

Bureaucratic Locus of Control

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Abstract

To what extent do public officials feel they have control over their lives in public service? We develop a new measure of perceived control in the bureaucracy based on the locus of control scale. The ‘Bureaucratic Locus of Control’ (BLOC) scale extends standard measures to a bureaucratic context as well as introduces an extension to these measures that focuses on the power of systemic forces in officials’ lives. Field tests amongst a representative sample of Ethiopian public officials suggest that the BLOC scale has good internal reliability and that it is positively associated with promotion opportunities, rewards and motivation. We showcase its use by investigating the extent to which inequality in control impacts the general perception of control. Potential uses of the scale to study bureaucratic dynamics are discussed.

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1 Introduction

Public officials formally operate under rigid rules and guidelines, but frequently enjoy a high degree of de-facto autonomy (Lipsky, 1980; Carpenter, 2001; Egeberg and Trondal, 2009; Fukuyama, 2013; Maggetti and Verhoest, 2014; Rasul and Rogger, 2018). This raises the question of who has control of the policy process. The corresponding distribution of control has implications for the allocation of public resources and the fate of public policy. This paper presents and empirically validates a measurement framework that identifies those individuals who perceive themselves as having control over their lives in public service and the associated policy activities they undertake. We develop a new individual-level measure of bureaucratic control, empirically validate it in a public service setting through a representative survey of 1,616 public administrators across 373 organizations, and provide analysis of who perceives themselves as having control in the bureaucracy.

We build on the Locus of Control (Rotter, 1954, 1966) as a measure of individuals officials' beliefs about what determines the events that affect them, and where they attribute primary causation of those events. In the locus of control framework, individuals can be placed on a continuum of beliefs that attribute causation to dominantly internal or dominantly external factors. Those with an internal locus of control believe they control events in their lives through their decisions and actions, and those with an external locus of control believe that the events that affect them are outside their control. It follows that an individual's locus of control can be a driving influence on their behavior and decision-making. In the world of public service, individual officials may make distinct efforts towards implementing public policy depending on how they think those actions will relate to outcomes. Which officers have control will determine the nature of public reality.

We refine the most commonly used measure of locus of control to build a scale to measure the locus of control of bureaucrats in their place of work. We follow the guiding rationale of each item of the scale as outlined in Levenson (1973, 1974) which provides

clear guidance as to what each item should assess. By doing this we hope to capture the perceptions of bureaucrats on their role, their organization and the degree of control they have in determining how they fit into it. This exercise contributes to an expanding literature that designs micro-level measures of characteristics of bureaucracy (Bussell, 2017; Trondal, Murdoch and Geys, 2017; Lee and Van Ryzin, 2018). It builds an empirical tool to investigate aspects of bureaucratic control at the individual level.

In applying the standard scale to a public service setting, there was one key aspect of a civil servant's life that was not well captured by the standard scales: institutional or system constraints. Almost by definition, civil servants operate in 'systemic' environments that are highly contingent on the actions and beliefs of others, and the institutional structures that bind these individuals together. Bernier and Hafsi (2007) provide empirical examples of the importance of this perspective in understanding public sector outcomes.

To understand the extent to which civil servants attribute life outcomes not to other people or luck, but to the system of rules and hierarchy they are embedded in, we determined that a new sub-scale was required to complement the standard scales. Such a sub-scale bridges internal and external factors, since officials are both part of and embedded in the public service system. Thus, in order to capture systemic control over civil servants' locus of control, a fourth sub-scale was added: Power of the System. Once again, Levenson's guidelines on how to incorporate a new sub-scale into BLOC were relatively precise, so our task was to translate these guidelines using the language of bureaucratic systems. Such language reflects the wider literature on bureaucratic systems, for example in Wilson (1989) who highlights the impact of systemic forces on who gains positions of leadership (assessed in item A), the importance of the culture of the organization (item D), and government's ability to deliver (item H).

