

ARTICLE

Behavioral strategies for reducing corruption: from regulation to choice architecture

Alejandro Hortal^{1,2}  and Armenio Pérez Martínez³ 

¹Department of Language, Literature, and Cultures, University of North Carolina Greensboro, Greensboro, NC, USA; ²Department of Philosophy, Wake Forest University, Winston-Salem, NC, USA and

³Department of Social Sciences and Law, Universidad Laica Vicente Rocafuerte de Guayaquil, Guayaquil, Ecuador

Corresponding author: Alejandro Hortal; Email: a_hortal@uncg.edu

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Abstract

Traditionally, corruption is seen as a rational pursuit of profit, focusing on personal gain. However, this view overlooks other influences. This paper focuses on the behavioral aspects of corruption, providing a deeper understanding of its complexities, and addressing the factors overlooked by conventional approaches. Reviewing some of the literature, we highlight how researchers have approached corruption from the perspective of behavioral sciences. Additionally, we examine how the emerging discipline of *Behavioral Public Policy (BPP)* employs innovative methods to reduce corrupt practices, offering new strategies that transcend traditional perspectives. Our paper innovates by demonstrating how corruption can be reduced by substituting traditional regulations with nonregulatory tools like nudges and sludge audits, or by leveraging digital choice architectures to minimize human-to-human interactions, known corruption enablers. By reducing regulations and administrative red tape, and introducing digital frameworks, these tools simplify processes minimizing opportunities for corrupt behavior. In this paper, we aim to infuse corruption research with a behavioral twist, a digital approach, and a deregulatory perspective, offering policymakers an alternative path to foster transparency, accountability and ethical governance. While this approach will not completely eradicate corruption, it strives to show how *BPP* can reduce its occurrences.

Keywords: *Behavioral Public Policy*; corruption; nudges; regulations; sludge audits

Introduction

Corruption manifests when individuals exploit public or private office for personal advantage, benefitting themselves, family, friends or acquaintances. As outlined by the World Bank (2015), corruption can assume various forms, including bribery, fraud, extortion, kickbacks, nepotism, patronage, embezzlement, vote buying and

election rigging. While corruption is often perceived as an individual's illegal and immoral pursuit of gain, its social and behavioral dimensions are equally significant. Corruption undermines economic growth, erodes trust in public institutions, exacerbates inequality, distorts markets and hinders social development. To address it effectively, it is crucial to understand that corrupt practices are not merely the acts of rational individuals but also a systemic issue influenced by broader behavioral and societal factors. Pérez and Rodríguez (2020) further contend that corruption flourishes in environments marked by poor moral and ethical standards, a pervasive sense of impunity and compelling incentives like weak legal frameworks and opportunities for power gains. This problem is aggravated by the abuse of power and the absence of robust anticorruption mechanisms, which often cause corruption to be normalized and are underreported within the society.

The 2023 Corruption Perception Index (CPI) reveals stagnant global corruption levels, with a global average score of 43 out of 100 for the 12th consecutive year (Transparency International, 2024). Over two-thirds of countries score below 50, with 26 at their lowest-ever scores. Their data show that the USA has improved, while Brazil, Nicaragua and Venezuela remain low. Denmark, Finland and New Zealand rank high, while South Sudan, Syria and Somalia are among the worst. The CPI indicates that most countries struggle against corruption, with only a few making significant progress. Transparency International also reports that corruption leads to increased global security challenges, thriving in conflict zones and even high-scoring countries contribute by sheltering illegal funds and supporting kleptocratic regimes (Transparency International, 2023).

Corruption is often seen as a rational way to profit illegally, but scholars argue that its causes also include social and behavioral factors beyond cost–benefit analysis. The latter view (that corruption is a rational way to profit illegally), which reduces corruption to a neoclassical economic model, overlooks crucial influences and assumes harsher punishments will deter it. Muramatsu and Bianchi (2021a) challenge the idea that corruption results solely from rational benefit calculation. The *Homo Economicus* model views corruption through neo-institutional economics' principal–agent theory, framing it in terms of costs and benefits (Groenendijk, 1997). However, it is essential to also consider factors like bounded rationality, values and social norms (Hernández Cervantes, 2024) in human decision-making.

Many approaches to reducing corruption have proven ineffective. To increase effectiveness, this essay introduces not only behavioral insights but also a strategy inspired by Holcombe and Boudreaux's (2015) theory. These authors argue that increased government spending and regulation create corruption opportunities, except in Scandinavian countries, despite large government size. They suggest extensive regulation, rather than the government's productive or redistributive roles, is most linked to corruption. To their approach, we also acknowledge the potential of digital systems to reduce corruption by minimizing human involvement and associated risks.

