



# MCC Indonesia Procurement Modernization (PM) Project Evaluation *Interim Report*



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## About This Report

This report is an interim assessment of the MCC Indonesia Procurement Modernization Project. The interim assessment was conducted after the end of the project, since the endline evaluation was delayed until late 2019 to allow for the project's impact to mature.

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## LIST OF ACRONYMS

5-Ss	Superordinate Goals/Shared Values; Structure; Systems; Skills; Staffing
BAPPENAS	Badan Perencanaan dan Pembangunan Nasional (National Development and Planning Agency)
CoE	Center of Excellence
ERR	Economic rate of return
GoI	Government of Indonesia
ITB	Bandung Institute of Technology
KPPU	Komisi Pengawas Persaingan Usaha (Commission for the Supervision of Business Competition)
LKPP	Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah (National Public Procurement Agency)
LPSE	Layanan Pengadaan Secara Elektronik (Electronic Procurement Service)
MCA-I	Millennium Challenge Account – Indonesia
MCC	Millennium Challenge Corporation
MoHA	Ministry of Home Affairs
OECD	Organisation for Economic Co-operation and Development
PM	Procurement Modernization
PMIS	Project Management Information System
PPP	Public Private Partnership
PSU	Procurement service unit
PwC	Pricewaterhouse Coopers
RUP	Rencana Umum Pengadaan or the Annual Procurement Plan derived from each institution's annual budget
SBD	Standard bidding document
SiRUP	An LKPP-developed application for the publication of the RUP to the GOI. It is used to publish the RUP of each institution to the vendor community and the Indonesian public.
SOP	Standard Operating Procedures
SPP	Sustainable Public Procurement

## Executive Summary

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### *Overview of Compact and Interventions Evaluated*

The Procurement Modernization (PM) Project was part of the Millennium Challenge Corporation's (MCC's) Indonesia Compact. The PM project's objective was to strengthen the implementation of the procurement function within the Government of Indonesia (GoI) by building capacity and facilitating institutionalization of procurement service units (PSUs) so that they have improved systems and processes, and skilled procurement professionals. The logic of the project was that cost savings and efficiency improvements resulting from the project should lead to more efficient provision of goods and services, while also leading to budgetary savings that can be applied to other productive investments, potentially enhancing economic growth.

MCC engaged Abt Associates to conduct an evaluation of the PM project to determine whether and to what degree the project achieved its objectives. This report presents the results of Abt's interim assessment completed in November 2018 and January 2019 to document findings after the close of the compact in April 2018, and answers a limited set of evaluation questions. As requested by MCC, the endline evaluation in summer 2019 is delayed to one year after project close to document findings after the project interventions have had time to mature.

### *Evaluation Methodology*

The interim assessment used a mixed-methods approach to answer evaluation questions. It conducted a performance evaluation to assess organizational change and an impact evaluation to assess overall procurement performance from July 2016 through July 2019. Both the qualitative and quantitative aspects of the evaluation are based upon the theoretical foundation provided by the 5-S framework. Specifically, the qualitative design is a pre-post comparison of changes in shared values, structure, systems, skills, and staffing that form the 5-S framework to assess organizational change and change in procurement skills.

The **qualitative analysis** drew on qualitative interviews with 17 key stakeholders about the PM project's influence on shared values, structure, systems, skills, and staffing. We used the data collected to identify major themes around each of the 5-S components, which allowed us to assess progress toward project goals.

The **quantitative analysis** evaluated impacts of the PM project on procurement-quality related outcomes. The evaluation team used a comparative interrupted time series design, using administrative Project Management Information System (PMIS) data from the National Public Procurement Agency (*Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah*, LKPP), to evaluate the project's impact on the number of bidders, number of tenders passing through PSUs per month, average amount offered for tenders per month, and amount of time staff spent on several procurement-related tasks. Specifically, we compared these outcomes for the treatment group of selected PSUs to a comparison group of shortlisted but ultimately not selected PSUs to find the differential impact of the treatment over time. It is important to note that the comparison PSUs also received some program inputs, although with much less intensity. Therefore, the impact estimates are an underestimate. Further, this also reduces the chance that the evaluation would detect a small magnitude of impact between treatment PSUs that received more intensive treatment relative to the comparison PSUs.

### *Findings*

In summary, interviewees reported that the PM project improved a range of public procurement aspects in Indonesia along the 5-Ss—shared values, structure, systems, skills, and staff. The findings are presented by the specific evaluation questions below.

To assess the project's influence on shared values, the evaluation answered the following questions:

- Are there any issues related to the political economy (or other aspects) of the procurement system and its actors not addressed by the project that may have impacted the project's ability to achieve its intended results?
- Did the program result in a change in culture or shared values?

Most interviewees reported that shared values improved among procurement professionals throughout the project regarding commitment to and perceptions of procurement reform. Concretely, several interviewees pointed out that the political support for procurement reform had not been very strong, especially at the beginning of the project. While political support for procurement reform improved over the course of the project, several interviewees continued to see politics as the main obstacle to improvements in public procurement.

To assess the project's influence on organizational structure, the evaluation answered the following questions:

- What types of organizational or operational changes are taking place at the PSU level?

The project strengthened the organizational structure of 43 of 44 pilot PSUs according to project monitoring (Ray 2018), leading to increased permanence and independence as reported by interviewees. Explicitly, interviewees reported that PSUs were on a stronger legal footing due to increased permanence and became more integrated into the (local) administrative apparatus due to the project activities.

To assess the project's influence on procurement systems, the evaluation answered the following questions:

- What types of procedural changes are taking place in the conduct of procurements?
- Are there changes in policies, procedures, or otherwise that could lead to quality improvements in ultimate procurement (contract) outcomes? How so?
- Are there changes in policies, procedures, or otherwise that could lead to savings (financial or total lifecycle) in government procurements? How so?
- Are PSUs using e-catalog for standard purchases?
- Have PSUs developed their own framework contracts?

The evaluation found that the PM project helped develop and implement a number of new procurement tools and systems that staff could draw on in their work. These included e-tendering and e-procurement, based on state-of-the-art software. Framework contracting, fraud filters, and other innovations adopted and implemented under the PMIS initiative are other examples of measures the PM project introduced that improved the quality of procurement in Indonesia. Due to these system improvements, a majority of interviewees also reported gains in the effectiveness and efficiency of the procurement process, leading to both cost and time savings.

To assess the project's influence on staffing to support procurement, the evaluation answered the following questions:

- Are staff now permanent staff?
- Do staff seem committed to and engaged in pursuing a procurement career path?
- Do staff feel more supported administratively and legally?

The number of government officials who became trained procurement professionals increased, and a larger portion of PSU staff became permanent procurement officers than before the project period, although not all project targets were met in this regard. Most interviewees said that they thought pursuing a career in public procurement became more attractive as a result of the project as well. At the end of the

project, 245 functional positions had been created, out of a goal of 500 (Ray 2018). Most interviewees further reported that awareness of the importance of good public procurement was improved among both bureaucrats and politicians, although some interviewees still perceived politics as a constraint to reform.

To assess the project's influence on skills to support procurement, the evaluation answered the following questions:

- Has the procurement knowledge and skill of trainees improved?

The majority of interviewees reported that the PM project training and mentoring improved the skills of procurement staff related to procurement and organizational skills, although there is still room for growth. The project provided 589 pilot PSU and 271 non-pilot PSU staff with 12 modules of organizational and procurement skills training, out of targets of 500 staff for each group (Ray 2018). According to data from procurement skills tests administered by the project, average knowledge acquisition increased by 40% in post-training testing (Millennium Challenge Account – Indonesia (MCA-I) 2018b). According to the project, 30 of the 44 pilot PSUs achieved all 22 criteria for quality standards needed to be verified as Centers of Excellence (CoEs) by the end of the project (Ray 2018). These PSUs also serve as sources of information for non-pilot PSUs, including through 72 staff from these PSUs who offer institutional mentoring and coaching clinics to other PSUs (Ray 2018). Several PSU staff reported that because their PSUs are CoEs, they help other PSUs improve their procurement services' quality through mentoring, knowledge sharing, coaching, visits, and training.

Changes in the 5-S factors were intended to lead to overall improvements. The project aimed to improve procurement planning and budgeting, procurement skills, organizational effectiveness, and the efficiency and effectiveness of procurement, ultimately contributing to an improved procurement process ensuring value for money and better performing contracts. The quantitative analysis of PMIS data found evidence of some overall changes in procurement quality-related outcomes: first, the PM project led to a reduced number of bidders in 2018. There was no change in the time taken to evaluate the tenders, but the time allocated to verifying tender qualification increased. These changes suggest that the PM project resulted in greater scrutiny in weeding out fraudulent bidders, and likely increased effort in adhering to procurement guidelines. The evaluation team did not find an impact of the PM project on the amount offered for each tender or the number of days taken to evaluate the tenders.

Most interviewees reported that they thought corruption and collusion in the public procurement process have decreased, as it has become more difficult due to the increase in transparency and accountability brought about by the innovations mentioned above. However, they still saw corruption as an issue.

Looking ahead, most interviewees agreed that there was still considerable scope for improvement in public procurement reform. For example, since the project had improved the public procurement process, several interviewees reported that corruption and collusion had shifted to the planning and budgeting phase. Corrupt activities in the planning and budgeting phase were beyond the reach of the project, interviewees lamented. Interviewees reported some challenges related to political support, continued corruption, and technical challenges with new electronic systems. In addition, some interviewees were unsure about the sustainability of the interventions.

Overall, stakeholder perspectives thus far are suggestive of a positive influence of the MCC procurement reform project. Interviewees largely reported improvements in staff capacity, organizational strength, procurement systems, and procurement outcomes. However, interviewees still reported challenges facing procurement in Indonesia, and not all project goals were achieved or interventions implemented as initially envisioned. Quantitative analysis of the PMIS data found changes in some procurement quality outcomes, but not all.

### ***Next Steps***

To finalize the evaluation, Abt will conduct endline data collection in June 2019. This effort will include an individual-level quantitative survey of PSU employees, qualitative interviews of stakeholders and PSU employees, and analysis of an additional round of PMIS data.

## 1. Introduction

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Indonesia's procurement system has been marred by corruption and inefficiency. This has contributed to the country's crumbling infrastructure, delayed government spending, and weak performance on a range of social indicators (Harvard Kennedy School 2010: vi-viii). The Indonesia Procurement Modernization project (PM project) was part of the Millennium Challenge Corporation's (MCC's) five-year Indonesia Compact, which encompassed three projects across health and nutrition, sustainable land and energy management, and procurement modernization and expended \$474 million. The PM project spent \$75 million of the overall compact and was implemented between 2013 and April 2018 with the overall goal to reduce resource inefficiency and save resources for investments that can contribute to Indonesia's economic growth.

This report presents the findings from an interim assessment of the PM project that was conducted after the project ended, since the endline evaluation was delayed until late 2019 to allow for the project's impact to mature.<sup>1</sup> The interim assessment was designed to provide a quick, cost-effective update on results at the close of the project. It assesses the extent to which the PM project has led to an improvement in organizational performance along Shared Values, Structure, Systems, Skills, and Staffing (or the 5-S system of measuring organizational performance) and consequently an improvement in the efficiency of procurement.

## 2. Overview of the Compact and the Interventions Evaluated

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The PM project was designed to accelerate the government's procurement reform agenda and transform operation of the public procurement system in Indonesia. Indonesia spends more than 30% of its national budget, and around 60% of foreign development assistance, on the procurement of goods and services on behalf of government agencies (CIPE 2011). Corruption is endemic, and most cases of government corruption are related to public procurement. This has contributed to the country's crumbling infrastructure, delayed government spending, and weak performance on a range of social indicators (Harvard Kennedy School 2010). Procurement reform can reduce resource inefficiency and save precious resources for other investments that can contribute to Indonesia's economic growth. In this context, the project's objective was to strengthen the implementation of the procurement function within the GoI by building capacity and facilitating institutionalization of PSUs so that they are resourced with systems, processes, and skilled procurement professionals per Presidential Regulation No. 54/2010. This was expected to result in cost savings and efficiency improvements for procured goods and services, while ensuring that their quality satisfies the public need and that they are delivered to the public as planned. The logic of the project was that these savings should lead to more efficient provision of goods and services to the economy, while also leading to budgetary savings that can be applied to other productive investments, potentially enhancing economic growth.

### 2.1. Project-Level

As noted above, the intent of the project activities was to encourage better assessment of the services and goods needed, greater competition, procurement of services and goods at lower cost, higher-quality products, and reduced procurement and delivery time. The project logic shown in Exhibit 1 depicts a causal path leading from the activities associated with the inputs (Procurement Professionalization Activity, PMIS, Policy and Procedure Activity) to the project objectives. The project aimed to provide services to improve the skills of procurement professionals and procurement policies and systems.

