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Institutional Reforms and Political Context: An Evaluation of the Indonesia Procurement Modernization Project

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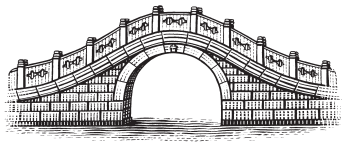

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EXECUTIVE SUMMARY

This article assesses the impact of political context on procurement reform outcomes in Indonesia by analyzing the U.S.-Millennium Challenge Corporation's Procurement Modernization Project from 2013 to 2018 and finds that higher political competition positively influences the adoption of procurement innovations but also correlates with higher perceived corruption.

MAIN ARGUMENT

By replicating an impact evaluation of the Procurement Modernization Project in Indonesia, we found that political covariates significantly correlate with a subset of key procurement outcomes. The level of political competition within subnational governments influenced the adoption of specific procurement reforms. Concretely, higher political competition was found to positively affect the adoption of procurement innovations such as framework contracting and the use of electronic catalogs. However, higher political competition also correlated with increased levels of perceived corruption. Additionally, the study observed that local bureaucracies led by government heads in their first term were more receptive to implementing procurement management systems. These results underline a complex interplay in Indonesia, and potentially elsewhere, between political competition, leadership tenure, and procurement reform outcomes, suggesting nuanced dynamics in reform effectiveness.

POLICY IMPLICATIONS

- *Consideration of political context.* Effective procurement reform requires accounting for the local political environment. Reform strategies should be adaptable to these political dynamics to enhance their uptake and sustainability.
- *A tailored approach to reform.* The variability in reform success based on political competition and leadership term limits indicates the need for a more tailored approach to procurement reform. Strategies might include targeted support for regions with new leadership or high political competition, where the potential for reform adoption appears greater. Similarly, the correlation between political competition and perceived corruption may suggest that procurement reform efforts should be accompanied by robust anti-corruption measures.
- *Long-term commitment.* The mixed outcomes of the Procurement Modernization Project underscore the need for a long-term commitment to institutional reform, with continuous adaptation and learning from the political landscape to achieve sustainable improvements in procurement practices.

This article aims to answer the specific question of how political competition influences public procurement reform in Indonesia, a nation with a vast public procurement system to which a significant share of government and foreign aid spending is directed. Given that Indonesia's procurement system is fraught with inefficiencies, corruption, and estimated annual losses of $4 billion due to these issues, understanding the mechanisms driving reform in this sector is of paramount policy relevance.[1] This understanding is vital to improve budgets, infrastructure development, and social indicators.[2] The policy importance of this question stems from the fact that approximately 47.8% of Indonesia's national government spending in 2020 was on public procurement,[3] and around 60% of foreign development aid is used for procuring public goods and services.[4] Thus, enhancing the efficiency and effectiveness of the procurement process could have substantial economic and social benefits.

This article examines the influence of political context on the effectiveness of procurement reforms in Indonesia, focusing on the Procurement Modernization (PM) Project spearheaded by the U.S.-Millennium Challenge Corporation (MCC) from 2013 to 2018. It finds that higher political competition is associated with the adoption of innovative procurement practices and with increased perceptions of corruption. Furthermore, this research indicates that local bureaucracies led by first-term government heads are particularly receptive to adopting new procurement management systems. These insights reveal a nuanced interplay between political dynamics and the success of procurement reforms, highlighting the critical role of political competition and leadership tenure.

To provide evidence for this argument, we combined the dataset of the MCC PM Project evaluation with an original dataset on levels of competition in subnational government head elections in Indonesia.[5] The article's findings

1 "Public Procurement Reform in Indonesia," Regional Office for Southeast Asia and the Pacific, UN Office on Drugs and Crime, December 8, 2020 ~ https://www.unodc.org/roseap/en/what-we-do/anti-corruption/topics/2020/public-procurement-reform-indonesia.html.

2 Anthony Saich et al., "From Reformasi to Institutional Transformation: A Strategic Assessment of Indonesia's Prospects for Growth, Equity and Democratic Governance," Ash Center for Democratic Governance and Innovation, Harvard Kennedy School, 2011, xv–xx; and Sean Lewis-Faupel et al., "Can Electronic Procurement Improve Infrastructure Provision? Evidence from Public Works in India and Indonesia," *American Economic Journal: Economic Policy* 8, no. 3 (2016): 258–83.

3 "Public Procurement Reform in Indonesia."

4 Heni Yulianto and Jonni Oeyoen, "APEC Procurement Transparency Standards in Indonesia: A Work in Progress," Transparency International–USA and Center for International Private Enterprise, July 16, 2011, 13 ~ https://www.cipe.org/legacy/publication-docs/TI-Report-Indonesia.pdf.

5 Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report," Millennium Challenge Corporation, April 2020 ~ https://doi.org/10.3886/8km6-dm59.

contribute to a broader understanding of public procurement reform, echoing the argument that reforms are more likely to be successful when they take into account the political context, specifically the competitive dynamics among political actors. This approach aligns with the call by Muriel Cote and Andrea Nightingale for a shift "away from attention to institutional configurations alone, and towards the processes and relations that support these structures," emphasizing the interplay between political competition and procurement reform efforts.[6]

The remainder of the article is organized as follows:

- pp. 120–23 offer background information on Indonesia's public procurement context.
- pp. 123–24 present a brief overview of the MCC PM Project.
- pp. 124–35 detail our methodology and data sources.
- pp. 135–39 discuss the research findings.
- pp. 139–41 establish an agenda for future research that connects public procurement reform to the political contexts that are prevalent in low-quality electoral democracies such as Indonesia.
- pp. 142–52 present the appendixes.

SITUATING PUBLIC PROCUREMENT IN INDONESIA IN HISTORICAL CONTEXT

The current challenges of Indonesia's public procurement system have roots in the colonial era and the early years of independence. The Indonesian archipelago, previously known as the Dutch East Indies, was governed by a commercial enterprise, the United East India Company (known in Dutch as the Verenigde Oostindische Compagnie, VOC), for almost two hundred years. After the company went bankrupt in 1799, the Netherlands government installed a colonial administration to manage state affairs. However, the primary goal of extracting maximum profit from the archipelago remained unchanged.

Due to logistical and economic reasons, the Dutch ruled most parts of the archipelago indirectly. As a result, the colonial administration tolerated various indigenous laws and legal jurisdictions, slowly implementing a universal legal code for the country. Consequently, "a baroquely complex legal

6 Muriel Cote and Andrea J. Nightingale, "Resilience Thinking Meets Social Theory: Situating Social Change in Socio-Ecological Systems (SES) Research," *Progress in Human Geography* 36, no. 4 (2012): 480.

system" emerged across the archipelago, creating a multilayered and often contradictory framework for regulating state affairs.[7]

When Indonesia declared independence in 1945, the new government ruled that colonial laws would be invalid if they violated the new constitution, and "since the Constitution was a brief, often vague, document, this provision meant that the application of law was formally subject to political considerations."[8] This combination of a predatory state, overlapping and conflicting legal frameworks, and a tradition among ruling elites to manipulate the law for political purposes gave birth to a "system of exemptions," in which laws were bent in favor of state officials and politically connected private sector interests.[9]

Between 1965 and 1998, the authoritarian New Order regime under President Suharto streamlined and expanded this system. Similar to the opium- and tax-farms established during the colonial period,[10] the Suharto administration created a "franchise system" that encouraged bureaucrats, military personnel, and politicians to use state power to extract public resources for private gain.[11] Motivating state officials to "live off the land" not only ensured their loyalty but also kept potential spoilers in check.[12] In addition, the co-opted Indonesian judiciary used information about transgressions to exclude individuals and groups that did not comply with Suharto's regime from access to state patronage.

Indonesia's first formal procurement rules were adopted in 1979 under Presidential Decree No. 14.[13] Several subsequent presidential instructions amended and formally improved the regulatory framework for public procurement during the New Order, including Presidential Decree (Keppres) No. 29 of 1983, which officially aimed at increasing competition

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7 Robert Cribb, "A System of Exemptions: Historicizing State Illegality in Indonesia," in *The State and Illegality in Indonesia*, ed. Edward Aspinall and Gerry van Klinken (Leiden: KITLV Press, 2010), 34–36.

