI can carry out to support anti-corruption efforts and the challenges that data and due process constraints generate. Again, this is in line with Odilla's approach, as she conceptualizes AI applied as an anti-corruption tool

as a data-processing system driven by tasks or problems designed to, with some degree of autonomy, identify, predict, summarise, and/or communicate actions related to misuse of

position, information and/or resources aiming towards private gain at the expense of the collective good.

(Odilla, 2021, p. 5)

It is therefore worth clarifying here that I am mainly concerned with efforts aimed at identifying (and sanctioning) instances of procurement corruption, not with other types of analysis that could have broader or more indirect anti-corruption purposes, such as measuring the prevalence of corruption in a given jurisdiction, comparing across jurisdictions or across time, or assessing the effectiveness of anti-corruption regulatory interventions (for details on these different goals of treating big data through AI, see Berliner and Dupuy, 2018, p. 8).

Those primary tasks aimed at identifying (and sanctioning) instances of procurement corruption related to the specific phases of a procurement procedure where a contracting officer screens economic operators' integrity (e.g. at the qualitative selection and exclusion stage under the European Union's rules or at the responsibility determination stage under the US FAR), as well as relevant investigatory phases of related procedures carried out by an oversight or enforcement authority, such as ex-post challenges of contract award or corruption-related (criminal) investigations. From a functional perspective, the tasks that need to be carried out in those different administrative (or criminal) law procedures are the same, as the relevant officer needs to access specific information in order to analyse it and decide whether or not to take further action.

In streamlined terms, then, those functions are information acquisition, mining or aggregation; information analysis (in particular, through cross-checks); anomaly identification; and risk prediction. The first three functions are equivalent to what anti-corruption (and procurement) officials need to do in an analogue or traditional setting: investigate (i.e. search for and cross-check information) and legally classify (i.e. analyse) procurement behaviour (either in discrete events or in patterns of behaviour) with a view to detect, (prosecute) and sanction corrupt practices. The final function (prediction) is an additional support for officials that can enhance their priority-setting and help close gaps in screening and detection strategies. This is not necessarily an exhaustive approach to the anti-corruption functions that AI could carry out in relation to specific instances of procurement corruption (e.g. prevention via early stage interventions aimed at nudging potential infringers back into legal compliance or direct sanction through delegated algorithmic decision-making), but I think it is comprehensive of the likely implementations in the foreseeable future.

So, from an anti-corruption perspective, AI can make positive contributions to the extent that it can find or aggregate information that was previously inaccessible or costly to gather for human officials; cross-check information in ways that were not possible or were (too) time-consuming to carry out; (continuously, more quickly) run deviation checks against clearly established benchmarks (e.g. in the context of contract implementation, to ensure that the contracted outputs are delivered as originally established, to measure delays or raise flags around contractual modifications) or standards (e.g. legal or best practice standards) to identify anomalies or abnormalities in key (performance) indicators; or reliably classify specific procurement activities on the basis of their corruption risk. These tasks seem to imply an increasing level of complexity and, as such, may be attainable through different technologies. Information gathering and cross-checks seem adequate for robotic process automation. The same technology can be used for some deviation checks (e.g. comparing a tender submission deadline against the benchmark of either a mandatory rule or best practice guidance), but other checks may require an element of machine learning (e.g. a supervised algorithm). Prediction can also be done in different ways, with the more ambitious uses seeking to deploy unsupervised algorithms able to draw from unstructured information

sources (e.g. natural language processing of content outwith procurement and other government-held databases).

The final point to make is perhaps that the possibility of developing an AI-based all-knowing anti-corruption ‘big brother’ capable of automatically and autonomously detecting and sanctioning corruption in public procurement (or more generally) simply remains science-fiction. More realistically, even the possibility of entirely automating decisions based on corruption in procurement (such as debarment/exclusion, the imposition of fines, or criminal convictions) needs to be excluded for a range of reasons. The first one is that those decisions usually involve a degree of discretion (e.g. on whether they accept self-cleaning as sufficient or in balancing public interests in maintaining a corrupt tenderer in competition for a specific contract), and AI is unable to exercise discretion in that manner because it requires the application of general principles and considerations difficult to structure as closed rules. Another reason is that, depending on the legal system, there are limitations on the automation of specific decisions (see, e.g., Art 22 EU GDPR) or the delegation of specific functions implying the exercise of public powers (Chesterman, 2021, pp. 109–110). Finally, while some of the consequences of finding corruption in procurement (such as debarment) could be given effect by an AI (or a set of interacting AIs) in eProcurement contexts that were fully automated or at least adequately permissioned, other consequences (such as financial penalties or criminal sanctions) would require ‘offline’ interventions. And, in all cases, given the likelihood of legal challenge and the possibility of suspending the effects of the initial (AI-generated) decision, the automatism of AI decision-making would still be doubtful.

