Government Analytics Using Data on the Quality of Administrative Processes

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SUMMARY

This chapter seeks to highlight the value of quantifiable measures of the quality of back-office processes when assessing governments' bureaucratic effectiveness. Conceptually, it defines a framework for understanding administrative *process productivity*. It then presents case studies from the Ghanaian and Liberian civil services, where different measures of internal (within bureaucratic units) versus external (across bureaucratic units) process quality were piloted. Specifically, these pilots sought to assess the feasibility, cost, and scalability of the process measures considered. We explore their correlations with other measures of productivity (for example, financial expenditures and the completion of planned tasks) and the claims and characteristics of civil servants in the surveys we have undertaken.

ANALYTICS IN PRACTICE

- Many of the activities undertaken by public administrators can be characterized as the application of proper processes and procedures to a project, file, or case. As such, the quality of the processing work undertaken by public officials is an important part of the quality of government activity and a determinant of public sector productivity.

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- Government analytics systems should include measures of the quality of processing by government officials. This requires a framework for assessing the adherence of administrators' process work to accepted government procedure. An important distinction in the development of a conceptual framework for assessing process quality is whether a process is mainly confined within organizational units (what this chapter calls *internal process productivity*) or is associated with interactions between organizational units (*external process productivity*). Separately, such a framework could be formulated to assess the quality of processes in general within a public service or targeted at domain-specific activities, such as the implementation of an appraisal process.

- By not measuring the quality of process productivity, analytics systems bias measures of the quality of government toward more measurable aspects of government work, such as the activities of frontline officials, and away from the important body of administrative professionals who support them. By taking a narrow approach to defining bureaucratic productivity according to frontline outputs, studies risk missing why a service may be delivered well or poorly.

- Such data can be collected automatically, as part of digitized government work, or manually, by assessors employed to judge process quality in the physical records of projects, files, or cases. Analysts can benchmark the quality of processes evidenced by relevant records in terms of the extent to which they are well organized, logical in flow, and adherent to government procedure; their timeliness with respect to a deadline; or whatever aspect of a process is of interest. To some degree, the digitization of government has supported the improvement of processes—by ensuring that all components of a process are present—but it also facilitates the physical or automated inspection of process quality.

- Measures of process quality in public administration open up three areas of government analytics: assessments of variation in the quality of processes and associated productivity within and across organizations in the same country, comparisons of process quality across countries, and assessments of public sector process quality over time. In this way, government analysts can pinpoint where government procedure is not being adhered to, how different processes relate to public sector productivity, and what dynamics exist across individuals and organizational units.

INTRODUCTION

The effective delivery of government work requires a long chain of processes undertaken by public officials. From policy development, through budget and planning, to monitoring and evaluation, many of the activities undertaken by public administrators can be characterized as the application of proper processes and procedures to a project, file, or case. This is the back-office administration of public policy. In the case of policy development, for example, proper process in most modern governments would include presenting a balance of evidence on the pros and cons of policy content, ensuring broad-based consultation within (and potentially outside) government, and generating a coherent policy that others in government could follow.

The quality of the processing work undertaken by public officials is thus an important part of the quality of government activity. Given how important these processes are in the chain of delivery for government goods and services—such as the budget and procurement processes—process quality is a key component of public sector productivity.

This chapter articulates a framework for measuring the quality of these processes based on the idea of adherence to accepted government procedure. The rationale of adherence to government procedure may be varied: it may include equity considerations (ensuring all cases are dealt with in a similar way), fiduciary concerns (ensuring resources are utilized for the public good), and legal issues (ensuring that actions are in line with existing laws and the rules of the public service). The quality of government processes can be

measured along these and other margins as a measure of the nature of government functioning. This chapter outlines specific measures of the quality of government processes and discusses their use through two case studies in Ghana and Liberia.

To date, measures of bureaucratic activity and effectiveness have focused on frontline outputs, as described in chapter 29 of the *Handbook* on service delivery indicators (SDI), financial expenditures or the procurement of goods, as described in the *Handbook* chapters on budget and procurement (chapter 12), and the provision of physical infrastructure, as described in the *Handbook* chapter on task completion (chapter 17). This chapter focuses not on the prices, wages, or services achieved by the government but on the quality of the processes applied toward those ends. For example, a procurement officer may gain low prices for a set of goods procured but do so in a way that breaks public service rules and potentially exposes the public sector to unnecessary reputational risks. Similarly, an officer may complete all assigned tasks within deadline and budget but do so in a way that has negative spillovers on other units in the agency.

This approach to understanding the quality of work in the public sector has parallels to aspects of the SDI outlined in chapter 29. For example, in assessing the quality of education, analysts have assessed the extent to which teachers are subject to classroom observation by an independent assessor and are provided feedback on their teaching. This measure does not score the quality of the teaching itself, or even the quality of the feedback. Rather, it assesses the extent to which a process is in place to provide feedback, assuming that feedback is an important part of a quality teaching environment.[1]

Perhaps the closest approach to an assessment of bureaucratic functioning that attempts to measure the quality of government processes is the approach associated with case analysis. As described in chapter 15 on administrative case data, such analysis assesses the quality of responses by public officials to requests for public services, such as in the social security sector, or the fulfillment of public responsibilities, such as the collection of taxes. However, the data collected are almost universally on outcomes of these activities, such as the volume of cases processed in a particular time frame or, conversely, processing speed, prices paid, and so on. A complement to this analysis characterizes the quality of public sector actors' work processes, from the comprehensiveness of records to the quality of the evidence they provide to back up their assertions. So while measures like those in chapter 15 typically characterize the speed of case completion as a positive outcome, a *process productivity* perspective would assess whether sufficient time had been allotted for consultation (such as for advertising a procurement). Little quantitative work has been undertaken on this margin of government activity.[2]

This paucity of preexisting work stands in contrast to the fact that a substantial portion of the work of public administration is best characterized as processing. Rasul, Rogger, and Williams (2021) find that 73 percent of civil service activities in Ghana can be categorized as "processing tasks." The common conception of government work is frequently back-office process work.

The absence of effective measures of the quality of government processes has skewed the focus of public sector studies toward frontline officials and away from the important body of administrative professionals that support them.

Most civil servants play an important role in facilitating the role of frontline staff, by providing the long chain of supporting activities that are at the core of the effectiveness of government. Processing work is a substantial component of this support.

By taking the narrow approach of defining bureaucratic productivity according to frontline outputs, studies also risk missing why a service may be delivered well or poorly. For example, for a citizen to receive a welfare payment, budgetary officers must ensure sufficient funds are available, contracting officers must ensure effective transfer systems to recipients, and accounting officers must ensure a clear paper trail to reduce the diversion of funds. Wrapping the entirety of these activities into a single indicator of payment disbursement does not allow us to uncover which process creates a bottleneck.

Consequently, this chapter seeks to highlight the value of quantifiable measures of this type of back-office, administrative process productivity when assessing governments' bureaucratic effectiveness. It does so by presenting case studies from the Ghanaian and Liberian civil services, where different measures of *internal* (within bureaucratic units) versus *external* (across bureaucratic units) process quality were piloted.

And it considers both the quality of standard work processes (Ghana) and the implementation of a new set of processes related to staff appraisals (Liberia). These pilots introduce concrete ideas for measuring process quality and showcase their feasibility and scalability to entire public services.

Measures of process quality in public administration open up three areas of government analytics. First, we can use such measures to assess variations in process quality and associated productivity within and across organizations in the same country. For example, by using a common assessment of process quality across organizations, we can identify which organizations are appropriately adhering to government procedure across a government. Second, with appropriate caveats, common measures enable comparisons of process productivity across countries. For example, understanding the time it takes for a social sector ministry to provide inputs to the center of government across countries provides microevidence of the relative quality of governance. Finally, given the relative simplicity of these measures, we could collect productivity data on a regular basis and thus provide a more nuanced assessment of public sector capacity over time.

This chapter continues as follows. It begins with an overview of related measures and then presents concrete applications of these ideas in case studies from Ghana and Liberia. It then showcases the results of measurement in these two settings and discusses what we learn about the nature of process quality in the public service.

CONCEPTUAL FRAMEWORK AND RELATED LITERATURE

Conceptually, the notion that government processes should adhere to particular standards is widespread. Most governments have rules for undertaking (or *processing*) the tasks of public administration that articulate best practices. These best practices almost universally align with themes of completeness, rationality, fairness, and efficiency—all themes extolled by the Weberian school of public administration.