8 Ibid., 35.

9 Edward Aspinall and Gerry van Klinken, "The State and Illegality in Indonesia," in Aspinall and van Klinken, *The State and Illegality in Indonesia*, 19.

10 John Butcher, "Revenue Farming and the Changing State in Southeast Asia," in *The Rise and Fall of Revenue Farming: Business Elites and the Emergence of the Modern State in Southeast Asia*, ed. John Butcher and Howard Dick (New York: St. Martin's Press, 1993).

11 Ross H. McLeod, "The Struggle to Regain Effective Government under Democracy in Indonesia," *Bulletin of Indonesian Economic Studies* 41, no. 3 (2005): 367–86.

12 Aspinall and van Klinken, "The State and Illegality in Indonesia," 24.

13 "Indonesia: Country Procurement Assessment Report—Reforming the Public Procurement System," World Bank, Report, no. 21823-IND, March 27, 2001, 41; "Snapshot Assessment of Indonesia's Public Procurement System as at June, 2007: Piloting OECD/DAC Procurement JV Baseline Indicator (BLI) Benchmarking Methodology," Organisation for Economic Co-operation and Development (OECD), version 4, June 2007; and Yulianto and Oeyoen, "APEC Procurement Transparency Standards in Indonesia."

while also protecting small domestic companies.[14] Presidential Decree No. 29 of 1984 later stipulated essential financial regulations in government procurement procedures. For instance, this decree required that the benefits of public procurement decisions be distributed among as many interests as possible, in line with the official spirit of equity (*pemerataan*) in New Order economic planning.[15]

To address this, every registered construction company was assigned a quota of government contracts each year. Consequently, if a company exhausted its annual quota, it would not receive any contracts, even if it submitted a bid offering the highest-quality work at the lowest cost. The regulations also established a procurement system that relied on the pre-qualification of bidders. Construction companies had to undergo a government pre-qualification assessment, which then created a shortlist of firms to invite to tender. The quota of procurement contracts for each company was determined through an evaluation of the company's size and past work experience.[16]

Additionally, Suharto controlled the public procurement process by influencing tender decisions through "independent" procurement monitoring bodies. For example, Presidential Decree No. 10 of 1980 established the Control Team for the Procurement of Government Goods, also known as Team 10. Its task was to control and coordinate the procurement of goods and contracted work valued at or above 500 million rupiah (1 U.S. dollar equaled 8,375 Indonesian rupiah in 1985). The team consisted of high-ranking bureaucrats and ministers who reported directly to the president. Various subsequent decrees expanded Team 10's mandate to subnational governments and eventually instructed it to approve tenders below 500 million rupiah.[17] Over time, Team 10 branches were established in all government ministries to tightly control procurement decisions across different levels of government.[18] Due to the agency's tremendous institutional leverage and the president's political backing, it is believed that Team 10 alone awarded $60 billion in procurement contracts to New Order

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14 Hugh Verrier, "Procurement Policies in Indonesia," *Malaya Law Review* 30, no. 2 (1988): 440–461.

15 Chairil Anwar, *Labour Mobility and the Dynamics of the Construction Industry Labour Market: The Case of Makassar, Indonesia* (Göttingen: Cuvillier Verlag, 2004), 79.

16 S. Pompe, "Small Enterprises and Company Law in Indonesia: A Study of the Limited Company in Indonesian Commercial Practice," *Bijdragen tot de Taal-, Land- en Volkenkunde* 148, no. 1 (1992): 67–81.

17 D. Gingerich, "Tendering in Indonesia: The Legal Framework," East Asian Executive Reports, no. 7 (1982); and Verrier, "Procurement Policies in Indonesia," 444.

18 Jeffrey A. Winters, *Power in Motion: Capital Mobility and the Indonesian State* (Ithaca: Cornell University Press, 1996), 123–160.

regime loyalists during the eight years it was active.[19] There were other, similar institutions that also reported to Suharto.

The 1998 collapse of the New Order system had a mixed impact on Indonesia's public procurement system. On the one hand, the newly democratic environment deregulated Suharto's patronage system, creating opportunities for new players to enter the "business of politics" and push it in new directions. On the other hand, New Order habits remained influential in public procurement because they provided tangible economic and political benefits to elites.[20] "The decentralization of political and fiscal powers… also created a highly heterogeneous procurement landscape across the archipelago."[21]

In summary, corruption and inefficiency persisted in newly democratic Indonesia's public procurement process, continuing to be major factors contributing to the leakage of public funds and the implementation of substandard government projects.

THE PROCUREMENT MODERNIZATION PROJECT

Considering this historical context, the National Public Procurement Agency (Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah, or LKPP) and several other organizations implemented the PM project from 2013 to 2018 through the Millennium Challenge Account–Indonesia. The project aimed to transform Indonesia's public procurement system by addressing resource inefficiencies and strengthening the procurement function within the Indonesian government. It sought to build capacity and facilitate the institutionalization of Procurement Service Units (PSUs) equipped with systems, structures, and skilled professionals, as mandated by Presidential Regulation No. 54 of 2010 and Presidential Regulation No. 16 of 2018. The PM project also promoted more systematic tender evaluations to achieve cost efficiency, higher quality, and faster procurement and delivery.

The PM project comprised two main activities: procurement professionalization activity and policy and procedure activity. The former

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19 Jeffrey A. Winters, *Oligarchy* (Cambridge: Cambridge University Press, 2011), 164.

20 Cribb, "A System of Exemptions," 43; and Michael Buehler, "Countries at the Crossroads 2012: Indonesia," Freedom House, 2012.

21 Michael Buehler, "Public Procurement Reform in Indonesian Provinces and Districts: The Historical Institutional Context and Lessons Learned from Analytical Work" (unpublished report, 2012) ~ https://www.academia.edu/26541877/Public_Procurement_Reform_in_Indonesian_Provinces_and_Districts_The_Historical_Institutional_Context_and_Lessons_Learned_from_Analytical_Work_Jakarta_WBOJ.

focused on human resource development (e.g., procurement skills training), institutional strengthening support (e.g., training and mentoring on organizational skills and performance measurements), framework contracting support, and the building of the modernized, electronic Procurement Management Information System (PMIS). The latter activity provided guidance on public-private partnerships and the development of a sustainable procurement policy framework.

Participants in the PM project included organizations and individuals. At the organizational level, the project supported 44 PSUs across various levels of the Indonesian government's administrative hierarchy, including provinces, districts, and municipalities.[22] The PSUs engaged with the project in two phases. In the first phase, 29 demonstration PSUs participated for the full project duration (2013–18). In the second phase (2016–18), the project supported an additional 15 PSUs.[23] Besides working with PSUs at different government levels and with ones involved in varying types and volumes of procurements, the PM project chose a geographically diverse set of PSUs with the goal of establishing best practice models nationwide. The selected PSUs represented each major island and region (East Nusa Tenggara, Java, Kalimantan, Maluku, Papua, Sulawesi, Sumatra, and West Nusa Tenggara).

Individual staff from participating PSUs, along with some additional public-sector staff, received organizational and procurement skills training. Staff in comparison PSUs also benefited from some project inputs through nationwide changes—such as the introduction of e-procurement and the PMIS.

EVALUATING THE IMPACT OF THE PM PROJECT AND POLITICAL CONTEXT ON PUBLIC PROCUREMENT IN INDONESIA

In this section, we describe the evaluation hypotheses, the study sample and data sources, variables used in the analysis, the evaluation design, and study findings.

22 Rural districts and municipalities are situated below provinces in Indonesia's administrative hierarchy.

23 PSUs are responsible for conducting public procurement procedures on behalf of the government's technical departments, which are called Regional-Level Working Units, or Organisasi Pemerintah Daerah (OPDs). We use PSU as a shorthand for both PSUs and associated OPDs. Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report," 1, 3.