We then assessed our newly defined 'Bureaucratic Locus of Control' through applying it in the field. We held face-to-face interviews with 1,616 public administrators in 373 organizations across the three tiers of Ethiopia's government. We applied frontier methods of survey design and implementation to generate a representative sample from across government. Our results provide the first large-scale survey evidence on the nature of

control in public administration.

Ethiopia's government is an excellent laboratory for testing new measures of bureaucratic control. Similar to many other developing countries, the dynamic nature of the public service leaves it prone to uncertainties amongst staff as to the consequences that might result from their actions. Second, given the developmental nature of Ethiopia's polity and public service, its service organizations exhibit a wide range of organizational culture and effectiveness. This provides the variation that any empirical study requires to fully explore the features of corresponding survey instruments and the implications of the phenomenon under investigation. At the same time, Ethiopia's federal system, diversity of citizenry and commonalities with bureaucratic structures in a wide variety of developing and developed countries implies an institutional framework that overlaps heavily with other settings.

Our analysis implies internal consistency of the BLOC scale, and factor analysis implies that our new 'system' sub-scale provides additional information about perceptions of control in a bureaucratic environment, adding particularly to the external construct of control, as might be expected.¹ We showcase an application of our scale by investigating inequality in control as a determinant of individual perceptions of control.

The rest of this paper proceeds as follows. Section 2 describes the related literature on this topic. Section 3 outlines our development of a bureaucracy-focussed locus of control, as well as the survey we enumerated to test it. Section 4 assesses the validity of our new scale and assesses various determinants that are fundamental to bureaucracy, such as organizational inequality. Section 5 discusses potential uses of the instrument.²

¹To be clear, our aim is to extend the comprehensiveness of measurement of control in the public service setting, rather than suggest there is a third latent factor beyond its internal and external expressions. Through factor analysis presented in Appendix Table OA6, we show that the Power of the System sub-scale loads on both internal and external latent factors in a 2 factor solution.

²In much of the LOC literature, authors have presented analysis as to what the most valuable components of an LOC-index are in terms of their marginal information content. This allows researchers, where constrained to field a smaller number of items, to do so at minimal cost. We therefore provide an online appendix that presents an assessment of the underlying latent factors that determine our scale and what this implies for a refined version.

2 Literature Review

As early as Wilson (1887) scholars have postulated that the bureaucracy as a whole plays an important role in determining the nature and effectiveness of government policy (Peters, 1995). Research on control of bureaucratic activities has examined the extent to which bureaucratic organizations are responsive to political institutions (Wood and Waterman, 1991; Meier and O’Toole, 2006; Ting, 2012, 2017) and how institutional features mediate bureaucratic control (Gulick, 1937; Wilson, 1989; Hammond, 1990; Meier and Bohte, 2003; Egeberg, 2012). This work typically takes a more ‘macro’ approach, assessing organizational or system-wide dynamics. Empirical evidence on the individual officials within the bureaucracy who exert this control has been limited.

Waterman and Rouse (1999) employ a survey of officials in the US Environmental Protection Agency to assess how bureaucratic agents perceive the influence exerted by a variety of political principals. However, they do not examine how these external influences mediate their individual sense of control. Nielsen and Moynihan (2017) assess the conditions under which politicians employ a logic of collectivized versus individualized responsibility to bureaucrats. Page and Jenkins (2005) use qualitative interviews to assess the influence of individual Whitehall officials, noting the technical challenges that disrupted their plans for large-scale survey work.