Wilson (1989, 26) argues that understanding public sector productivity, in contrast to that of the private sector, means understanding the processing of tasks. Since the goals of the public sector are too vague to be a useful organizing framework, the public sector must focus on specializing in improved task or process productivity. This reasoning has since been bolstered by a range of authors (for example, Alesina and Tabellini 2007; Dixit 2002).[3]

However, few analysts argue for a coherent notion of government processes as a component of government functioning or of public sector productivity. Yet if government processes mediate the use of inputs to the production function of government, then undertaking them to a high standard would seem to be an output of government work related to functioning and productivity. In relation to ideals of the state, such as the equitable treatment of cases, process may be an end in itself, observed in the capacity of public officials to make coherent decisions.

When public officials make coherent arguments for choosing one policy over another that incorporate relevant information, they improve the quality of government outputs but also characterize government itself. Both of these are public goods of their own type. Similarly, when a manager judges one official eligible for promotion over another using solid evidence of the performance of both officials, the public sector becomes more effective and is characterized as meritocratic. Again, both of these are public goods in distinct ways.

For this reason, whether public officials process government work in the appropriate ways can be studied as a form of public sector productivity: *process productivity*. When the government effectively and efficiently undertakes work according to proper processes, it generates better outputs for the next stage of government work and defines a superior character of government. It is therefore more productive in producing these public goods. Take, for example, a firm that creates parts to sell to other firms that build machines out of those parts: when it does this with a high level of quality and in a reliable way, the parts firm is productive. Likewise, a government organization that undertakes its tasks using proper processes is a more productive institution.

What proper process means will vary by setting and the tasks focused on. However, best practices in government processes often include the clear and complete gathering of evidence and rational decision-making, as well as equity considerations (ensuring all cases are dealt with in a similar way), fiduciary concerns (ensuring resources are utilized for the public good), and legal issues (ensuring that actions are in line with existing laws and the rules of the public service). An example of an approach to assessing the quality of decision-making is the SMART framework, which considers whether relevant elements are specific, measurable, achievable, relevant, and time-bound. This framework will be applied in one of our case studies.

This chapter assesses how an analyst might measure process quality, and thus process productivity, on a large scale (across a substantial portion of units of public administration) using a quantitative approach. Efforts to date to characterize government and its processes have been broad-brush, such as expert assessments of corruption that outline the propensity to circumvent proper processes for personal gain across an administration as a whole.[4] Our focus is on measurement at a granular level, frequently the task, project, or individual level.

This more granular level is the area of measurement for which there is little to no previous work and, as argued in much of the rest of the *Handbook*, where there is the most potential for gains from analysis. For a similar reason, we look for processes that are generally applied across government, rather than a domain-specific set of processes, such as how doctors should treat patients (Bedoya et al. 2017; Daniels et al. 2017; Wafula et al. 2017). However, to provide clarity in the application of our framework to domain-specific settings, our second case study looks at the application of process productivity assessments to a domain-specific activity undertaken by all public servants—performance appraisal.

Empirical assessments of government processes in political science have studied the nature of responses to public information requests (also known as freedom of information requests). By assessing the qualities of government responses, researchers have assessed whether citizens receive a response quickly (Wehner and Poole 2015; Wood and Lewis 2017) and equitably (Berliner et al. 2021; Peisakhin and Pinto 2010). This approach is clearly highly constrained in what it can measure as an external lens with ambiguous links to government functioning.

In the economics literature, Chong et al. (2014) assess the quality of government processes through how quickly misaddressed letters are returned to their original senders. This measure is unrelated to most aspects of government work but can be seen as similar in spirit to the measure we will introduce in this chapter to assess government productivity through how responsive units are to centralized requests for information.

The closest paper to measuring internal process quality in a large-scale, quantitative way is Banerjee et al. (2021), who use retired senior police officers to grade a random set of case files from project police stations. They grade officers on whether scientific techniques were used, the care with which evidence was collected, and so on. Though their focus is explicitly on the clarity of police processes, the approach we elaborate in this chapter is a generalization of their approach.

We distinguish *internal process productivity*, the quality of administrative processes for activities confined within a particular administrative unit, from *external process productivity*, the quality of administrative processes for activities in which units interact. An example of the first is the development of the design of a project in which a unit specializes, while an example of the second is a request for information from one unit by another.

We make this distinction because accountability and professional dynamics vary distinctly between the two cases. Public administration is typically conceptualized around work units organized within a hierarchy. These work units have a degree of flexibility in how they organize their approaches to undertaking government work and implementing process guidelines. However, the head of a unit is responsible for ensuring process quality, as only the head administrator of an organization ensures the organization as a whole adheres to processes. An analogous assessment can be made between organizations and the government as a whole.

Similarly, when communicating within organizational units, different record-keeping formats are required than when communicating between organizations. For this reason, the nature of measurement must vary when analysts are assessing internal versus external conceptions of process productivity.

EMPIRICAL CASE STUDIES

We study the quality of bureaucratic processes in the public administrations of two West African countries: Ghana and Liberia. These are excellent environments for testing new measures of public service productivity. They are governed by clearly defined and well-structured rules for undertaking government processes. However, similar to many developing countries, the productivity of departments and organizations in these settings varies substantially (Rasul and Rogger 2018; Rasul, Rogger, and Williams 2021). There is mounting evidence that this variation in productivity is also prevalent in the public sectors of wealthier nations (Best, Hjort, and Szakonyi 2017; Fenizia 2022), but the variation we analyze likely subsumes this heterogeneity and is representative of a large portion of the world's public administrations.

In Ghana, we study a representative set of administrative tasks under-taken by the core public administration. In Liberia we focus on process quality in relation to a specific administrative activity: the implementation of a staff appraisal system. We split our efforts into understanding the quality of internal processes, by assessing whether the processing of these tasks adheres to government procedures, and external processes, by assessing how promptly units respond to requests from central agencies. Our discussion of the two case studies thus covers the main features of process productivity outlined in the previous section.

Institutional Background

Ghana is a lower-middle-income country home to 28 million people, with a central government bureaucracy that is structured along lines reflecting both its British colonial origins and more presidentialist postindependence reforms. Ghana is one of Africa's most democratic countries.

Liberia is a low-income country of nearly 5 million people, with an agency-based administration similar in design to that of the United States. Years of civil war exacerbated recruitment and rewards based on patronage in the service. The resulting bloated workforce, a lack of established processes and procedures—or the presence of overly bureaucratic processes and procedures—and inadequate office resources have delayed and derailed the processing time for needed administrative procedures in the service. Furthermore, while Liberia is Africa's oldest and first modern republic, with a political system heavily influenced by the US Constitution, it has historically been largely characterized by minoritarianism. Democratic and recognized fair elections only commenced in the 21st century. Ghana and Liberia thus represent polities at two ends of Sub-Saharan Africa's distribution of state fragility.

Ghana's civil service consists of 57 central government ministries and departments that primarily perform the core bureaucratic functions of policy making, administration, and service delivery oversight. Ministries and departments are overseen by the Office of the Head of Civil Service (OHCS), which is responsible for personnel management and performance within the civil service. The OHCS coordinates and decides on all hiring, promotion, transfer, and (in rare circumstances) firing of bureaucrats across the service. Similarly, Liberia's Civil Service Agency (CSA) oversees the strategic leadership and management of the country's civil service, formulating and providing guidance on recruitment, personnel management, standards, and performance in civil service institutions. The Liberian service is made up of 31 ministries and agencies, in addition to the country's numerous public autonomous organizations. The architecture of the administration in the two countries has many commonalities.

Processes under Study

The civil servants we study carry out public administration activities following administrative procedures, which set out guidelines and standards for how to formally proceed with government business. These apply equally across the service and broadly aim to ensure transparency, equity, and efficiency in government business. In both Ghana and Liberia, we seek to assess the efficiency with which civil servants undertake administrative processes. However, the specific processes under study differ.

In Ghana, we focus on an assessment of process quality in core office duties, such as project planning, budgeting, and monitoring. Rasul, Rogger, and Williams (2021) describe the most common types of tasks in Ghana's central government offices. These relate to processing paperwork related to the construction of public infrastructure, such as roads, boreholes, and schools (24 percent of tasks); administrative advocacy (16 percent); and monitoring, review, and auditing (14 percent). The OHCS outlines rules and associated guidelines for Ghanaian civil servants about how to prepare infrastructure or advocacy projects and monitor, review, and audit them according to proper procedures. For this reason, the Ghanaian civil service is characterized by a common set of standards and centrally managed procedures that officials are required to follow when handling administrative files (PRAAD 2007).[5]

In Liberia, we focus on adherence to new processes for performance assessment or "appraisal." Following the end of Liberia's civil war in 2003, the CSA focused on establishing a more meritocratic civil service by, among other policies, developing a performance management system (PMS) policy (CSA and USAID-GEMS 2016; Forte 2010; Friedman 2012; World Bank 2014). Job descriptions were only recently formulated and formalized across all positions in Liberia's civil service, so an appraisal scheme helps embed them as part of the daily work of public servants.

