

**Management of Bureaucrats and Public Service Delivery:**  
**Evidence from the Nigerian Civil Service**

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## Motivation

- the effectiveness of government bureaucracy matters:
  - from a macro perspective:
    - large share of total economic activity [25-35% of GDP in LICs]
    - quality of the bureaucracy is an important driver of growth, welfare and equality [Besley and Persson 2010]
  - from a micro perspective:
    - presumption behind many program evaluations is that successful ones can be scaled-up and delivered by government
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## Management Matters

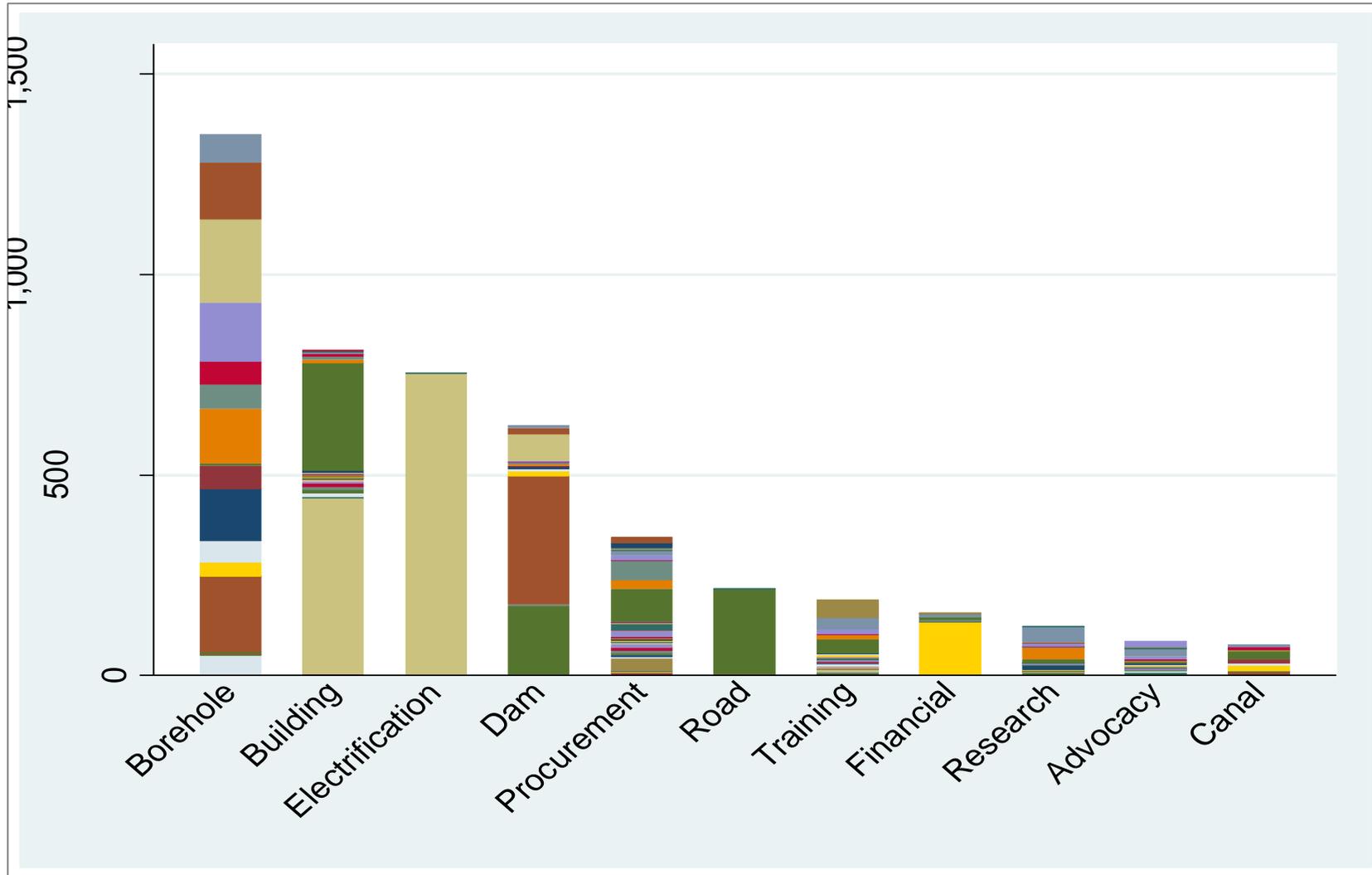
- measure management practices bureaucrats operate under following Nick Bloom and John Van Reenen's pioneering approach
  - adapt their management surveys to our setting, account for insights from public administration [Rose-Ackerman 1986, Wilson 1989]
  - for each civil service organization, we derive three indices of management practices:
    - provision of **autonomy/flexibility** to bureaucrats
    - provision of **incentives/monitoring** to bureaucrats
    - composite index of other practices (staff training, culture etc.)
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## Projects