Hypotheses Linked to Program Logic

We anticipated improvements in public procurement and its perception due to the PM project's focus on enhancing staffing and institutional capacity. The evaluation classified these improvements using a simplified version of the 7-S McKinsey Model, which posits that organizational change depends on the interrelationship between organizational elements.[24] The key organizational elements included here are *skills* (employee skills and competencies), *staffing* (attitudes), *shared values*, and *systems* (formal and informal procedures). These organizational elements are all crucial to improving ultimate efficiency and quality outcomes.

Skills. We hypothesized that the PM project would improve staff proficiency through training, as measured by the total score on a knowledge quiz embedded in the survey.

Staffing. We expected that the PM project would enhance the perceived desirability of public procurement as a career, as measured by staff intent to continue in procurement positions and feeling supported.

Shared values. We anticipated that the PM project would improve procurement culture and shared values such as integrity and professionalism, as measured by staff perceptions of changing levels of corruption.

Systems. We expected that the PM project would increase rates of adoption and adherence to procurement systems and e-procurement processes, as measured by the number of procurement policies and procedures adopted out of 26 options; whether staff report using the PMIS; whether staff report using e-catalogs[25]; and whether staff report using framework contracting. Use of e-procurement processes has been shown to improve overall efficiency and quality in Indonesia.[26]

Overall efficiency and quality. We hypothesized that the PM project would increase staff-perceived rates of time efficiency and outcome quality. Additionally, we expected political context, specifically political competition and term limits, to influence public procurement outcomes.

Political competition. Generally, stronger political competition is associated with positive effects on the public procurement process.

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[24] Robert H. Waterman Jr., Thomas J. Peters, and Julien R. Phillips, "Structure Is Not Organization," *Business Horizons* 23, no. 3 (1980): 14–26.

[25] An e-catalog in public procurement serves as a digital platform on which suppliers list their products or services, allowing public sector buyers to compare offerings, streamline the procurement process, and make informed purchasing decisions.

[26] See, for example, Benjamin A. Olken, "Monitoring Corruption: Evidence from a Field Experiment in Indonesia," *Journal of Political Economy* 115, no. 2 (2007): 200–249.

Existing research maintains that political competition strengthens both vertical and horizontal accountability, leading to positive outcomes for the public procurement process.[27] When examining the connection between vertical accountability and public procurement governance, it is suggested that politicians are motivated to enact and follow through with reforms that increase efficiency and effectiveness, given the popularity of such initiatives with voters. Should politicians neglect public procurement governance, they may find the electorate unwilling to support them at the polling booth. Term limits can intensify these dynamics. Government leaders in their first term might be more motivated to implement procurement reforms, given their potential bid for re-election, unlike those in their final term. The latter may rely less on public support, possibly diminishing their interest in reform interventions. On the link between horizontal accountability and public procurement governance, academics have put forth that checks and balances both within and across various branches of government positively affect public procurement as they offer oversight on public expenditure.[28]

In light of these findings from the broader literature, we anticipated that: (1) increased competitiveness in subnational elections, based on number and vote share of candidates, will compel elected officials toward transparency in their procurement processes, leading to improved procurement outcomes, and (2) government heads (specifically, mayors) in their first term will have higher incentives to adopt and implement procurement reforms than those in their second, noncompetitive final term.[29]

Our study emphasized political competition and term limits as "political drivers" shaping the adoption of procurement reform, which admittedly oversimplifies the complex landscape of local politics. Future research should delve deeper into precisely how political dynamics influence the adoption of procurement reform. Nonetheless, our findings suggest an underlying factor that has been largely overlooked and merits further investigation.

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27 Rasmus Broms, Carl Dahlström, and Mihaly Fazekas, "Procurement and Competition in Swedish Municipalities," Quality of Government Institute, Working Paper Series, no. 5, July 2017 ~ https://core.ac.uk/download/pdf/85145196.pdf; and Catherine E. De Vries and Hector Solaz, "The Electoral Consequences of Corruption," *Annual Review of Political Science* 20 (2017): 391–408.

28 Daniel E. Bromberg, "Gatekeepers: How Procurement Personnel Guard Against Hybrid Accountability," *Public Organization Review* 16 (2016): 549–60 ~ https://doi.org/10.1007/s11115-015-0325-z.

29 Direct elections for governors, district heads, and mayors were introduced in Indonesia in 2005. Law No. 32 of 2004, Concerning Regional Administrations, laid out the rules for these elections and the powers of subnational government heads. Most immediately relevant for this analysis are the nationwide term limits for subnational government heads that the law introduced. Governors, district heads, and mayors can only serve two five-year terms anywhere in Indonesia.

Data Sources

The evaluation collected staff survey data at the beginning and end of the PM project; we also compiled an original dataset from the subnational election reports of the national election commission Komisi Pemilihan Umum and newspaper archival research to calculate the intensity of political competition in Indonesian jurisdictions.

For the survey, the instrument consisted of ten modules and covered a broad range of topics, as shown in **Appendix 1**. The baseline survey of 426 randomly selected staff members was conducted in July and August 2016. The endline survey of 658 randomly selected staff members was conducted in August and September 2019, over a year after the project ended since procurement reform may take time to influence outcomes. Surveys were conducted with staff from treatment and comparison PSUs.[30] For sampling and descriptive statistics, see **Appendix 2**.

Finally, to calculate levels of political competition, we collected information on the elections of subnational government heads between 2005 and 2014 by gathering data from provincial, district, and municipal election commissions as well as national and local newspapers.[31] From 2015 onward, the Komisi Pemilihan Umum created and made publicly available a web dashboard of all subnational elections. Based on these sources, we recorded the names of candidates and votes they had won for every subnational government head election since 2005. In total, we collected data on 1,324 out of 1,629 subnational elections between 2005 and 2019, including 81 gubernatorial elections, 988 district head elections, and 255 mayoral elections.[32] This analysis used the election data relevant to the location of the treatment and comparison PSUs.

Variables

The main outcome variables by category used in the analysis were as follows:

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30 The evaluation's target sample size was 600 staff for the baseline. However, PSU staff size limited sample size. For the endline, we had a higher target for OPD staff to obtain a higher overall sample.

31 We focus on subnational government head elections because the local executive government dominates both the agenda and implementation stages of the policy cycle and is therefore likely to play the most important role in shaping public procurement reform initiatives on the ground. See Anis Ibrahim, Nuruddin Hady Sirajuddin, and Umar Sholahuddin, *Parlemen lokal DPRD: Peran dan fungsi dalam dinamika otonomi daerah* [Local Parliaments (DPRD): Their Role and Function in the Dynamics of Regional Autonomy] (Malang: Setara Press, 2009).

32 We excluded the Jakarta Special Region from our dataset for two reasons: first, the gubernatorial candidate in Jakarta must win 50% plus one vote to get elected, and, second, the governor appoints all mayors in Jakarta. Since elections in Jakarta do not follow the same rules as other subnational government head elections in Indonesia, different dynamics may be at play in this region.

Skills. The total staff score on a knowledge quiz embedded in the survey.

Staffing. Binary variables based on underlying five-point Likert scales that capture whether staff intend to continue in procurement positions and whether staff feel supported administratively and legally.

Shared values. A measure of staff perception of changing levels of corruption in their PSU according to an item-response theory (IRT) index of responses to five-point Likert scales.

Systems. Variables that capture system change were the number of procurement policies and procedures adopted out of 26 options and three binary variables based on five-point Likert scales that capture whether staff report using the PMIS, e-catalogs, and framework contracting.

Overall efficiency and quality. Staff rated their agreement or disagreement of perceived changes in time efficiency as well as quality on a five-point Likert scale, which was then collapsed into binary variables.

The main independent variables included:

Treatment-time interaction term. The main variable showcasing changes due to the PM project was the interaction of treatment and time. Binary variables for treatment versus comparison and time (baseline versus endline) were also included separately.