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<sup>1</sup> The endline analysis will evaluate the final outcomes of the PM project after the project's reform initiatives have been in operation for more than a year and will be based on a larger sample of interviewees for the qualitative assessment, assessment of PMIS data, and a large PSU-level survey.

## **2.2. Link to Economic Rate of Return and Beneficiary Analysis**

MCC typically calculates a projected economic rate of return (ERR) for each of its projects. The ERR characterizes the projected costs and benefits of the project and discounts them to a net present value to determine whether the project is likely to generate positive economic benefits above a pre-specified threshold. In this case, some of the project's procurement outcomes were designed to lead to cost savings, which would mean they are directly related to the project's ERR. The MCC economists were still working on an ERR for this project as of the drafting of this report. The direct beneficiaries of the project were the PSU and LKPP staff, while the broader beneficiaries were the governments that the PSUs supported in the procurement process. Insofar as the project was expected to lead to cost savings and rechanneling of those savings into economic growth programs, all Indonesians were potential beneficiaries.

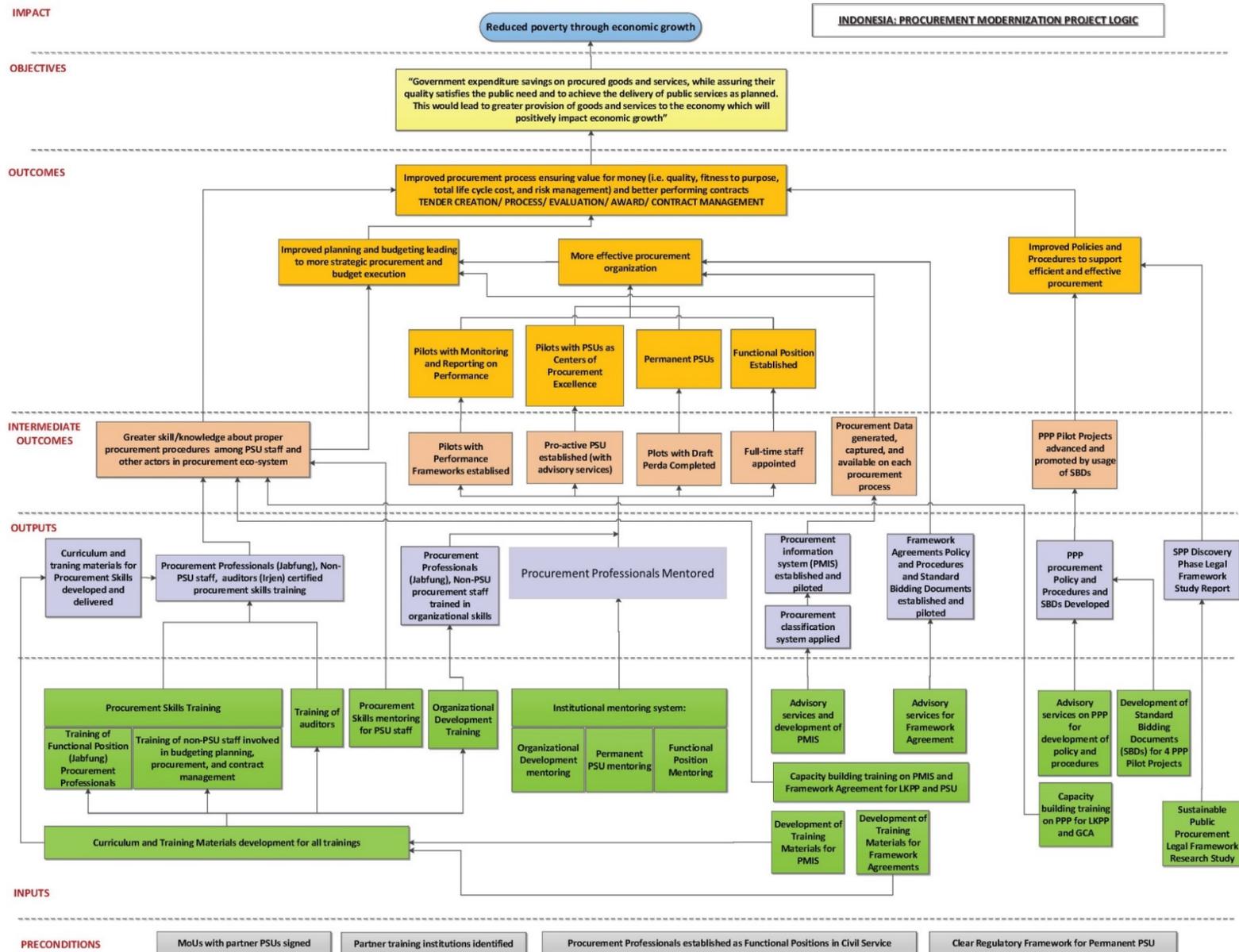
## **2.3. Project Participants**

PM project participants were both organizations and individuals. At the organizational level, the project supported PSUs at several levels of local government—city, district, institution, ministry, and province. In total, the project directly supported 44 PSUs. These PSUs were engaged in the project in two phases. In the first phase, the project engaged 29 demonstration PSUs that participated for the full project period (2013-2018). In the second phase, starting in 2016, an additional 15 PSUs joined for the remainder of the project. At the individual level, the project selected staff from participating PSUs to receive organizational and procurement skills training. Additional public sector staff who were not in participating PSUs also received training. Our baseline report describes in detail how these organizational and individual participants were selected (Abt Associates 2017).

## **2.4. Geographic Coverage**

The PM project was implemented in a geographically diverse set of PSUs, with the aim of establishing models of best practices across the country. A key objective of the PSU selection process was to achieve diversity, both geographically with representation from each major island and region (Sumatra, Kalimantan, Java, Sulawesi, Papua, Maluku, East Nusa Tenggara, and West Nusa Tenggara), and in terms of level of government and type and volume of procurements. Exhibit 2 shows the location of the Phase 1 and Phase 2 PSUs that the project directly supported.

# Exhibit 1 PM Project Logic



Source: MCA-I 2018

Exhibit 2 PM Project Phase 1 and Phase 2 PSUs



## 2.5. Implementation Summary

The PM project has been implemented, through MCA-Indonesia, by LKPP and several implementing organizations. The project involves two main activities: (1) the Procurement Professionalization Activity and (2) the Policy and Procurement Activity. As shown in Exhibit 3, each main activity included several sub-activities. Exhibit 3 shows the final activities implemented during the project, but does not show how some of the activities shifted during implementation. There were some changes to the detailed activities across the sub-activities. They were relatively small changes on the whole. The Sustainable Public Procurement (SPP) activity only completed Phase 1, as MCA did not request the additional two optional phases. The Public Private Partnership (PPP) activity had the largest change, as it was substantially expanded from only a policy review activity to a larger sub-activity that included a training program, pilots, and regulation reform.

**Exhibit 3 PM Project Activities**

Activities	Sub-Activities	Detailed Activities	Key Consultants
Procurement Professionalization Activity  \$44.657 million	Human Resource Development Activity	<ul style="list-style-type: none"> <li>• Provide procurement skills training stream (PSTS)</li> <li>• Establish Centers of Excellence (CoEs)</li> <li>• Provide ongoing procurement skills mentoring</li> <li>• Deliver auditor training</li> <li>• Develop training database</li> <li>• Develop knowledge center</li> <li>• Produce procurement clinics</li> <li>• Communicate good news stories, select procurement champions, and develop Internet forum</li> </ul>	<ul style="list-style-type: none"> <li>• Booz Allen Hamilton</li> </ul>
	PSU Institutional Strengthening Activity	<ul style="list-style-type: none"> <li>• Deliver performance measurement and management (PMM) training</li> <li>• Develop Centers of Excellence (CoEs) that provide training and mentoring; select and train individual mentors within CoE PSUs; socialize CoEs</li> <li>• Through PSU institutional development “sistering” program, facilitate peer-to-peer learning between pilot and non-pilot PSUs</li> <li>• Develop and deliver Indonesian Procurement Maturity Model tool</li> <li>• Provide technical assistance and mentoring to establish permanent PSUs and permanent staff</li> <li>• Train pilot and non-pilot PSU staff in organizational skills</li> <li>• Implement legal protection pilot</li> <li>• Establish Jakarta Forum for procurement policy dialogue among national stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Pricewaterhouse Coopers (PwC)</li> <li>• Bandung Trust</li> </ul>
	Framework Contracting Program	<ul style="list-style-type: none"> <li>• Provide training on knowledge and skills needed to complete and manage framework agreements and contracts</li> </ul>	<ul style="list-style-type: none"> <li>• PwC</li> </ul>

Activities	Sub-Activities	Detailed Activities	Key Consultants
		<ul style="list-style-type: none"> <li>• Provide advisory services and technical support on framework agreements and contracts</li> <li>• Establish framework agreements</li> <li>• Develop and institutionalize rules and procedures for framework contracting</li> <li>• Pilot the fraud filters</li> </ul>	
	PMIS	<ul style="list-style-type: none"> <li>• Advisory services and development of the PMIS</li> <li>• Development of fraud and integrity filters</li> <li>• PMIS data systems, including data warehouse, reporting, and business intelligence system</li> <li>• E-catalog software, fraud filters, and <i>Layanan Pengadaan Secara Elektronik</i> (Electronic Procurement Service System, LPSE)</li> <li>• General procurement planning/SIRUP*</li> <li>• Electronic contract management</li> <li>• Other support including procurement classification, strategic IT planning, and procurement knowledge center</li> </ul>	<ul style="list-style-type: none"> <li>• European Dynamics Luxembourg SA/ European Dynamics SA PT Mitrais</li> <li>• PT Berca Hardayaperkasa Consultants</li> </ul>
Policy and Procedure Activity  \$3.593 million	Public Private Partnership	<ul style="list-style-type: none"> <li>• Development of a practical toolkit with templates and model documents for procurement planning and project preparation</li> <li>• Training program</li> <li>• Gap analysis</li> <li>• Perka assistance</li> <li>• Piloting and standard bidding documents (SBD) establishment</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Adviser to the PPP Sub-Activity, Dr. Azadeh Kopp-Moini</li> <li>• PwC</li> </ul>
	Sustainable Public Procurement	<ul style="list-style-type: none"> <li>• Undertake assessment for SPP, including stakeholder consultation, regulatory review, and market research study</li> <li>• Establish procedural framework for a Sustainable Public Procurement Policy</li> <li>• Develop SPP training package</li> </ul>	<ul style="list-style-type: none"> <li>• KPMG</li> <li>• Procurement specialist advisors</li> </ul>

Sources: MCA-I 2018a, 2018b, 2018c; Ray 2018; Mitchell-Turner 2018

\* SIRUP is an LKPP-developed application for the publication of the Annual Procurement Plan (RUP) to the GoI. It is used to publish the RUP of each institution to the vendor community and the Indonesian public.

### 3. Literature Review

#### 3.1. Summary of the Existing Evidence

##### 3.1.1 Background

Public expenditure reviews that the World Bank conducted at both the national and subnational level concluded that Indonesia's main challenge in the years ahead was no longer to transfer more resources to local governments but to ensure that such resources will be spent effectively and efficiently (World Bank 2007; World Bank 2012). The last comprehensive national public expenditure review, conducted in 2007,

recommended the introduction of performance-based budgeting systems, improved linkages between budgeting and development planning, and a stronger procurement and auditing system to increase transparency and predictability in public expenditure processes (World Bank 2007). This evidence supports the basis for the PM project.

Institutional-organizational reforms and political and fiscal decentralization have formally increased transparency and accountability while creating more competitive relations between political elites. Incumbent turnover in Indonesian elections is comparatively high in both executive and legislative elections, especially at the local level. This theoretically bodes well generally for procurement reform, since it may lead to the realization among elites that the electorate can vote them out of office if they do not live up to reform promises. On the other hand, the newly democratic environment has created new challenges for public procurement reform. Most importantly, democratization and decentralization have deregulated the highly structured New Order<sup>2</sup> patronage networks, and introduced new costs for politicians (McLeod 2000). Therefore, politicians have incentives to engage in collusive practices, either to amass campaign funds prior to elections or to pay back campaign donors after the elections (Silitonga et al. 2015). Recent studies show this has led to new dynamics in public procurement collusion (Van Klinken and Aspinall 2012).

The following contradictory assessments of Indonesia's procurement environment are emblematic of these local complexities. In 2007, the GoI with the assistance of the Organisation for Economic Co-operation and Development (OECD) conducted an evaluation of the country's legislative, regulatory, and institutional frameworks; management capacity; procurement operations; and market practices; as well as the integrity and transparency of the formal public procurement system. These were compared with international procurement standards. The assessment revealed that the Indonesian public procurement system matched with more than 60% of the OECD baseline indicators, leading the organization to conclude that "public procurement risks in Indonesia are currently perceived to be average" (OECD/DAC 2007).