Given these circumstances, our paper explores how tools from the *Behavioral Public Policy (BPP)* toolbox, such as nudges (interventions to steer choices without restricting freedom) and sludge audits (evaluations to reduce unnecessary administrative burdens), can streamline or remove unnecessary regulations. By using nudges, sludge audits and digital choice architectures to minimize human interactions, these tools,

combined with other methods, can potentially reduce opportunities for corruption, offering an innovative perspective on tackling the issue.

The remainder of this paper is structured as follows: it first explores the social and behavioral dimensions of corruption. Then, it analyzes behavioral experiments in corruption and how *BPP* addresses the issue, focusing on ‘nudges’ and ‘sludge audits’ as tools for reducing corruption by considering human-bounded rationality. The paper concludes by discussing research that links higher corruption levels with more regulated societies, suggesting that some *BPP* tools can help eliminate regulations, streamline their implementation with digital nudges and simplify bureaucracy, thus creating friction for corrupt behavior.

Corruption as a social, systemic and behavioral issue

Corruption manifests in various contexts, representing diverse forms of illicit gain. Its causes are multifaceted, stemming from systemic, social or behavioral factors. From an individual perspective, the principal–agent theory is the traditional approach to understanding it. In this theory, the agent, rather than working on behalf of the principal (such as the government or a company), acts for personal gain. To reduce corruption effectively, principals tend to implement monitoring and enforcement mechanisms. This includes developing transparent systems, creating clear accountability structures and imposing strict penalties for corrupt actions, ensuring the agent’s activities align consistently with the principal’s objectives. According to Groenendijk (1997, p. 226), this approach explains how principals must handle and minimize both failure costs and the costs of preventing or inspecting for misconduct, amidst agents’ efforts to hide or divert activities, including the specific challenge of reducing corruption-related expenses and failure costs.

However, limiting the understanding of corruption to individual choices aimed at personal profit can be counterproductive. Our behavior is often shaped by our bounded rationality (Simon, 1982; Hortal, 2017) and social norms (Bicchieri, 2005) and is inserted in a system that may favor or sanction different types of actions. Some authors, such as Bo Rothstein (2018), claim that to meaningfully reduce corruption, policymakers should abandon the principal–agent framework and use a more social approach, a type of social contract change, in which a direct fight is replaced by an indirect strategy, such as increasing people’s access to a free and public education. Abandoning approaches based on penalties, Rothstein suggests, can be more efficient in corruption reduction.

Systemic corruption involves many agents, whether willfully or unconsciously, sustained over time, institutionally linked and coordinated among those engaged in the practice (Ceva and Radoilska, 2018, p. 791). Corruption is considered systemic when the structure of the system itself enables it, whether this system refers to institutions, social norms, expectations, reciprocal systems or legal frameworks. Systemic corruption is often viewed as a collective action problem rather than a principal–agent issue. This is the main argument in the article by Persson *et al.* (2013), which suggests that a collective action model better explains the reality of corruption and offers more effective ways to decrease it. In this collective action model, the cost/benefit analysis of agents and principals becomes secondary, while the expectation of what should be

done in similar situations emerges as the underlying reason behind people's behavior, beyond personal gains. Even if people morally or politically disagree with corruption in general or with a specific case, they would practice it if that is what is expected from them: '[c]onsequently, in a context in which corruption is the expected behavior, monitoring devices and punishment regimes should be largely ineffective since there will simply be no actors that have an incentive to hold corrupt officials accountable' (Persson *et al.*, 2013, p. 457). Considering social contexts where bribery is normal and 'everyone does it', or where everyone thinks that the issue is common (whether it actually happens or not with the frequency people think it happens), engaging in it becomes a social trap, 'meaning that once corruption has become systemic, it tends to reinforce itself' (Köbis *et al.*, 2022, p. 599). This is problematic since most attempts to decrease corruption by creating awareness may give people the impression that the community engages frequently in these actions. Consequently, if people perceive bribery as the norm, they will follow these descriptive rules, focusing on what is done rather than what is considered right or wrong, instead of adhering to normative rules. Corruption increases public spending, adding extra taxpayer costs, damages the country's public image, undermines domestic business competitiveness and harms international reputation. Additionally, corruption erodes trust and social cohesion. Research explores corruption in individual, social and systemic forms. Complex regulations, human interactions in regulatory processes and bureaucratic hurdles create opportunities for bribes, fostering systemic corruption. The following section presents insights from behavioral sciences, focusing on the role of regulations and bureaucracy in combating corruption. Recent studies in behavioral economics provide valuable insights into corruption mechanisms and potential solutions.