The PMS is similar in structure to most other performance management schemes in public sectors around the world: in collaboration with their manager, employees commit to a set of performance targets at the start of each annual cycle, which are reviewed and assessed over the cycle, typically twice a year. Managers meet with each of their officers at the start of the cycle to agree on their individual performance targets and how they will be assessed, and they record this information in what we call Form 1. They are then supposed to meet again at midyear, to track progress in achieving individual targets, and at the end of the year, to jointly fill in and discuss a performance diagnostic: Form 2, an updated version of Form 1.[6] Processes are governed by detailed guidelines published by the CSA, which also provides training to managers in how to undertake the process correctly. We focus on the proficiency of individuals and their managers in executing the PMS process.

The PMS has given civil servants who use it better insight into their roles and responsibilities and how these feed into their institutions' overall delivery of public services, but measuring, managing, and rewarding performance remains a challenge. Table 13.1 lists some barriers to ministries' and agencies' effective use of the PMS, as observed by CSA officials.[7]

In addition to the quality of a procedural process as implemented within a unit, the extent to which governments can efficiently manage the communication and coordination of processes across work units is another important measure of the quality of government processes. To assess what we have named external process productivity, we examine the extent to which civil service departments respond to external inquiries. The internal management of the many tasks that civil servants carry out depends on external inputs and consequently requires a chain of activities that span organizational units. We therefore implement a common measurement

TABLE 13.1 Reasons for Incomplete Adoption or Nonadoption of the PMS Process, Liberia

Reasons for not adopting the PMS	Reasons for only partly adopting the PMS	Reasons for not filling in the PMS forms properly
HR officers see the PMS as an added burden on their work.	HR officers did not communicate the timeline to staff.	The forms are bulky. The process is paper-based.
The PMS will be used to fire or remove people from their jobs.	Too much of a paper trail.	Some just fill in forms after being coerced and threatened with disciplinary action.
Some institutions struggle to see the benefits of the PMS to them.	Some do not understand what is fully required of them throughout the PMS cycle.	They have not understood the process.
Leadership lack the willpower to adopt the PMS.	Supervisors with more than 10 staff members find the PMS time-consuming.	
The PMS is a CSA-imposed idea.	Staff expect the CSA to provide guidance at every phase of the PMS.	

Source: Original table for this publication.
Note: CSA = Civil Service Agency; HR = human resources; PMS = performance management system.

framework in both Ghana and Liberia that assesses public officials' responsiveness to requests from the central personnel authorities. We track a set of standardized requests relating to annual personnel record updates undertaken by the two institutions of centralized personnel management, the OHCS in Ghana and the CSA in Liberia. Letters requesting information on all officials in an organization were sent to the census of civil service organizations. For example, the central office might request annual updates to the profile of an organization's staff concerning qualifications and training. The aim of such efforts is for the OHCS or the CSA to plan its capacity-building efforts for the next year based on up-to-date information on current capabilities within the public administration. In Ghana, units were asked to provide staff members' names and civil service IDs as well as any training they had received in the past year. In Liberia, units were asked to provide an updated list of the civil service staff currently employed in their team, including staff members' names, payroll IDs, the names of their direct supervisors, and any relevant training undertaken in the past year.

Assessing the Quality of Processes

In both countries, the processes we study are applicable across all organizations and sectors (though the internal measure in Ghana is general and in Liberia is specific to the appraisal process). This allows us to undertake a common analysis of procedure quality within each public service.

Our approach requires a record of public officials' activities that can be assessed by an independent evaluator. The records in both Ghana and Liberia are dominantly paper-based files that record the "treatment" of projects, files, or cases. The vast majority of such physical files are on-site in a government office. Thus, in the case studies we focus on, we were required to build a team of evaluators that could make physical visits to units to review the government files.[8] To some degree, the digitization of government has supported the improvement of process quality by ensuring that all components of a process required by a procedure are present before the case can be completed. It has also facilitated the sort of inspection and assessment outlined here because enumerators can assess process quality remotely by accessing electronic records, which was not possible in our settings. Besides the ability to access records remotely, however, much of the wider approach described here would be the same in the case of digitized records.

Internal Process Productivity

The evaluations of internal process productivity we undertook in both countries focused on the completeness of records, their degree of organization, and evidence of transparent, logical, and equitable decision-making. First, we focused on measuring the level to which the principal components of administrative documents adhere to the general filing rules. Second, we examined whether the argument laid out in those documents was complete and consistent. Such an approach accords with the overarching concern of the public service rules in the countries of focus that decisions or activities be clearly documented and indicate a logical and equitable decision-making process. The public service rules of each country set the baseline for measures of how the files should have been completed. The OHCS guided the process of designing an instrument to assess process quality in Ghana, and the *Performance Management Policy Manual* (CSA and USAID-GEMS 2016), along with guidance from the CSA, informed the corresponding instrument in Liberia.

Completeness is the level to which the principal components of a file adhere to the general filing rules. In Ghana, the assessment tool collected information on whether the file ladder, folios, memos, minutes, letters, and related documents are compiled correctly, following the public service rules. The file ladder is an important element of a file, summarizing file circulation within an organization and expressing how valuable a file is. According to the general procedure, the file ladder should document all file circulation, specifying the date and the documents involved. To guarantee the accessibility of a file, all documents should be numbered consecutively, starting with folios from the opening of the file to the most recent ones. If actions are required, documents and letters should be minuted, dated, and signed, clearly stating from whom the letters are coming and to whom they are directed. The same procedure is applicable to memos and other relevant records in the file. In addition to dates and signatures, incoming and outgoing correspondence requires

specific stamps: the organizational (incoming) and dispatch (outgoing) stamp. Once a file has been passed on to other record officers or stored in the records office, it should not contain either duplicated and draft documents or misfiled and miscellaneous items. Thus, *completeness* is a catch-all for the general handling of government files, assessing the completeness of the file ladder; the consecutive organization of folios within a file; the availability of minutes, memos, and other relevant documents; and the proportion of incoming and outgoing correspondence with dates, stamps, and signatures.

For the appraisal process in Liberia, we similarly searched for complete sets of PMS documents, with all three forms expected in the annual cycle, that echoed the above considerations regarding completeness. Specifically, we looked at how much information had been entered on the PMS forms and whether the civil servants' listed work objectives were linked to their performance indicators, their performance reports, and their supervisor's feedback.

Beyond completeness, evaluators assessed the quality of content in terms of the overall clarity of the file subject and the decision process. In Ghana, we assessed files along six margins:

- How clear is the background to issues?

- How clear is the outline of courses of action available or taken?

- Is the file organized in a logical flow?

- Are choices based on evidence in the file?

- Is it clear who should take action?

- What proportion of materials have a clear deadline?

In Liberia, we reviewed the extent to which civil servants' objectives and performance indicators follow the required SMART framework: whether relevant elements were specific, measurable, achievable, relevant, and time-bound. We assessed files along six distinct dimensions:

- Are different/unique categories of objectives presented?

- Are these objectives specific/measurable/time-bound?

- Are there associated performance indicators/measures?

- What is the extent and quality of reporting on each of these measures?

- Did the manager give recommendations as to how to meet the objectives?

- Did the manager identify development needs and how they could be met?

We also made note of the scores given by managers in the appraisals to assess whether they were validated by the evidence presented in the appraisal documents and indicated a true distribution across the unit.

Table E.1 in appendix E presents the instrument used in Ghana to measure the quality of general processes in government files. Files were assessed on the following sets of indicators:

- The comprehensiveness of reporting on the activity across the series of tasks (for example, "Where applicable, are minutes, memos and other necessary records present and complete [including from whom, to whom and signature]?")

- The sufficiency of the evidence and rationale following each of the decisions made (following the government's due process) (for example, "How would you characterise the quality of content you have in the file along the following margins? Choices are based on evidence in file.")

- The overall commitment to effective processes of the unit as reflected in the file (for example, "In general, to what extent does the file organisation adhere to government procedure? [Give an overall score from 0 to 100.]").

Table E.2 in appendix E presents the instrument used in Liberia to measure the quality of implementation of the appraisal process. Files were assessed on the following sets of indicators:

- The comprehensiveness of reporting across the series of appraisal forms (for example, "Which forms have been completed for Employee [Name]?")

- The sufficiency of the evidence and rationale determining each of the appraisal scores given an employee (for example, "Comments are substantive and provide a quality assessment of officer's contributions [even if discussion is that officer had to do work not in key objectives].")

- The overall commitment to an effective appraisal process of the unit as reflected in the package of appraisal documents (for example, "When reviewing the whole set of appraisal forms for a unit/all those filled in by an appraiser, were there any of the following discrepancies in the set of appraisal forms for the unit? Objectives are very similar across forms.").