- projects assigned to organizations are also decided centrally (National Assembly)
  - 11 project types (road, borehole, training etc.) [construction vs. non-construction]
  - same project type implemented by **multiple** organizations
    - e.g. small-scale dams are constructed by the federal ministries of water, agriculture, and environment, and by all the river basin development authorities
  - each organization implementing **multiple** project types
  - identify impact of management on public service delivery within project type
  - [Figure A]
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**Figure A: Major Project Types by Implementing Organization**



**Notes:** Each histogram bar represents the total number of projects for the given project type on the x-axis. Each colored band represents the projects at a particular organization (different bands imply different organizations irrespective of whether they are the same color). The sample used to construct the histogram is those projects for which proportion completed evaluation variable and management scores are available. The projects are classified here by their primary classification.

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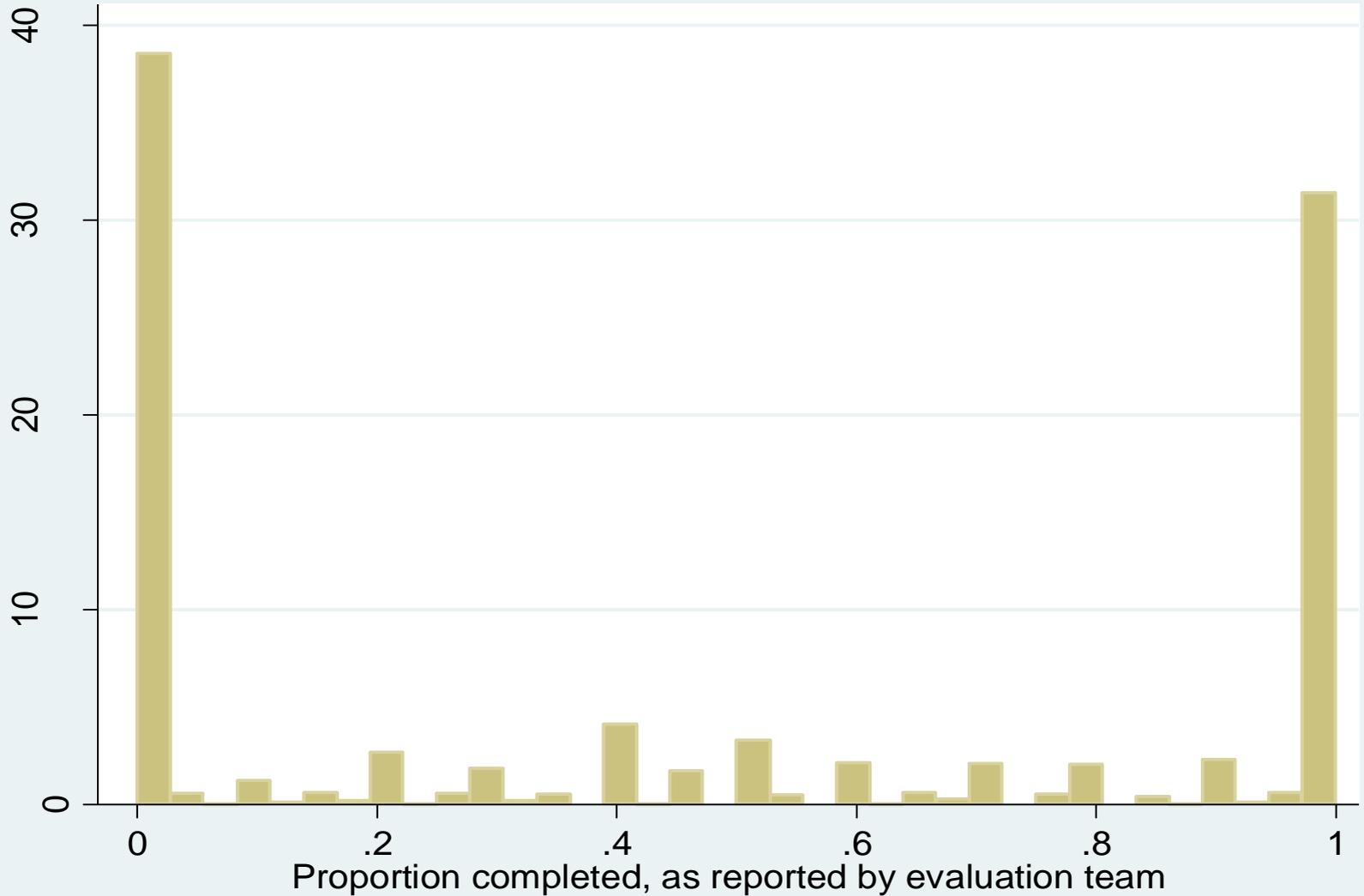
## OPEN