Research on private sector organizations has found correlations between measures of control and a wide array of workplace behavior such as job satisfaction, job performance, motivation, and turnover intention (Judge and Bono, 2001; Allen, Weeks and Moffitt, 2005; Ng, Sorensen and Eby, 2006; Chen and Silverthorne, 2008). However, public management scholars have highlighted distinctive differences between the private and public sectors (Boyne, 2002; Rainey, 2009). Unlike private firms, governmental agencies serve multiple principals with conflicting demands, including political actors, and deliver complex public goods, all of which contribute to a distinctive control environment in the public sector. An outstanding question is therefore how these factors effect the perception of control by officials and whether the distribution of that control has similar impacts

on motivation and performance, as well as the extent to which it can explain variation in government performance across officers, sectors, agencies and countries.³

The locus of control concept has been applied to physical and mental health (Wallston, Wallston and De Vellis, 1978; Cobb-Clark, Kassenboehmer and Schurer, 2014; Chen et al, 2017), academic achievement (Cooper and Findley, 1983), labor market outcomes (Judge, Locke and Durham, 1997; Caliendo, Cobb-Clark and Uhlendorff, 2015) and numerous other areas of life. These studies use a variety of scales developed on the basis of Rotter’s original scale. These scales vary in length, structure and scope, and range from unidimensional to multidimensional, general to specific, and depending on the construction of the scale, on what they predict. Whilst the framework has been applied to organizational theory (Spector, 1988; Saboe and Spector, 2015), there is a relative absence of its use in public administration. This is despite the potentially large impact that public officials have on policy making.

3 Bureaucratic Locus of Control

3.1 Adapting the Locus of Control to Bureaucracy

The extent of discretion within bureaucratic environments, its potential impact on public policy, and the unique context of the public sector are arguments for a bureaucracy-focused locus of control scale, or a ‘Bureaucratic Locus of Control’ (BLOC). The Bureaucratic Locus of Control we present builds on Levenson’s IPC (Internality, Powerful Others, Chance) Scale (Levenson, 1973, 1974), a 3-part scale developed on the basis of Rotter’s original I-E (Internal, External) scale. The IPC scale is made of up three subscales: the Internality or I scale measures an individual’s belief in the degree of control s/he exerts on her/his own life; the Powerful others or P scale measures an individual’s belief in the degree of control exerted by powerful others on her/his life; and the Chance

³Which members of the bureaucracy have control over the policy process also has implications for the tension between democratic accountability and bureaucratic autonomy. This tension would be perceived differently in the case in which control was captured by a sub-set of bureaucrats whose actions may not be in the public interest.

or C scale, which measures an individual's perceptions of chance control over her/his life. The IPC scale has been adapted into many scales and languages and has been used in studies on education, health and psychology, and has been validated in several situations (Halpert, 2011).

In order to adapt the IPC Scale to a civil service setting, each item in the scale was assessed in terms of how it could be applied to the professional life of a civil servant. In those instances where items were applicable to this setting, no changes were made. In those instances where items did not apply to the professional setting of a civil servant the wording was adapted, but without changing the underlying objective of those items. Some items required only a small change, such as replacing the word 'friends' with 'colleagues', whereas other items required a more substantial change. Table 1 presents each of the statements used in the IPC scale along side the Bureaucratic Locus of Control statements. For example, the first item in Levenson's internality scale is "Whether or not I get to be a leader depends mostly on my ability." We translated this to "Whether or not I am promoted depends mostly on my ability." The second item in Levenson's scale is "Whether or not I get into a car accident depends mostly on how good a driver I am." We translated this to "Whether or not I get a query depends mostly on how good a civil servant I am." And so on.

In order to ensure adapted items continued to capture the basic original ideas, careful consideration was given to the original rationale behind each item. Appendix Table OA1 provides details of these concepts and their application to the public service setting. For example, item A in each of the IPC sub-scales relates to a person's 'progression towards leadership'. In the internality sub-scale, this takes the form of "Whether or not I am promoted depends mostly on my ability." In the powerful others sub-scale, this takes the form of "Although I might have good ability, I will not be promoted without appealing to those in positions of power." Using our mapping of the underlying concepts interpreted for the public service as a baseline, items were adapted to reflect the specific context of the bureaucracy without changing the original rationale.⁴

⁴The scales were also adapted in such a way that items would be relevant to all civil servants equally

