

Management and bureaucratic effectiveness

A scientific replication in Ghana and Nigeria



- In brief**
- Management and productivity are crucial to public service delivery in African countries where governments have to deliver services with limited resources. Yet reforms are often launched with little data about the current state of management and productivity.
 - As part of this study, the authors worked with the Government of Ghana to conduct a survey of nearly 3,000 civil servants across every ministry and department in the central government, and to assess completion of 3,628 projects across government.
 - An enormous range of variation was documented in management practices and project completion across organisations within Ghana's Civil Service, even though these organisations share a common institutional and regulatory structure and are located near each other in the capital.
 - Management practices related to greater autonomy have a positive association with project completion, but practices related to stricter monitoring and incentives have a negative association with completion. A similar pattern was found in a study of Nigeria's Federal Civil Service.
 - Finding this pattern in these two contexts suggests that the focus of civil service reforms worldwide on introducing stronger incentives could backfire. Reforms should consider how to strengthen bureaucrats' autonomy to perform complex tasks effectively.

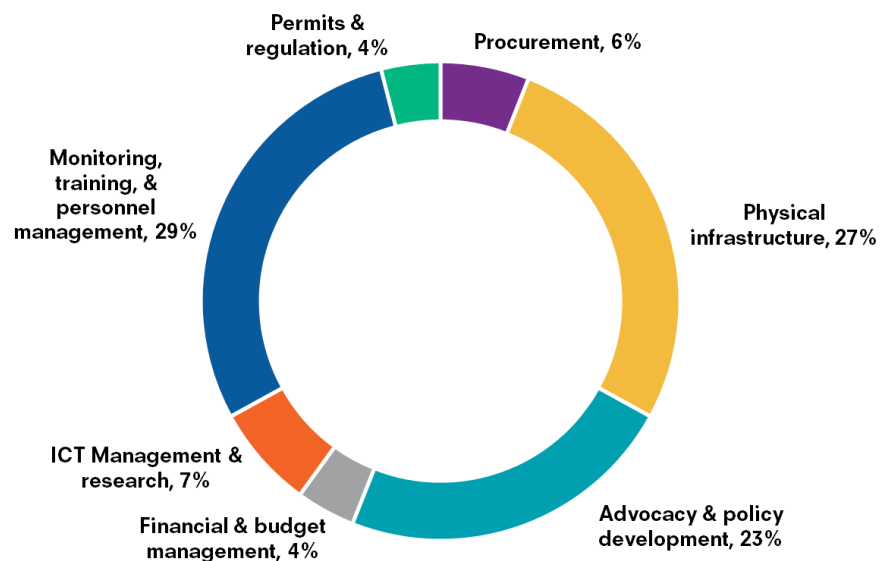
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Management and productivity are crucial to public service delivery in government, especially in African countries where governments often have to deliver a wide range of services with limited resources. Yet reforms are often launched on the basis of little hard information about the current state of management and productivity, or how different management practices are related to productivity.

To address these issues and help Ghana’s government design effective reforms, we partnered with the Office of the Head of Civil Service (OHCS) to conduct a survey of every senior officer in Ghana’s Civil Service, amounting to nearly 3,000 individuals across almost 50 organisations in Accra. This gave us an extremely rich view into how civil servants are managed, what tasks they do, what challenges they face in doing them, and what ideas they have for improving productivity. By combining this data with the results of a previous study in Nigeria, we are able to examine whether similar trends in management and productivity exist across countries.¹

We also assisted the Civil Service to digitise and analyse their existing performance data, contained in quarterly and annual reports for each Civil Service organisation. This led to a database of 3,628 projects and tasks undertaken across 31 organisations during the course of 2015 – one of the most comprehensive pictures ever assembled of what government bureaucracies actually do. As Figure 1 shows, most of these projects are non-infrastructure projects, many, if not most of which, are related to internal bureaucratic functioning rather than frontline public service delivery: the most common project type relates to human resource management (“monitoring, training, and personnel management”). Comprising 29% of all projects, this reinforces the importance of understanding how the management practices that bureaucrats operate under relate to bureaucratic effectiveness.

Figure 1: What do bureaucracies do?



¹ Rasul, Rogger, and Williams (2017).

Our data also allows us to examine whether projects were actually completed on schedule. In Ghana, 21% of projects were never started, and just 34% were fully completed. In Nigeria, 38% of projects were never started, and only 31% are fully completed.² We therefore use each organisation's completion of its planned projects as a simple proxy for output and productivity.

Analysing this rich data led us to three main insights, all of which also hold in Nigeria. The fact that these three insights were present in both countries – i.e., that this study scientifically replicated the previous results from Rasul and Rogger (2016)³ – suggests that they can be tentatively considered as “stylised facts” of the rapidly growing research literature on the management of government bureaucracies.