- Nigerian government began a program of sweeping reforms in 2003 [Nkonjoleala and Osafo 2007]
  - as a result, Paris Club canceled its external debt to the tune of US\$18bn
  - Presidency saw this as an opportunity to track the effectiveness of government expenditures
  - 2006/7 started the OPEN initiative: to trace, by project, the use and impact of around 10% of all Federal Government social sector expenditures
  - we focus on projects with a 12 month completion schedule
  - projects evaluated by independent teams of engineers:  
(i) completion rate [0-1]; (ii) quality {0,1}
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## Checks and Balances in OPEN

- centralized team of technocrats monitored the evaluation teams, providing them with training and opportunities for standardization of their methods
  - evaluators were asked to provide material, photographic, or video evidence to support their reports
  - the national teams and Presidency performed random checks on evaluated sites (all of which were found to be consistent with OPEN monitors)
  - hand coded the material from all projects recorded in OPEN initiative reports from 63 organizations:
    - 4721 projects, aggregate budget of US\$800 million
  - [Figure B; Tables 1, 2]
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# Figure B: Proportion Projects Completed



**Notes:** This is a histogram of the proportion of project completed variable. The sample used to construct the histogram is those projects for which proportion completed evaluation variable and management scores are available.

**Table 1: Descriptive Evidence on Project Types**

<b>Project Type</b>	<b>(1) Number of Projects [Proportion]</b>	<b>(2) Number of Implementing Organizations</b>	<b>(3) Median Budget Allocation (US\$000s)</b>	<b>(4) Proportion Never Started</b>	<b>(6) Proportion Completed Conditional on Being Started</b>
<b>Borehole</b>	1348 [0.29]	<b>18</b>	29	0.44	0.84
<b>Building</b>	806 [0.17]	<b>32</b>	120	0.37	0.79
<b>Electrification</b>	751 [0.16]	<b>2</b>	93	0.14	0.65
<b>Dam</b>	624 [0.13]	<b>14</b>	18	0.79	0.74
<b>Procurement</b>	345 [0.07]	<b>41</b>	87	0.30	0.83
<b>Road</b>	217 [0.05]	<b>4</b>	167	0.12	0.59
<b>Training</b>	189 [0.04]	<b>26</b>	80	0.20	0.74
<b>Financial project</b>	157 [0.03]	<b>8</b>	17	0.38	0.79
<b>Research</b>	122 [0.03]	<b>21</b>	67	0.11	0.72
<b>Advocacy</b>	86 [0.02]	<b>23</b>	49	0.24	0.80
<b>Canal</b>	76 [0.02]	<b>12</b>	347	0.70	0.45