BPP, experiments and corruption

The use of behavioral sciences in public policy has established *BPP* as an independent discipline (Oliver, 2017), offering tools to understand and influence behavior to improve individual and societal well-being. Over the last decade, in *BPP* there has been an increased focus on guiding citizens' behavior toward well-being (Hortal, 2022, 2023; Hortal and Segoviano Contreras, 2023), health and collaboration, particularly using nudges (Thaler and Sunstein, 2009) and sludge audits (Sunstein, 2022). The use of choice architecture is a core concept within *BPP*. It is conceived as an aid to improve decision-making in contexts of risk and uncertainty, establishing contextual elements and tasks to facilitate information processing and decision-making through the use of nudges and sludge audits.

Sludge is any intentional or unintentional burdensome aspect (Sunstein, 2021) of the choice environment that decreases individual and/or societal well-being (Hortal and Segoviano Contreras, 2023). Sludge as a form of cost can manifest in various ways: search costs occur when outdated information, unclear language or confusing requirements create barriers; decision costs arise from evaluating options with ambiguous criteria and choice overload; cognitive costs involve the mental effort to understand complex information or seek clarity; and emotional costs include feelings of stigma, loss of autonomy, stress, disempowerment, anxiety, confusion or frustration (OECD, 2024). Accordingly, Sunstein (2022) argues that regular sludge audits

should be performed by both public and private institutions to assess and reduce these burdens. He suggests that such audits can lead to significant improvements in performance and efficiency by identifying unnecessary administrative tasks and choosing cost-effective methods for achieving institutional goals. The reduction of sludge is particularly beneficial for the most vulnerable populations, improving access to services and opportunities and enhancing overall well-being.

In general, nudges and sludge audits simplify choice environments and can guide behavior toward better decisions, minimizing cognitive biases and complexity while maintaining freedom of choice. These interventions respect individual autonomy, subtly encouraging beneficial behaviors without coercion. In public administration, these tools are valuable as citizens expect transparent, timely and high-quality services that respect their autonomy. Since the integrity of public servants is crucial (Molina and Espés, 2019) for underpinning public trust in government actions and decisions, nudges and sludge audits can promote transparency and efficiency in public services, aligning public servants' actions with ethical standards and the public's best interests.

Our objective is to use behavioral sciences to understand and reduce corruption by employing nudges and sludge audits, either replacing or complementing regulations with digital choice architectures (to eliminate human-to-human interactions). Behavioral experiments in economics and public policy provide empirical evidence on how psychological and situational factors influence decision-making. This allows us to design effective nudges and sludge audits that target behaviors and contexts driving corruption. Understanding these dynamics helps create interventions that promote ethical behavior and reduce administrative burdens, fostering a transparent and efficient public administration. The following section explores how behavioral sciences offer a nuanced understanding of corruption, examining psychological and social factors and highlighting relevant experiments and interventions.

Behavioral sciences and the knowledge–action gap in corruption

Behavioral sciences examine corruption through individual choice, highlighting the knowledge–action gap (Dharshing and Hille, 2017; Yoon, 2018), where people recognize unethical behavior but feel compelled to engage in it due to psychological, social or situational influences. This gap shows the complexity of aligning ethical understanding with ethical action. Citizens often use automatic and unconscious decision-making processes, differing from classical models that assume reflective and conscious decision-making (Ölander and Thøgersen, 2014; Lunn, 2015). Behavioral sciences study decision-making, focusing on common errors and failures to understand why people delay actions, overvalue immediate rewards and favor inertia and framing (Benartzi *et al.*, 2017). According to Halvorson *et al.* (2017), poorly made decisions impact both individuals and the environment, highlighting the need to overcome biases. Mitigating cognitive biases and using *BPP* tools are crucial for reducing corruption among public servants and institutions. Molano (2016) adds that we value the behavior of those around us as a guide for our actions, emphasizing the importance of making honest behavior visible. However, corrupt behavior often remains hidden, complicating efforts to address it. Corruption thrives in clandestine networks, protected by fear of reprisal, lack of transparency and societal attitudes that tolerate it.

Despite being hidden, corruption can become normalized when corrupt actors aren't held accountable, making it a low-risk, high-reward activity. Economic hardship can drive people to engage in corruption, and corrupt officials can legitimize these practices. Thus, corruption is both hidden and normalized (like tax evasion or work harassment), operating in a complex interplay of power, fear and societal acceptance, making it difficult to address effectively.

This challenge is further exacerbated by a high present bias, which influences not only everyday decisions (Kahneman and Tversky, 1979) but also corrupt practices. Other authors (Hoorens and Harris, 1998) also reveal that most individuals believe they possess better habits than others, a perception that can mask the prevalence of dishonest actions. Recognizing that honest behavior can bring both moral and economic rewards – akin to incentives like discounts or loyalty benefits – underscores the importance of promoting such behavior more frequently. The following lines highlight recent research, illustrating how these insights inform effective anti-corruption strategies.