We felt that there was one key aspect of a civil servant’s life that was not well captured by the IPC scale: institutional or system constraints. Civil servants typically operate in ‘systemic’ environments that are highly contingent on the actions and beliefs of others, and the institutional structures that bind these individuals together. To understand the extent to which civil servants attribute life outcomes not to other people or luck, but to the system of rules and hierarchy they are embedded in, we determined that a new sub-scale was required to complement the IPC scale. Thus, in order to capture systemic control over civil servants’ locus of control, a fourth sub-scale was added: Power of the System. To ensure consistency with the pre-existing literature, the eight new items included in this sub-scale corresponds to one of the pre-existing three-item sets in the IPC scale, preserving the parallelism across the full adapted scale (becoming four-item sets). Specifically, using our listing of what underlying phenomenon each of the three-item sets of the IPC is testing for, we created eight new items corresponding to each of these phenomenon and relating to the power of the system. Table 1 describes our eight new items. Our intention is to add granularity to the existing notions of internal and external control with this additional sub-scale, rather than determine a wholly new realm of control.

The conclusion of this exercise is a new 4-set, 32-item ‘Bureaucratic Locus of Control’ (BLOC) which both retains consistency with the original locus of control theory and extends it to reflect the distinctive nature of the public service.

3.2 The Public Service in Ethiopia

To apply the scale in the field, we enumerated it to a representative sample of civil servants across Ethiopia’s civil service. Ethiopia is Africa’s second most populous country, home to 100 million people or 10% of the population of sub-Saharan Africa. Like other developing countries, government expenditures represent a significant fraction of GDP (18%) and the public sector is a large employer of formal workers. Corruption is less prevalent than

across positions, hierarchies and sectors.

in most of sub-Saharan Africa, but government effectiveness is perceived to vary across the agencies of government (World Bank, 2019).

The state is organized in a federal system, with three major tiers of government: federal, regional, and district (woreda). Each tier has its own staff of civil servants who must define and refine government policy within their tier, direct budgetary and other resources, and manage the implementation of public services. None of the officials we study implement public services themselves, at any of the tiers, but rather administer public policy and resources. Across sectors, the structure of the vertical hierarchy is relatively constant. Ministry organizations focus more on agenda setting for the sector, and the development of governing policies, but also direct resources to service providers and thus focus on managing implementation. Regional organizations develop policies for their region in line with federal stipulations, and guide resources across districts. District governments focus on service delivery, whilst translating policies into guidelines for their district. All the public officials we study therefore have the potential to impact the quality of governance in their country.

Beyond simply affecting potentially important actors in the governance process, Ethiopia's civil service has useful features for the application and validation of a Bureaucratic Locus of Control. First, large expansions in the population of public servants over the past decade have led to significant ambiguities in what roles individual officials play. Similar to many developing countries, the dynamic nature of the public service leaves it prone to uncertainties amongst staff as to the consequences that might result from their actions. Second, given the developmental nature of Ethiopia's polity and public service, its service organizations exhibit a wide range of organizational culture and effectiveness. This provides the variation that any empirical study requires to fully explore the features of corresponding survey instruments and the implications of the phenomenon under investigation. Related to this, the diversity of Ethiopia's citizenry leads to substantial variation in the tasks faced by public officials, accentuating the heterogeneous tasks public officials must face for which control is likely to be a fundamental input.

3.3 Survey of Public Officials

To elicit an understanding of the control Ethiopian public officials feel they have in their environment, between June and September 2016 we held face-to-face interviews with 1,616 public administrators in 373 organizations across the three tiers of Ethiopia's government. We followed frontier protocols for large-scale surveys, using 5 teams each with experienced team leaders, and recording subjective assessments of the quality of the interviews amongst other features. The online appendix provides details of our sampling and implementation approaches, with Table OA2 listing the organizations included in our study and Figure OA1 providing a map of the district governments we sampled in the Ethiopian Survey of Civil Servants (ECSS). Our analysis focuses on the agriculture, education, health, revenue, and trade sectors. For each of these five sectors, we sample the main ministry, all the corresponding regional offices, and a geographically representative sample of corresponding district offices from across the country. Within each organization, we interviewed senior managers and a representative sample of their staff. We limit our scope to the professional grades of technical and administrative officers, excluding grades that cover cleaners, drivers, secretaries, etc. Altogether, the survey is one of the most comprehensive enumeration exercises ever undertaken in the public administration.