A similar assessment conducted in 2010 found that, overall, procurement reform had been successful in establishing formal mechanisms for tender and bidding processes and in recruiting qualified staff to auxiliary bodies such as LKPP. At the same time, the report concluded that the sustainability of the current reform drive in the procurement sector was "moderate" (Attström and Rusman 2010). The authors also found that political imperatives rather than principles of efficiency and transparency were defining procurement-related government documents (Attström and Rusman 2010).

Prior to the PM project, procurement-related corruption and collusion remained endemic in Indonesia and continued to be a main reason for the leakage of public funds and the implementation of development projects of inferior quality. Losses to the state due to corruption and collusion amounted to around 35% of the total value of procurement projects scrutinized by the Corruption Eradication Commission between 2005 and 2009, according to an official government estimate (*The Jakarta Post* 2009). In 2008 and 2009, for instance, accusations of unfair procurement tenders topped the list of cases reported to the Commission for the Supervision of Business Competition (*Komisi Pengawas Persaingan Usaha* (KPPU)). In 2009, the last year such data were collected, 84% of all cases reported to the KPPU were related to unfair procurement tenders, compared to 79% in 2008 (*The Jakarta Post* 2009). In 2007, almost 90% of all corruption cases were related to public procurement of goods and services. Anecdotal evidence supports the findings of the National Development Planning Agency (BAPPENAS) that only around 30-40% of all government institutions are conducting procurement as required under the regulations (Rahardjo 2007). Similarly, 94% of the 2,100 procurement-related complaints that the Corruption Eradication Commission (*Komisi Pemberantasan Korupsi*) received in 2009 referred to failures to hold

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<sup>2</sup> The New Order refers to the authoritarian regime and related policies, including those aimed at reviving the economies, implemented during Suharto's rule from 1966 to 1998.

open tenders. The remaining 6% of cases were about schemes, including price markups. A recent study showed that because of Indonesia's weak procurement institutions, commercial diplomats<sup>3</sup> from the European Union rely heavily on informal procedures and personal networks when lobbying for public procurement contracts (Bondarouk and Ruël 2012).

Likewise, the available literature suggests that corruption in the construction sector has been endemic, with the most recent available figures estimating a loss of \$300 million to \$1.4 billion due to bribe payments in 2004 alone (van Klinken and Aspinall 2012). The dynamics in the construction industry testify to the fact that the legacies of Suharto's patronage system and the forces that compromise good governance in public procurement in contemporary Indonesia have survived the post-1998 reform initiatives. In addition, studies point out that procurement reforms prior to the PM project, ironically, lowered the quality of public work contracts and the ensuing infrastructure projects. Legal requirements for Indonesian government officials to award contracts to the cheapest bidder have forced many contractors to submit unrealistic project proposals, leading to project delays or the outright failure to complete infrastructure projects (Larasati 2011).

### 3.1.2 Results of Government Reforms

E-procurement was officially mandated in Presidential Regulation No. 4/2015. Since then, a great number of provinces and districts have endorsed the government-promoted LPSE, making e-procurement the most widely adopted procurement reform initiative prior to the PM project (Huda and Yunas 2016). Several studies have been published in recent years on e-procurement's impact in jurisdictions where such programs *were* adopted. A comprehensive study of Indonesian jurisdictions found no evidence that the use of e-procurement lowered the prices paid by governments. However, the quality of companies bidding for contracts increased (Lewis-Faupel et al. 2014). Other studies have been equally critical about the impact e-procurement has had in Indonesian jurisdictions. For instance, in his study of e-procurement programs in four districts in East Java Province (Jember, Kediri, Sampang, and Surabaya) Hidayat (2015) found that such initiatives had not improved the efficacy and efficiency of procurement processes due to the contentious relationship between PSUs and end-users of e-procurement services. E-procurement reforms have also not significantly improved the perception of service delivery in Kutai Kartanegara district in East Borneo Province, according to Mutiarin (2014). Nurmandi and Kim (2015) attribute the inconsistent outcome of e-procurement initiatives to tensions between national and local administrative layers in their recent study of e-procurement in three municipalities in Indonesia. On the other hand, a recent study showed that hospitals that used an e-catalog in the procurement process lowered their expenses for drugs significantly (Suliantoro et al. 2016).

Besides great variance in the adoption of e-procurement reforms, recent studies have also found considerable differences with regard to the adoption of other procurement reform initiatives. Most importantly, the aforementioned standardization of procurement regulations that has occurred at the national level since 1998 has not been adopted to a similar degree at the subnational level. At the time of writing, only one province and 27 district governments had adopted standard bidding documents, removed barriers for bidders, or crafted and implemented standard operating procedures (SOPs) for local PSUs (Rahman et al. 2012a).

Wibowo (2012) examined how the idea of "good governance" was adopted in procurement agencies in Indonesia as well as whether the exclusion of corrupt bidders has improved public procurement processes (Wibowo n.y.).

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<sup>3</sup> Commercial diplomacy is an activity that state representatives with diplomatic status conduct in view of business promotion between a home and a host country. It aims at encouraging business development through a series of business promotion and facilitation activities.

Local capacity-building in public procurement seems to occur in a more balanced manner, particularly with regard to general procurement training in preparation for procurement certification, and e-procurement training on how to operate and maintain the LPSE system. The literature suggests that the overall number of procurement-certified staff has increased at both the provincial and district level across Indonesia (Rahman et al. 2012a). Still, many subnational governments seem to lack a comprehensive strategy to increase the number of procurement-accredited staff (Rahman et al. 2012c). Research also found that the absolute number of procurement accredited staff was lower on average in districts with decreasing procurement. However, these districts had a higher proportion of procurement-accredited staff compared to the overall number of bureaucrats than districts where procurement values were on the rise over the period examined in this research (Rahman et al. 2012d).

Furthermore, provinces and districts also embraced organizational reform initiatives in an uneven manner prior to the PM project. Procurement Service Units, for instance, had been adopted in 27% (9/33) of all provinces and 26% (130/497) of all districts as of 2012 (Rahman et al. 2012c). The establishment of PSUs was slightly higher in districts with increasing procurement volumes (Rahman et al. 2012d). Finally—despite the considerable power that aforementioned political and fiscal decentralization initiatives have bestowed upon local government heads—governors, district heads, and mayors were not really reform drivers in any of the localities examined in a recent study. When governors or district heads were replaced, the procurement reform initiatives continued in most cases (Rahman et al. 2012b).

To summarize, the recent literature on procurement reform initiatives in Indonesia points to considerable variance in the adoption of procurement reforms both between and within administrative layers. The uneven enforcement of procurement regulations at a subnational level, differences in leadership styles, and different levels of political will—in addition to tensions within the bureaucratic apparatus—have all been put forward in recent studies as potential explanations for the fragmented procurement reform landscape in Indonesia.

### **3.2. Evidence Gaps That the Current Evaluation Can Fill**

The most significant gap in the literature remains a rigorous impact study of the effects of broad public procurement reform efforts on procurement outcomes in the country. Most recent studies on procurement reform in Indonesia have narrowly focused on e-procurement and also include a limited range of procurement outcomes. Against this backdrop, the evaluation of the PM project will contribute to our understanding of the many procurement reform initiatives underway in Indonesia, as well as the broader organizational and systems contexts for these reforms.

With regard to actual reform initiatives, studies reviewed above showed that the overall number of procurement-certified staff greatly increased across administrative layers. Nevertheless, many local bureaucracies lack a comprehensive strategy to increase the number of procurement-accredited staff. The interim assessment of the PM project evaluates whether additional reforms initiated by the PM project occurred and identifies obstacles to them. The interim assessment also provides a snapshot of project implementers', stakeholders', and participants' perspective on whether e-procurement has been a success regarding the project's intended outcomes. The interviews and PMIS data also support an interim assessment of the efficiency and efficacy of e-procurement with regard to increasing competition; lowering corruption and collusion; and, ultimately, lowering prices for public procurement.

The interim assessment also contributes to an understanding of the broader political context of procurement reforms in Indonesia. For instance, the OECD report mentioned above highlighted the reasonably well-developed institutional framework on which public procurement in Indonesia rests. At the same time, our baseline findings revealed a strong perception that corruption and bid rigging remain in public procurement. The interim assessment adds to our understanding of ways that official procurement regulations are implemented in practice.

The interim assessment included interviews with procurement staff on the changes they have seen in their PSUs since the PM project was implemented. The interim assessment also explored whether recent

reform initiatives have increased incentives for Indonesian bureaucrats to pursue a career in public procurement. These findings, while specific to the PM project, can provide insight into the dynamics of procurement reform in Indonesia.

## 4. Evaluation Design

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In this section, we first describe the evaluation type. Then we present the evaluation questions addressed in this interim assessment. Finally, we describe the qualitative and quantitative methodology that we used to address the evaluation questions.

### 4.1. Evaluation Type

The interim assessment was designed to provide a rapid, cost-effective update on results at the close of the project with minimal resources. It uses a mixed-methods design to establish evidence on the possible effects of an intervention to improve and modernize public procurement. It conducts a performance evaluation to assess organizational change and an impact evaluation to assess overall procurement performance. Specifically, it uses a pre-post qualitative comparison to assess the PM project's influence on organizational change to improve the procurement process, as measured by changes in shared values, structure, systems, skills, and staffing. The findings from the qualitative analysis also enrich the quantitative results by contextualizing them. The data sources are interviews with a limited number of key stakeholders, and review of final project documents that were provided by the implementers. The evaluation uses an impact evaluation to assess the PM project's impact on overall procurement performance. Specifically, it uses a quantitative comparative time series evaluation design to assess the PM project's impact on time and cost savings. The data source is the PMIS data warehouse with tender-level outcomes information from 2014 to September 2018. The analysis focuses on Phase 2 treatment PSUs that entered the program in 2016 (treatment group), and those that were part of the initial list of Phase 2 PSUs, but did not receive the full program intervention (comparison group).

### 4.2. Evaluation Questions

The evaluation questions focus on assessing program implementation, and identifying the project's key challenges and successes. In addition, the evaluation questions assess the project's progress at its end along selected portions within each component of the 5-S organizational change framework. These include:

- **Shared values:** Influence of culture and shared values on project implementation and the influence of the project on procurement culture and shared values like integrity and professionalism.
- **Structure:** Project's impact on moving the PSUs to the desired structure based on elements in the Maturity Model, including permanency and independence of PSUs.
- **Systems:** Project's impact on adapting and adhering to procurement systems and e-procurement processes.
- **Skills:** Project's impact on training staff and their proficiency
- **Staffing:** Project's impact on gender equity in staffing, and staff who are permanent and functional.

Insofar as the PM project influenced positive changes in the organizational framework, the evaluation questions also focus on changes in final outcomes, such as:

- Cost savings as a result of the PM project.
- Improved efficiency as a result of the PM project.

Other evaluation questions focus on assessing whether the PM project led to changes in procurement quality as measured by changes in time taken to clear the tenders and the number of bidders that applied for the tenders.

The interim assessment addresses 16 of the 33 evaluation questions; it did not answer some questions that are best suited for the endline evaluation. Exhibit 4 presents the evaluation questions addressed in the interim assessment and notes the methods used each question (we will answer some evaluation questions only at endline). The link to findings column identifies where their results can be found.