Behavioral experiments on corruption

Traditionally, these experiments have been designed with two players: the briber, who is the person attempting to bribe the public official, and the bribed, the public servant or worker with responsibility and decision-making capacity. They consist of two phases: first, the bribe offered by the briber; then, the bribe decision (acceptance or rejection of the bribe).

Research shows (Barr and Serra, 2009, 2010; Cameron *et al.*, 2009) that individuals from countries with higher levels of corruption are more prone to corrupt behaviors and more likely to justify such actions. Additionally, Falk and Fischbacher (2002) demonstrated that when individuals receive higher bribes, it increases the willingness of those around them to be bribed, supporting the principle of visible behavior. Dong *et al.* (2012) obtained similar results, showing that information about the behavior of peers directly influences the decision to accept bribes.

Experiments on control

Frank and Schulze (2003) found that introducing detection mechanisms in laboratory conditions increased corrupt behavior by encouraging more people to accept bribes, possibly seeing it as a game or challenge. In contrast, Olken (2007) determined that frequent audits of public spending significantly reduce corruption, with lower corruption rates in frequently audited road construction projects. Serra (2012) applied three different treatments to groups and found that the combination of top-down control among officials and bottom-up popular control was the most effective. Similarly, Barr *et al.* (2009) found that in Ethiopia's public health services, officials selected through public voting for control responsibilities tended to control more effectively.

Experiments on punishment

Abbink *et al.* (2002) found that punishment and introducing negative externalities reduce corrupt behavior by 30%, confirming that severe penalties deter corruption

and that subjects underestimate the likelihood of detection. Abbink *et al.* (2014) also showed that with an unequal distribution of risk, where only the public official bears the guilt of corruption, citizen reports increased, decreasing the number of public officials asking for bribes. This study also highlighted the importance of complementary measures: institutional changes, staff rotation policies or guaranteeing whistleblower anonymity.

The four-eyes principle, employee rotation and other factors

Some researchers think that one of the most effective measures to reduce corruption is the four-eyes principle, which involves having more than one person responsible for decision-making in positions vulnerable to bribes, making it more costly and difficult (Poerting and Vahlenkamp, 1998; Rieger, 2005). However, group decision-making dilutes responsibility, and the possibility of reporting at any moment within a fraudulent transaction can increase corruption levels. Reciprocal behavior among corrupt officials stabilizes, protecting them from public controllers demanding excessive bribes. Nevertheless, by changing the approach to favor public servants who report corruption, consistently positive results were obtained, supported by other studies (Krajcova and Ortmann, 2008). Research shows that job rotation reduces both the frequency of bribes, and their reciprocity, and obstructs the development of long-term trust among public officials. Additionally, when citizens are aware of officials' corruption levels, they tend to offer more and larger bribes (Abbink, 2004; Bilotkach, 2005; Serra, 2012).

Experiments with salary incentives, negative externalities and intermediaries

The hypothesis that salary levels influence corrupt behavior has been analyzed in multiple experiments. Van Ruckenhem and Weder (2001) suggested that high salaries attract more competent servers, making the opportunity cost of being caught in bribes very high. However, low salaries justify accepting bribes. Abbink *et al.* (2002) did not find that higher salaries directly influence corrupt behavior. Barr and Serra (2009) found that bribe acceptance is lower when negative externalities are high. Drugov *et al.* (2014) analyzed intermediaries in corruption, finding they reduce moral costs and detection risk, increasing the proportion of corrupt officials and citizen bribing (Van Ruckenhem & Weder, 2001; Abbink *et al.*, 2002; Barr and Serra, 2009; Drugov *et al.*, 2014).

Moral nudges

Some authors have explored using moral nudges. Engelen and Nys (2024) argue that moral nudging, which involves designing choice environments to promote ethical behavior, can enhance moral worth. They show that nudges can increase prosocial behaviors without undermining intrinsic motivation and suggest that in imperfectly moral societies, nudges should scaffold moral behavior, making ethical actions easier and more salient. They refute objections that nudges are manipulative, concluding that moral nudging is both possible and desirable. Capraro *et al.* (2019) demonstrate that simple moral nudges, such as asking individuals what they believe is morally right, significantly enhance pro-social behaviors. These nudges increase altruistic

behavior in economic games, have lasting effects, and can spill over into different contexts. For instance, participants morally nudged in economic games showed higher rates of altruism and cooperation in subsequent games and increased donations to humanitarian organizations by about 44% in a crowdfunding campaign. Hortal (2024) also discusses how nudges can foster virtuous behavior by shaping decision environments to make ethical actions easier, introducing ‘virtue nudges’ to align interventions with individual virtues to promote habit formation while respecting personal choice. This strategic use of nudges can help individuals develop and sustain virtuous habits, enhancing societal well-being.