With all this, I mean to stress that the deployment of AI for anti-corruption purposes will for the foreseeable future remain a matter of automating specific information-based tasks that can be programmed for using different digital technologies. That is the reason why the next step in the analysis needs to concern that information and the extent to which public procurement is an area where the potential of AI can be realized.

### **Current limitations and potential of (improved) procurement (big) data**

The general constraints on the availability and quality of data for the development of AI entirely apply to the development of anti-corruption solutions in the procurement context (European Parliament, 2021). While some of those may be mitigated through ongoing projects to increase the availability of information through open procurement data (Open Contracting Partnership, 2021a), developing effective anti-corruption AI tools can often require access to non-procurement information that necessitates higher levels of digitalization of governmental and other databases or registries (Berliner and Dupuy, 2018). Moreover, even having access to all these sources of information in a machine-readable format may be insufficient to develop adequate (i.e., unbiased) anti-corruption tools, as having access to the data does not equate with understanding (and being able to eliminate) the underpinning structures that could be supporting (undetected) corruption. I address these two issues in turn below.

#### ***No data, no fun***

Straightforwardly, given that the deployment of AI for anti-corruption purposes is an information- or data-processing-based endeavour, the existence or not of adequate sources of procurement data is the main constraint on its practical adoption. The need for more open procurement data so that AI can be deployed is not a new or particularly advanced insight, and there are constant calls for governments to digitally generate, store and publish more open access procurement data so that

there can be experimentation in the development of AI tools (see, e.g., ACCA, 2020, p. 7). To be sure, the move towards increased transparency of procurement data is not without risks and costs (Halonen, Caranta, and Sanchez-Graells, 2019), but in the anti-corruption context, the general view is that the benefits of data accessibility and the enabling effects it can have for the deployment of AI solutions far outweigh those risks (Open Contracting Partnership, 2018). I argue that the need for more procurement data *availability* should be decoupled from its *transparency* (in the sense of its general *accessibility*, or publication for everyone to see, Sanchez-Graells, 2021a) and that effective AI anti-procurement tools can be developed based on ‘need to know’ access to the relevant information (which is supported by the emphasis on ex ante transparency by Bauhr et al., 2020). This is important because different levels of transparency can trigger different strategic approaches to the publication (or not) of information, as well as to the quality of what data is published (Berliner and Dupuy, 2018, pp. 9–12).

In any case, from the perspective of enabling AI deployment, it needs to be stressed that the crucial aspect is to ensure that relevant actors (and, in my view, procurement officers and anti-corruption watchdogs are in a different position than civil society) have access to the information they need. What is most important, then, is to reflect upon the extent to which the open contracting approach (regardless of the level of transparency attached to it) would or not suffice to create an adequate and sufficiently comprehensive data architecture, so that (in case not) policymakers can also direct efforts to making other crucial sources of anti-corruption information available for the purposes of deploying anti-corruption AI tools.

Taking the open contracting data standard (OCDS) as a blueprint (Open Contracting Partnership, 2021b), it is clear that in the case of complete implementation, significant relevant data can be generated (and published) following the standard. For the purposes of anti-corruption efforts, the most relevant information will concern the outcome of the tender process and the conditions of contract award (e.g. to contrast it with the initial budget or with comparable awards by other contracting authorities). The current OCDS version would record information on the awardee/s of the contract and, potentially, on any subcontractors (although this is not an official part of the standard but rather a community extension thereof). Information on post-award contractual implementation and contract modifications could also shed light on corrupt practices, and the current version of the OCDS standard would record that information as well as, potentially, information on performance failures (although this is also a community extension to the standard).

However, it is also clear that the current version of the OCDS standard leaves out significant amounts of relevant anti-corruption information. This is particularly clear in comparing the general OCDS standard with the one currently being developed for public–private partnerships (PPPs; Open Contracting Partnership, 2021c). This newer and more demanding standard would contain other types of relevant anti-corruption information, such as information on the qualitative selection of bidders and any exemptions granted from the standard requirements, decisions on conflicts of interest declared or uncovered during the tender and decisions on any debarments (or exclusions) issued.

On the whole, it seems clear that the generation and digital storage of procurement data – in particular, those based on the OCDS standard – can make a positive but still insufficient contribution to anti-corruption efforts. The reason for that is that the information that is generated under those standards (even the more demanding one for PPPs) is constrained to procurement-procedure-related information and, mostly, to the outcomes of tender procedures. While this can impose a constraint on forms of corruption based on deviating from contracted obligations (e.g. under-performance or non-delivery that goes unsanctioned) and also be useful in identifying trends and, given a sufficient time series, perhaps the existence of corruption schemes identifiable through



cross-section analysis, the type of analysis that can be conducted based on OCDS data is still somewhat limited.