**Exhibit 4 Linkage of Evaluation Questions to Key Outcomes, Data Sources, and Data Collection Methods Used in the Interim Assessment**

Evaluation Question <sup>1</sup>	Key Measures	Data Source	Evaluation Method	Link to Findings Section
<b>1. Superordinate Goals/Shared Values</b>				
a. Are there any issues related to the political economy (or other aspects) of the procurement system and its actors not addressed by the project that may have impacted the project's ability to achieve its intended results?	Political economy issues or other barriers to success of the project	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.1.1
<b>2. Structure</b>				
a. What types of organizational or operational changes are taking place at the PSU level?	Leadership and management, PSU permanency, staff permanency	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.2
<b>3. Systems</b>				
a. What types of procedural changes are taking place in the conduct of procurements?	Adherence to best practices in procurement	PSU staff	Qualitative pre-post comparison using qualitative interviews	5.3.1
b. Are there changes in policies, procedures, or otherwise that could lead to quality improvements in ultimate procurement (contract) outcomes? How so?	Adherence to best practices in procurement related to quality improvements	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.3.1, 5.3.2
c. Are there changes in policies, procedures, or otherwise that could lead to savings (financial or total lifecycle) in government procurements? How so?	Adherence to best practices in procurement related to cost savings	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.3.2
e. Are PSUs using e-catalog for standard purchases?	Use of e-catalog	High-level stakeholders, PSU staff, project-generated monitoring data	Qualitative pre-post comparison using qualitative interviews	5.3.1

Evaluation Question <sup>1</sup>	Key Measures	Data Source	Evaluation Method	Link to Findings Section
h. Have PSUs developed their own framework contracts?	Development of framework contracts	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.3.1
<b>4. Skills</b>				
c. Has the procurement knowledge and skill of trainees improved?	Skills and knowledge of procurement	PSU staff, project-generated monitoring data	Qualitative pre-post comparison using qualitative interviews and project generated monitoring data	5.4
<b>5. Staffing</b>				
a. Are staff now permanent staff?	Share of staff made permanent	High-level stakeholders, PSU staff, project-generated monitoring data	Qualitative pre-post comparison using qualitative interviews and project generated monitoring data	5.5.1, 5.5.2
b. Do staff seem committed to and engaged in pursuing a procurement career path?	Commitment to procurement career	PSU staff	Qualitative pre-post comparison using qualitative interviews	5.5.3
d. Do staff feel more supported administratively and legally?	Self-reported administrative and legal support	PSU staff	Qualitative pre-post comparison using qualitative interviews	5.5.3
<b>6. Overall Evaluation Questions</b>				
b. Is there evidence that the interventions have resulted in the outcomes outlined in the project logic?	High-level outcomes in project logic, PMIS outcomes: number of tenders per month, number of bidders, amount offered per month, duration of procurement activities	High-level stakeholders, PSU staff, LPSE, PMIS data	Qualitative pre-post comparison using qualitative interviews. Quasi-experimental design using PMIS data base	5.6

Evaluation Question <sup>1</sup>	Key Measures	Data Source	Evaluation Method	Link to Findings Section
c. Has framework contracting/e-catalog resulted in time and/or cost savings?	Cost savings due to framework contracting/e-catalog	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.6
f. Is there evidence for cost savings in the program PSUs?	Cost savings due to PM project components	High-level stakeholders, PSU staff	Quasi-experimental design using PMIS data base	5.6
i. Did the program contribute to change perceptions of corruption or transparency?	Perceptions of corruption and transparency	High-level stakeholders, PSU staff	Qualitative pre-post comparison using qualitative interviews	5.6

<sup>1</sup> The evaluation questions are not numbered sequentially because some evaluation questions will be answered only at endline.

### 4.3. Methodology

The qualitative and quantitative methods are described in detail below.

#### 4.3.1 Qualitative

The 5-S framework guided the qualitative analysis that pursued the five lines of inquiry focusing on the PM project’s influence on shared values, structure, systems, skills, and staffing. The data sources were interviews with key stakeholders, and project monitoring data from the final project reports that the implementers shared with us. Note that the evaluation team did not independently verify the monitoring data. The interviews sought responses to semi-structured questions from three categories of key stakeholders: MCC and MCA-I staff, participating PSU staff (i.e., PSU directors), and LKPP leadership. The interview guides were updated versions but were comparable to those used at baseline. The evaluation team’s procurement modernization expert conducted the interviews by phone in English or Bahasa Indonesia as appropriate. The interviews were recorded with consent. These recordings served as the basis for detailed notes in English that were used for qualitative analysis. The evaluation team synthesized the data along each component of the 5-S framework and looked for patterns within and between stakeholder groups. In the analysis, we remained attentive to potential response bias, which we considered in presenting findings when response bias seemed evident by seeking to triangulate data with PM project reporting and comparing responses with those provided by other respondents.

The PM expert conducted 17 interviews for the interim assessment, which exceeded the proposed sample size of 15 that was outlined in the interim assessment plan. As planned, we used purposive sampling to identify stakeholders in each key stakeholder category as shown in Exhibit 5. We used the sample of key informants from the baseline as the sampling frame for this interim assessment. The interview sample is not representative, but rather seeks to capture perspectives from a range of respondents with detailed knowledge about the PM project. The interview data provide illustrative examples of a small sample of stakeholder perspectives about the implementation, successes, and challenges of the PM project. Given the rapid nature of the interim assessment, the interview responses provide the perspectives of those whom we interviewed rather than a broader consensus about project implementation or effects.

## Exhibit 5 Qualitative Interview Sample

Stakeholder Category	Total
MCC staff	1
MCA-I staff	7
PSU staff	7
LKPP leadership	2
Total	17

### 4.3.2 Quantitative

Quantitative analysis focused on estimating the project’s impacts on tender-level outcomes available in the PMIS data warehouse beginning in 2014. These indicators measure the cost and efficiency of the procurement process. Specifically, the evaluation assessed the project’s impact on the amount offered for tenders as a measure of cost efficiency, and the number of tenders per month passing through PSUs and the number of bidders for each tender as other key measures of efficiencies. These outcomes were broken out by sector (e.g., consulting services, construction, procurement of goods, other services). The secondary outcomes included the number of days the various phases of procurement took. PM project activities may have influenced these outcomes, such as procurement staff capacity building and improving e-procurement systems. The data and the detailed method are described below.

#### *Data*

The data for the quantitative analysis is the tender-level information on key tender-related outcomes from the PMIS data warehouse for the last few months of 2014, before Phase 2 PSUs began receiving treatment, up to the fall of 2018, when the project ended. This data warehouse was developed and consolidated as part of the PM project. It was intended to be a central repository of information from the 640 LPSE servers around the country and to act as a principal reporting tool for LKPP and others monitoring the procurement process at all levels of the cycle.<sup>4</sup> LKPP provided the evaluation team with a subset of the variables for the analysis, from which we developed the analysis sample focused on Phase 2 treatment and comparison PSUs, for which the evaluation had collected baseline survey data. The tender outcomes included in the PMIS analysis are:

- The number of tenders passing through PSUs per month
- The number of bidders per tender
- The amount offered per tender
- The number of days it took to evaluate tenders
- The number of days it took to evaluate the tenderers’ qualifications

The data sample from PMIS used in the analysis comprises the PSUs in the baseline sample. This allowed the interim assessment to also draw on the baseline data that the evaluation team gathered at the PSU level using structured surveys.

#### *Methods*

The quantitative analysis uses a quasi-experimental design. Specifically, it uses a weighted comparative interrupted time series to compare the outcomes after the compact implementation (hereafter, “treatment”) began for the Phase 2 PSUs that directly received the program – the treatment PSUs – to the PSUs that were shortlisted but not selected to receive the program’s core services – the comparison

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<sup>4</sup> Final PMIS Report

PSUs.<sup>5</sup> Importantly, as of this interim assessment, the evaluation team learned that all PSUs in the country received reforms promoted by the PM project at some level, although not at the same level of intensity. The treatment PSUs received more direct and intensive program inputs relative to the comparison PSU. Even so, this means that our assessment is not of a true treatment and comparison, but rather a comparison of different levels of treatment. Therefore, any impacts presented in the next section are likely an underestimate of the total impacts of the PM project activities, and instead measure the effect of the differential level of activities in the treatment group as opposed to the comparison group.

The validity of the quasi-experimental design rests on ensuring that the comparison group does not systematically differ from the treatment group on factors that influence outcomes, other than exposure to treatment. As is described in more detail in the design report, the treatment group consisted of 12 non-ministry PSUs from a shortlist of Phase 2 PSUs of 22 PSUs,<sup>6</sup> and the comparison group consisted of the 10 PSUs that were not selected for treatment from the shortlist (Abt Associates 2016). To the extent that both treatment and comparison PSUs were shortlisted for Phase 2, they are likely similar. Yet the treatment group was intentionally selected for treatment, and the comparison group was not – although even the comparison group got some treatment toward the end of the project. Therefore, there may be inherent differences between the two groups at baseline that could bias the results.

To account for these baseline differences between the treatment and comparison groups, we used data on baseline characteristics to assigned analysis weights to PSUs in the comparison group. The analysis weights used predicted probabilities of being selected for the project from a logistic regression with treatment dummy as the dependent variable regressed on baseline characteristics of the PSUs that were closest to the factors that influenced their selection by the PM project. The project’s final reports suggest that PSUs’ size in terms of total PSU spending influenced their selection, with larger PSUs more likely to be selected. PSUs that did not have permanent status, had commitment from the leadership, and were closer to Jakarta were more likely to be selected. Exhibit 6 lists the baseline characteristics that closely measured these selection criteria, which were used to estimate the propensity model.

**Exhibit 6 Baseline Characteristics**

PSU Selection Criteria	Baseline Characteristic
Institutional permanency	Dummy if the PSU has permanent status
Total PSU procurement spending	Average expenditure on tenders (\$/PSU) Average number of bidders per tender (numbers/ PSU)
Proximity to Jakarta/other pilots	The distance to Jakarta (km)
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 comparison group PSUs receive a weight of  $p/(1-p)$  (Nichols 2007; 2009). Effectively, the comparison PSU that “looked like” treatment PSUs got a larger weight. The weighted sample was balanced across the treatment and comparison groups on a variety of baseline characteristics. The full balance table (see Appendix A) shows the baseline means, with and without the weights.<sup>7</sup>

<sup>5</sup> The evaluation team does not have information about the exact methods used to determine the treatment group from the shortlist of Phase 2 PSUs. In addition, since the treatment group was selected by design, randomization was not possible.

<sup>6</sup> Ministry PSUs were excluded from the sample because they were not thought to be comparable to other PSUs.

<sup>7</sup> The baseline report provides more detail on the baseline differences between the treatment and comparison groups.

Using the weighted observations, we estimated the generalized linear model depicted by equation [1], which amounts to a weighted comparative interrupted time series estimate of tender-level outcomes across the treatment and comparison groups.

$$y_{ijt} = \exp(\alpha + T_{jt}\gamma + post_t\delta_1 + T_{jt} * post_t\beta_1 + post2_t\delta_2 + T_{jt} * post2_t\beta_2 + X_{jt}\sigma + \varepsilon_{ijt}) \quad [1]$$

The functional form of generalized linear model is exponential because all outcomes are logically nonnegative: number of bidders, tenders per month, amount, or days elapsed for procurement tasks. In this model,  $y_{ijt}$  is the outcome for tender  $i$  in PSU  $j$  in time  $t$ ,  $T_{jt}$  is the treatment status of PSU  $j$  in time  $t$ .  $X_{jt}$  is a vector of covariates including the baseline characteristics that are good proxies of the selection criteria as well as baseline values of the outcome. Using pre-treatment characteristics as covariates makes the model doubly robust (i.e., the causal inference is correct if either the propensity score is correct or the regression model is correct). Further,  $\varepsilon_{ijt}$  is the random error term for individual  $i$  in PSU  $j$  in time  $t$ . Standard errors are clustered at the PSU level.

In this model,  $post_t$  is a dummy equal to 1 for observations in the entire post-implementation period (after fall 2016), while  $post2_t$  is equal to 1 for tenders in 2018. Therefore,  $\beta_1$  is the impact of treatment in the years directly following treatment, prior to 2018, and  $\beta_2$  is the incremental impact of treatment at the end of the project (in 2018), as compared to the years directly following treatment. The impact of the PM project on tenders in 2018 is  $\beta_1 + \beta_2$ .<sup>8</sup>

### ***Timeframe and justification for exposure period***

Qualitative data collection took place between November 2018 and January 2019, which was after the close of the compact in April 2018. We collected data at this time because the interim assessment was designed to provide a quick, cost-effective update on results at the close of the project prior to the endline.

## **5. Findings**

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This section presents the findings from the qualitative and quantitative analysis. We present qualitative findings for each of the 5-S components: shared values, structure, systems, skills and staffing. Then we discuss overall findings, where we present our quantitative results with respect to changes in procurement quality-related outcomes as well as qualitative findings about perceptions of corruption and challenges in the procurement process.

### **5.1. Shared Values**

Shared values relate to the general perceptions and beliefs held by staff with regard to professional behaviors and reform in procurement. The PM project hoped to improve procurement systems and therefore create more confidence and buy-in from procurement staff, generating a stronger culture of shared values. Accordingly, the evaluation questions in this section relate to the presence of any national or local political barriers related to the overall goals of the project, and whether the organizational culture is supportive of reducing corruption and increasing transparency in public procurement. Specifically, we answer the following evaluation questions:

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<sup>8</sup> In other words, the proportional change in the conditional expectation of the outcome for an increase in a dummy variables from zero to one is  $\text{Exp}(\text{Coefficient}) - 1$ . As an example, for  $y = \exp(Xb + Pd)$ , or  $\log(E[y|X,P]) = Xb + Pd$ . Conditional expectation  $E1 = E(Y|X,P=1)$  where a dummy  $P$  is one;  $E0 = E(Y|X,P=0)$  where a dummy  $P$  is zero. Therefore,  $\ln E1 - \ln E0 = d$  and  $\ln(E1/E0) = d$  and  $E1/E0 = \text{Exp}(d)$ . Then  $(E1 - E0)/E0 = \text{exp}(d) - 1$ . In other words the proportional change in the conditional expectation of the outcome for an increase in a dummy variable from zero to one is  $\text{exp}(\text{coef}) - 1$ . In other words the proportional change in the conditional expectation of the outcome for an increase in a dummy variable from zero to one is  $\text{exp}(\text{coef}) - 1$ : this is the treatment effect conversion used below. We multiply these proportional changes by 100 so coefficients are in percentage point units. Further, it is also true that the proportional change in the conditional expectation of the outcome for both  $post$  and  $post2$  to take value zero to one is  $\text{Exp}(\beta_1 + \beta_2) - 1$ .