The behavioral approach

Behavioral experiments in corruption provide insights into the psychological and contextual drivers of corrupt behavior, showing how cognitive biases and social norms influence decisions, contributing to corruption and revealing a gap between ethical knowledge and actions driven by automatic decision processes. Addressing corruption requires considering bounded rationality, choice architecture, decision-making automaticity and social cues. Control and punishment mechanisms, like detection technologies or penalties, can alter the perceived risks of corruption but are not always effective. Effective anticorruption strategies require understanding human behavior, tailored interventions, choice architecture and continuous policy evaluation and adaptation.

Other behavioral strategies aimed at mitigating corruption

By focusing on choice architecture, social norms and the cognitive biases that perpetuate corrupt behaviors, behavioral strategies can propose innovative interventions. From nudges (digital or not) that subtly alter decision contexts to sludge audits that reduce administrative burden, or training programs that refine ethical decision-making, research is showing how corruption can be mitigated through an understanding of bounded rationality, human behavior and choice environments.

Following this line of thought, Muramatsu and Bianchi (2021b), criticizing traditional economics for its failure to capture the nuanced human behaviors and cognitive biases that contribute to corruption, suggest a need for theories that incorporate psychological insights. They emphasize the potential of nudges as effective tools in combating corruption by leveraging social norms and influencing behavior without heavy regulatory measures. They also argue (2021) against traditional economic models of corruption that rely heavily on cost–benefit analyses and principal–agent frameworks, since these models fall short of addressing the multifaceted reality of corruption that involves political, institutional and moral dimensions.

In fighting corruption, public administration should adopt integrity programs based on *BPP* instead of traditional compulsory interventions. De Alencar and Machado (2018) suggest using nudges such as public rankings of companies with effective programs, informational campaigns on high compliance rates, transparency portals, ethical performance in procurement evaluations and negative publicity avoidance. These incentives can enhance corporate compliance and ethical standards.

Nudges can improve policy compliance and ethical behavior (Hortal, 2024) without changing economic incentives. Opoku *et al.* (2018) explore this approach in public governance to reduce corruption and enhance economic development in Ghana. While positive framing and culturally relevant messages show promise, the complexity of local contexts and the evolving evidence base remain significant hurdles. In this context, The Basel Institute on Governance report (Stahl, 2022) examined behavioral insights to combat corruption, noting the need for context-sensitive interventions and the challenges in designing effective, universally applicable solutions. Training programs to increase integrity may also work. Hauser (2019) emphasizes the effectiveness of regular anticorruption training for employees. According to this work, trained individuals are less likely to rationalize corrupt actions, enhancing ethical decision-making and fostering a culture of integrity within organizations.

Some work has also been done with posters (Köbis *et al.*, 2022), examining the impact of social norm nudges on anticorruption measures. The study, for example, found that displaying these posters significantly reduced both the perceived and actual instances of bribery, suggesting that altering public perceptions of social norms can effectively combat corruption and inspire similar strategies elsewhere.

Within the intersection of ethics and *BPP*, Yuval Feldman (2017) has examined the concept of behavioral ethics to understand and mitigate corruption, especially among individuals who perceive themselves as ethical. Feldman argues that traditional methods aimed at curbing corruption often fall short because they don't account for the psychological processes that lead 'good' people to engage in unethical behaviors. Such individuals may engage in corruption under circumstances that allow them to rationalize their actions or when they are not fully aware of the ethical implications. Behavioral ethics research highlights the role of unconscious and self-deceptive processes in promoting unethical behavior among otherwise well-intentioned individuals. To combat this, Feldman suggests expanding regulatory strategies beyond traditional ethical codes and financial incentives. He recommends incorporating preventative interventions that account for the behavioral insights on how people actually behave, rather than how they should behave. For instance, interventions could be designed to enhance individuals' ethical awareness and reduce their ability to rationalize unethical behaviors. For practical application, Feldman's research could guide the implementation of nuanced anti-corruption policies in various sectors. Organizations could develop training programs that help employees recognize and manage their ethical blind spots.

Moynihan *et al.* (2014) also explored how reducing administrative burdens (sludges) through sludge audits can increase transparency and decrease opportunities for corrupt behavior, thereby improving overall compliance.

The studies mentioned highlight a shift in anticorruption strategies from strict regulations to behavioral insights. Approaches like transparency, public rankings, social norm nudges and targeted training aim to realign behaviors with ethical norms. Continuous evidence-based evaluation and adaptation are crucial. The behavioral experiments demonstrate the potential of these interventions to reduce corruption by addressing psychological and situational drivers. This aligns with *BPP*'s goal to create environments that encourage better choices, enhancing societal well-being and fostering integrity and accountability. Integrating behavioral economics with anticorruption efforts can foster ethical, resilient organizations and governments.