Political competition. To measure political competition, we focused on the number of candidates running for subnational government head elections because most of the interventions of the PM project occurred at the local level. Furthermore, governors, district heads, and mayors dominate the drafting, adoption, and implementation stages of the policy cycle.[33]

In addition to taking into account the number of candidates, we also had to identify the number of candidates with a genuine chance of winning elections. One cannot simply assume that all government head elections with at least two pairs of candidates vying for voter support were competitive.[34] Many participating candidates have no realistic chance of winning. Some enter the elections because they overestimate their popularity with voters, while others participate due to "professional campaigners" seeking access to a candidate's funds by convincing them they stand a chance at winning.

[33] Ibrahim, Sirajuddin, and Sholahuddin, *Parlemen lokal DPRD*.

[34] In Indonesia, local government head elections are contested by pairs of candidates. One candidate runs for the position of local government head, while their running mate runs for the position of deputy local government head. These pairs compete against other pairs of candidates.

Finally, some candidates set up additional candidates as a ploy to draw votes away from strong opponents.[35]

We calculated political competition scores for the subnational government elections using the score from the 2012–16 period closest to the year of the baseline (2016). For the endline political competition scores, we used the election in the 2015–19 period closest to the endline year (2019).[36] Although it is imperfect that districts may differ in the number of years since their last election, many districts have elections within a five-year period, so this range allowed us to capture baseline and endline elections for most districts.

To calculate the political competition score, we adapted Markku Laakso and Rein Taagepera's "effective number of parties" as the effective number of candidates.[37] We calculated the effective number of candidates based on vote numbers for each pair of candidates in all subnational government head elections since 2005. The effective number of candidates measures their relative strength based on the votes they obtained, using the formula: $\textit{Effective number of candidates} = \frac{1}{\sum_{i=1}^{n} S_i^2}$, where S represents the candidate's share of votes. In other words, it accounts for the fragmentation of the local political system by considering the number of candidates and their proportional vote share. If the effective number of candidates is smaller than two, the election is not competitive, as most votes are concentrated in just one candidate. For mayoral terms, we considered whether the mayor is in his or her first or second term at baseline and again at the time the subnational election took place.[38]

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35 Michael Buehler and Paige Tan, "Party-Candidate Relationships in Indonesian Local Politics: A Case Study of the 2005 Regional Elections in Gowa, South Sulawesi Province," *Indonesia*, no. 84 (2007): 41–69.

36 Five PSUs included in the dataset were province-level PSUs (as opposed to district or city-level PSUs) for which we used the average effective number of candidates across districts in the province for which we have PSU data available. For the treatment and comparison PSUs used in this paper, the subnational election data covered all PSUs but for three we do not have subnational election data close to baseline. For these three PSUs, we use subnational election data from more than five years prior to baseline.

37 Markku Laakso and Rein Taagepera, "'Effective' Number of Parties: A Measure with Application to West Europe," *Comparative Political Studies* 12, no. 1 (1979): 3–27. Laakso and Taagepera's measurement has faced criticism for not accounting for the possibility of multiple candidates being elected in certain races. For instance, in legislative elections with multi-member electoral districts, it is possible to elect more than one candidate per district. Therefore, Laakso and Taagepera's effective number of candidates is not a suitable measure for such scenarios. Instead, a measure assessing the "viability" of multiple candidates should be applied in such cases; see Richard G. Niemi and John Fuh-sheng Hsieh, "Counting Candidates: An Alternative to the Effective N: With an Application to the M+1 Rule in Japan," *Party Politics* 8, no. 1 (2002): 78. However, as we focused on executive elections, which are essentially single-member district elections, we found Laakso and Taagepera's measure to be appropriate.

38 Local government head term data was available for nearly all subnational election years and PSUs included in this study. For one PSU, we did not have the local government head term data, and for two PSUs there was no local government head term data for one of the subnational election years used.

Covariates are described in **Appendix 3**. They included binary variables for treatment PSUs and time, as well as a number of baseline characteristics that might influence PM project success. These included characteristics such as the distance to Jakarta and the average number and expenditure of tenders per month.

Quantitative Methods

The quantitative analysis uses a difference-in-difference design. This quasi-experimental design compares outcomes for treatment and comparison PSUs over time. Given comparison PSU selection (see below on PSU selection and weighting), the comparison group does not systematically differ from the treatment group in observable factors affecting outcomes, aside from treatment exposure. To enable us to investigate the relative importance of political competition, this article (unlike the final report from Abt Associates in 2020), adds political competition as a covariate to the impact estimation model.[39]

PSU selection and weighting. Unlike in a randomized control trial, we cannot assume that all unobservable factors are equivalent on average between the comparison and treatment groups. Fortunately, due to extensive program information on the selection of treatment PSUs, we were able to closely model the selection process for comparison PSUs, increasing the likelihood of baseline similarity. The treatment group consisted of twelve Phase 2 PSUs, while the comparison group comprised ten PSUs that the Millenium Challenge Account–Indonesia shortlisted but did not select for treatment.[40] Since these PSUs were almost chosen for treatment, they are likely very similar to the treatment PSUs in terms of PM project outcomes.

To further mitigate preexisting differences between treatment and comparison PSUs, we used weights to account for baseline differences, considering selection criteria such as institutional permanency, PSU procurement spending, proximity to Jakarta, and leadership commitment. To account for baseline differences between treatment and comparison groups, the evaluation used data on baseline characteristics to assign analysis weights to comparison PSUs. Effectively, comparison PSUs resembling treatment PSUs in these criteria received a larger weight. The analysis weights used predicted probabilities of project selection from a logistic regression

[39] See Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report."

[40] Abt Associates, "Indonesia Compact – Procurement Modernization: Design Report," Millennium Challenge Corporation, December 13, 2019.

with a treatment dummy as the dependent variable, regressed on baseline characteristics of PSUs that most closely influenced their selection by the PM project. **Table 1** lists baseline characteristics reflecting these selection criteria, which were employed to estimate the propensity model.

TABLE 1

Baseline Characteristics

PSU selection criteria	Baseline characteristic
Institutional permanency	Dummy of whether the PSU has permanent status
Total PSU procurement spending	Average expenditure on tenders (US$/PSU) Average number of bidders per tender (number/PSU)
Proximity to Jakarta/other pilot PSUs	Distance to Jakarta (kilometers)
Leadership commitment	Whether the PSU has a set of standard operating procedures

Using estimates of predicted propensity of being selected for treatment, p, each treatment PSU received a weight of 1, and each comparison group PSU received a weight of $p/(1\text{-}p)$.[41] We adjusted all primary results as described in the results section to account for multiple comparisons.

Cross-sectional difference-in-difference analysis. The equations below show the models used to evaluate outcomes across treatment and comparison PSUs using survey data in the baseline and endline. We used the most appropriate functional form to maximize power depending on the nature of the outcome. For the continuous outcomes, we use ordinary least squares regressions as shown in Equation 1:

$$y_{ijt}^{1} = a^{1} + T_{jt} * b^{1} + post_{t} * c^{1} + T_{jt} * post_{t} * d^{1} + W_{jt} * r^{1} + X_{j} * s + e_{ijt}^{1}$$

Most outcomes were measures of staff perceptions and are in Likert scales, such as the desirability of procurement career paths. These were recorded to binary variables for ease of interpretability.[42] Other outcomes were already

41 Austin Nichols, "Causal Inference with Observational Data," *Stata Journal* 7, no. 4 (2007): 507–41.

42 We used results from the analysis of dichotomous variables for ease of interpretation. Results using ordered logits are similar.

dichotomous, such as those that measure whether PSUs use framework contracts. Dichotomous outcomes were analyzed using logistic regressions as shown in Equation 2:

$$y_{ijt}^{2} = \left(a^{2} + T_{jt} * b^{2} + post_{t} * c^{2} + T_{jt} * post_{t} * d^{2} + W_{jt} * r^{2} + X_{j} * s + e_{ijt}^{2} \right) > 0$$