Insight 1: There is huge variation in productivity across organisations in a country's government

Table 1 shows how bureaucratic output varies by project type. In Nigeria, infrastructure projects are more likely to never be initiated than non-infrastructure projects. So for example, while 11% of research projects are not initiated, this rises to 79% for small-scale dams. In Ghana, there is also considerable heterogeneity across project types in the extensive margins of completion: for example, procurement projects are more than twice as likely not to be initiated as permits and regulation projects.

Figure 2 focuses on the variation in completion rates across organisations. To quantify this variation we note that the 75th percentile organisation has an average completion rate: (i) 189% higher than 25th percentile organisation in Nigeria; (ii) 22% higher than 25th percentile organisation in Ghana. This variation occurs despite the fact that multiple organisations engage in similar project types, they are assigned hires from the same pool of incoming bureaucrats, and most are located close to each other in Abuja/Accra.⁴ Table A1 presents descriptive evidence on the public service delivery of the ten civil service organisations that implement the most projects, by country. This reiterates there is huge variation across organisations in their measured effectiveness. These statistics all suggest there might be important organisational factors correlating with this variation in effective public service delivery. Our focus is on one such factor: the management practices of the middle-tier of civil service that bureaucrats operate under.

2. There were important methodological differences between how both output and management were measured in Ghana and Nigeria, although the underlying constructs were the same in both cases. See Rasul, Rogger, and Williams (2017) for methodological details and further results.

3. As Hamermesh (2017) writes of the growing push for replication in social sciences, “the more important type of replication is not like that of the ‘hard-scientific’ research, but rather in the only sensible way for a social science – by testing the fundamental idea or construct in a different social context.”

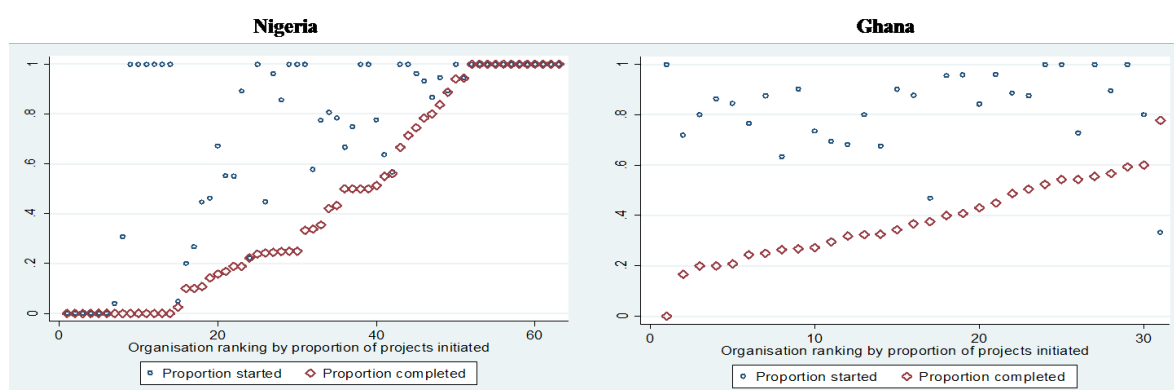
4. As we use the minimum and maximum score of reports for the extensive margin of project output, it is possible that the percentage of initiated projects is below that for completed projects, as occurs in one organisation.

Table 1: Variation in bureaucratic performance by project types

A. Nigeria					
Project Type	(1) Number of Projects [Proportion]	(2) Number of Implementing Organizations	(3) Proportion Never Started	(4) Proportion Fully Completed	(5) Completion Rate [0-1]
All Project Types	4,721 [1.00]	63	0.38	0.31	0.46
Physical infrastructure	3,822 [0.81]	45	0.41	0.28	0.44
All non-Physical Infrastructure Projects	899 [0.19]	49	0.26	0.44	0.58
Borehole	1348 [0.29]	18	0.44	0.37	0.47
Building	806 [0.17]	32	0.37	0.34	0.50
Electrification	751 [0.16]	2	0.14	0.25	0.56
Dam	624 [0.13]	14	0.79	0.10	0.15
Procurement	345 [0.07]	41	0.30	0.47	0.58
Road	217 [0.05]	4	0.12	0.22	0.52
Training	189 [0.04]	26	0.20	0.42	0.60
Financial project	157 [0.03]	8	0.38	0.35	0.49
Research	122 [0.03]	21	0.11	0.52	0.63
Advocacy	86 [0.02]	23	0.24	0.47	0.61
Canal	76 [0.02]	12	0.70	0.05	0.14