Choice architecture, libertarian paternalism and the systemic and behavioral causes of corruption

In an insightful article, Holcombe and Boudreaux proposed that increased regulation can cause corruption and raise its likelihood (2015). They explain that '[r]egulation, by its nature, is designed to keep people from making choices they would have made in the absence of the regulation. That supplies incentives for people to engage in activities that generate regulatory benefits for themselves or avoid regulatory costs' (p. 77). The authors argue that expanding certain types of government interventions and increasing regulation often led to more corruption, as these expansions create opportunities for officials to receive bribes for regulatory advantages, subsidies and contracts. According to the authors, 'Regulation opens the door to corruption, because without regulation, there are no regulators to bribe. A substantial amount of literature also supports the idea that corruption generates regulation' (p. 82). Scandinavian countries are an interesting case since they have substantial government sizes yet exhibit lower corruption rates. Although institutional variations might explain differences in corruption levels among countries, generally, they argue, a higher regulatory environment correlates strongly with increased corruption rather than government's size, its production or redistribution efforts.

Holcombe and Boudreaux present a well-supported argument that decreasing regulations (and not government size) can reduce corruption, primarily by demonstrating a strong correlation between the level of regulation and corruption across various countries. They argue that '[p]olicies that reduce corruption are desirable even if they do not increase income. The relationship between the regulatory state and corruption also has clear policy implications regardless of the direction of causation. If regulation causes more corruption, reducing regulation will have the desirable result of reducing corruption' (p. 82). Using empirical data, including regression analyses, they show that countries with fewer regulations tend to have lower levels of corruption. The use of statistical methods, such as the *t*-statistic and *R*-squared values, strengthens their case by quantifying the relationship between regulation and corruption, showing that as regulation decreases, corruption also tends to diminish.

While their analysis is robust in establishing a correlation, it does not conclusively prove causation. The authors acknowledge this limitation and suggest that the relationship between regulation and corruption might be bidirectional, indicating that while less regulation might lead to less corruption, the reverse could also be true. This complexity is recognized in their discussion but does not detract from the policy implications they propose, advocating for reduced regulation to potentially decrease corruption. They claim that '[p]olicies that reduce corruption are desirable even if they do not increase income. The relationship between the regulatory state and corruption also has clear policy implications regardless of the direction of causation. If regulation causes more corruption, reducing regulation will have the desirable result of reducing corruption' (p. 82). Since this connection has robust indicators, it may be worth exploring how substituting regulatory interventions for more liberal approaches based on behavioral sciences and choice architecture, such as the ones we have been describing here (nudges and sludge audits), can be a fruitful path for corruption reduction.

Stockman (2013) also argues that regulatory capture and fiscal irresponsibility benefit politically connected corporations and undermine free market principles.

He suggests reducing government interventions and regulations to restore economic health and reduce corruption. Fisman and Gatti (2002) found that fiscal decentralization reduces corruption by improving local accountability. These findings support Holcombe's assertion that excessive regulation fosters corruption, indicating that deregulation and decentralization can reduce corruption by minimizing regulatory capture and enhancing local governance. Addressing corruption requires more than eliminating unnecessary regulations; integrating digital choice architecture within regulatory frameworks can mitigate the risk of discretionary power abuse in human interactions.

Regulations can not only influence behavior and reduce negative externalities, but they can also foster corruption, especially when they are complex, enforcement is weak and officials have significant discretion. Unnecessary bureaucratic burdens increase corruption by creating opportunities for bribery, as individuals and businesses may pay bribes for faster service in opaque systems. Complex bureaucracies concentrate power and deter corruption reporting due to fear of retribution or the burden of the process.

Eliminating bureaucratic hurdles can reduce corruption opportunities, promoting transparency and accountability. One effective *BPP* tool for this is sludge audits (Sunstein, 2022), which identify and eliminate unnecessary paperwork (Hortal and Segoviano Contreras, 2023). Sludge audits streamline processes, making them more efficient and transparent, thereby reducing opportunities for corruption.

For instance, in the procurement process, simplifying application and approval procedures, reducing steps required to submit bids and clarifying selection criteria can speed up processes and reduce corruption opportunities. In permitting and licensing, eliminating redundant paperwork, simplifying submission and review processes, and moving services online can increase transparency and accountability, reducing human intervention and potential corruption touchpoints.