There are a number of important issues that are simply not captured by OCDS, such as the corporate linkages between economic operators, indirect control and conflicts of interest resulting from beneficial ownership structures, political connections (including political donations), revolving doors and other mechanisms of corruption (such as the use of common financial intermediaries or legal advisors), to name but a few. Perhaps one of the most promising anti-corruption uses of AI lies in the possibility of crossing procurement data with other sources of information. This of course requires those sources of information to also be available in an adequate format and curated in a way that ensures their quality and reliability. While some of those sources of information will also be held by the public sector and, as such, are susceptible of digitalization through open government initiatives beyond procurement (Open Government Partnership, 2021), other sources may require public–private cooperation to generate adequate data exchanges (see, e.g., European Commission, 2018), which can limit the extent to which a sufficient level of (digital) data availability can be reached so that anti-corruption AI solutions can be properly deployed.

### ***Garbage in, garbage out***

Beyond the issues of data availability discussed above, there are also important issues of data quality and implicit biases in the data that need careful consideration. While some basic applications of AI (mainly robotic process automation) can be deployed as soon as procurement databases start being available to automatically retrieve information from them, their added value will be limited to the extent that they can only rely on *newly* (automatically) generated information. Unless previous procurement (and other) records are digitized and made available for the purposes of data retrieval and cross-checks, the value of these implementations will only arise with a significant time lag (in other words, we will have to wait for the OCDS or otherwise automatically generated data to get *sufficiently big*). However, the use of pre-existing information to accelerate the uptake (and value generation) of AI anti-corruption solutions creates some additional problems.

Regarding the digitalization of pre-existing data, one of the concerns can be the cost and time required to create such databases. And, pragmatically, a decision could be made to only digitize samples of records or records for a limited period of time (e.g. the last three years). However, these decisions need to be carefully considered against the biases that they could generate in the data. This is important for two reasons. AI solutions (especially unsupervised machine learning) work better when they are trained on the entire universe of data (i.e., closed games) or, at least, when they are trained on data that is (due to its size) statistically representative. Therefore, sampling is problematic if it is difficult to ensure statistical representativeness. In the procurement context, given the variety of contracting authorities, contractual objects, contractual values, and so on, this can be very difficult to achieve. Time limitations are also problematic, as looking at the procurement dynamics of the last three years would evidently show (the distortions generated by the pandemic and the ensuing instrumentalization of procurement to reactivate the economy, making it impossible to establish a ‘normal’ baseline of procurement practice). This means that there will almost unavoidably be problems arising from digitalization efforts that fall short of comprising the entirety of the relevant (procurement) records. Given that procurement records can go back a long time, perhaps the minimum period worth considering is a decade (other than in sectors such as concessions or PPPs, where project lifetimes exceed that horizon). Generating that database is certainly a significant commitment of time and resources.



Another difficulty in creating unbiased datasets on which to train algorithms is the massive challenge of assembling a sufficient and high-quality database of corrupt and non-corrupt procurement exercises from which the algorithms can learn. The difficulties here stem not only from the long time it can take for (criminal) corruption cases to be legally final (which creates uncertainty in the data, at least for suspected corruption cases) but also from the fact that corruption is not detected in 100 per cent of the instances and that it is very hard to assess its prevalence (Wattne and Stephenson, 2021), which practically means that cases that could be considered ‘clean’ in a database may in reality represent undiscovered instances of corruption. All of this means that past data needs to be reassessed very carefully and probably more often than not discarded, even if only to avoid training algorithms that entrench screening approaches unable to detect sophisticated or difficult-to-observe corrupt practices. Given the small number of procurement fraud findings/convictions in any given year in any given jurisdiction, and given the limited (if any) comparability of the broader regulatory, economic and socio-political environments in which they take place, the creation of a training dataset that draws on a multijurisdictional basis would probably also be doomed to fail and does not seem like a viable solution to bypass the issue of limited data points and uncertainty about the under-inclusiveness of the ‘corrupt’ (versus ‘clean’) category in any given database.

The risks of ignoring these issues could hardly be overemphasized and, in my view, warrant intervention to regulate data governance and data quality for the purposes of deploying AI (which is one of the major shortcomings of the proposed AI Act in the European Union, as it leaves the use of AI in procurement to self-regulation; Sanchez-Graells, 2021b). Moreover, in practical terms, the existence of such risks and the difficulties in satisfactorily addressing them raise important questions on the practical deliverability of AI solutions that can perform functions beyond information gathering and cross-checks, as well as simple comparisons between the characteristics of a procurement procedure and a well-defined absolute standard (i.e. one that does not include values relative to other procurement procedures, such as variance comparisons), as the more advanced potential implementations for abnormality detection and corruption risk prediction are crucially affected by the constraints above.