- Are there any issues related to the political economy (or other aspects) of the procurement system and its actors not addressed by the project that may have impacted the project's ability to achieve its intended results?
- Did the program result in a change in culture or shared values?

The answers to these questions are summarized below.

### 5.1.1 Overall Political Economy's Influence on the Project

Most interviewees agreed that there were factors situated outside the project that had an impact on the project's ability to achieve its intended results given the complex nature of public procurement. For example, although the Indonesian fiscal year follows the calendar year, poor public financial management in Indonesia has meant that budgets are rarely approved before April. This has meant that procurement cannot begin until at least May. This has had negative consequences for the effectiveness of public procurement according to an interviewee. One interviewee also perceived elections as an obstacle to the successful implementation of the project. The commitment of local politicians such as governors, mayors, and district heads was crucial in getting local bureaucracies to support procurement reform. In several jurisdictions, local government heads who had been committed to reform were not re-elected and were replaced by figures less dedicated to public procurement reform. In short, political dynamics often undermined the sustainability of public procurement reform initiatives according to one interviewee. Several PSU staff interviewed also mentioned the Ministry of Home Affairs (MoHA) as an obstacle to procurement reform. For instance, MoHA would often reject applications from PSUs for permanent status. Another interviewee mentioned that many of his Indonesian stakeholders wondered whether LKPP had sufficient capacity to implement procurement reform. In fact, several Indonesian interviewees asked the evaluators at the end of the interview whether MCC was committed to continuing procurement reform in Indonesia. This suggests that respondents were concerned about the sustainability of the reforms achieved to date.

In addition to constraints imposed on the public procurement process by Indonesia's budget process and inter-ministerial rivalries, a few respondents mentioned work culture was mentioned as another obstacle outside the immediate scope of the procurement modernization project. In this context, one respondent said that they thought the prevailing culture within LKPP was one of the main obstacles in achieving the project's intended results. LKPP was determined to develop its own procurement tools until the PM project was launched. The project then needed to convince LKPP not to work on software development but to use the procurement software that was already available on the market. This required a cultural and resource shift and posed a challenge for the change management process within LKPP. Another interviewee was even more critical of LKPP and stated that the agency did not know about its role in public procurement in Indonesia, and due to its frequent staff turnover, it also did not have the capacity to develop the institutional memory that would benefit public procurement reform in Indonesia. The lack of vision and identity at LKPP also manifested itself in an inability to follow through on reform projects, according to the respondent.

According to one respondent, the PM project was not designed to address the political economy challenges. However, the PM project had to overcome some of these challenges, including overcoming legal issues and barriers to the project. For instance, Presidential Regulations No. 54/2010 on Public Procurement of Goods/Services and Presidential Regulation No. 70/2012 on the Second Amendment of Presidential Decree No. 54/2010 on Public Procurement of Goods/Services required PSUs to establish independent and permanent procurement units. However, in order to do so, a lot of work was required at the highest political levels, including the office of the vice president of Indonesia, to address political and legal barriers to the implementation of the requirement for permanent procurement units stipulated in the aforementioned presidential regulations. Another interviewee saw great improvements in terms of how MCA procurement reform mentors proactively approached political players in the second phase of the project compared to the first phase. In the first phase, the respondent thought that seeking support of

political players at all levels of the bureaucracy had been neglected, which they thought subsequently slowed down the project.

With regard to obstacles originating in the political economy of public procurement in Indonesia, several interviewees stated that not only had political commitment to procurement reform increased but that the coordination between different government layers with regard to public procurement had considerably improved throughout the project.

### 5.1.2 Project's Influence on Culture and Shared Values

Nearly all respondents thought that shared values among PSU staff, bureaucrats, and politicians improved over the course of the project. Most interviewees agreed that the objectives were consistent throughout the project, namely to strengthen the governance of public procurement in Indonesia. However, the understanding of how to achieve this goal in the most effective and efficient manner changed throughout the project, according to the interviewees. For example, the project raised awareness of procurement as a strategic function in government. Indonesian bureaucrats and politicians, even at the highest level, did not think of procurement in these terms before the project, according to one interviewee. Over time, national level politicians became interested in procurement reform, although several interviewees noted that there was great variation in support for procurement reform at a subnational level. A change in the prioritization of procurement shows a change in how procurement and procurement reform is valued by procurement professionals. Further, successes in procurement reform motivated and reinforced the perceived value of procurement reform. Respondents described how on several occasions the procurement reform project created a virtuous circle in which local politicians wanted to become reformers, too, after seeing how procurement reform had helped other jurisdictions with the completion of infrastructure projects or budget absorption. Several PSU staff reported that they had political support from local leadership to institute reforms.

On the whole, most interviewees agreed that the awareness of the importance of good public procurement and the realization that it is not simply an administrative job increased significantly over the course of the project.

## 5.2. Structure

Structure refers to key structural characteristics of the PSUs such as PSU permanency and independence. One of the main goals of the PM project was to ensure that more PSUs achieved permanency through its activities. Here the evaluation addresses to the extent possible what organizational or operational changes may have occurred through the institutional mentoring system as outlined in the project logic model. Specifically, we answer the following question:

- What types of organizational or operational changes are taking place at the PSU level?

Most interviewees agreed that significant organizational and operational changes had been achieved at the PSU level over the course of the project. The PM project aimed to increase the level of independence and authority of PSUs. The project target was for all 44 participating PSUs to have legal status by the end of the project. According to project monitoring data, all but one participating PSU (43 PSUs) had achieved legally permanent status by the end of the project (Ray 2018:11) compared to 13 PSUs at the baseline (Abt Associates 2017).<sup>9</sup> For example, one respondent explained that their PSU was ad hoc, but since receiving mentoring from the project, it has become a permanent procurement division. A few interviewees noted that their PSU, as a result of becoming permanent, took on more functions and was

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<sup>9</sup> The foundation for the organizational change components of the PM project was created by the legal and institutional reforms set forth in Presidential Regulation No. 54/2010 on Public Procurement of Goods and Services. Regulation No. 54 required the establishment of permanent, independent PSUs at national and subnational levels.

involved in more stages of the procurement process. Another interviewee reported that their PSU's level of independence and authority improved because it gained procurement authority.

Despite the overall positive assessment of organizational changes at the PSU level, some interviewees also pointed to the considerable subnational variance in the adoption and implementation of procurement reform.

In addition, a few interviewees lamented the fact that LKPP's leverage over government units was confined by the fact that LKPP does not have the authority to develop legislation, regulations, and policies on general procurement plans. Since this responsibility was in the hands of ministries such as the Indonesian Ministry of National Development Planning, LKPP was limited in how much it could make government units implement change. In addition, government regulations mandate that PSUs are under the Regional Government Secretariat rather than being independent, which would provide them with more autonomy.

### 5.3. Systems

As part of systems, we examine procurement systems, policies, and procedures, including framework contracting, PMIS, and e-catalogs, and discuss use of measures about procurement. The PM project sought to institute best practice policies and procedures that would make systems within the PSU more efficient and effective at procurement. This included the emphasis on framework contracts, the development of the e-catalog for efficient procurement of goods, and a centralized PMIS for better monitoring.

The evaluation answered the following questions to assess the PM project's influence on procurement systems and procurement measures:

- What types of procedural changes are taking place in the conduct of procurements?
- Are there changes in policies, procedures, or otherwise that could lead to quality improvements in ultimate procurement (contract) outcomes? How so?
- Are there changes in policies, procedures, or otherwise that could lead to savings (financial or total lifecycle) in government procurements? How so?
- Are PSUs using e-catalog for standard purchases?
- Have PSUs developed their own framework contracts?

The answers to these questions are presented below.

#### 5.3.1 Public Procurement Systems, Policies, and Procedures

Most interviewees agreed that significant operational changes had been achieved at the PSU level over the course of the project, including use of framework contracts and e-catalogs as discussed below. For example, a few interviewees noted that there have been significant changes in contract management: staff have begun to follow better vendor selection procedures and apply international procurement methods. One interviewee noted that contract management was weak prior to the project because the government would sign the contract but then would not monitor delivery of the good or service. The project provided training on contract management, which helped staff monitor contracts during delivery to improve quality of delivery. Several PSU staff explained that their PSUs became involved in more stages of the procurement process. Previously, they were only tasked with procurement, but now they are involved from the initial planning stage through contract management.

According to one interviewee, a key achievement of the project was that local procurement officers became more willing to adopt new technology. The project showed Indonesian procurement officials how modern procurement policies and technologies would not only make their jobs easier but also improve transparency in the procurement process, and therefore protect them from potential accusations of malpractice.

One interviewee mentioned how the project greatly improved the quality of e-tendering in Indonesia. At the beginning of the project, the e-tendering system that the government used had weaknesses, including not meeting security requirements. Due to advice and support that the project provided to LKPP on how to strengthen its e-tendering system, the agency realized the limitations of its previous system. At the very end of the compact, LKPP bought e-tendering software that had more functionality than the system that LKPP had developed. This software also brought e-tendering in line with the e-catalog system. At the time of writing, LKPP had begun encouraging local PSUs to use their e-tendering system, a process that may not be completed until 2020, according to an interviewee.

Another interviewee felt that it was difficult to identify changes in PSUs' involvement in different components of the procurement process continuum because the time period of the compact was too short for PSUs to be able to notice any change. PSUs found it easiest to identify savings and improvements in the quality of procurement that had been achieved through the adoption and implementation of the e-catalog system. The influence of all other PMIS functions on public procurement, however, was more difficult to assess at the PSU level as these changes were delivered through LKPP, according to one interviewee.

### ***Framework Contracting Awareness and Use***

By the end of the project, 65 framework agreements were signed, and 20 procurements (out of the target of 25) worth \$47.2 million were completed through framework contracts (MCA-I 2018a:6, 46). These procurements were for goods (e.g., chemicals, uniforms), materials (e.g., asphalt), and services (e.g., IT, security services, advertising). Framework contracting seems to have been less widely adopted than other systems developed by the project. Only 10 PSUs implemented framework contracts (MCA-I 2018a:45), and only a minority of PSUs interviewed had conducted framework contracting. However, several PSU officers interviewed mentioned that the implementation of framework contracting was a priority for 2019.

Despite somewhat limited adoption, several interviewees mentioned the successful implementation of framework contracting as an important development that occurred during the project. The few PSUs that had adopted framework contracting reported substantive gains both in terms of effectiveness and cost savings. For instance, framework contracting reduced the number of contractors providing goods and services to institutions such as universities while expediting the purchase of goods and services. One respondent explained that instead of having to run a procurement process every time a certain good or a service is needed, it can now just be ordered under a framework contract.

### ***PMIS Awareness and Use***

Interviewees largely agreed that data on procurement had significantly improved not only in terms of quality but also availability, mainly through the establishment of the PMIS data warehouse. Crucial in that respect was that LKPP developed the capacity to bring together a centralized system. Further, there was the realization among project participants that e-procurement did not simply consist of creating a system through which bids could be submitted electronically but also establishing a data warehouse that provides procurement units with crucial data for decision making. The PMIS system increased the availability of procurement data, such as the cost of tenders. One interviewee gave the example that if a PSU wanted to purchase medical equipment, it could check the PMIS to see what other PSUs had paid for the same equipment and use those data along with market research to determine price. The PMIS also provides data on vendors' past performance, which was not previously available to PSU staff and can be considered in selection. According to an interviewee, the establishment of the PMIS data warehouse also improved smart reporting by bringing together the first data warehouse with other tools used by LKPP.<sup>10</sup> The smart report incorporates aggregated data such as the annual total value or number of packages

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<sup>10</sup> Smart Report retrieves data from multiple servers and compiles it into a report. It presents the compiled results of the Electronic Procurement System database processing that is distributed throughout the Electronic Procurement Services (LPSE).

completed through e-procurement or e-purchasing via the e-catalog; however, it does not contain comprehensive data.

### ***E-catalog Awareness and Use***

The PM project developed and delivered the e-catalog system and met its targets for doing so, according to project documents. According to project information, the e-catalog served 100 buyers across 40 buyer organizations with 727 items listed by 65 suppliers under 21 contracts (Mitchel-Turner 2018:8). While interviewees only had anecdotal evidence on the adoption of e-catalogs, most thought that the e-catalog system was present in most PSUs that the project engaged. Respondents reported that many PSUs were using the e-catalog system enthusiastically, and there were indications that they continued to do so even after the compact had ended. Although one interviewee thought that the quality of the e-catalog could still be improved (e.g., transparency in selection of items included in the catalogue), most interviewees thought that e-procurement in general and the e-catalog in particular had greatly improved transparency and therefore accountability. One interviewee pointed out that in many parts of Indonesia, poor infrastructure was one of the main obstacles for the proper implementation of an e-catalog system. The interviewee mentioned, for instance, that on small islands in Papua or Sumatra, network connection and Internet coverage were often so poor as to make it impossible to implement an e-catalog system.