Simplifying tax filing and payment processes by removing unnecessary forms, reducing the complexity of the documents needed and providing clearer guidelines and help resources can also be beneficial. Automating parts of the tax collection process can also reduce direct interactions between taxpayers and officials, thereby decreasing opportunities for corrupt practices. The evaluation and revision of the processes involved in applying for and distributing social services like unemployment benefits, healthcare services or educational programs must be an important part of these audits. Eliminating unnecessary paperwork and steps in the verification process, while ensuring compliance and eligibility through more efficient means, can help in reducing corruption by making the system more direct and less manipulable. Also, streamlining compliance checks by reducing the frequency of unnecessary inspections, focusing on high-risk areas, and utilizing data analytics to monitor compliance would not only make the process less burdensome for businesses but also can help in focusing resources on areas with a higher likelihood of noncompliance or corruption.

Implementing sludge audits requires balancing the reduction of paperwork with maintaining the integrity and purpose of original processes. We propose using nudges and sludge audits as alternative or parallel policy tools to influence behavior without heavy-handed regulation, reducing corruption opportunities with digital nudges.

These tools can lessen regulatory pressure and corruption potential by simplifying paperwork and reducing bureaucratic burdens, minimizing complexity and discretion. Instead of directly targeting corrupt behavior, replacing corruption-linked regulations with nudges and sludge audits can be effective. Identifying specific regulations to substitute with these tools is crucial, allowing *BPP* to create choice environments that reduce corruption opportunities by removing unnecessary regulations and complex bureaucracy. Specific implementation examples (as alternatives or complementary approaches) include:

- Environmental Compliance: Instead, or complementing regulatory quotas and penalties for emissions:
 - Nudge: Offer public recognition programs for companies in Latin America that achieve lower emissions. For example, the successful (Moz-Christofoletti *et al.*, 2022) Brazil's Green Municipalities Program (Programa Municípios Verdes) recognizes municipalities that reduce deforestation and promote sustainable practices.
 - Sludge Audit: Conduct regular reviews of the environmental compliance process. In Colombia, the National Environmental Licensing Authority (ANLA) has streamlined its procedures to reduce bureaucratic hurdles and improve transparency, making compliance easier for businesses. Accordingly, ANLA has been praised and recognized for its efficiency and transparency (Autoridad Nacional Licencias Ambientales, 2022).
- Tax Compliance: Instead, or complementing heavy penalties and complex rules for tax filing:
 - Nudge: Simplify the tax filing process by using pre-populated forms. In Chile, the Internal Revenue Service (SII) introduced a prefilled tax return system, which simplifies tax compliance for taxpayers. This improvement 'is an effective solution to high taxpayer compliance costs, the associated tax gap, and the risk of burdensome inspections, audit, and tax evasion' (Jenkins *et al.*, 2023, p. 1).
 - Sludge Audit: Assess the tax filing process. The Peruvian Tax Administration (SUNAT) has implemented measures to simplify tax compliance, including electronic invoicing (Facturación Electrónica) and a virtual taxpayer service center, which reduce paperwork and limit face-to-face interactions, thus minimizing corruption opportunities. Additionally, SUNAT introduced simplified tax regimes for SMEs, offering lower tax rates and streamlined filing procedures to encourage compliance (Bellon *et al.*, 2022).
- Traffic: Research shows, for example, that 'tighter traffic regulations unexpectedly produce and legitimize corruption in weaker regulatory systems' (Onyango, 2022). In Kenya, according to Onyango, corruption does not only occur between officers and motorists, but it also happens within the police system itself: for recruitment, to avoid relocation to harsh parts of the country, officers must pay bribes. Instead (or complementing) heavy fines for traffic violations:
 - Nudge: Digital nudges like GPS can encourage drivers to adhere to traffic laws by making it easier and more convenient to follow the correct routes and speeds and avoid encounters with police (Nori *et al.*, 2022).