In these models, $y_{ijt}^{1,2}$ is the outcome for staff member i from PSU j in time t for Equations 1 and 2. T_{jt} is the treatment status in time t for PSU j. X_j is a vector of covariates, including baseline characteristics of PSU j that are good proxies of the selection criteria. W_{jt} are the political competition variables. Further, e_{ijt} is the random error term for staff member i from PSU j in time t. Standard errors are clustered at the PSU level.[43]

In these models, *post* is a dummy equal to 1 for observations from the endline evaluation conducted in 2019. The $b^{1,2}$ is the difference between treatment and control prior to 2018 in equations 1 and 2. The weighted difference-in-difference estimate of the impact of the PM project is $d^{1,2}$.[44]

Findings

This section discusses the statistically significant findings. For full results, see the regression output and Benjamini-Hochberg corrections in **Appendix 4.** The evaluation found that the PM project had little impact on the public procurement process in Indonesia. There was little evidence of increased adoption of e-catalogs, PMIS, framework contracting, or the number of permanent staff in PSUs with the PM project.[45] The presence of the PM project in a local jurisdiction (district or municipality) is correlated with a small but statistically significant increase of 1.020 ($p < .01$) in *skills* among procurement staff. This increase is modest, at almost one point out of eighteen on a quiz to test staff knowledge.[46] Regarding *staffing*, our

[43] Note that there is no interaction term included between political competition variables and the treatment. It is unlikely that there are any interactions between assigning a PSU to the treatment and changes in the effective number of candidates or mayoral term, since one or two years of a program is unlikely to change the political dynamics of subnational elections. Moreover, the national election commission sets the date of subnational executive government elections, so subnational election timing is not related to the PM project.

[44] In the case of outcomes that are the result of IRT analyses, this corresponds to effects on a latent scale approximately equivalent to a z-score.

[45] Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report," 2.

[46] To see the survey questions, contact Marius Meijerink <Marius_Meijerink@abtglobal.com>.

evaluation[47] found evidence that a higher number of procurement officials feel supported at work; the PM project is related to an increase of 2.266 times in feeling supported ($p < .05$). However, feeling supported did not translate to perceived improved career prospects: the PM project was related to a decrease in the odds of intending to make a career in public procurement of 0.303 ($p < .05$).

In terms of *shared values*, the MCC PM Project evaluation did not find evidence that the project influenced staff perceptions of corruption.[48] However, political context variables in our assessment did influence perceptions of corruption. A one-unit increase in the effective number of candidates correlates with a small increase in the perceived corruption index (0.102, $p <.05$). Moreover, procurement staff in jurisdictions under the leadership of subnational government heads in their second term perceive that there is less corruption in the procurement process (-0.182, $p < .05$) compared to procurement staff in jurisdictions under the leadership of government heads in their first term.

Regarding *systems,* our evaluation did not find evidence that the PM project increased the use of procurement procedures, the PMIS, e-catalogs, or framework contracting. There was a small increase in the percentage of procedures used (0.065, $p < .05$). However, the adoption of these systems increased across all PSUs—treatment and comparison—likely because of nationwide policy changes. We found that the political context also correlates with *system* procurement outcomes. A one-unit increase in the effective number of candidates increased the odds of e-catalog use by 1.394 ($p < .01$) and the odds of using framework contracting by 1.313 ($p < .01$). In other words, the more intense political competition was in a jurisdiction, the more likely the e-catalog and framework contracting were used in the public procurement process. Likewise, procurement reform initiatives related to *systems* were picked up to a higher degree in jurisdictions under the leadership of subnational government heads in their first term compared with those under the leadership of subnational government heads in their second and final term: the odds of PMIS use decreased by 0.477 ($p < .05$) in jurisdictions with subnational government heads in their second term.

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47 Note that the *staffing* result of feeling more supported and the systems result of using more procurement procedures are the only ones that substantially differ from the project evaluation report Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report." This shows that separating out the influence of political context can help clarify the results of the PM project.

48 Ibid., 2.

Finally, the evaluation did not find evidence of improved perceptions of overall *efficiency* and *quality*.[49]

Table 2 provides mean findings by term and by competitiveness, where two is the cutoff for a competitive election score. Although this table does not take into account all the variables included in the regressions and therefore does not perfectly align with the regression results, it nonetheless showcases the main outcomes in a digestible format. The mean for framework

TABLE 2

Mean Outcome by Term and Competitiveness

			A	B	C	D
			First term	**Second term**	**Less competitive**	**Competitive**
1	**System**	Level of framework contracting	0.538	0.454	0.442	0.531
2		E-catalog used	0.602	0.584	0.521	0.620
3		Use of PMIS	0.754	0.689	0.688	0.747
4		Procurement procedures adopted	0.664	0.604	0.617	0.653
5	**Shared values**	Perception of corruption	0.012	-0.116	-0.034	-0.010
6	**Efficiency**	Time efficiency	0.782	0.765	0.757	0.774
7		Quality of procurement	0.721	0.677	0.659	0.721
8	**Skills**	Quiz score	9.878	10.012	9.710	9.993
9	**Staffing**	Intent to make career in procurement	0.811	0.848	0.832	0.810
10		Feeling supported	0.593	0.513	0.559	0.554

[49] Please refer to Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report," for outcome measures based on procurement records rather than staff perception (without political competition variables). Robustness check: an important caveat regarding the comparison PSUs is that all PSUs in the country, including comparison PSUs, could have been impacted by reforms promoted by the PM project. This could lead to attenuation in the estimates of the total impacts of PM project activities. To understand the degree to which comparison PSUs received treatment, we included interview questions to determine if the comparison PSUs received any support from other PSUs. The MCC PM Project evaluation (Abt Associates, "MCC Indonesia Procurement Modernization Project Evaluation Final Report") found that only one of nine comparison PSUs received such support. We conducted a robustness check on our findings by excluding this PSU from our analysis and found similar results.

contracting and e-catalog use are both higher in competitive districts than in less-competitive districts (D1 and D2 are higher than C1 and C2, respectively). PMIS is higher in the first term than the second term (A3 is higher than B3). The perception of corruption is higher in competitive districts (D5 is higher than C5) and in the first term (A5 is higher than B5).

In summary, our evaluation found that the PM project affected only a few procurement reform targets and only very weakly so. However, some reform indicators changed based on variables about the broader political context in which the PM project was embedded. The full findings of our regression analyses are located in Appendix 4. The fact that certain procurement reform initiatives were taken up to a lesser degree in jurisdictions under the leadership of government heads in their second and final term demonstrates that the broader political context may help shape the adoption and impact of public procurement reform in Indonesia.

INTERPRETATION OF FINDINGS

The broader literature, as referenced in the previous section, proposes that countries with strong political competition and executive government term limits see more efficiency and less corruption in their public procurement process. At an initial assessment, our findings seem to coincide with this body of literature. In the context of systems-related procurement outcomes, we noticed that a larger number of candidates and initial mayoral terms are associated with increases in e-catalog, framework contracting, and PMIS usage.