Table 2 provides descriptives for the 373 organizations we study. All officials work within a relatively standard structure, with a manager overseeing levels of hierarchy below him within a clearly defined organizational structure. As is common, the more centralised an authority is, the larger it is in terms of both the number of managers and the number of employees. In terms of bureaucrat characteristics, around 20% are women (at managerial grades, 8% are women, at non-managerial grades 24% are women); 82% of Ethiopian bureaucrats have some form of university education, with 10% having a postgraduate degree (at managerial (non-managerial) grades, 15% (9%) have a post-graduate degree). As in other state organizations, bureaucrats enjoy stable employment once in service: the average bureaucrat has 13 years in service, with their average tenure in the current organization being 7 years. Across tiers, bureaucrats are similar in that they are on average in their mid-thirties, have been in their current post for roughly similar amounts

of time, and have all worked in roughly 3 service organizations (2 before the present one). Each of the officials we interviewed was asked to fill in a sheet with our BLOC questions. In a small minority of cases (12%), officials answered less than two-thirds of the BLOC questions. Individuals not finishing the sheet was mainly due to the questionnaire covering two sides of paper, and many of the individuals who did not complete the questionnaire simply did not turn the questionnaire over. However, we drop from our analysis any individual who did not complete at least two-thirds of the survey. Appendix Table OA3 indicates that on observable characteristics, it does not seem that they are a self-selected group of officials. Tables 1 and 2 shows the rate at which we dropped observations for different items and across different types of officials. Tables 1 and 2 also provide raw descriptive statistics for each of the items, the aggregate BLOC score, and each of our BLOC sub-indices.

We convert the raw scores for each item into a normalized z-scores (so are continuous variables with mean zero and variance one by construction), and then sum these z-scores into sub-indices for the ‘Internality’, ‘Powerful Others’, ‘Chance’, and ‘Power of the System’ sub-indices, as well as an aggregate BLOC score for each individual. Figures 1A and 1B display the variation in our indices graphically. Both of these descriptive exercises indicate a substantial level of variation in the BLOC scores across officials in the Ethiopian government. Along with locus of control questions, we asked these officials to respond to a survey on their basic characteristics and features of their organization.⁵

In conjunction with the survey, we also collected data on the performance of public officials as assessed in their annual appraisal.⁶ Each year, public officials are evaluated by their direct manager on the tasks that they were expected to contribute to. For example, tasks might include ‘Monitor and provide support to the [work] team preparing the budget’ and

⁵To develop and enumerate a questionnaire that was relevant for the Ethiopian setting, we worked closely with the Ministry of Public Service and Human Resource Development and employed ex-civil servants within our enumeration teams to facilitate navigation of the public service. The implementation of the survey was successful across the organizations we visited, with 99.5% of public officials sampled agreeing to be interviewed and 98.2% of interviews being classified by the enumerator as having gone ‘somewhat well’ (26.4%) or ‘very well’ (71.7%).

⁶A weakness of our approach is the potential for common source bias (Meier and O’Toole, 2012). In such cases, Favero and Bullock (2014) argue that the coherence of common source results should be validated using independently collected performance data.

‘Support the team to prepare soft and hard copy documents of the budget’. Managers evaluate the quality of contributions bureaucrats make to the tasks they were involved in and produce an overall ‘performance’ score. In addition to this performance-related score, public officials are evaluated on their ‘attitude’ to work, which intends to measure their office behaviour and alignment to the organization (Abagissa, 2014; Tereda, 2014). For the year 2016, we collected the performance, attitude, and total scores (which are a weighted average of performance and attitude scores) for each official from a subset of the organizations we visited for which they were available. The scores were only available for 856 of our survey respondents.