- Sludge Audit: In Lagos, Nigeria, the government implemented Traffic Management Solution (TMS) devices to digitalize the process of managing traffic violations. These devices allow for the electronic issuance of fines and the option for offenders to pay fines digitally or challenge them in court, reducing face-to-face interactions with traffic officers. This system enhances transparency and reduces opportunities for bribery and corruption by minimizing direct contact and streamlining the penalty process (Ajifowo, 2021).
- Welfare and Social Benefits: Instead of complicated application processes and checks for welfare benefits.
 - Nudge Alternative: Simplify access to welfare benefits. Brazil's Bolsa Familia program targets families in poverty and extreme poverty based on monthly per capita income. Families must register in the Unified Registry for Social Programs, but selection for benefits is automated and based on census data, ensuring transparency and prioritizing those with the lowest incomes and most children. This automated, data-driven selection process minimizes human intervention, reducing the potential for corruption (Paiva *et al.*, 2019). This system nudges toward reducing corruption by using objective criteria and automated processes to ensure fair and transparent allocation of benefits.
 - Sludge Audit: Examine the application and verification processes. In Argentina, the government has worked to streamline the application and the payment process for social programs like Asignación Universal por Hijo (AUH), reducing unnecessary steps and paperwork. For example, after a sludge audit, they implemented virtual wallet payments for social program beneficiaries (Iglesias, 2024) reducing opportunities for corruption. By enabling payments through platforms like Mercado Pago, the need for physical cash withdrawals and face-to-face interactions is minimized, enhancing transparency and traceability. This digital approach simplifies the process and eliminates bureaucratic hurdles that are often exploited for corrupt purposes.
- Procurement – To promote fair bidding, as parallel intervention or instead of strict rules and heavy penalties for noncompliance in the bidding process:
 - Nudge Alternative: In Nigeria, behavioral insights have been leveraged to promote transparency and integrity in public procurement. One example is the use of transparency portals that publicly display procurement data. This nudge increases visibility and accountability, making it easier for stakeholders to monitor and report irregularities, thus encouraging fair practices (Williams, 2024).
 - Sludge Audit: Regularly audit the procurement process. In Chile, after an audit, the ChileCompra platform has digitized and simplified procurement procedures, making the process more transparent and reducing opportunities for corruption.

In 2019, ChileCompra redesigned how to buy computers, data services, and software development. They reduced contracts from six years to nine months. They used three standard computer ranges instead of 1,200 types. ChileCompra expected savings of 10 percent: As of 2021, the new framework led to average savings of 28 percent compared to market prices. (Beaven, 2024)

We think practitioners and policymakers should consider researching and implementing nudges and sludge audits, after careful consideration and analysis, so governments can foster environments where the desired behaviors are the default option or simple to achieve, reducing the need for direct regulation and thereby the opportunities for corruption.

Concluding remarks: regulation, corruption and nudges

This paper has explored how corruption can be understood from a behavioral perspective, criticizing the reductionist view that sees it as merely a rational calculation for profit. This can help researchers and practitioners in their fight against corruption.

After analyzing corruption from a behavioral sciences perspective, our paper introduces a novel approach based on Holcombe and Boudreaux's (2015) view that increased regulation can foster corruption. We propose nonregulatory behavioral approaches like nudges and sludge audits as promising alternatives or digital complements to compulsory interventions. These strategies steer behavior while preserving choice by simplifying processes and reducing bureaucratic burdens. Policymakers should analyze specific environments to replace regulations with effective behavioral interventions, maintaining integrity and purpose. However, deregulation must be carefully managed to avoid compromising public welfare, and strategies must be tailored to local norms. Integrating behavioral insights with traditional measures creates a transparent, accountable governance system that reduces corruption.

Effective contexts and limitations

Nudges and sludge audits have demonstrated success in various contexts, such as public procurement, environmental compliance, tax filing and traffic regulation. For example, digital nudges have helped streamline tax compliance in Chile, while sludge audits in Argentina's social benefits system have minimized opportunities for corrupt practices. However, these tools are not universally applicable and must be tailored to specific cultural and institutional environments. In contexts with deeply entrenched systemic corruption or where regulatory frameworks are weak, the effectiveness of nudges and sludge audits may be limited.

Scope and integration with other policies

While behavioral tools offer significant promise, they should not be seen as standalone solutions. Integrating nudges and sludge audits with broader anticorruption strategies can enhance their effectiveness. For instance, combining these tools with robust enforcement mechanisms, transparent governance practices and public accountability can create a more comprehensive approach to reducing corruption. Additionally, recognizing the limitations of behavioral tools is crucial; they are most effective when used to complement, rather than replace, necessary regulations and oversight mechanisms. It is also important to note that sludge audits often serve as a preliminary step for the introduction of nudges. By identifying and eliminating unnecessary bureaucratic burdens, sludge audits create a streamlined environment where nudges can be more effectively implemented.

Future research directions

Investigating cultural and institutional contexts through comparative studies can help tailor nudges and sludge audits effectively. Assessing the long-term impact of these interventions via longitudinal studies is crucial for determining lasting reductions in corruption. Exploring integration methods with existing anticorruption policies can identify best practices for combining traditional and behavioral approaches. Additionally, examining the role of technology through digital platforms and data analytics can enhance the implementation and monitoring of nudges and sludge audits.

In conclusion, while nudges and sludge audits provide promising alternatives to traditional regulatory measures, their successful implementation requires careful consideration of context, integration with other policies and ongoing research to adapt and refine these tools. By leveraging the strengths of behavioral insights alongside conventional anticorruption strategies, policymakers can foster more transparent, accountable and ethical governance.

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