External Process Productivity

To measure external process productivity, we tracked the timeliness of units' responses to requests from the centralized service management agency (the OHCS or the CSA) and the completeness and quality of the responses. More specifically, we measured the following:

- The time it took for a unit to respond to the request

- The extent to which all officers on the staff roster for that unit were reported on

- The accuracy of the information (through spot checks, where possible).

In Ghana, the research team tracked request letters from three directorates of the OHCS to public service organizations and the date of delivery of their responses, before and after a clear deadline. The three directorates asked organizations to share five different HR documents: promotion registers, training plans and reports, annual performance reports, the chief director's (CD) self-assessment report, and a signed head of department/director's performance agreement. The research team tracked organizations' internal response time in the execution of a request, recording the period when minutes and memos were executed by schedule officers and the final delivery to the OHCS.

In Liberia, over 400 bureaucratic units and divisions from 28 civil service organizations who were participating in an impact evaluation study were asked to submit personnel files to the CSA. This was done by sending a letter with a set of standardized personnel requests to these study units. The research team then looked at whether the units responded to the request and, if so, what their response time was as a measure of process productivity. The survey firm BRAC assisted the CSA in handing out the letter that communicated this file request and in recording when unit representatives submitted their files in response. Personnel listings were submitted either as hard copies in person or via email to the CSA's Management Services Directorate.

Data Collection

The exercise to assess internal process productivity in Ghana started in April 2018 and lasted for six months, including a two-month pilot. In total, 763 files were assessed from 55 organizations. Randomly sampling across the four main administrative directorates and technical units, the research team audited files from 256 divisions and units.[9]

In Liberia, enumerators assessed the quality of PMS files completed in 2017–19 for the same 437 units that had participated in an impact evaluation study at that time. All Liberian civil servants were supposed to use the PMS process to track and improve performance management. The enumerators thus assessed whether all staff in each unit had completed the PMS forms each year and, if so, the quality of those forms. These three assessments each took place after the completion of the annual PMS process cycle in December 2017, 2018, and 2019.[10] In total, civil servants employed in 437 units and divisions across 28 organizations were assessed on whether they had completed,

TABLE 13.2 Completion of PMS Forms, Liberia, 2017–19

PMS form type	PMS in 2017	PMS in 2018	PMS in 2019
Form 1: Employee performance planning and progress review	1,440	1,655	1,232
Form 2: Employee self-assessment form	774	1,110	600
Form 3: Performance appraisal form	1,297	1,197	547
Individuals with at least one form	2,021	1,587	1,202
Individuals with forms 1 and 3	577	1,090	509
Individuals with all three forms	466	948	498

Source: Original table for this publication.
Note: PMS = performance management system.

in full or in part, the PMS process in 2017–19. Survey data were collected for 7,419 bureaucrats across the three years, whereby 4,810 PMS files were found and could be assessed as a census of available documents (see table 13.2).

The exercise to assess external process productivity in Ghana started in February 2018 and ended in May 2019. In total, 750 letters were tracked during the data collection period sent to 31 ministries and departments in 2018 and 30 ministries and departments in 2019, requesting types of data specific to human resource management (HRM) and policy, planning, monitoring, and evaluation (PPME) organizational divisions. In Liberia, the exercise of requesting and tracking the receipt of personnel files to measure units' responsiveness started on February 24, 2020, and concluded on March 24.

RESULTS

Internal Process Productivity in Government

Table 13.3 presents descriptive statistics for the procedural measures of process quality in Ghana, while table 13.4 presents statistics for the quality of the content of assessed files. We can see a substantial number of files were lacking in at least one of our categories, with only 3 percent of files having a complete or near-complete file ladder, 39 percent having close to the required minutes, and 9 percent having sufficient

TABLE 13.3 Procedural Characteristics of Assessed Files, Ghana

	(1) File ladder: Completeness	(2) File ladder: Transparency	(3) Folios	(4) Minutes and memos	(5) Incoming letters	(6) Outgoing letters
Proportion of files (0–19%)	0.40	0.70	0.35	0.04	0.06	0.72
Proportion of files (20–39%)	0.33	0.04	0.07	0.04	0.04	0.03
Proportion of files (40–59%)	0.04	0.04	0.10	0.15	0.13	0.03
Proportion of files (60–79%)	0.05	0.04	0.18	0.36	0.32	0.06
Proportion of files (80–100%)	0.03	0.03	0.27	0.39	0.42	0.09
Not applicable	0.12	0.15	0.00	0.01	0.04	0.07
Observations	763	763	763	763	763	763

Source: Original table for this publication.
Note: The table reports descriptives of the main dimensions of files' procedural quality. Enumerators were asked to assess files on a Likert scale from 1 to 5, where 1 is "0–19%" and 5 is "80–100%," evaluated on the following margins: "How complete is the file ladder?" (column 1), "Does each step in the file ladder have dates?" (column 2), "Are folios within the file organised and numbered consecutively?" (column 3), "Where applicable, are minutes, memos and other necessary records present and complete (including from whom, to whom and signature)?" (column 4), "What proportion of incoming correspondence has an organisational stamp/date/signature?" (column 5), and "What proportion of outgoing correspondence has a despatch stamp/date/signature?" (column 6).

TABLE 13.4 Content Characteristics of Assessed Files, Ghana

	(1) Background to issue	(2) Course action	(3) Logical flow	(4) Choices	(5) Action taken	(6) Clear deadline
Score 1	0.00	0.00	0.02	0.02	0.00	0.08
Score 2	0.08	0.07	0.14	0.17	0.07	0.14
Score 3	0.11	0.09	0.22	0.14	0.09	0.08
Score 4	0.60	0.66	0.47	0.54	0.66	0.03
Score 5	0.19	0.16	0.10	0.11	0.16	0.69
Not applicable	0.01	0.02	0.06	0.03	0.02	0.00
Observations	763	763	763	763	763	763

Source: Original table for this publication.
Note: The table reports descriptives on the main dimensions of files' content quality. Enumerators were asked to assess files on a Likert scale from 1 to 5, where 1 is "Very poor" and 5 is "Very good," evaluated on the following margins: "Background to issue" (column 1), "Clearly outlining what courses of action are available or taken" (column 2), "The file is organised in a logical flow" (column 3), "Choices are based on evidence in file" (column 4), and "Clarity on who should take actions at each stage" (column 5). In column 6, enumerators were asked to indicate the proportion of files with a clear deadline.

FIGURE 13.1 Diversity in Level of Procedural Adherence across Organizations and Divisions, Ghana
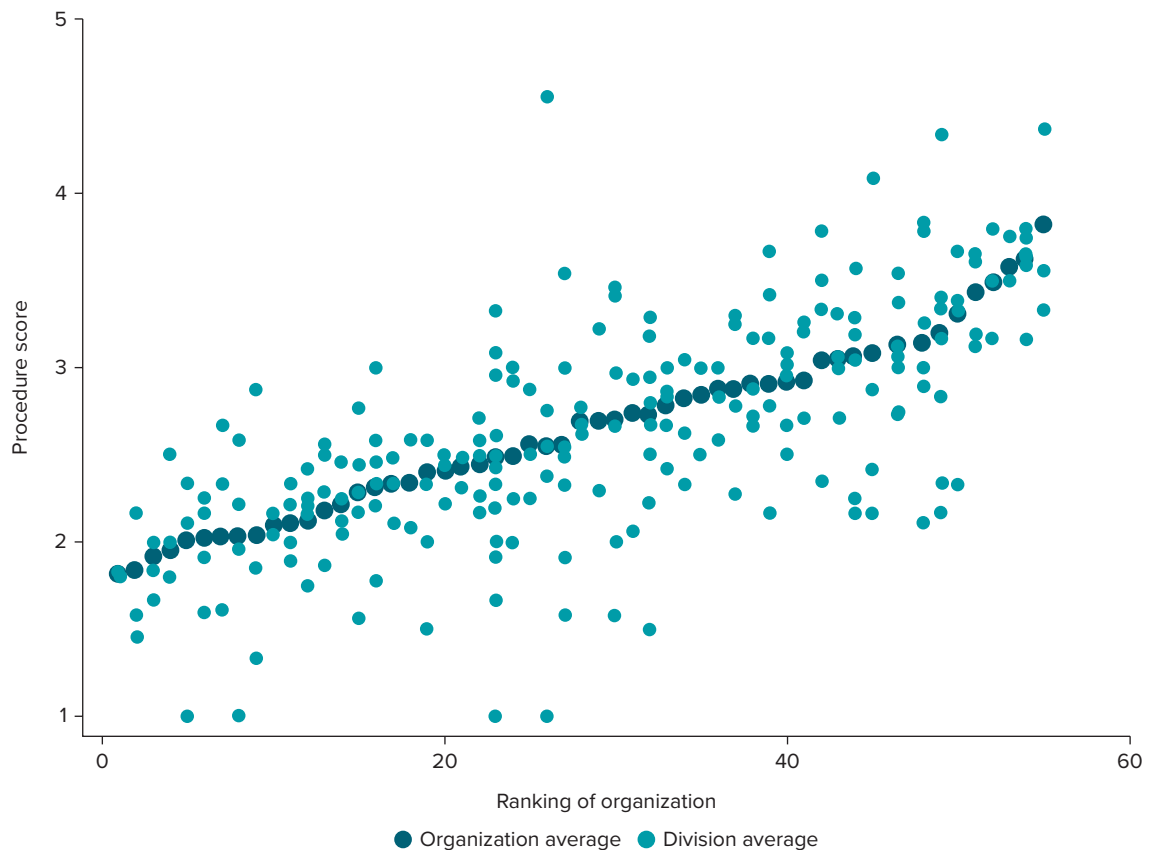
Source: Original figure for this publication.