4 Determinants of Control

Table 3 presents basic descriptives of the correlates and determinants of our measure of the locus of control of public officials in the Ethiopian public service. Individual characteristics may interact with bureaucratic structures in a distinct way to the personal realm. We investigate the impacts of each of 5 topics in turn before undertaking a unified regression in column 6. The aggregate Bureaucratic Locus of Control scale integrates the sub-indices such that it is increasing in the level of internal control an individual feels they have.

In column 1 we focus on the impact of demographics on perceptions of control. We see that females tend to believe they have greater control in the service than men. Noting from Table 2 that only 20 percent of public officials are women, these are likely to be a selected set of individuals perhaps with a greater belief in their abilities. Age also has a positive impact on perceived control, which might be expected as officials grow in life experience and confidence. However, it is an order of magnitude smaller than the coefficient on gender. A male official would have to be 26 years older than a female official to have the same level of perceived control. Whilst tertiary education does not seem to have a substantial impact on perceptions of control, a masters education is correlated with a lower perception of control.

Column 2 investigates variables related to experience in the service. Unlike life experience, simply having more time in the service does not seem to affect the perception of control there. Perhaps this relates to the fact that control is determined by hierarchical standing in bureaucracy rather than tenure. Indeed, individuals of a higher grade have a greater sense of control, with a coefficient that is significant at the 10% level. This is also consistent with the result in column 3 that managers have substantially greater perceptions of the power they have over their public service lives.⁷

In column 4 we investigate the impact of the sector in which public officials work on their perceptions of control. With similar public service conditions for administrators across sectors, we would not expect the experience of public officials in different sectors to vary substantially on average. We see it has little impact. A joint test of significance of the sectoral variables has a p-value of 0.46. This finding is consistent with other work that finds little systematic difference in the experience of public officials across sectors (Rogger, 2017).

Finally, we find evidence in this setting that federal employees believe they have least control over their public service lives, with both regional and district (woreda) employees stating a higher overall level of control. However, we see that this is driven by subordinates sense of a lack of control, with federal managers having relatively high aggregate BLOC scores. In the Ethiopian setting, and consistent with a theoretical lens in which autonomy generates a sense of control, decentralization leads to a greater sense of employee empowerment across tiers of management and government organizations.

Together, these results are consistent with hierarchical structures of bureaucracy being significant mediating factors in the control individual officials feel they have in their work lives.

⁷Column 2 also indicates that those who state that they work longer hours believe they have a greater sense of control. Perhaps the relationship here is between those with a greater sense of control working longer to achieve their intended aims.

4.1 Validating the data

We empirically investigate the relationship between the BLOC scales with a few theoretically related constructs, to empirically test for construct validity of these scales. In particular, we focus on indicators of performance, motivation, and job satisfaction (as investigated by Spector, 1982) that were also asked in the civil servants survey. There is a large literature that establishes a positive relationship between a higher internal locus of control and such measures in the private sector. Recent meta-reviews of this literature include (Wang et al, 2010, Ng et al, 2006). There is also much debate as to whether locus of control directly or indirectly affects these measures, but we investigate the relationships here for the purposes of validation.

Table 4 presents regressions corresponding to proxies of performance, motivation, and job satisfaction. All of the regressions in the table condition on the basic demographics presented in Table 3, and a range of ‘noise controls’. In particular, individual controls are the individual’s gender, age, years of education, tenure in the civil service, an indicator of current civil service grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager. Noise related controls are the time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator’s subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects).