### **5.3.2 Procurement Measures**

Procurement measures refer to the ways PSUs track their progress on procurement processes and outcomes. The qualitative interviews indicate that the awareness of ways that good data collection and management improve the quality of procurement was also strengthened as a result of the project. One interviewee mentioned that most data were collected manually prior to the project and that the introduction of PMM indicators had made a difference by encouraging electronic data collection so the data would be more accessible. The PMM indicators were a combination of data held centrally by LKPP and local data. The indicators came out of the institutional strengthening component of the project, which included providing mentoring and guidelines on the indicators. While awareness of data and data warehousing greatly improved, the actual collection often remained cumbersome. One interviewee mentioned how data that LKPP sent to the local PSUs often consisted of PDF files. Local PSUs then had to enter the data manually from the PDF files into Excel files, but the sheer amount of data prevented this from being a viable strategy. Consequently, many local PSUs began investing in their own data collection and warehousing systems. In short, there was a real hunger at the PSU level for change regarding data collection and management, but the broader context often made it difficult.

### **5.4. Skills**

A key aspect of improving the procurement system is raising PSU staff's level of knowledge of procurement activities. The rationale is that when PSU staff better understand all the components of the procurement process, they are better able to coordinate with all stakeholders involved in the procurement lifecycle. The project's procurement skills training also included non-PSU staff to include persons who have a vital role in the procurement process (e.g., budget officials, contract managers, auditors). To assess the project's influence on improving procurement skills, the evaluation specifically addresses the following question:

- Has the procurement knowledge and skill of trainees improved?

The PM project positively influenced procurement knowledge and skills of trainees according to most interviewees. While at the beginning of the compact, bureaucrats tasked with procurement would simply follow the written rules, the project training built many bureaucrats' capacity as procurement professionals. One interviewee mentioned that at the beginning of the compact, Indonesian procurement officials did only what a given regulation instructed them to do, so procurement officials would only procure goods and services if a regulation explicitly called for it. The procurement skills training provided under the project generated a new consciousness and awareness about officials' role in procurement.

Procurement officials became more self-confident in making procurement decisions that would deliver the best results for the GoI within the parameters of the general procurement plan.

Interviewees reported that procurement knowledge and skills of trainees improved over the MCC procurement reform project in a variety of areas. Pilot and non-pilot PSU staff received training to strengthen their procurement skills. The project exceeded its training targets, by training a total of 2,281 pilot PSU staff and 508 non-pilot PSU staff. Overall, 24% of trainees were female (MCA-I 2018b:22). Within pilot PSUs, a total of 675 staff completed basic training, 589 completed intermediate training, and 494 completed advanced training (MCA-I 2018b:22). According to project monitoring data, average knowledge acquisition increased by 40% in post-training testing (MCA-I 2018b). Further, 530 staff were mentored as part of the mentoring program, which exceeded the target of mentoring 500 staff (MCA-I 2018b).

Improved awareness about the importance of data and data collection for good procurement was a positive development that interviewees ascribed to the project. The ability to conduct market research on goods and services was another area where the project had led to considerable positive change. One interviewee mentioned, for example, how more procurement packages for medical good and services were successfully approved after training had improved the market research skills of procurement staff. Previously, staff would issue tenders without knowing the market and often ask for goods and products that were no longer produced. Staff no longer made such mistakes after the project started, according to the interviewee.

The monthly visits by Booz Allen staff to both Phase 1 and Phase 2 PSUs were considered crucial in achieving the aforementioned improvements to procurement knowledge and skills of trainees, according to a few interviewees.

One interviewee was concerned about the negative impact of staff attrition on procurement knowledge and skills in their PSU. The interviewee lamented that their PSU had lost trained staff several times because they were subsequently posted to other bureaucratic units. Staff attrition as a potential threat to the sustainability of procurement reforms was also mentioned in several project reports (MCA-I 2018a; Ray 2018).

The PM project positively influenced organizational knowledge and skills of trainees according to most interviewees.. The project provided 589 pilot PSU and 271 non-pilot PSU staff with 12 modules of organizational skills training, out of targets of 500 staff for each group (Ray 2018:12-13). The project also developed several organizational management guidebooks (Ray 2018:13). Several interviewees mentioned how leadership skills, performance management, and customer service skills all improved as a result of the project. Not only were performance metrics introduced in order to turn PSUs into proactive and strategic government units, but the project was successful in convincing managers and staff that introducing performance measures would yield real benefits.

According to the project, 30 of the 44 pilot PSUs achieved all 22 criteria to be verified as Centers of Excellence by the end of the project (Ray 2018:19). The CoE model provided support on institutional strengthening and organizational knowledge and skills. The project established a number of standards that PSUs have to fulfill within the Maturity Model to become a CoE. The procurement Maturity Model provides a comprehensive set of organizational competency indicators. These PSUs also serve as sources of information for non-pilot PSUs, including through 72 staff from these PSUs who offer institutional mentoring and coaching clinics to other PSUs (Ray 2018:22). Several PSU staff reported that because their PSUs are CoEs, they help other PSUs improve their procurement organization through mentoring, knowledge sharing, coaching, visits, and training. For example, one PSU said that they have supported 28 other PSUs, including some in other regions, through mentoring. Further, pilot PSUs conduct “sistering” visits to non-pilot PSUs to share lessons learned, with 556 sistering visits completed during the project (Ray 2018:25-26).

## 5.5. Staffing

The PM project intended to develop a workforce of permanent and functional staff<sup>11</sup> with the goal being that permanent staff are better knowledgeable and more invested in the work they are conducting than part-time staff. Under staffing, we address the following evaluation questions in this report:

- Are staff now permanent staff?
- Do staff seem committed to and engaged in pursuing a procurement career path?
- Do staff feel more supported administratively and legally?

Most interviewees agreed that pursuing a procurement career path had become more attractive due to the project. The management and staff training contributed to a change in attitudes toward a career in public procurement since these trainings showed Indonesian bureaucrats that there was a professional pathway in procurement. At the same time, many interviewees believed that the GoI still needed to make progress in this regard. The project fell short of achieving its target of 500 functional positions established, with only 245 being created by the end of the project, which the project reporting attributed to low levels of compensation for procurement position grades (Ray 2018:31).

One interviewee mentioned that in the PSUs they were involved with during the project, incentives for pursuing a career in public procurement also increased due to the introduction of framework contracting. Prior to the project, the work of public procurement officials was rather transactional. However, the scope of work for public procurement officials became broader with reforms introduced by the project. Framework contracting especially broadened the scope for interesting work while also providing public procurement officials with a little more control according to this interviewee.

Several interviews also emphasized the positive dynamics the project had unleashed beyond the goals set by the MCC. Graduates of procurement training workshops formed a network on their own initiative and would regularly organize meetings for interested procurement officials. The MCC procurement reform project, in other words, facilitated the creation of a “very vibrant community” of procurement officials, according to an interviewee.

Interviewees reported that there were also positive developments regarding the number of women entering public procurement to pursue a career in this field. Previously, many women shied away from public procurement because of the corruption and collusion associated with the profession and the consequent risk of legal issues like arrest according to interviewees. Training provided by the MCC procurement reform project, however, educated women on their rights and how to participate successfully in public procurement. The number of women entering the field “substantially exceeded [program] objectives,” according to one interviewee. Another interviewee mentioned that there were capable and professional women involved in public procurement prior to the compact but that the project greatly elevated the position of these women through training and knowledge exchange workshops where they were incorporated as role models.

While most interviewees stated that they did not know the actual figures of non-permanent and permanent procurement staff, most believed that the number of permanent staff had increased over the course of the MCC procurement reform project. This is supported by project monitoring data, which show that PSUs

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<sup>11</sup> PSU part-time or full-time staff are staff from another institution who have an assignment decree to work for a PSU but still report to and are listed in the originating institution’s payroll. These could either be civil servants or contract-based staff. PSUs with permanent status usually have full-time staff assigned to them. PSU functional staff are civil servants assigned as government procurement officials’ specialists to perform government procurement processes. These individuals have full rights and authorities as governed by public procurement law and regulations. Structural staff are those who hold positions such as the Head of the PSU, Secretary, and administrative supports (management).

were staffed with 636 full-time, permanent staff, which exceeded the project's goal of 500 permanent positions (Ray 2018:12).

At the same time, a number of interviewees had a more critical view of the attractiveness of a career in public procurement as well as the capacity of the project to change perceptions about careers in public procurement. Some PSUs were keen to establish permanent staff, while others were not. A major factor driving this decision was that not all PSUs had a pool of good candidates for permanent procurement officers available, according to an interviewee. A lack of good candidates was also the result of negative perceptions of a career in public procurement and the risks associated with it. An interviewee reported the perception that staff often deliberately failed the exam to become a procurement official in order to avoid a post in public procurement. Another main deterrent to a career in public procurement was the uncompetitive salaries and the fact that LKPP had yet to issue a clear policy about public procurement careers at the time of this assessment. Another interviewee pointed out that the take-home pay for functional staff, to which someone who wanted to be a permanent procurement officer had to transfer from a structural staff position, was much less than that of a structural staffer.

The discrepancy between salary and responsibilities and risks associated with being a permanent procurement officer was especially pronounced at the subnational level, according to one interviewee. There, procurement is demanding and complex, and public procurement officers are operating in a context in which various interests in the business sectors may not be pleased with procurement decisions.

One interviewee provided an account of how they had tried to convince stakeholders at the national level such as the Ministry of Administrative and Bureaucratic Reform, the Ministry of Finance, the Ministry of Health, the Ministry of Transportation, and even the Office of the President that the salary range for permanent procurement officers needed to be adjusted. The interviewee thought that some progress was made on this toward the end of the compact.

## **5.6. Overall Evaluation Findings**

Changes in the 5-S factors discussed previously were intended to lead to overall improvements in procurement quality-related outcomes, perceptions of corruption and collusion, and challenges in the procurement process. These factors are addressed in this section. Specifically, these evaluation questions are:

- Is there evidence that the interventions have resulted in the outcomes outlined in the project logic?
- Has framework contracting/e-catalog resulted in time and/or cost savings?
- Is there evidence for cost savings in the program PSUs?
- Did the program contribute to change perceptions of corruption or transparency?

To answer these questions, we use both qualitative evidence from our interviews with key stakeholders and quantitative evidence from our analysis of indicators available in the PMIS data.

### **5.6.1 Procurement Quality-Related Outcomes**

Most interviewees agreed that the PM project had led to real improvements in the quality of public procurement system processes with subsequent positive changes in procurement outcomes. The introduction of framework agreements, e-tendering, and e-procurement was mentioned by several interviewees. These were seen as improving the efficiency and quality of the procurement process through the number of bidders, the duration of procurements, and costs.

#### ***Number of Tenders and Bidders***

We explored the impact of PM project on key tender outcomes using quantitative analysis of the indicators that were available in PMIS data – focusing on the impact of the PM project on the number of tenders that the PSU processes in a month, and the number of bidders that participate in a procurement. As such, it is conceivable that improvement in procurement processes would result in a greater number of

tenders being processed by a PSU; however, the expectation was that the number would decline if more effort and care were taken in processing, evaluation, and assurance of appropriate quality. The qualitative data provide some support of these ideas. For example, one interviewee reported that the number of procurement packages turned over in a given period of time increased, while there were also improvements with regard to procurement fitness to purpose.

Further, the use of framework contracts was expected to reduce the number of tenders. However, at the time of the interim assessment the framework contracts were not widely used. As stated in Section 5.3.1, only 20 procurements had been made through framework contracts. The qualitative findings also suggest the reforms have contributed to better fitness to purpose and that the fraud filters implemented in the e-procurement system filter out fraudulent bids. An interviewee also noted that framework contracts reduced the number of tenders because they allow for procurement under the framework contract, rather than having to go to the market for every procurement need.

Similarly, the qualitative interviews suggested that the number of bidders should decrease because procurement reforms are expected to weed out unqualified participants. For example, the e-procurement system may have reduced the number of bidders participating in the procurement process because only eligible bidders were able to make it through the verification process. It is true, however, that a minimum number of qualified participants is also needed to ensure a successful process.

Exhibit 7 presents the results of the weighted comparative time series design that assesses the PM project's impact on number of bidder per tender and the number of tenders processed by the PSU. The results are presented in percentage point changes. We find that the impact of the PM project on the number of bidders for the post period was negative, as was the incremental impact on tenders in 2018, but the result was not statistically significant. That is, the increase we observe could be due to chance variation alone. However, impact of the PM project on the number of bidders on all 2018 tenders was negative and statistically significant: the PM project led to an 11.5 percentage point reduction in the number of bidders per month in 2018, which, given a treatment group mean of 22.1 bidders in 2018, translates to a reduction in the number of bidders by nearly 3. This implies that the project's impact also took time to mature. This overall finding is supported by the qualitative finding that the procurement reforms would cull out unqualified bidders, and reduce the number of bidders per tender.