FIGURE 13.2   Diversity in Content Scores across Organizations and Divisions, Ghana
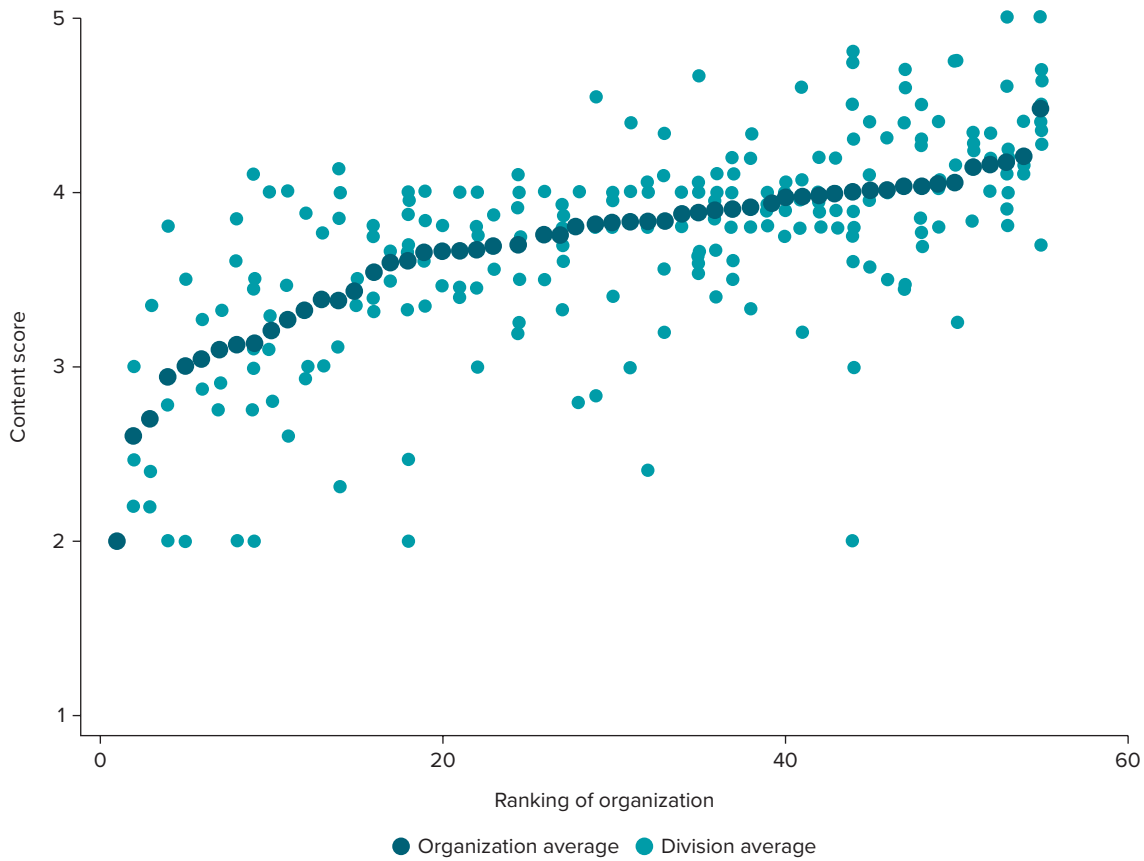
Source: Original figure for this publication.

copies of outgoing letters. There is substantial room for improvement. Similarly, only 19 percent of files got the highest score in terms of the background they provided to issues, and 10 percent the highest score for logical flow of the argument. In general, the average level of organizational file adherence to public procedure is poor.

Figure 13.1 showcases how process quality varies across Ghanaian organizations. We average the scores for variables shown in table 13.3 into a single index and plot organizational averages of these scores as dark blue dots. There is a substantial degree of variation in the quality of adherence to processes across organizations. We also plot, stacked vertically at the "rank" of each organization, the scores for individual divisions within those organizations as light blue dots. Thus, the dispersion of the light blue dots around the dark blue dots indicates the degree of variation in process quality within an organization. We take a similar approach to the quality of content in figure 13.2, which summarizes an index created using the measures outlined in table 13.4.

We see a relatively high level of variation across organizations but also within organizations, with those in the middle of the distribution having some units whose process productivity is as bad as the average of the worst-performing organizations. At the same time, there is clearly some degree of correlation between an organization's score and its divisions, indicated by the proximity of the light blue dots to the dark blue ones.

Together, these descriptive statistics tell us that though the general level of process quality is poor, there are some organizations that are able to raise the general standard for processes within their institutions. Though there are still some units that deviate from those practices (either positively or negatively), processes seem to be influenced by organizational practice.

The descriptives also indicate that some areas of process are of higher quality than others. Most of the files presented a blank or not fully complete file ladder, suggesting that organizations were not correctly reporting information on file movement (column 1). About 50 percent of files consecutively numbered folios, while around 40 percent poorly or very poorly organized documents (column 3). A high proportion of memos and minutes on documents were correctly compiled in 75 percent of sampled files (column 4). Looking at correspondence, incoming letters were in general aligned with government procedure, presenting a precise date, a clear signature, and an organizational stamp in 75 percent of cases (column 5). By contrast, outgoing letters were usually poorly compiled: 80 percent of the files show a high percentage of outgoing letters without a dispatch stamp, reflecting an unofficial rule to stamp envelopes rather than letters (column 6).

Likewise, some components of content quality in Ghana fare better than others. About 80 percent of the files had a clear or very clear background to issues (column 1) and clearly outlined what courses of action were available or had been taken (column 2). The files were organized in a logical flow in 57 percent of the cases (column 3), and choices were based on evidence recorded in the documents in 65 percent of the cases (column 4). Documents clearly stated who should take action at each stage in 70 percent of the files in the sample (column 5). On the other hand, the proportion of documents with a very clear deadline is also on the extreme, suggesting either that when documents required a deadline, this was clear, or that some documents did not have a deadline even though required (column 6).[11]

To what extent are those files that adhere to procedures most strongly also those that have a higher quality of content? Figure 13.3 presents a scatterplot (with one dot for each file we study) of the content quality

FIGURE 13.3 Relationship between Adherence to Procedure and Quality of Content, Ghana
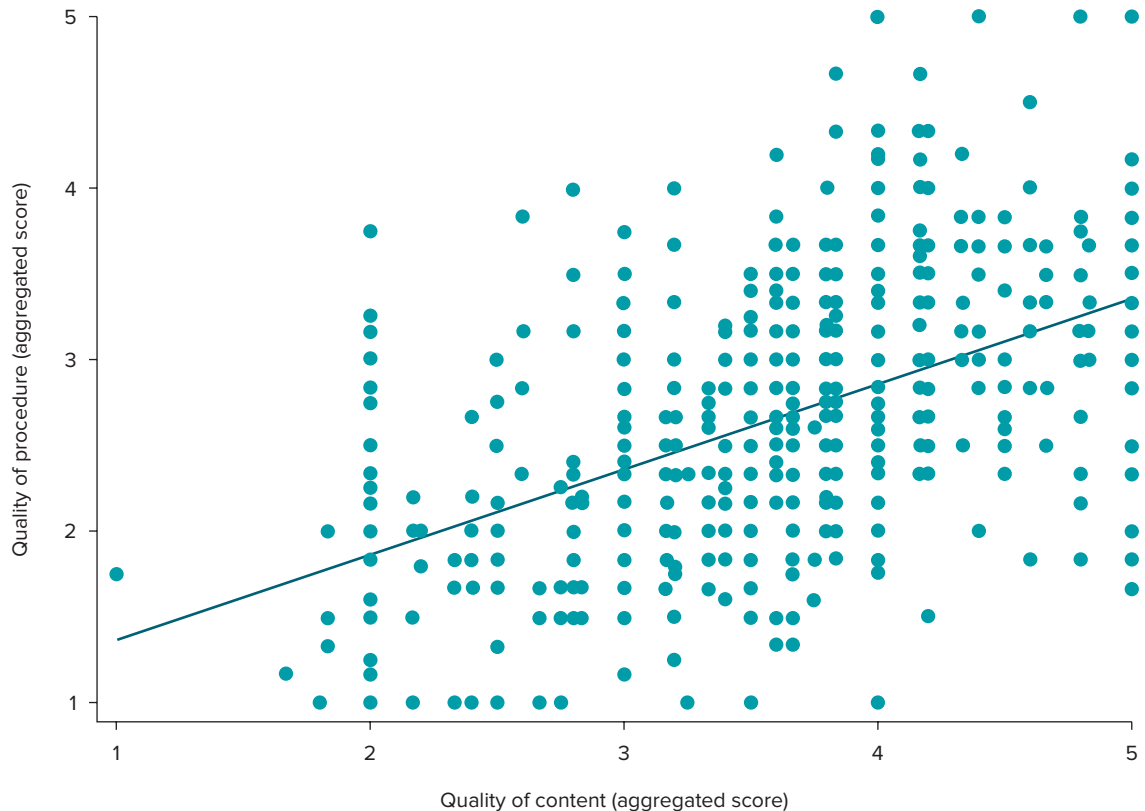
Source: Original figure for this publication.
Note: Each dot represents one file that was studied.