B. Ghana					
Project Type	(1) Number of Projects [Proportion]	(2) Number of Implementing Organizations	(3) Proportion Never Started (Min Report)	(4) Proportion Fully Completed (Max Report)	(5) Completion Rate [1-5]
All Project Types	3,628 [1.00]	31	0.21	0.34	3.23
Physical infrastructure	985 [0.27]	24	0.17	0.28	3.20
All non-Physical Infrastructure Projects	2643 [0.73]	31	0.23	0.37	3.24
Advocacy and Policy Development	836 [0.23]	30	0.23	0.34	3.20
Financial & Budget Management	138 [0.04]	19	0.27	0.44	3.29
ICT Management and Research	284 [0.08]	26	0.18	0.35	3.23
Monitoring, Training and Personnel Management	1,042 [0.29]	31	0.23	0.40	3.30
Permits and Regulation	149 [0.04]	22	0.14	0.32	3.28
Procurement	194 [0.05]	22	0.31	0.36	3.02

Figure 2: Bureaucratic performance by organisation



Insight 2: There is huge variation in management practices across organisations

In both Ghana and Nigeria, we follow the management practice measurement methods pioneered by Bloom and Van Reenen (2007) and Bloom et al (2012) – henceforth BSVR – but adapt their survey tool to public sector settings. Rasul, Rogger, and Williams (2017) explain in detail, including methodological differences across countries. In each case, we measure three dimensions of management practice: those capturing bureaucrats’ autonomy/flexibility (CS-autonomy), those capturing incentives and monitoring for bureaucrats (CS-incentives/monitoring), and a composite measure of other practices (CS-other).⁵ For the CS-autonomy index, we assume greater autonomy corresponds to better management practices, and similarly for the CS-incentives/monitoring measure.

Figure 3: Management practices across bureaucracies

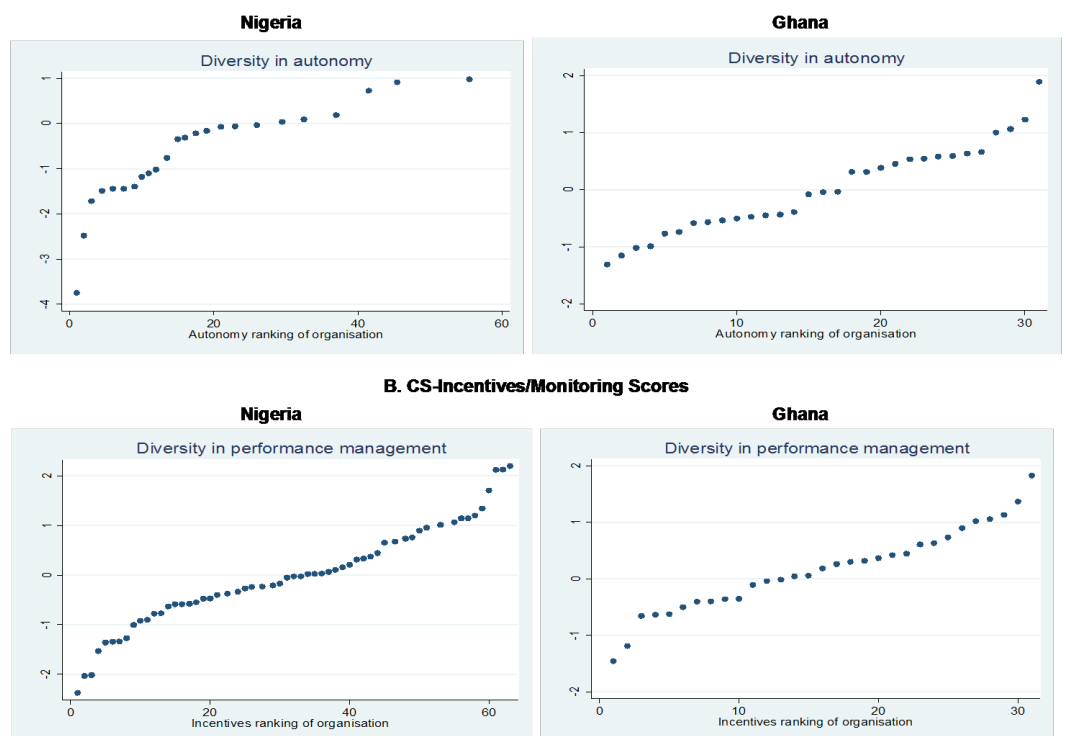


Figure 3 shows the across-organisation variation in management practices. As with bureaucratic performance, there is high variation in practices across organisations. For those related to the provision of autonomy to bureaucrats, the 75th percentile organisation has a CS-autonomy score that is: (i) 49% higher than 25th percentile organisation in Nigeria; (ii) 145% higher than 25th percentile organisation in Ghana. On management

5. Each index is converted into a z-score (so are continuous variables with mean zero and variance one by construction), where both are increasing in the commonly understood notion of ‘better management’.

practices related to incentives/monitoring, the 75th percentile organisation has a CS-incentives/monitoring score that is: (i) 74% higher than 25th percentile organisation in Nigeria; (ii) 97% higher than 25th percentile organisation in Ghana. Again, this variation occurs despite the fact that all organisations in each country share the same colonial and post-colonial histories, are governed by the same civil service laws and regulations, are overseen by the same supervising authorities, are assigned new hires from the same pool of incoming bureaucrats each year, and many are located close to each other.