**Notes:** The “project type” classification refers to the primary classification for each project. Other project classifications exist. The median budget allocation in Column 3 is in thousands of US Dollar (assuming an exchange rate of US\$1: Naira 150). The sample of projects covers those which have a positive budget allocation and for which the proportion completed evaluation variable and management scores are available. The project quality variable in Column 8 is not available for all projects. Standard deviations are in parentheses. Figures are rounded to two decimal places where relevant.

**Table 2: Descriptive Evidence on Largest Civil Service Implementing Organizations**

<b>Civil Service Organization</b>	<b>(1) Number of Projects</b>	<b>(2) Number of Unique Project Types</b>	<b>(4) Proportion Never Started</b>	<b>(6) Proportion Completed Conditional on Being Started</b>
<b>Federal Ministry of Agriculture and Rural Development</b>	797	<b>9</b>	0.54	0.63
<b>Federal Ministry of Power and Steel</b>	750	<b>1</b>	0.14	0.25
<b>Federal Ministry of Water Resources</b>	520	<b>4</b>	0.95	0.77
<b>National Primary Health Care Development</b>	447	<b>4</b>	0.19	0.79
<b>Sokoto Rima River Basin Development Authority</b>	277	<b>2</b>	0.22	0.85
<b>Upper Benue River Basin Development Authority</b>	169	<b>3</b>	0.11	1.00
<b>Ogun/Oshun River Basin Development Authority</b>	165	<b>4</b>	0.55	0.71
<b>Chad Basin River Basin Development Authority</b>	148	<b>3</b>	0.43	1.00
<b>Lower Benue River Basin Development Authority</b>	143	<b>3</b>	0.45	0.77
<b>Nigerian Agricultural Cooperative and Rural Development Bank</b>	133	<b>2</b>	0.42	0.80

**Notes:** The sample covers the ten largest civil service organizations ranked by number of projects from our overall sample of projects. The “project type” classification refers to the primary classification for each project. Other project classifications exist. The budget allocation in Column 3 is in millions of US Dollars (assuming an exchange rate of US\$1: Naira 150). The sample of projects covers those which have a positive budget allocation and for which the proportion completed evaluation variable and management scores are available. The project quality variable in Column 8 is not available for all projects. Standard deviations are in parentheses. Figures are rounded to two decimal places where relevant.

## Management Practices

- revival of research investigating the impacts (and origins) of management practices on productivity and performance of private sector firms
  - follow BVR's methodology to measure management practices in civil service organizations
  - adapt their survey tool to the Nigerian public sector setting:
    - measured practices are informed by the public sector management literature
    - 'double blind' face-to-face group interviews with senior managers, consensus reported
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## Management Practice Topics

- BVR scores management practices in four topics: operations, targets, incentives and monitoring
  - we use nine topics: roles, flexibility, incentives, monitoring, facilities, skills, staffing, targets and culture
  - rank each answer 1 to 5, increasing in common notion of good practice
  - derive three measures of management practice: CS-autonomy, CS-incentives, CS-other
  - construct z-score for each management practice
  - [Table A2]
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## Table A2: Defining Management Practices Using the CS Indices

Management Practice	Topic	Specific Questions Related to this Topic
<b>CS-Autonomy</b>	<b>Roles</b>	Can most staff above SGL 7 in your organization make substantive contributions to the policy formulation and implementation process?
		Can most staff above SGL 15 in your organization make substantive contributions to the policy formulation and implementation process?
		To what extent do the employees in this organization have the ability to determine how they carry out the assignments in their daily work?
	<b>Flexibility</b>	Does your organization make efforts to redefine its standard procedures in response to the specific needs and peculiarities of a community?
		How flexible would you say your organization is in terms of responding to new practices, new techniques, and regulations?
		At your organization, how efficiently is best practice shared between departments?
		Given past experience, how effectively would a conflict within your organization be dealt with?