score against procedure quality. We see from the trend line that the relationship is positive, and the correlation is 0.48. However, it is also clear from the figure that there is a high degree of variation, with files that are well organized but with weak arguments, and vice versa.

In the Liberian civil service, only a fifth of public officials in the units assessed went through the PMS, reflecting an even weaker adoption of proper procedure in practice in the service.[12] However, when looking at the units that successfully adopted the PMS practice, on average 68 percent of civil servants working in the unit completed at least one of the PMS steps.[13] Table 13.2 illustrates that most staff who utilized the PMS process together with their supervisor completed their initial work plans and midyear assessments (Form 1) and, to a lesser degree, the end-of-year performance appraisal (Form 3). However, less evidence was found of staff assessing their own performance. This is an important piece of the process to ensure that appraisals are fair and the staff are engaged in and buy into the process. Ultimately, 60 percent or less of those who implemented the PMS did so by completing all three required forms. Overall use of the PMS also appears to have peaked in 2018, then fallen in 2019.[14] Hence, completion rates could improve.

Issues around form completeness further hindered enumerators' ability to assess the quality of the content in the forms found. The proportion of forms in which all compulsory sections had been filled in decreased from 84 percent in 2017 to 58 percent in 2018 and 39 percent in 2019. Furthermore, peaking at 50 percent when assessing 2018 forms, enumerators said that they had all the information they needed to assess quality for only 25 percent of the 2019 forms (see table 13.5). On a positive note, the proportion of files stored without a filing system decreased to just 5 percent of all forms found. Even so, table 13.6 shows how a lack of information in the files; poorly organized and at times missing pages; and, to a lesser extent,

TABLE 13.5   Sufficiency of Information for Assessing Quality of PMS Forms, Liberia

Did enumerators have all needed information to assess quality?	PMS in 2017	PMS in 2018	PMS in 2019
Have information needed	743 (37%)	795 (50%)	300 (25%)
Am missing information, but it is not critical to decision on quality	586 (29%)	533 (34%)	521 (43%)
Struggle to make judgment on form quality because of limited information	693 (34%)	259 (16%)	381 (32%)
Observations total	2,027	1,587	1,202

Source: Original table for this publication.
Note: The table shows the number of total observations where true, with the percentage of total observations made in parentheses. Five enumerators refused to answer questions in a survey on the PMS in 2017. PMS = performance management system.

TABLE 13.6   Challenges in Judging the Quality of PMS Forms, Liberia

Form quality issues	PMS in 2017	PMS in 2018	PMS in 2019
No challenges encountered	0.43 (0.50)	0.58 (0.49)	0.36 (0.48)
Little information in file	0.42 (0.49)	0.28 (0.45)	0.49 (0.50)
Poorly organized form	0.15 (0.35)	0.20 (0.40)	0.16 (0.37)
Some pages were missing	0.12 (0.33)	0.11 (0.31)	0.11 (0.31)
Poor level of legibility	0.10 (0.30)	0.11 (0.32)	0.10 (0.30)
Lack of coherence	0.09 (0.28)	0.04 (0.19)	0.08 (0.27)
Subject matter difficult to judge	0.07 (0.25)	0.01 (0.09)	0.02 (0.14)
Total observations	2,027	1,587	1,202

Source: Original table for this publication.
Note: The table shows means, with standard deviation in parentheses. PMS = performance management system.

ineligible, incoherent forms made it difficult to assess the PMS files' quality. This goes to show how a process to map and guide staff performance improvement, such as the PMS, is only as valuable as the level of detail and actionable observations recorded in the PMS forms.

Table 13.7 indicates that civil servants and their supervisors got better, at least initially, at developing SMART objectives and targets, which were then followed up on in midyear and end-of-year progress reports—even if their ability to develop time-bound goals could improve. However, table 13.8 suggests that supervisors could improve at providing practical advice and guidance to their staff through constructive feedback on how they could improve.

Looking at how well staff adopted the SMART objectives as one measure of the quality of the PMS process across organizations and units, figure 13.4 shows substantial variation in adoption. We create an index across different measures of the quality of the performance objectives by averaging the number that meet the relevant criteria. As with the Ghana data, we then take averages of those numbers at the unit and organizational levels. Figure 13.4 illustrates how effectively different organizations have implemented the appraisal process, with some organizations articulating their staff's entire work plan in a single objective. Within these organizations, we see substantial variation, dwarfing the variation across organizations. In the case of the Liberian PMS, process productivity seems to be highly influenced by unit staff.

Drilling down into two of the specific features of SMART indicators—the extent to which they are relevant and measurable—we repeat our analysis but restrict it to the proportion of indicators that were deemed relevant and measurable by our assessors. Figure 13.5 shows that there is once again significant variation across organizations but a similar scale of variation across units within organizations. Thus, again we see evidence that factors at the unit level substantially influence the quality of the PMS process.

TABLE 13.7   Formulating and Reporting on Objectives and Targets, Liberia

SMART objectives and targets	PMS in 2017	PMS in 2018	PMS in 2019
Percent of objectives that are specific	0.92 (0.21)	0.97 (0.10)	0.94 (0.16)
Percent of objectives that are measurable	0.65 (0.42)	0.74 (0.38)	0.56 (0.43)
Percent of objectives that are timebound	0.32 (0.40)	0.34 (0.41)	0.23 (0.36)
Percent of objectives with progress report (midyear)	0.88 (0.30)	0.95 (0.19)	0.81 (0.38)
Percent of objectives that were met/achieved (midyear)	0.81 (0.34)	0.72 (0.41)	0.61 (0.44)
Percent of targets that relate to objectives	0.92 (0.19)	0.93 (0.18)	0.94 (0.17)
Percent of targets that are measurable	0.41 (0.47)	0.66 (0.43)	0.54 (0.45)
Total observations range	924–1,358	1,394–1,545	1,010–1,165

Source: Original table for this publication.
Note: The table shows the means and standard deviation in parentheses. PMS = performance management system.

TABLE 13.8   Quality of Supervisors' Feedback, Liberia

Quality of feedback	PMS in 2017	PMS in 2018	PMS in 2019
Supervisor gave recommendations on how to meet objective	0.66 (0.48)	0.58 (0.49)	0.40 (0.49)
Supervisor identified development needs of the employee	0.48 (0.50)	0.43 (0.50)	0.41 (0.49)
Supervisor recommended activities to build employee's capacity	0.44 (0.50)	0.41 (0.49)	0.36 (0.48)
All objectives are reported on	0.64 (0.48)	0.72 (0.45)	0.23 (0.42)
All comments are substantive	0.38 (0.49)	0.41 (0.49)	0.27 (0.44)
All comments are constructive	0.25 (0.43)	0.31 (0.46)	0.04 (0.19)
Total observations range	943–1,353	1,069–1,544	510–1,010