Column 1 of Table 4 presents a measure of performance from outside the survey. The total performance appraisal score presents an indicator of the officials performance in their job as assessed by their supervisor. It is the weighted average of scores on ‘performance’ and ‘attitude to work’. The coefficient is positive and significant at the 10% level. Individuals who perform better within the service feel more in control of their jobs, as one might expect. Similarly, the effect may be that officials who feel empowered are able to perform more effectively. As Fernandez and Moldogaziev (2013) argue, employees with a greater sense of control are able to improve performance by identifying and implementing innovative ways of correcting errors and redesigning work processes across

the organization.

Columns 2 through 7 of Table 4 present self-assessments of our variables of interest from the survey for employees only (managers were not asked the in-depth module from which we draw these questions). We measure satisfaction by creating a binary indicator for if the civil servant is 'satisfied' or 'very satisfied' when responding to the question: "To what extent would you say you are satisfied with your experience of the civil service?" We see in column 2 of Table 4 that individuals who feel satisfied with their lives in the service feel more in control of them. The coefficient is large, significant at the 1% level, and indicates that satisfaction with experience of the service is related to a half a standard deviation increase in the BLOC scale. Similarly, we measure motivation by creating a binary indicator for if the civil servant states that they are more motivated now than when s/he first started working in the public service. We find a positive coefficient, significant at the 1% level, that indicates that officials who are as motivated as when they first entered the service score almost a standard deviation higher on the BLOC scale.

We can also assess the extent to which the BLOC scale correlates with perceptions of the quality of the work environment. Column 4 presents the results of a regression of 'Trust' is a binary indicating if the respondent agrees that 'most people in the civil service can be somewhat trusted or trusted a lot'. Column 5 presents a regression where the key explanatory variable is the response to the following question: "If 100 represents you being on track with your career goals, and 0 is completely off track, what number would you say are you at now?" In column 6, 'Confidence in promotion' is a binary reflecting whether the civil servant is somewhat or very confident in getting promoted, conditional on performance. Finally, in column 7, 'Recieved awards' is a binary reflecting whether the civil servant has received any formal or informal, financial or non-financial award in the past year. We find positive coefficients on each of these variables, significant at the usual levels. As one would expect, working in an environment one trusts, where you are on track with your career, and where you are rewarded for good performance, are all strongly correlated with your perception of control. Together these results provide

validation that BLOC is picking up an important underlying concept.⁸

Given the novelty of the ‘Power of the System’ sub-scale, we re-run the regressions in Table 4 focussing only on that sub-scale. The results are presented in Appendix Table OA5 and are qualitatively similar. We also present principal component analysis of the BLOC scale in the online appendix and compute Cronbach’s alpha scores to further assess the validity of the BLOC scale. The results of these exercises are all supportive of BLOC’s measurement validity. Together, the results indicate strong empirical support for a positive relationship between the BLOC scale as a whole and those features of the environment that are theoretically associated with greater perception of control, and for the internal consistency of the items in our scale. The Power of the System sub-scale correlates strongly with the ‘external’ factor, adding further to our understanding of the nature of pressure experienced by public officials, but also has items that are predictive of the ‘internal’ factor, indicating that systemic forces link internal and external forces.

4.2 Inequality

Building on the insights presented above, we can investigate the determinants of the Bureaucratic Locus of Control that might be thought of as particularly important in a bureaucratic setting. As an example of the usefulness of our framework, we assess the extent to which inequality in the perception of control impacts on the average level of perceived control across our sub-indices.

Our interest is the extent to which the distribution of perceived control can impact on an individual’s own sense of control, real or otherwise. A generally equal distribution of control across the bureaucracy may be perceived favorably by all officials involved, raising the general level of perceived control. By giving some individuals more control than others, and increasing the level of inequality in control, how is the average level of control in the organization affected? Peters and Pierre (2000) describe how control in the public sector can be rivalrous. For example, when multiple officials are both

⁸To assess these results using only within-organization variation, we re-run the regressions with organizational fixed effects in Table OA4 and the results are qualitatively similar.

working towards securing scarce management positions. The more empowered one group of officials feels, this may come at the cost of a general perception amongst their colleagues of a general loss of control. We may hypothesize that as control becomes more skewed towards a smaller group of officials, this reduces the general or total perceived level of control. The pie is both distributed more unfairly and smaller.