## Table A2: Defining Management Practices Using the CS Indices

Management Practice	Topic	Specific Questions Related to this Topic
<b>CS-Incentives</b>	<b>Performance Incentives</b>	Given past experience, how would under-performance be tolerated?
		Given past experience, what happens if there is a part of your organization that isn't achieving agreed results?
		What percentage of <i>workers</i> were rewarded when targets were met?
		What percentage of <i>managers/directors</i> were rewarded when targets were met?
		Given past experience, are members of this organization disciplined for breaking the Public Service Rules?
		Given past experience, what would most likely happen to a person in this organization who accepted money or a present from someone who came to them with a problem?
	<b>Monitoring</b>	In what kind of ways does your organization track how well it is delivering services?
		If have performance indicators, how often are these indicators collected?
		If have performance indicators, how often are these indicators reviewed by Minister or Permanent Secretary?
		If have performance indicators, how often are these indicators reviewed by non managerial staff?
		Does the organization use performance or quality indicators for tracking the performance of its employees?
		At your organization, how highly regarded is the collection and use of data in planning and implementing projects?

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## Empirical Method

- unit of observation: project  $i$  of type  $j$  in organization  $n$ :

$$y_{ijn} = \gamma_1 CS\text{-autonomy}_n + \gamma_2 CS\text{-incentives}_n + \gamma_3 CS\text{-other}_n \\ + \beta_1 PC_{ijn} + \beta_2 OC_n + \lambda_j + \epsilon_{ijn}$$

- $y_{ijn}$  corresponds to the project completion rate, or assessment of project quality
  - CS- measures are normalized z-scores
  - $PC_{ijn}$  are project characteristics (complexity, scale...)
  - $OC_n$  are organization characteristics (noise controls, size, budget, staff-education...)
  - project fixed effects  $\lambda_j$
  - standard errors clustered by project type-organization
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# Table 3: Management Practices and Public Sector Service Delivery

Standard Errors: Clustered by Project Type Within Organization

OLS Estimates

	Project Completion Rates			
	(1) Unconditional	(2) Organization Controls	(3) Project Controls	(4) Project Type Fixed Effects
<b>CS-Autonomy</b>	0.11** (0.05)	0.18*** (0.03)	0.17*** (0.03)	0.18*** (0.03)
<b>CS-Incentives</b>	-0.06* (0.03)	-0.11*** (0.02)	-0.11*** (0.02)	-0.14*** (0.02)
<b>CS-Other</b>	0.10*** (0.04)	0.05 (0.03)	0.05 (0.03)	0.08*** (0.02)
<b>Organization Controls (capital, general, noise)</b>	No	Yes	Yes	Yes
<b>Project Controls</b>	No	No	Yes	Yes
<b>Fixed Effects</b>	None	None	None	Project Type
<b>Observations (clusters)</b>	4721 (201)	4721 (201)	4721 (201)	4721 (201)