Insight 3: Autonomy is positively associated with output, but monitoring/incentives are negatively associated with output

Since each organisation implements multiple project types, we are able to compare the relationship between management practices and output across organisations, holding constant the type of projects that each organisation implements.

In both Ghana and Nigeria, we find that: i) the CS-autonomy index is robustly positively correlated with project initiation, full completion, and average completion rate; ii) the CS-incentives/monitoring index is robustly negatively correlated with all these measures of project completion. Moreover, the estimates show similar effect sizes of both dimensions of management practice on the initiation and full completion margins, in which the two settings are most comparable. For project initiation, in Nigeria, a one standard deviation increase in CS-autonomy increases the likelihood a project is initiated by 15%; in Ghana the comparable effect size is 20%. In Nigeria, a one standard deviation increase in CS-incentives/monitoring decreases the likelihood a project is initiated by 16%; in Ghana the comparable effect size is 8%. For project completion, in Nigeria, a one standard deviation increase in CS-autonomy increases the likelihood a project is completed by 16%; in Ghana the comparable effect size is 27%. Recall the backdrop here is that in Nigeria, 38% of projects are never started; in Ghana, 21% of projects are never started.

These findings suggest the main results from Nigeria are scientifically replicable in the Ghanaian context. In both settings, management practices for bureaucrats matter and are of economic significance. The findings confirm the two dimensions of management practice emphasised by the public administration and economics literatures do indeed robustly correlate to effective public service delivery. The positive correlation of CS-autonomy with project completion rates supports the notion bureaucracies could delegate some decision making to civil servants, relying on their professionalism and resolve to deliver public services. The evidence is less supportive of the notion that when bureaucrats have more agency, they are more likely to pursue their own, potentially corrupt, objectives that diverge from societal interests.

The negative partial correlation between project completion rates and management practices related to the provision of incentives and monitoring of bureaucrats, is surprising and counter to evidence from private sector settings. Evidence on the impacts of performance-related incentives in public sector settings is mixed (often focusing on the impacts of specific compensation schemes to frontline workers). Ours is among the first evidence to suggest the possibility that such management practices negatively correlate to the output of the vital tier of civil service bureaucrats in multiple contexts.

Discussion and policy implications

Our research is among the first scientific replications of a study on the correlates of bureaucratic functioning in developing country contexts. Replicating findings in this nascent literature is valuable because: (i) each individual study is nearly always limited to a small number of bureaucratic organisations, especially when examining middle-tier civil servants working in central ministries; (ii) establishing robust findings across similar contexts underpins the external validity of any given study, and so moves the knowledge frontier closer to establishing stylised facts; (iii) scientifically replicating findings using alternative methodologies/ measurement tools helps researchers collect data more cost-effectively; and (iv) where differences in results have emerged, this helps focus researchers' future attention on such sources of heterogeneity across contexts.

Our findings have several implications for approaches to bureaucratic reform in Ghana, Nigeria, and elsewhere:

- While the overwhelming emphasis of civil service reforms in past decades has been on the introduction of performance management systems and trying to mimic private sector incentives, our results suggest that this emphasis may be misguided – or at least incomplete.
- Instead, there seems to be a benefit to finding ways to support the autonomy and professionalism of civil servants, both in terms of specific management practices (e.g. making sure individuals understand their role in the organisation and how it connects to that of their colleagues) as well as in terms of fostering organisational cultures of flexibility and innovation.
- Emphasising discretion and flexibility rather than hierarchy or incentives can encourage bottom-up changes and reforms.
- Importantly, we find no evidence that giving civil servants autonomy is associated with greater corruption or decreased productivity – if anything, the reverse seems to be true.

Given the growing recognition that bureaucrats and bureaucracies play in determining state capability, it will be important for researchers to understand similarities and differences across such state organisations in order to advance the literature.

Bureaucracies differ in terms of their selection and retention policies for bureaucrats (Dal Bo et al. 2013), and mechanisms for the public and politicians to hold public sector organisations accountable (Olken 2007, Bjorkman and Svensson 2009). Building on the literature examining cross-country differences in bureaucratic effectiveness, our analysis pushes forward the frontier to understand within-country variation in effectiveness, and highlighting the role that management plays in driving pockets of good governance within the same structure of political institutions in relatively weak states (Leonard 2010).

We hope our work is the first of many to help establish a picture of what findings on bureaucratic effectiveness replicate over settings and what the sources of within-country heterogeneity driving effectiveness might be.