However, it is improbable that the political factors mentioned above shape public procurement in Indonesia in a manner similar to consolidated democracies. This is due to the fact that assumptions about the correlation between political competition and the quality of public procurement predominantly stem from research undertaken in consolidated democracies. Such presumptions may not be applicable to low-quality electoral democracies in the global South, such as Indonesia, for a multitude of reasons. For instance, both vertical and horizontal accountability rarely operate via formal political institutions. The introduction of direct elections for parliament and executive government heads in 1999 and 2005, respectively, seemed to fortify vertical accountability within Indonesian politics. Socioeconomic realities, however, bar most Indonesians from running for office. Hence, despite high electoral

turnover in Indonesia,[50] elections primarily substitute incumbents with similar candidates from within a limited political elite.[51]

Furthermore, it is unclear whether the Indonesian electorate is genuinely interested in holding politicians accountable through the electoral process based on the quality of public services. Studies demonstrate that the Indonesian electorate is "either indifferent to, or supportive of, an increasingly illiberal democratic order"[52] and that there is frequently a lack of public demand for improved public service provision.[53] In past elections, Indonesian voters have even elected candidates previously convicted of corruption.[54] The concept of horizontal accountability may also function differently in Indonesia compared to consolidated democracies. For instance, institutional changes over recent years have favored the executive government over parliaments across all levels of Indonesia's institutional hierarchy.[55]

Moreover, political parties in genuine opposition to the government are nonexistent in Indonesia due to the presence of party cartels, particularly at the national level. Hence, many parties, despite losing at the polls, find representation in the presidential cabinet as a result of collusive negotiations conducted after the election. In elections for subnational government heads, candidates are often either loosely associated or not affiliated at all with political parties, which makes it uncertain which are the opposition parties. Political parties often play it safe and avoid severely criticizing incumbents so as not to lose a potential opportunity to join a ruling coalition either before or after an election. A lack of political parties genuinely opposing the incumbent government complicates voters' attempts to hold politicians accountable at the polls. These formal and informal institutions significantly weaken horizontal accountability between government branches. In summary, while political competition positively affected the implementation and impact of

50 Michael Buehler and Ronnie Nataatmadja, "A Research Agenda for Studying Legislative Incumbent Turnover in New Democracies, Using Indonesia as a Case Study," *South East Asia Research* 27, no. 3 (2019): 203–24.

51 Robertus Robet, "Who Are the Elites Who Control Indonesian Politics?" Indonesia at Melbourne, University of Melbourne, April 11, 2023 ⇝ https://indonesiaatmelbourne.unimelb.edu.au/who-are-the-elites-who-control-indonesian-politics.

52 Edward Aspinall et al., "Elites, Masses, and Democratic Decline in Indonesia," *Democratization* 27, no. 4 (2020): 505.

53 Matthew S. Winters, Abdul Gaffar Karim, and Berly Martawardaya, "Public Service Provision under Conditions of Insufficient Citizen Demand: Insights from the Urban Sanitation Sector in Indonesia," *World Development* 60 (2014): 31–42.

54 Michael Buehler, "Rise of the Clans," *Inside Indonesia*, no. 90, December 22, 2007 ⇝ https://www.insideindonesia.org/archive/articles/rise-of-the-clans.

55 Michael Buehler, "Decentralisation and Local Democracy in Indonesia: The Marginalisation of the Public Sphere," in *Problems of Democratisation in Indonesia: Elections, Institutions and Society*, ed. Edward Aspinall and Marcus Mietzner (Singapore: ISEAS Publishing, 2010), 267–85.

several reform initiatives introduced during the PM project, the mechanisms through which political competition enacts change are likely to differ greatly from those in consolidated democracies.

How, then, might electoral competition and term limits have influenced the adoption and outcomes of the PM project in Indonesia? One potential explanation for the impact of the broader political context on the implementation and results of public procurement reform in Indonesia is related to the politicization of the subnational state apparatus, a consequence of the introduction of direct elections for local government heads in 2005.[56] This context arises from a blend of underdeveloped party consolidation and substandard party system institutionalization. Given the financial limitations of Indonesian parties to back candidates in elections, it is common to find that the contenders vying against each other in these races are often not party members.[57] Consequently, the connection between these candidates and political parties is feeble and unstable.[58]

Additionally, political parties suffer from poor institutionalization, facing challenges in sustaining party structures at the subnational level. Thus, most candidates cannot depend on a party apparatus to rally voters during subnational election campaigns. As a result, candidates competing for office primarily depend on their personal networks to organize and mobilize the electorate.[59] Within this context, the local state apparatus at large, and the public procurement process specifically, have been politicized. Since the subnational state bureaucracy provides a unified structure for rallying the electorate, local bureaucrats have begun running for office, often leveraging the state apparatus as a campaign platform. This practice has become so prevalent that an Indonesian newspaper released an article titled "Elections Arrive, Bureaucrats Disappear."[60] The article highlighted how government buildings became abandoned during election campaigns

56 Remember that we measured political competition as the number of effective candidates in local government head elections between 2005 and 2019.

57 Initially, Law No. 32/2004 mandated that candidates be nominated by a party that had garnered at least 15% of votes in the previous election or a coalition of parties that held at least 15% of seats in parliament. Subsequently, Law No. 12/2008 granted candidates the option to run for office without the nomination of any political party. However, such independent candidates are more the exception than the rule, primarily due to the exceptionally high administrative hurdles required to register as an independent candidate.

58 Buehler and Tan, "Party-Candidate Relationships in Indonesian Local Politics."

59 Ibid.

60 "Kilasan peristiwa: Pilkada datang, pejabat hilang" [Event Flash: Elections Arrive, Bureaucrats Disappear], *Kompas*, July 31, 2005, 14.

as public servants were compelled to campaign on behalf of their superiors running for political office.

In short, candidates can expect minimal support from financially burdened and weakly institutionalized political parties. Consequently, they rely on networks under their control, including the local state apparatus, to rally and structure the electorate.[61] Moreover, the substantial influence of local construction industries in Indonesia's subnational elections further exacerbates the politicization of the local state apparatus, particularly in the public procurement process. Specifically, in Indonesia,

> construction is often a dominant part of local economies, construction projects are a major focus of collusive and predatory behavior, and *kontraktor* (contractors) are often prominent not only in business but also in politics. Provincial and district parliaments are full of contractors who live on building projects they themselves decide on. Contractors are prominent in the campaign teams for directly elected district heads and governors.[62]

In such a context, intensified political competition arguably complicates the ability of a single candidate to gain complete control over the local state apparatus. This could create opportunities for the adoption and execution of procurement reform initiatives that may not be present in bureaucracies governed by leaders that face no political competition. In bureaucracies located within jurisdictions of intense political competition, bureaucrats may have not only more opportunities to adopt procurement reform initiatives but also greater incentives to do so. As per Marian Moszoro and Pablo Spiller, intense political competition pushes bureaucrats to introduce stricter public procurement procedures to safeguard themselves from political interference.[63] This could explain why in Indonesia public procurement reforms were more firmly embraced in jurisdictions where political competition was high compared to areas where competition was low or absent. In essence, procurement reforms may paradoxically enable bureaucrats to protect themselves from the very politicization of the state apparatus that initially opened up the space for procurement reforms to be adopted.

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61 We found a weak but statistically significant correlation between the size of the bureaucracy (i.e. the number of local bureaucrats per population) and levels of political competition. In other words, the larger a bureaucracy in a jurisdiction, the stronger political competition is.

62 Gerry van Klinken and Edward Aspinall, "Building Relations: Corruption, Competition and Cooperation in the Construction Industry," in Aspinall and van Klinken, *The State and Illegality in Indonesia*, 140.

63 Marian W. Moszoro and Pablo T. Spiller, "Political Contestability and Public Contracting," *Journal of Public Economic Theory* 21, no. 5 (2019): 945–66.

Lastly, the competitive clientelism that characterizes power dynamics in jurisdictions with robust political competition might also account for why the perception of corruption in public procurement was higher among bureaucrats in those areas compared to regions where competition was lower. Recall that our findings revealed that perceptions of corruption are higher with a greater number of effective candidates and under first-term mayors, not lower as the literature would suggest. While it is not feasible to ascertain the actual costs of participating in local politics in Indonesia, anecdotal evidence from the past two decades indicates that candidates face tremendous expenses.[64] Heightened political competition is likely to increase both formal and informal costs for election campaigns. Moreover, Indonesian politicians often resort to bribes to purchase political support precisely because they lack the stable power structures needed to rally the electorate and consolidate support. This could be one reason why public procurement officials in jurisdictions with high levels of political competition perceive corruption in the procurement process to be higher than their counterparts in jurisdictions where political competition is weak. Ironically, the actual level of, not just the perceived level of, corruption in the procurement process may be lower in highly competitive jurisdictions. More intense political competition among candidates is likely to diminish the influence of local construction industry interests. When multiple candidates stand a chance of winning an election, the local construction industry cannot bank on co-opting or colluding with a single candidate. This could lead to a more dynamic procurement landscape compared to jurisdictions where political competition is minimal or nonexistent.