**Notes:** \*\*\* denotes significance at 1%, \*\* at 5%, and \* at 10% level. Standard errors are in parentheses, and are clustered by project type within organization throughout. All columns report OLS estimates. The dependent variable in Columns 1 to 4 and 6 is the proportion of the project completed (that is a continuous measure between zero and one). The dependent variable in Column 5 is the product of the proportion completed variable and the dummy variable for quality. The sample of projects in Column 5 is limited to those for which project completion and quality data is available. Project Type fixed effects relate to whether the primary classification of the project is as a financial, training, advocacy, procurement, research, electrification, borehole, dam, building, canal or road project. Project controls comprise project-level controls for the project budget, whether the project is new or a rehabilitation, and an assessment of its aggregate complexity by Nigerian engineers. Capital controls comprise organization-level controls for the logs of number of employees, total budget, and capital budget. General controls comprise organization-level controls for the share of the workforce with degrees, and the share of the workforce with postgraduate qualifications. Noise controls are four interviewer dummies, indicators of the seniority, gender, and tenure of the managers who responded, the day of the week the interview was conducted, the time of day the interview was conducted, a dummy variable indicating whether the interview was conducted during Ramadan, the duration of the interview, and an indicator of the reliability of the information as coded by the interviewer. Note that no quality information is available for organizations surveyed on a Saturday, and thus the dummy variable indicating a survey took place on a Saturday is omitted in Column 5. Total and capital budget figures are an average of organization budget figures for the years 2006-10. Figures are rounded to two decimal places.

# Table 3: Management Practices and Public Sector Service Delivery

Standard Errors: Clustered by Project Type Within Organization

OLS Estimates

	Project Completion Rates				(5) Interaction	(6) Quality-Adjusted Completion Rate
	(1) Unconditional	(2) Organization Controls	(3) Project Controls	(4) Project Type Fixed Effects		
<b>CS-Autonomy</b>	0.11** (0.05)	0.18*** (0.03)	0.17*** (0.03)	0.18*** (0.03)	0.23*** (0.03)	0.11** (0.04)
<b>CS-Incentives</b>	-0.06* (0.03)	-0.11*** (0.02)	-0.11*** (0.02)	-0.14*** (0.02)	-0.15*** (0.02)	-0.08*** (0.02)
<b>CS-Other</b>	0.10*** (0.04)	0.05 (0.03)	0.05 (0.03)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)
<b>CS-Autonomy x CS-Incentives</b>					0.06** (0.02)	
<b>Organization Controls (capital, general, noise)</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Project Controls</b>	No	No	Yes	Yes	Yes	Yes
<b>Fixed Effects</b>	None	None	None	Project Type	Project Type	Project Type
<b>Observations (clusters)</b>	4721 (201)	4721 (201)	4721 (201)	4721 (201)	4721 (201)	<b>2206 (144)</b>

## Interpretation

- autonomy: divesting authority/flexibility to bureaucrats is beneficial
  - autonomy is not driving more corrupt practices
  - findings against Weberian/rules-based view
  - CS-incentives: negative partial correlation, implications for good governance agenda
  - two interpretations of why this practice can correlate negatively with output...
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## Detrimental CS-Incentives

- **multi-tasking**: bureaucrats exert multiple effort types [process vs production]
    - practices capture an incentive system that places excessive regulatory burden or ‘red tape’ on bureaucrats [Kelman 1990]
    - poorly targeted incentives/monitoring → reallocation of effort to **process**
  - **SPE**: the practices we measure using the BVR method pick up *subjective* performance evaluation (SPE)
    - SPE has the benefit of being based on a more rounded set of assessments
    - but SPE also encourages influence activities [Milgrom 1988, Milgrom and Roberts 1988]
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## Contributions

- provide widescale evidence linking practices in civil service organizations to public services delivered
  - management practices matter: multi-tasking and SPE key
  - one sd adjustments in CS-autonomy and CS-incentives → 32% increase in project implementation rates
    - 38% of projects not started (\$1.4bn)
  - implications for good governance agenda: **joint** consideration of incentives for bureaucrats and **other features** of civil services...
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## Wider Agenda: Improving Public Service Delivery

- this paper: management practices for bureaucrats **within** public sector
- interplay with other channels documented to raise public service delivery:
  - selection of workers **into** public sector [Dal Bo et al. 2013 use experimental variation in wage offers]
  - public accountability/top-down auditing [Besley and Burgess 2002, media; Olken 2007, roads]
  - grassroots monitoring [Bjorkman and Svensson 2010, health]
  - provision of information to users [Reinikka and Svensson 2011, health; Andrabi et al. 2013, education]
- rich agenda to study these multiple margins together