Beyond technical issues surrounding the adequate design and implementation of AI solutions (and the underlying data used to train them), as well as ethical considerations of paramount importance in generating trust in the adoption of AI by the public sector (see, e.g., UK Government, 2019), for the purposes of our discussion, the existence of legal constraints on administrative (and criminal) law decision-making needs to be considered as a further layer of regulation conditioning the potential use of AI for anti-corruption efforts in public procurement and more broadly.

### **Due process requirements as an unavoidable constraint**

The specific scope of due process constraints will vary by jurisdiction, but, for the purposes of our discussion, I argue that anti-corruption decision-making that meets due process requirements must encompass the right to good administration, which will imply both a duty to rely on accurate information and to assess it objectively as a prior step towards adopting a decision and a duty to provide reasons in a way that is meaningful to the addressee of a given administrative decision (Pasquale, 2021, pp. 45–48), as well as the right of access to justice, which will generally imply the right to challenge a decision that negatively affects one’s individual rights.

The existence of due process constraints is relevant at different levels of complexity in the deployment of AI for anti-corruption procurement efforts. At the lower level of sophistication, where AI solutions are solely used to acquire or aggregate information and/or to carry out

cross-checks, the duty to act based on accurate information objectively assessed will be engaged. This means that defective or inaccurate uses of AI could be challenged as a breach of this duty. The likelihood of challenge would of course be higher in the case of over-inclusive AI-based searches, at least to the extent that the irrelevant or incorrect information was not weeded out by the human official using that information. However, given that this function is solely supportive of the human decision-maker, there seem to be no particular implications from the perspective of the duty to give reasons or the right to challenge decisions because the analysis will be carried out in the same manner as if the information had been retrieved and cross-checked in a non-automated manner.

In contrast, at an intermediate level of sophistication, where AI is, for example, used for abnormality screening, as well as at high levels of sophistication, where AI is used, for example, for risk prediction, in addition to the duty to act objectively, the duty to give reasons and the right to challenge (on the basis of those reasons) will be of central importance. Here, the relevant requirements will concern not only the need to ensure that the AI is fair and unbiased as a fundamental guarantee of adequate decision-making but also the explainability of the (algorithmic) process and specific factors that have influenced a specific output (e.g. the identification of an abnormality requiring further investigation or the flagging of a specific procurement award as potentially corrupt).

While addressing the issue of AI explainability far exceeds the possibilities of this chapter, it should suffice to point out that the general requirements applicable to administrative decision-making also apply to that supported by AI (see Doshi-Velez et al., 2019, p. 10), and that this encompasses the obligation to provide an explanation (or reasons), understood as ‘human-interpretable information about the factors used in a decision and their relative weight’ (see Doshi-Velez et al., 2019, p. 4). And this will be paramount even if the final decisions are never fully delegated to the AI and a human decision-maker continues to formally adopt the administrative (or criminal) law decision establishing the existence of corruption in procurement or related consequences (e.g. debarment/exclusion), either on the basis of an AI recommendation or by deviating from it. The reason why these guarantees are engaged even if the use of the algorithms is not determinative (i.e. there is a human-in-the-loop, or at least a human-over-the-loop) is that the human decision-maker cannot simply provide as a justification or reasoning for the decision that ‘the AI established it’ or, conversely, that ‘the AI was wrong’. The human decision-maker will need to be able to understand the reasons why the AI suggested a specific classification of the relevant information (in basic terms, as corrupt or not, eventually with an estimation of the likelihood of that being the case) to decide whether to adopt the (legal) analysis as their own or not. I argue that this means that due process constraints will (or, more conservatively, should) limit the types of AI solutions that can be deployed for the purposes of anti-corruption efforts and, in particular, that only explainable AI (XAI) solutions will be susceptible to adoption in a legally compliant manner (Ebers, 2021, pp. 10–11; *cfr* Coglianese and Lehr, 2019; see also Coglianese and Lampmann, 2021).

Beyond the issue of explainability of the underlying AI, the fact that a human decision-maker needs to remain in or over the loop has two further implications. First, that there is a need to pay close consideration to the AI–human interaction. There are two relatively clear risks in that respect. The first one is that the human decision-maker could be ‘asleep at the wheel’ and simply mindlessly follow the recommendations of the AI without engaging in a substantive analysis of their (perceived) correctness in the specific instance or disregard it only in cases where it contradicts the decision-maker’s own biases (Alon-Barkat and Busuioc, 2022). This can be the case in particular where the deployment of AI solutions is twinned with a reduction in the human workforce (i.e. where AI is substitutive rather than complementary to human activity). This can be problematic in different ways, but, barring an AI accuracy of 100 per cent, it is primarily problematic due to the errors and incorrect decisions that will ensue. Therefore, it will be necessary to create additional