AVENUES FOR FUTURE RESEARCH

Given that political competition and term limits positively influenced the uptake of various reform initiatives introduced during the PM project, it is crucial for future research to identify the factors contributing to the success of these reforms. Additionally, future research should investigate whether and how these factors could be replicated or enhanced in other jurisdictions and in regions beyond Indonesia. In this context, the notion of political competition bolstering accountability and transparency, derived from research in consolidated democracies, needs to be rethought.

64 Buehler and Tan, "Party-Candidate Relationships," 58.

As we argued earlier, politicians in low-quality electoral democracies often do not face the same societal pressures to reform the public procurement process due to a combination of weak public pressure, the inability of poorly consolidated political parties to aggregate what minimal electoral pressure exists to embrace reform, and a lack of checks and balances between government branches. Since neither vertical nor horizontal accountability is strongly developed in low-quality electoral democracies like Indonesia, future research needs to pinpoint the mechanisms through which political competition aids in the uptake and impact of public procurement reforms. Instead of focusing solely on the electoral process, our findings suggest that dynamics within the state apparatus must be considered to understand the adoption and impact of public procurement reforms.

Bureaucracies in the global South are more exposed to political dynamics than administrative structures in the global North.[65] Yet little is known about how the politicization of state structures in the context of democratization impacts the adoption and efficacy of reform initiatives. This will necessitate political ethnographies of the internal operations of bureaucracies at the subnational level where procurement spending concentrates. Moreover, how does the bureaucracy relate to players outside its realm? A social network analysis comparing the connections between local construction company owners and individuals inside the bureaucracy between jurisdictions with robust and weak political competition may offer new insights. Conceivably, in jurisdictions where competition is weak, there may exist few but strong links between a small group of local construction company owners and the dominant power center within the bureaucracy. Implementing procurement reform interventions in jurisdictions where power relations are structured in this manner may prove challenging. Conversely, in jurisdictions with strong political competition, one may expect numerous but weak links between local construction company owners and power centers within the bureaucracy. A more fragmented social network structure between local economic players and the bureaucracy may turn out to be more conducive to the implementation of procurement reform interventions.

Lastly, scholars should scrutinize the connection between procurement reform initiatives and corruption indicators. Research has indicated that perception-based indicators are not reliable for evaluating the types and

[65] Joel S. Migdal, *Strong Societies and Weak States: State-Society Relations and State Capabilities in the Third World* (Princeton: Princeton University Press, 1988).

prevalence of corruption on the ground.[66] Paradoxically, successful reform initiatives may increase perceived levels of corruption as such practices become increasingly exposed and discussed more than before the adoption of reform initiatives. Future research needs to identify more dependable methods than perception-based measures to determine how reform initiatives affect public procurement governance. In conclusion, future research on what works in public procurement reform must place the political context in which such reforms will be embedded at the core of the analysis. Ignoring potential political drivers of public procurement reform initiatives runs the risk of creating procurement reform interventions that are predestined to fail. ◈

66 Fredrik Galtung, "Measuring the Immeasurable: Boundaries and Functions of (Macro) Corruption Indices," in *Measuring Corruption*, ed. Charles Sampford et al. (Aldershot: Ashgate, 2006), 101–30.

APPENDIX 1

Changes in Procurement Policies and Procedures

We used a list of options on the survey to determine the extent of changes based on the program. Does the PSU:

- Use consistent recording of procurement data?
- Use a standard process for reviewing contract management?
- Have a whistleblower hotline for all suppliers and staff?
- Use a standard contract format?
- Have a written policy to manage environmental risk?
- Use market analysis techniques and past procurements to support writing of qualification criteria?
- Compare compensation externally to ensure competitiveness?
- Have a career advancement plan made available to staff?
- Have a reward program linked to performance management metrics?
- Use embedded checks and balances for each stage of the procurement process?
- Employ safeguards against fraudulent activities?
- Monitor blacklisted suppliers?
- Document key issues in contract administration?
- Undertake an organizational capability assessment to identify skill gaps in staffing?
- Have a program in place to enable cross-training of staff and other procurement holders?
- Use past contract performance to evaluate bidders?
- Use fair and transparent standard process and procedure for debriefing all vendors?
- Have strategies to reduce reliance on monopoly suppliers?
- Have a documented plan to improve staff competencies?
- Use evaluation criteria based on delivering value rather than lowest cost?
- Publicly disclose tenders and contract awards?

- Have a process in place to manage the potential risk of nonperformance in awarded contracts?
- Have a program in place to transfer skills between staff through mentoring?
- Use standard processes for contract award and signing?
- Have a written policy to manage conflicts of interest?
- Undertake financial reviews of suppliers to gauge threat of nonperformance?

APPENDIX 2

Sample Characteristics

In the survey conducted among employees at both the baseline and endline stages, approximately 80% of respondents were men and 20% were women. The vast majority of respondents held a college or university degree, and most had over five years of procurement-related experience. At the endline stage, around 73% reported having more than five years of experience, compared to 65% at the baseline stage. At baseline, nearly 50% of respondents worked at a district-level PSU; by endline, this number had increased to 75%. The percentage of those working at a PSU in a city decreased from 32% to 23% between the two stages. The remaining respondents indicated that they worked at the province level.

It is important to note that the endline respondents may not be the same individuals surveyed at the baseline stage due to staff turnover, particularly in PSUs that transitioned to becoming permanent. As permanency is an expected treatment outcome, this suggests that changes in outcomes related to employee perceptions might result from both specific program changes over time and staff changes due to the permanency transition. However, employees' demographic characteristics (age, gender, and education levels) did not significantly differ between the baseline and endline stages. This consistency lends some confidence that differences in responses over time are attributable to programmatic changes rather than shifts in employee characteristics.

Exhibit 1: Quantitative Sample of Surveyed Employees at PSUs and OPDs at Baseline and Endline

	Baseline (2016)			Endline (2019)		
	Comparison	**Treatment**	**Total**	**Comparison**	**Treatment**	**Total**
Phase 2						
Management	20	25	**45**	23	24	**47**
Staff	110	140	**250**	111	140	**251**
Total PSU-only employees	130	165	**295**	134	164	**298**
Number of PSUs	10	12	**22**	13	12	**25**
Staff employed at both PSU and OPD	18	38	**56**	13	4	**17**
OPD employees	35	40	**75**	139	164	**303**
Number of OPDs	10	12	**22**	10	12	**22**
Total respondents in Phase 2	**183**	**243**	**426**	**286**	**332**	**618**
Phase 1						
PSU employees	–	–	–	22	18	**40**
Number of PSUs	–	–	–	11	9	**20**
Total respondents in Phase 1 and Phase 2	**183**	**243**	**426**	**308**	**350**	**658**

Exhibit 2: Descriptives

	Treatment					Unweighted comparison					Weighted comparison					
	Count	Mean	Standard deviation	Min	Max	Count	Mean	Standard deviation	Min	Max	Count	Weighted sum	Mean	Standard deviation	Min	Max
Shared values																
Corruption in your PSU	575	-0.04	0.86	-1.12	2.45	414	0.70	0.91	-1.12	2.69	414	436.01	0.01	0.90	-1.12	2.69
Systems																
Percent procedures used	371	0.66	0.17	0.15	1	258	0.62	0.16	0	0.96	258	262.54	0.61	0.16	0	0.96
Use of framework contracting	516	0.53	0.50	0	1	369	0.42	0.49	0	1	369	389.30	0.47	0.50	0	1
Use of e-catalog	534	0.62	0.49	0	1	381	0.50	0.50	0	1	381	402.10	0.55	0.50	0	1
Use of new PMIS	498	0.75	0.43	0	1	366	0.70	0.46	0	1	366	382.52	0.70	0.46	0	1
Skills																
Quiz score	371	10.22	2.17	2	16	258	9.44	2.10	0	14.67	258	262.54	9.46	2.06	0	14.67