There was no significantly significant impact for the number of tenders per month cleared by the PSUs (Column 2 in Exhibit 8). The incremental impact on tenders per month in 2018 and the overall impact on 2018 tenders was positive, but the effect was not statistically significant.

**Exhibit 7 Number of Bidders per Tender and Number of Tenders per Month**

	(1) Number of Bidders	(2) Number of tenders per month
Treatment * post = (after September 2016) = $\beta_1^2$	-1.86 (-0.243)	-1.61 (-0.103)
Treatment * post2 = (2018) = $\beta_2^2$	-9.83 (-1.23)	21.6 (1.12)
$\beta_1^2 + \beta_2^2$ (total impact for 2018)	-11.5** (-2.54)	19.6 (0.804)
Treatment group 2018 mean	22.1	22.4
Regression adjusted comparison group mean	24.6	18.7
Observations	18110	728

Source: LKPP PMIS administrative data.

Notes: For full sets of results see Appendix A. Coefficients are transformed into percentage points for ease of interpretation. Standard errors are clustered at the PSU level. *t* statistics in parentheses.

<sup>\*</sup>  $p < 0.10$ , <sup>\*\*</sup>  $p < 0.05$ , <sup>\*\*\*</sup>  $p < 0.01$

### **Cost Savings Opportunities**

A general goal of the PM project was to make the procurement process more efficient through these reforms, which would lead to cost savings. The reduction in cost could be generally measured as a reduction in the value at which the tenders are cleared, or the amount offered for the tenders. However, lower offers may not always provide better value for money if the lower costs are achieved through bidders delivering lower quality goods and services. To answer the evaluation questions related to cost savings, we discuss both qualitative and quantitative evidence below.

Several interviewees mentioned that the e-catalog system had lowered transaction costs and the turnaround time for procurement packages considerably. One interviewee estimated that cost savings were as much as 30%, while 80-90% less time was needed to turn around procurement packages. Other project participants interviewed mentioned similar figures in terms of cost and time savings. Interviewees reported that government units realized the potential for cost and time savings with the e-catalog very quickly, and as a result, provincial and district governments beyond the pilot project began using the e-catalog system for their procurement needs. PM project reporting asserts that framework contracting also delivered improvements that led to savings both in terms of hard costs and time. This was mainly due to the reduction of procurement processes that had to be initiated under framework contracts, according to several interviewees. Based on the difference between historical prices paid for goods and services and the realized prices, the project estimated that a total savings of \$2.23 million was achieved on procured goods and services through framework agreements (MCA-I 2018a:13).

An example the interviewees provided to show how reformed procurement procedures had led to cost savings was the procurement unit at the Bandung Institute of Technology (ITB). Before the program, all ITB faculties had their own maintenance budgets for buildings they occupied and would hire separate contractors to conduct maintenance work. After ITB had become part of the procurement reform project, the institute developed a centralized contract for building maintenance and reduced the number of contractors to four or five, all under the same contract. Consequently, services became more standardized, and the quality of services improved, while the efficiency of maintenance contractors increased.

Several frontline procurement officers also mentioned how the LPSE had greatly improved their ability to measure and track efficiency of the procurement process and cost savings. Other frontline procurement officers expressed their frustrations with still falling short of the best practices introduced by the MCC procurement reform project mainly due to poor quality data or a lack of data needed to conduct procurement in line with MCC procurement reform standards.

The results from the weighted comparative time series analysis of PMIS data do not show a statistically significant impact of the project on the average amount offered for each tender. As seen in Exhibit 8, the impact of PM on amount offered is negative on tenders after the project was initiated, with a positive incremental impact of tenders in 2018. However, the results were not statistically significant. The impact of the PM project on tenders in 2018 was also positive, suggesting that as the project advanced the average amount offered per tender increased, but the result was not statistically significant.

**Exhibit 8 Amount Offered per Tender (US\$/10,000)**

	(1) Amount offered per tender
Treatment * post = (after September 2016) = $\beta_1^2$	-16.8 (-1.23)
Treatment * post2 = (2018) = $\beta_2^2$	24.2 (0.721)
$\beta_1^2 + \beta_2^2$ (total impact for 2018)	3.28 (0.134)

	(1) Amount offered per tender
Treatment group 2018 mean (\$10,000)	16.8
Regression adjusted comparison group mean	16.3
Observations	18081

Source: LKPP PMIS administrative data.

Notes: For full sets of results see Appendix A. Coefficients are transformed into percentage points for ease of interpretation. Standard errors are clustered at the PSU level. *t* statistics in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### **Duration of Procurement Process**

Other than cost savings, the PM project was expected to reduce the time taken to process tenders. However, as the reform process is implemented, or even after, procurement processing can take more time if it means that the process is more careful, particularly during the early stages of its implementation. For example, one interviewee pointed out that the turnaround of procurement packages may actually take longer at present than before the procurement reform project began. This could be if PSUs dedicate more time to turning around procurement packages in a professional manner than was previously the case. In addition, the e-catalog and e-procurement systems makes procurement information public, which may have encouraged procurement professionals to take more time and care in verification and selection.

The results of the weighted comparative time series indicate that the number of days to evaluate bid proposals went up but the result was not statistically significant (see column 1, Exhibit 9). The number of days to evaluate bid proposals went up by 0.242 percentage points, with an incremental impact of 4.61 percentage points in 2018, and an average impact of 4.86 percentage points on tenders in 2018. However, these results were not statistically significant.

The PM project's impact on number of days taken to verify tenderer qualification also went up for all tenders after the project was implemented – a 47.8 percentage point increase, with an incremental impact on tenders in 2018 of 15.8 percentage points. When we measure the total impact of the PM project on tenders in 2018, the results suggest that the PM project increased the number of days to verify tenderers by 71 percentage points, or roughly 2 days given that the treatment group mean is 4.5 days in 2018, and this result was statistically significant. This result is also validated by the qualitative finding that adherence to procurement guideline implied greater time taken to process the tenders.

### **Exhibit 9 Time-Elapsed Outcomes**

	(1) Evaluation of bid proposals (days)	(2) Verifying tenderers' qualification (days)
Treatment * post = (after September 2016) = $\beta_1^2$	0.242 (0.024)	47.8 (1.60)
Treatment * post2 = (2018) = $\beta_2^2$	4.61 (0.688)	15.8 (1.36)
$\beta_1^2 + \beta_2^2$ (total impact for 2018)	4.86 (0.545)	71.1* (1.95)
Treatment group 2018 mean (days)	10.6	4.50
Regression adjusted comparison group mean	10.1	2.63
Observations	18110	18110

Source: LKPP PMIS administrative data.

Notes: For full sets of results see Appendix A. Coefficients are transformed into percentage points for ease of interpretation. Standard errors are clustered at the PSU level. *t* statistics in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

In summary, the PM project resulted in fewer bidders per tender in 2018 for all tenders initiated in 2018 – a reduction in number of bidders by 11.5 percentage points. The number of days taken to verify tender qualification also increased significantly – by 71 percentage points. Overall, this suggests that the

procurement reform potentially led to improved adherence to procurement guidelines as evidenced by the increased number of days taken to ensure that the tenderers are qualified, and potentially that fraudulent bidders were weeded out by the new systems. However, thus far this has not led to a measurable reduction in the amount offered for each tender, although qualitative evidence suggests that there is some movement toward this goal.

In interpreting the impact evaluation results, it is important to note that the comparison PSUs also received some inputs from the procurement reform process, although not at the same level of intensity as the treatment PSUs. This means that any differences between the treatment and comparison means are likely smaller than they would have been if the comparison group had not been engaged at all. Therefore, the result of the quantitative analysis are also a lower bound estimate. Another important point that arises out of these analysis is that the existing indicators in the PMIS data warehouse do not provide an unequivocal measure of improvement in procurement reform process. Throughout our discussion we note that an indicator could increase or decrease depending on the nature of the impact we expect. This highlights the importance of reviewing the data that PMIS captures and developing indicators that can clearly determine if the procurement process is working well or developing target levels for each indicator against which the actual levels can be compared.

#### 5.6.2 Perception of Corruption, Bias, Collusion, and Lack of Transparency

The PM project was expected to reduce the extent of corruption, bias, and collusion through these reforms. All interviewees agreed that corruption, bias, and collusion remain endemic and systemic across Indonesia's public procurement landscape, but this was tempered with the widespread sentiment that the situation had improved from before. In the context of framework agreements and the PMIS system, fraud filters were introduced, which helped identify suspect activities.<sup>12</sup> LKPP was also committed to curbing corruption, bias, and collusion and collaborated with the Corruption Eradication Commission (KPK) to that end.

The introduction of e-procurement reduced bias in tenders, according to a few interviewees. Before the project, open bids were sometimes held at the police office for protection because certain bidders tried to prevent other bidders from submitting bids, according to one interviewee. The first e-procurement used in Indonesia improved the situation somewhat but was still subject to manipulation. For example, an interviewee described that on several occasions, sellers submitted their bids early, then hired local college students to submit hundreds of bogus bids, thereby jamming the e-procurement system and preventing competitors from submitting their bids on time. The e-procurement system was then upgraded in the context of the project and now includes sophisticated fraud filters and algorithms to detect suspicious activities, providing Indonesian procurement officers with a powerful e-procurement system, according to an interviewee. According to an interviewee, it became more difficult to "rig" the procurement process after the reforms introduced by the project.

The introduction of framework contracting was another effective tool for reducing corruption, according to several interviewees. They reported that framework contracting reduced the number of procurement deals that had to be made, thereby lowering the opportunities for backroom deals to be struck. Framework agreements, in other words, created greater control and oversight over the procurement process, thereby reducing corruption and collusion.

Another positive effect reported by the PM project on containing corruption was the realization among procurement staff that having comprehensive procurement data available was an effective tool for fighting corruption. In other words, the PM project initiated a cultural change within the public

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<sup>12</sup> Fraud Filters include system processes to prevent fraudulent or improper processes and synchronous, scheduled, and ad-hoc filtering. The filters also include a visualization component so users can see the result of filtering and notifications following the notification rules.

procurement community to the extent that officers realized how “boring” procurement data, as an interviewee phrased it, can not only accelerate procurement but also contain corruption.

One interviewee pointed out that problems with corruption and collusion in procurement do not solely originate on the buyer’s side. In one procurement unit for a university, there were massive issues with regard to the quality of goods and services purchased because many were supplied by re-sellers. Many re-sellers substituted or manipulated goods they had bought from original manufacturers. The interviewee mentioned that the project then approached original manufacturers to establish lists of authorized distributors. This improved the quality of goods and services.

Another interviewee pointed out that corruption had just shifted as a result of improvements in the public procurement process brought about by the project. While there may now be a more rigorous procurement process and fewer opportunities to manipulate it, corruption has now shifted to the planning and budgeting processes of government projects. For example, government officials can engage in rent seeking by including procurement for goods and services that are not actually needed during the planning and budgeting process, while still following procurement regulations. These are not part of the public procurement process and therefore beyond the reach of the project.

In short, despite the many positive examples of how corruption was curbed in public procurement, everyone agreed that containing corruption in Indonesia is a multi-generational effort. One interviewee thought that it would take decades of dedicated corruption eradication measures before Indonesia will reach the level of transparency and accountability present in European countries.

### 5.6.3 Challenges in the Procurement Process

Interviewees reported challenges that ranged from broad political and administrative hurdles to very specific technical challenges. Concretely, a lack of support from high-level politicians at the beginning of the PM project was mentioned by several interviewees as a major hurdle to achieving improvements in public procurement in Indonesia. However, most interviewees also stated that high-level political support improved considerably as the project matured. The role of MoHA continued to be seen critically by many interviewees, however. MoHA would often refuse to approve applications for permanent PSUs, for instance.

Some interviewees wondered about the sustainability of the reforms initiated as the successful adoption and implementation of reform initiatives very often depended on the support of a single individual. These individuals may transfer elsewhere in the bureaucracy or, in the case of politicians, may fail to be re-elected or may reach their term limit. It remains to be seen whether procurement reforms will continue in jurisdictions where reformers left their post recently.

Ongoing endemic and systemic corruption and collusion were another obstacle to procurement reform mentioned by several interviewees. One interviewee even expressed concerns that the procurement reform project may teach local procurement officials how to be more sophisticated in manipulating the system in their favor.

Finally, interviewees pointed to obstacles regarding specific aspects of the procurement reform project. Some of these hurdles were technical in nature. Several interviewees pointed out how much time had been lost because LKPP tried to develop its own software for e-tendering and e-procurement. Eventually, LKPP became convinced that software solutions available on the market were more suitable to their needs. Some interviewees also pointed out the technical challenges of adopting and implementing modern procurement systems in remote areas of the archipelago state, where Internet access was patchy or absent.