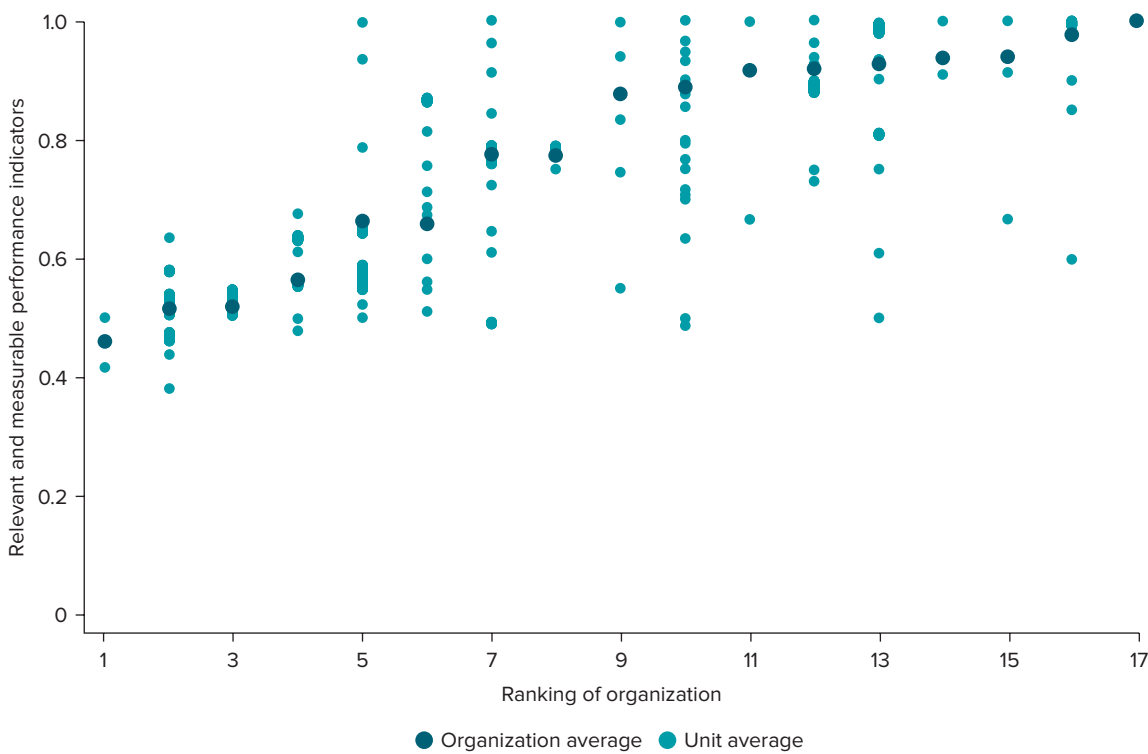Source: Original table for this publication.
Note: The table shows the means and standard deviation in parentheses. PMS = performance management system.

FIGURE 13.4 Average Number of SMART Objectives Identified in Appraisal Forms, Liberia
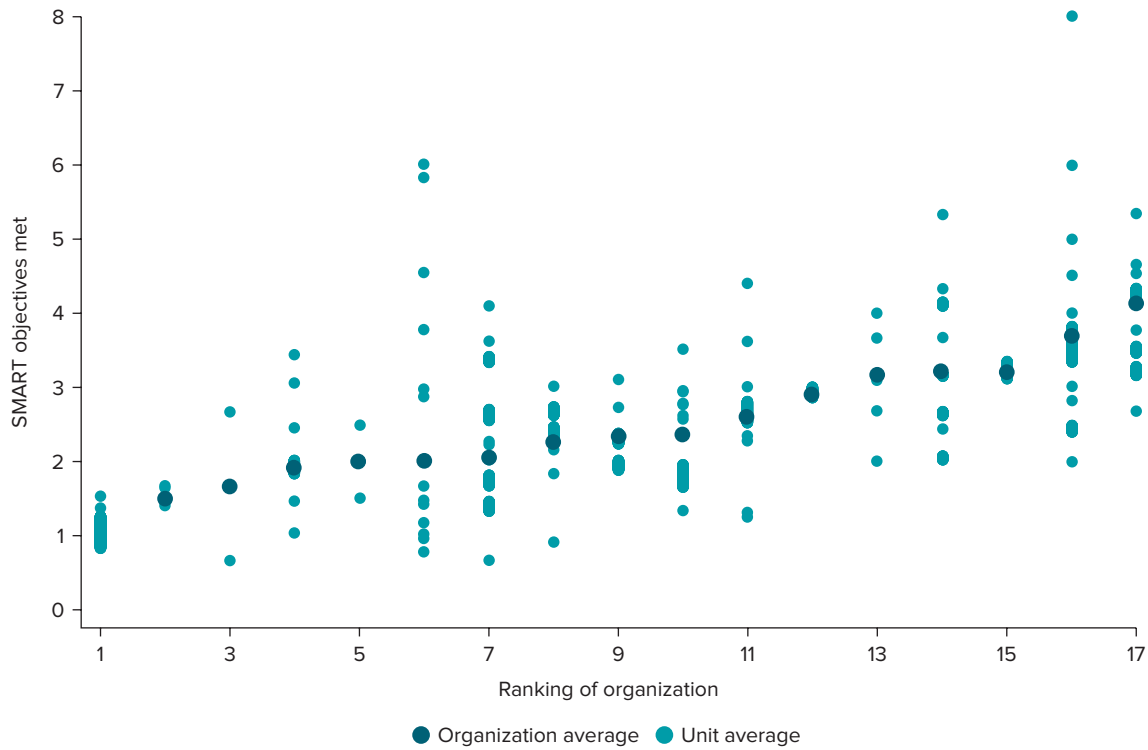
Source: Original figure for this publication.

FIGURE 13.5 Average Number of Relevant and Measurable Indicators Identified in Appraisal Forms, Liberia

Source: Original figure for this publication.

### External Process Productivity in Government

We now turn to the results of our assessments of external process productivity. Figure 13.6 shows the average number of days it took an organization (dark blue dots) to submit a response to the various requests made by the OHCS in 2017 and 2018 (*y* axis), with the organizations ranked by overall speed (*x* axis). Once again, we also present averages for the units within those organizations (light blue dots stacked vertically at their organization's ranking), but given that many such requests must be sent by the centralized dispatch office of the organization, we see a lot of clustering in the unit averages. A negative number on the *y* axis implies that the submission was received before the deadline (represented by 0 on the *y* axis).

Perhaps a third of organizations in Ghana's public service who eventually responded met the deadlines set by centralized entities. A minority of organizations were fully unresponsive and thus are not displayed in figure 13.6. However, even among those who eventually responded, perhaps a quarter did so a month or more late. Such delays impact the ability of central organizations to continue activities for which they require external information.

Turning to quality, figure 13.7 shows the completeness of the submissions received by the OHCS. The *y* axis displays the proportion of requests for which an organization (dark blue dot) or unit (light blue dot) submitted the required information. Here, organizational and unit averages are less closely related, since central dispatch offices will rarely mediate the quality of submissions. A few ministries, departments, and agencies submitted more than 80 percent of the data requested by the OHCS, and some units submitted all the information, while others submitted less than 20 percent of the information requested. The average level of quality is rather low, with the median organization submitting just over 60 percent of the information requested. All of this has knock-on effects on the capacity of the OHCS to undertake its work.

A similar picture is found in Liberia. Though not displayed here, we find similarly low responsiveness to centralized requests, with an even greater number of organizations simply not submitting any response at all.

FIGURE 13.6 Diversity in Number of Days to Receive Requested Information from Organizations and Divisions, Ghana
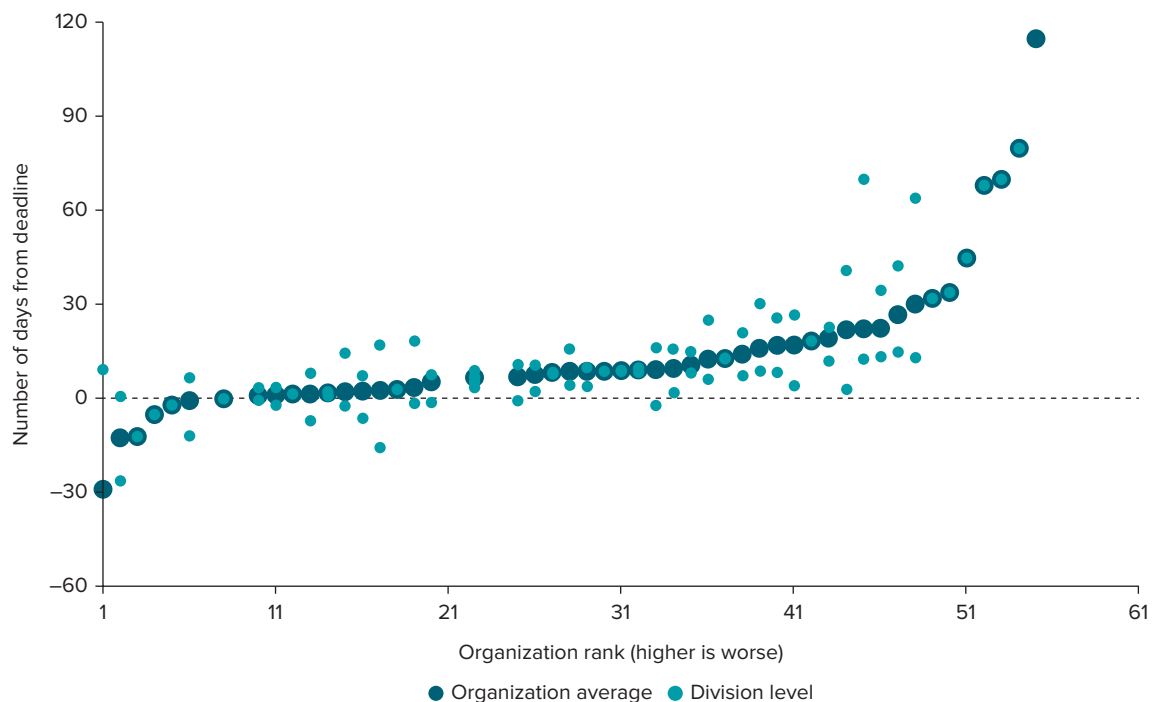
Source: Original figure for this publication.