Exhibit 2 continued

	Treatment					Unweighted comparison					Weighted Comparison					
	Count	Mean	Standard deviation	Min	Max	Count	Mean	Standard deviation	Min	Max	Count	Weighted sum	Mean	Standard deviation	Min	Max
Staffing																
Intention to make a career in procurement	367	0.82	0.39	0	1	255	0.82	0.39	0	1	255	260.02	0.82	0.39	0	1
Legal and administrative support	369	0.56	0.50	0	1	257	0.60	0.49	0	1	257	261.80	0.55	0.50	0	1
Overall evaluation questions																
Perceived time efficiency of procurement	563	0.77	0.42	0	1	402	0.75	0.44	0	1	402	426.30	0.77	0.42	0	1
Perceived quality improvement of procurement	531	0.71	0.46	0	1	386	0.68	0.22	0	1	386	409.51	0.70	0.46	0	1
Election related																
Effective number of candidates	575	2.66	0.79	1.51	4.99	414	2.43	0.85	1.45	4.49	414	436.01	2.35	0.69	1.45	4.49
Mayor term	575	0.35	0.48	0	1	414	0.30	0.45	0	1	414	436.01	0.39	0.48	0	1

APPENDIX 3

Covariate Descriptions

Covariates used in the regression results:

- A dummy variable for treatment PSUs
- A dummy variable for the time period (baseline or endline)
- Institutional permanency: a dummy of whether the PSU has permanent status, which likely makes it more effective, with permanent employees
- Distance to Jakarta (kilometers)
- Average expenditure on tenders: a value for dollars spent per PSU
- Average number of bidders per tender: a value for bidders per tender per PSU
- Average number of tenders per month
- Average duration of procurements (in days)

APPENDIX 4

Exhibit 1: Results

	Shared values	Systems				Skills	Staffing		Time efficiency	Quality
	Reg	Reg	Logit	Logit	Logit	Reg	Logit	Logit	Logit	Logit
	Perceived corruption in PSU	Percent of procedures used	Use of PMIS	Use of e-catalog	Use of framework contracting	Quiz	Staff intend to make a career in procurement	Staff feel supported, administratively and legally	Perceived improvement in time efficiency	Perceived improvement in quality of procurement outcomes
Treatment	-0.026	0.017	1.272	1.070	0.969	0.404	1.680	0.654	1.330	0.830
	(0.100)	(0.018)	(0.360)	(0.279)	(0.261)	(0.286)	(0.550)	(0.194)	(0.364)	(0.228)
Post–time period	0.083	0.066***	12.190***	1.547	1.200	0.059	1.705	0.856	1.776	1.224
	(0.107)	(0.020)	(3.400)	(0.409)	(0.326)	(0.307)	(0.706)	(0.279)	(0.496)	(0.331)
Interaction treatment and time	0.033	0.063**	1.960	1.525	1.648	0.973**	0.363**	2.383**	0.661	1.396
	(0.126)	(0.027)	(0.878)	(0.499)	(0.538)	(0.372)	(0.177)	(0.924)	(0.225)	(0.461)
Effective number of candidates	0.096*	0.011	0.933	1.394***	1.312**	-0.027	0.834	1.076	1.007	1.190
	(0.038)	(0.008)	(0.112)	(0.135)	(0.127)	(0.106)	(0.111)	(0.125)	(0.098)	(0.114)
Proportion of elections won by a second mayoral term	-0.155*	-0.069	0.477**	0.968	0.743	0.159	1.042	0.690	0.872	0.758
	(0.077)	(0.016)	(0.122)	(0.195)	(0.152)	(0.240)	(0.300)	(0.169)	(0.198)	(0.165)

Exhibit 1 continued

	Shared values	Systems				Skills	Staffing		Time efficiency	Quality
	Reg	Reg	Logit	Logit	Logit	Reg	Logit	Logit	Logit	Logit
	Perceived corruption in your PSU	Percent of procedures used	Use of PMIS	Use of e-catalog	Use of framework contracting	Quiz	Staff intend to make a career in procurement	Staff feel supported, administratively and legally	Perceived improvement in time efficiency	Perceived improvement in quality of procurement outcomes
Distance from Jakarta (km)/1,000	0.095**	0.005	0.985	0.868	0.758**	0.115	1.208	0.895	0.980	0.956
	(0.034)	(0.007)	(0.103)	(0.074)	(0.071)	(0.094)	(0.161)	(0.090)	(0.104)	(0.089)
Permanency of PSU at baseline	0.055	0.057***	0.859	1.322	1.282	0.225	0.894	2.375***	0.975	0.816
	(0.067)	(0.015)	(0.179)	(0.220)	(0.211)	(0.197)	(0.222)	(0.506)	(0.182)	(0.144)
Mean amount offered US$/10,000 at baseline	-0.011	-0.004***	1.011	0.920***	0.936**	-0.092	1.019	0.978	0.987	0.988
	(0.010)	(0.002)	(0.348)	(0.023)	(0.024)	(0.030)	(0.042)	(0.029)	(0.028)	(0.025)
Mean number of procurement participants at baseline	-0.003	0.001	1.04***	0.982	0.991	-0.008	1.005	1.006	0.985	0.983
	(0.004)	(0.001)	(0.014)	(0.010)	(0.010)	(0.012)	(0.015)	(0.013)	(0.011)	(0.011)

Exhibit 1 continued

	Shared values	Systems				Skills	Staffing		Time efficiency	Quality
	Reg	Reg	Logit	Logit	Logit	Reg	Logit	Logit	Logit	Logit
	Perceived corruption in your PSU	Percent of procedures used	Use of PMIS	Use of e-catalog	Use of framework contracting	Quiz	Staff intend to make a career in procurement	Staff feel supported, administratively and legally	Perceived improvement in time efficiency	Perceived improvement in quality of procurement outcomes
Mean tenders per month at baseline	0.010***	-0.001**	0.997	0.998	1.004	-0.023***	0.999	1.000	1.000	0.999
	-0.002	0.000	(0.007)	(0.006)	(0.006)	(0.007)	(0.008)	(0.007)	(0.006)	(0.006)
Mean duration (days) for procurements at baseline	0.008	-0.001	0.933	1.023	1.002	0.069**	0.967	0.987	0.993	1.007
	(0.002)	(0.002)	(0.030)	(0.026)	(0.025)	(0.029)	(0.035)	(0.030)	(0.028)	(0.027)
Constant	-0.551***	0.628***	1.915	1.231	1.332	9.569***	6.447	1.693	4.962	2.660
	(0.194)	(0.041)	(0.856)	(0.630)	(0.675)	(0.568)	(0.035)	(1.042)	(2.849)	(1.381)
Observations	987	629	913	913	-0.408	629	622	626	963	915
R^2 or pseudo-R^2	0.050	0.182	0.045	–	883	0.100	0.021	0.046	0.014	0.019

Note: * represents $p < 0.05$, ** represents $p < 0.01$, and *** represents $p < 0.001$.

Exhibit 2: Benjamini-Hochberg Corrections

Program effect	Significant?	P-value	P-rank by category of procurement process	BH adjusted critical p-value (0.05*p-rank / number of observations in category)	P-value smaller than new critical value?	Statistical significance after correction?	Primary outcome
Percentage of procedures that PSU uses	Yes	0.017	2	0.02	Yes	Yes	Yes
PSUs have framework contracting	No	0.126	3	0.03	No	Yes	Yes
PSUs are using e-catalogue	No	0.171	5	0.05	Yes	No	Yes
PSUs using PMIS	No	0.133	4	0.04	No	No	Yes
PSU engaged or plan to engage public-private partnerships	Yes	0.001	1	0.01	Yes	Yes	Yes
Staffing							
Staff intend to make career in procurement	Yes	0.038	2	0.05	Yes	Yes	Yes
Staff feel supported administratively and legally	Yes	0.025	1	0.03	Yes (same)	Yes	Yes
Overall procurement quality and efficiency outcomes							
Time efficiency	No	0.549	1	0.05	No	No	Yes
Quality improvement	No	0.312	2	0.03	No	No	Yes

Note: P-values are adjusted for primary outcomes within each category.