## 5.7. Policy Implications

The findings from the evaluation suggest a variety of avenues for future procurement reform initiatives.

- Future interventions ought to channel more resources towards local PSUs, and revisit the salary range for procurement officers. While most interviewees agreed that careers in public procurement had

become relatively more attractive than before the PM project began and in comparison to other career opportunities in the public sector, public procurement careers were still not very desirable. The low remuneration for public procurement officials played a big role in perpetuating this negative perception of public procurement careers. In addition to attracting talented bureaucrats to public procurement, more resources for local PSUs would also address a lack of institutionalization of many of the reforms, according to several interviewees. Many initiatives had been driven forward by dedicated individuals but after these individuals had left (often to pursue more lucrative careers in other parts of the bureaucracy), procurement reforms were in jeopardy.

- Another notable finding was the perception that corruption has shifted from the public procurement process to the budgeting and planning phase. In many ways, the perception of this shift is testament to the success of the project. Interviewees noted that since it has become more difficult to extract money and resources from the public procurement project, rent-seekers have shifted their attention to the budget and planning process. Presidential Regulation No. 16/2018 on Public Procurement of Goods and Services, which was issued in March 2018 and which revokes and replaces Presidential Regulation No. 54/2010 on Public Procurement of Goods and Services, stipulated new requirements for self-management (*swakelola*) during the procurement planning stage. This is an opportunity to design future reform programs focusing on procurement budgeting and planning.
- The broader context within which procurement reform occurs needs to be addressed more explicitly in future interventions, the influence of which was noted as a potential risk in the program design documents. Several interviewees mentioned how the political aspects of procurement reform had been underestimated and were only beginning to be addressed in Phase 2 of the procurement reform project. A lack of coordination and rivalries between ministries and government units were mentioned by most interviewees as major obstacles to successfully implementing procurement reform initiatives over the duration of the project. Future initiatives therefore ought to take political dynamics between government entities as determinants of project outcomes more seriously. Furthermore, there need to be initiatives to strengthen oversight of the procurement process through civil society organizations and advocacy groups given the endemic and systemic corruption within the judiciary in general and law enforcement in particular. The space for civil societies to monitor the state has narrowed in recent years. In late 2018, for instance, a new regulation on whistleblowing (Presidential Regulation No. 43/2018, replacing Presidential Regulation No. 71/2000) was adopted. While the new regulation offers a financial award to whistleblowers, it revokes the protection guaranteed to whistleblowers under the old regulation. Future initiatives need to aim at reversing such developments and work toward creating an environment that is conducive to third-party supervision of public procurement in Indonesia.

## 6. Conclusion

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In summary, the evaluation team found that based on responses from a limited number of interviewees the PM project improved a range of aspects of public procurement in Indonesia along the 5-Ss – shared values, structure, systems, skills, and staff. Most interviewees reported that **shared values** improved over the course of the project regarding commitment to and perceptions of procurement reform. Concretely, several interviewees pointed out that the political support for procurement reform had not been very strong, especially at the beginning of the project. While political support for procurement reform improved over the course of the project, several interviewees continued to see politics as the main obstacle to improvements in public procurement. The project strengthened the organizational **structure** of the majority of pilot PSUs, leading to increased permanence and independence. Explicitly, interviewees reported that PSUs were on a stronger legal footing and became more integrated into the (local) administrative apparatus due to the project activities. The PM project helped develop and implement a number of new procurement tools and **systems** that staff could draw on in their work than before the project. These included e-tendering and e-procurement, based on state-of-the-art software. Framework

contracting and other innovations adopted and implemented under the PMIS initiative are other examples of measures introduced by the PM project that improved the quality of procurement in Indonesia.

A majority of interviewees also reported gains with regard to the effectiveness and efficiency of the procurement process, leading to both cost and time savings. In addition, corruption and collusion in the public procurement process have become more difficult according to most interviewees due to the increase in transparency and accountability brought about by the innovations mentioned above. Further, the majority of interviewees reported that the PM project training and mentoring improved the **skills** of procurement staff overall, although there is still room for growth. In addition, the number of bureaucrats who became trained procurement professionals increased, and a larger portion of PSU **staff** became permanent procurement officers than before the project period, although project targets were not all met in this regard. Pursuing a career in public procurement became more attractive as a result of the project as well. Most interviewees further reported that awareness of the importance of good public procurement had improved among both bureaucrats and politicians. Overall, interviewees reported that the impact of the MCC procurement reform project has been a positive one.

The impact evaluation found some evidence of overall changes in procurement quality-related outcomes when comparing Phase 2 PSUs that were part of the project to PSUs that were not selected for the project but ultimately participated in some project activities, implying that the impact estimates are an underestimate. The evaluation did not find any impact of the PM project on tenders processed per month or the amount offered for tenders per month. However, we found evidence of the PM project in reducing the number of bidders per tender potentially because unqualified bidders were being weeded out by the procurement systems. We also found evidence of an increased number of days to verify tenderers' qualifications, which potentially reflects the time taken to adhere to procurement guidelines. The results also suggests that the incremental impact of 2018 was significant in some instances, which highlights the importance of the endline analysis in measuring the impacts of the project as the procurement reform process matures. Further, the results highlight the need for clarity on the theory of change and objectives of the procurement reforms on the direction of these indicators. Insofar as the PMIS database will be used to assess the procurement process, there is a need to assess the validity of the indicators to unequivocally measure progress or at least in setting target levels against which performance can be measured.

Looking ahead, most interviewees also agreed that there was still considerable scope for improvement with regard to public procurement reform. For example, since the project had improved the public procurement process, several interviewees reported that corruption and collusion had just shifted to the planning and budgeting phase. Corrupt activities in the planning and budgeting phase were beyond the reach of the project, interviewees lamented. Interviewees reported some challenges related to political support, continued corruption, and technical challenges with new electronic systems. In addition, some interviewees were unsure about the sustainability of the interventions.

As discussed above, the findings from the evaluation suggest a variety of avenues for future procurement reform initiatives, although these will be updated once the endline is complete.

- Future interventions ought to channel more resources toward local PSUs, particularly to increase the salary range for procurement officers.
- Future reform programs should focus on procurement budgeting and planning to address corruption and collusion that has shifted to that portion of the process.
- Future interventions should more explicitly aim to address the political and governance constraints to procurement reform to further improvements to the public procurement system.

## 7. Next steps

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The next steps for the evaluation involve conducting endline data collection to generate a final evaluation report. This effort will include a quantitative endline survey in June 2019 of employees of PSUs. The survey will be nearly identical to the baseline survey, to provide accurate comparisons. While the administrative data were able to provide a picture of some procurement outcomes such as number of bidders and amount offered, the survey will capture perceptions of PSU employees as well as changes in the procurement skill levels. At endline, we will also procure another round of the PMIS data from LKPP to build on our analysis of the administrative data and adapt our model to be able to identify the differential impacts of this additional time period.

In addition to the quantitative data collection, we will also conduct a sample of qualitative interviews with PSU staff and stakeholders. Based on our interim results, we will adapt some of the qualitative instruments to fill in gaps left by our interim findings. For example, it is clear that there has been a differential impact of the PM project on procurements in the different procurement categories, and our current data do not shed enough light on the causes of this. Therefore, it will be important at endline to collect data to understand why these differential impacts might exist, and what factors may have contributed to larger impacts in consulting services than procurement of goods or construction.

Part of understanding the factors contributing to our results will also be to explore them with respect to the other government regulations and reforms that were happening concurrently with the PM project, including activities and programs implemented by LKPP. While the PM project did work to effect change within the governmental procurement system, other regulations were being implemented simultaneously, and these may have had an impact on procurement outcomes as well.

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## Appendix A: Full Result Tables

**Exhibit 10 Balance Test with Unweighted and Weighted Means**

Baseline Characteristics	Treat N	Comp N	Treat Mean	Comp Mean	Difference	P-value	Weighted Treat Mean	Weighted Comp mean	Difference	P-value
Grade on quiz module	203	132	54.1	52.1	2.1	0.11	54.1	52.4	1.7	0.34
Distance from Jakarta (km)	203	132	1249	1348	-99	0.41	1249	1275	-26.2	0.96
PSU has permanent status	203	132	0.3	0.5	-0.2***	0	0.3	0.3	0.0	1
Number of full time staff	203	132	18.7	14.6	4.1***	0	18.7	11.7	6.9	0.12
Number of permanent staff	203	132	14.5	11.3	3.2**	0.02	14.5	8.0	6.5	0.15
How many total years of experience do you have in procurement-related tasks	203	131	6.4	6.5	-0.2	0.72	6.4	6.9	-0.5	0.56
Does your PSU use a set of Standard Operating Procedures (SOP)	200	130	0.8	0.9	-0.2***	0	0.8	0.9	-0.1	0.14
Rate your satisfaction with the overall procurement process	202	130	3.9	4.1	-0.2**	0.03	3.9	4.1	-0.3	0.21
Average number of bidders per tender in pre period	203	132	24.4	32.7	-8.2***	0	24.4	26.9	-2.5	0.68
Total value of tenders in pre period	203	132	6.5	9.1	-2.6***	0	6.5	7.9	-1.4	0.62
Total number of tenders in pre period	203	132	386	557	-170***	0	387	522	-135	0.41
Average time in days from start to end date	203	132	19.7	23.0	-3.3***	0	19.7	21.2	-1.5	0.53
Rate the level of framework contracting knowledge in your PSU	197	126	3.8	3.9	-0.1	0.53	3.8	3.9	-0.1	0.59
Average satisfaction with timeliness and efficiency	203	132	3.8	3.9	-0.1***	0	3.8	3.9	-0.1	0.28
Average feelings about corruption in procurement	203	132	1.7	1.8	0.0	0.43	1.7	1.7	0.0	0.81

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Exhibit 11 Full Regression Results for Number of Bidders per Tender, Number of Tenders per Month, and Amount Offered per Tender**

	(1) Number of Bidders	(2) Number of tenders per month	(4) Amount offered
Treatment	10.83** (2.55)	-9.75 (-1.33)	18.9** (2.15)
post=1 (2016-2017)	7.29 (1.07)	-20.4* (-1.73)	10.11 (1.18)
Treatment # post=1	-1.86 (-0.243)	-1.61 (-0.103)	-16.8 (-1.23)
post2 (2018)	3.94 (0.607)	-3.75 (-0.555)	23.0*** (2.81)
Treatment # post2=1	-9.83 (-1.17)	21.6 (1.12)	24.2 (0.721)
Distance (km/1000)	4.77 (1.43)	-18.2** (-2.49)	15.9*** (3.46)
PSU has permanent status	1.72 (0.543)	5.93 (0.573)	1.45 (0.245)
Average response to whether PSU has SOP	-4.40 (-0.583)	10.8 (0.648)	2.70 (0.171)
Baseline amount offered in US\$/1000	-1.74** (-2.01)	2.61 (1.92)	2.97*** (3.43)
Baseline number of bidders	3.35*** (25.7)	1.26*** (3.51)	-0.43 (-1.59)
Baseline tenders per month	-0.20** (-2.04)	4.75*** (12.43)	-0.69*** (-3.45)
Baseline duration	1.51*** (2.98)	-2.42** (-1.98)	4.44*** (5.43)
Constant	794*** (20.2)	553*** (11.1)	228*** (6.75)
Observations	18110	728	18081

Source: LKPP PMIS administrative data

Notes: Coefficients are transformed into percentage points for ease of interpretation; *t* statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Exhibit 12 Full Regression Results for Number of Days to Evaluate Bid Proposals and Verify Tenderers' Qualifications**

	(1) Evaluation of bid proposals (days)	(3) Verifying tenderers' qualification (days)
Treatment	11.6*** (3.11)	-16.8 (-1.17)
post=1 (2016-2017)	-7.65 (-1.25)	-32.3*** (-2.79)
Treatment # post=1	0.24 (0.024)	47.8 (1.60)
post2 (2018)	12.1*** (3.56)	6.60 (0.723)
Treatment # post2=1	4.61 (0.688)	15.8 (1.36)
Distance (km/1000)	8.43 (1.81)	4.65 (0.391)
PSU has permanent status	-7.58 (-1.26)	-23.3 (-1.41)
Average response to whether PSU has SOP	15.0 (1.15)	57.7 (0.990)
Baseline days for bid proposals	13.2*** (7.95)	
Baseline amount offered in US\$/1000	-2.37** (-2.15)	2.88 (1.49)
Baseline number of bidders	-0.442* (-1.71)	-1.18 (-1.52)
Baseline tenders per month	-0.645*** (-3.27)	-0.390 (-0.847)
Baseline duration	-0.360 (-0.268)	2.69 (1.60)
Baseline days to verify tenderers qualifications		25.0*** (7.04)
Constant	304*** (5.93)	-36.5 (-0.832)
Observations	18110	18110

Notes:

Coefficients are transformed into percentage points for ease of interpretation.

t statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: LKPP PMIS administrative data