FIGURE 13.7 Diversity in Proportion of Required Files Submitted by Organizations and Divisions, Ghana
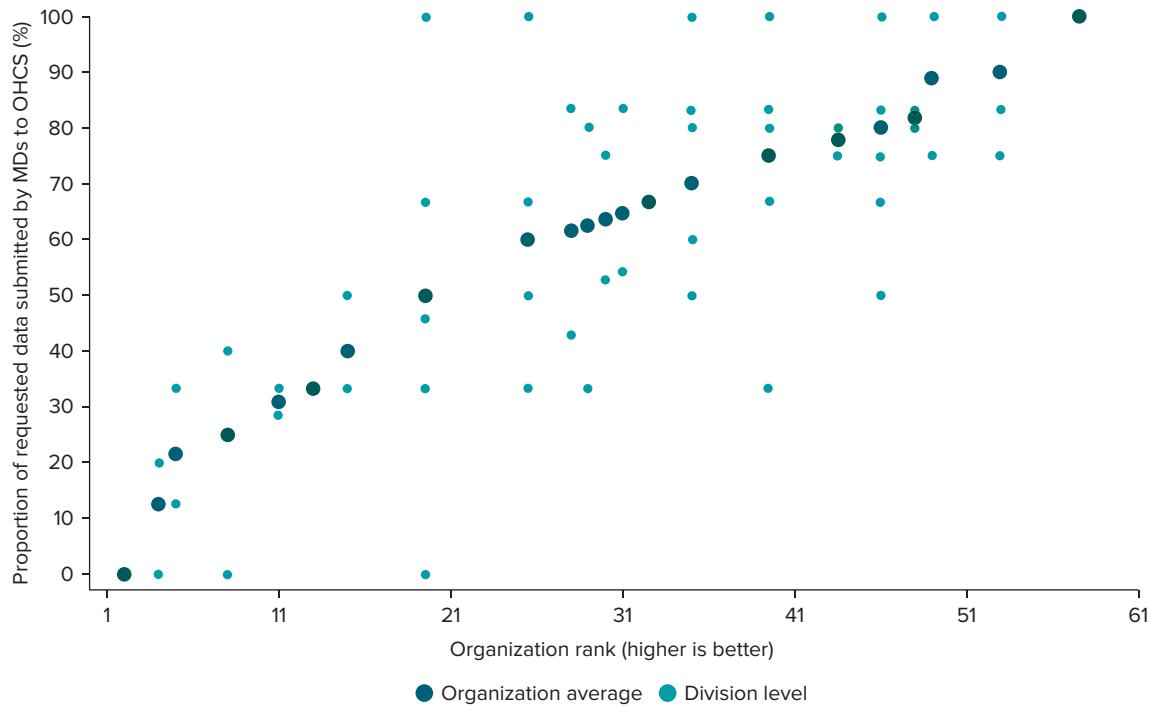
Source: Original figure for this publication.
Note: MDs = ministries and departments; OHCS = Office of the Head of Civil Service.

Of the 348 units across government that we confirmed received the CSA's request, 30 units responded, 21 (70 percent) within the deadline. The quality of those submissions is even more limited, with many containing little to no usable information. Trying to undertake personnel policy making when your colleagues in the rest of the service simply refuse to answer your requests for information must be challenging.

CONCLUSION

This chapter has put forward a framework for measuring process quality in public administration: identifying evidence of transparent, logical, and equitable decision-making throughout government. Though it is a fundamental part of the activities of the public sector, the quality of public officials' work processes has rarely been measured for government analytics. This drives assessments of government functioning and productivity toward frontline services and limits analysts' capacity to assess where in the long chain of government processes dysfunction might be occurring.

We have distinguished between internal process productivity, the quality of administrative processes for activities confined within a particular administrative unit, and external process productivity, the quality of administrative processes for activities in which units interact. We have made this distinction because accountability and professional dynamics vary distinctly between the two cases but also because appropriate measurement varies as well. We have then applied our framework to two case studies, concerning general government processes in the government of Ghana and the appraisal process in the government of Liberia. We have shown that in these settings, the quality of government processes is generally poor but highly varied, with some organizations and units effectively adhering to government processes and a higher overall quality of administration.

Such measures of process quality in public administration open up three areas of government analytics: assessments of variation in process quality and associated productivity within and across organizations in the same country, comparisons of process quality across countries, and assessments of public sector process quality over time. In this way, government analysts can pinpoint where government procedure is not being adhered to, how different processes relate to public sector productivity, and what the dynamics are across individuals and organizational units.

Strengthening the quality of government processes would require increasing and updating the knowledge of public officials on appropriate ways of handling government work, strengthening senior officers' supervision, and reinforcing their capacity to hold staff to account for poorly adhering to government processes. As the world's public administrations become increasingly digital, the ability to detect substandard processes will become more automated, but the continued assessment of which processes lead to improved productivity will require the use of this information for analysis. We hope this chapter has provided a framework for such work.

NOTES

1. See the measures under "Instructional leadership" in table 29.3 of chapter 29.
2. It should be noted that some of the indicators of proper procurement and customs procedures are versions of measures of process productivity.
3. Frontier empirical evidence on what bureaucrats do showcased in chapter 17 implies that almost three-quarters of bureaucratic work is related to undertaking bureaucratic processes, such as monitoring, training, and personnel management; financial and budget management; and so forth. It would seem that process productivity is key to the productivity of the public sector.
4. An intermediate approach is Hollyer, Rosendorff, and Vreeland (2017), who use reporting to the World Development Indicators as a measure of government transparency.
5. The OHCS has a Public Records and Archives Administration Department (PRAAD), whose aim is to facilitate and promote good government processes and record-keeping practices across ministries and departments. Officials are trained in relevant processes upon entry to the public service, as well as at regular in-service trainings.
6. At the end-of-year review, employees are supposed to assess their own performance against 10 servicewide standards in what we refer to as Form 2. They are further assessed by their supervisors on these 10 servicewide indicators, as well as on their individual overall performance and behavior in the workplace, in Form 3.
7. Importantly, there have been efforts to engage on the PMS between CSA and ministries or agencies, to train hundreds of supervisors and staff on the PMS cycle, and to assign individuals in each public agency to act as focal points on issues related to the rollout of the PMS. Still, limited political will to adopt the process in a timely manner; its paper-based format; and disconnect from any recognition, rewards, or sanctions system remain persistent challenges.
8. We employed senior and retired civil servants in Ghana to review the extent to which randomly chosen unit files followed appropriate government processes, whereas, in Liberia, this was done by enumerators from an external survey firm.
9. The sampled files were assessed by three assistant management analysts from the Management Services Department of the OHCS. During the piloting period, the tool was adjusted and improved to reflect the records management practices within the Ghanaian civil service. Files in the sample are indicatively opened in 2015, not confidential, and not related to personal or financial subjects.
10. The files were assessed by enumerators from Liberia-based survey firm BRAC.
11. In this case, the tool allowed a "not applicable" option. In 54 percent of the files assessed, documents did not require a specific deadline.

12. With an estimated total workforce of 7,099 in the units assessed, based on 2017 staff lists, only 28 percent, 22 percent and 17 percent of staff had completed at least one of the PMS forms in 2017, 2018, and 2019, respectively.
13. In the units with any adoption in that year, 65 percent, 67 percent, and 71 percent of staff had filled in at least one PMS form in 2017, 2018, and 2019, respectively.
14. A new administration came into office in 2018, and numerous pay reforms that resulted in pay cuts for some in 2018 and 2019 may have impacted civil servants' motivation and prioritization of the PMS process.

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