Table 5 tests these theories at the organization level by regressing the organization-level Gini coefficient of the individual-level BLOC indices on the organizational average of the corresponding BLOC scale. Since the regressions are at the organization level, we include organization-level averages of controls corresponding to the individual controls in Table 4. Column 1 presents the results of this regression for the ‘Internality’ sub-scale, which is increasing in the extent of internal control individuals feel that they have over the consequences of their actions. The coefficient is negative and significant at the 1% level, implying that inequality in the sub-scale is strongly negatively associated with the average level of the sub-scale in the organization. Thus, as there exists an increasingly large dispersion between officials in the extent to which they feel they have internal control, this reduces the perceived level of control on average within the organization. This would be consistent with a rivalrous relationship between control in the public sector. The results in columns 2 through 4 are consistent with this initial finding. Each presents a sub-scale associated with external factors determining the consequences of an individual’s actions. The coefficients related to the Gini score on the ‘Powerful Others’, ‘Chance’ and ‘Power of the System’ are all positive and all but that on Chance statistically significant at the usual levels. These coefficients imply that increases in inequality in the degree of external locus of control raise the level to which individuals believe that others determine their fate.

The regression in column 5 brings together the results from these sub-indices by using the aggregated BLOC scale which is increasing in perceptions of internal control. The coefficient is negative and significant at the 1% level. It implies that a standard deviation reduction in the Gini score for the aggregated BLOC scale leads to an increase in the average level of perceived control in an organization by roughly a third of a standard

deviation. This is like moving from the median organization to the one at the 61st percentile.

These results imply that there seems to be a negative relationship between the level of inequality in control and its aggregate level. At least in the public service, dividing up control less equally leads to a lower perceived level of control for the average staff member, and reduces the extent to which staff feel they control their lives in general.

5 Discussion

This paper has presented a new method of measuring the perceived distribution of control in bureaucracies based on the notion of locus of control. The ‘Bureaucratic Locus of Control’ presents a refinement and extension of standard measures of LOC that measures individual-level assessments of control within public sector bureaucracies. We find evidence that the BLOC scale is internally consistent and strongly predictive of important features of the public service related to a bureaucrat’s satisfaction, motivation and performance.

As a potentially important determinant of individual and organizational performance, the extent to which officials feel they have control over the consequences of their actions is a variable of key policy interest. It may determine the efforts they make in implementing public policy, mediate their incentives for innovation, and shift how attractive recruits believe the service is as a workplace. We show that individual characteristics such as gender, formal institutional factors such as the tier of government in which an official works, and cultural factors such as inequality in control across an organization, all influence the control an individual official perceives they have over bureaucratic activities. In contrast to the debate that pits institutionalist against behavioral perspectives of public administration (Hammond, 1990), we find evidence that both play a role in the nature of control over the bureaucracy as does their interaction (as postulated by Egeberg, 2012). These findings are distinct to those related to span of control (such as Meier and Bohte, 2003) since a variety of individual characteristics - the gender, age and the tier of gov-

ernment in which they work - are significant predictors of their perception of control. In fact, once we condition on these individual characteristics, whether an official is a manager or not explains a limited fraction of the variation in perceived control we observe. Rather, our results are in contrast to the assumption that control of the policy process amongst bureaucrats is vested in the most senior managers. Control over bureaucratic activities is diffuse (Lipsky, 1980), and our results imply a research agenda ahead to better understand the determinants of perceived control by bureaucrats.

The BLOC instrument provides a framework for better understanding the nature of control in the public sector, with associated implications for the implementation of public policy. Such a framework provides a standardized and validated scale to measure this key concept. The individual-level nature of the BLOC framework allows for an examination of how personal characteristics, institutional features and cultural factors determine control in the bureaucracy. It is an empirical question as to how our results from Ethiopia extend to other settings. Whilst this will likely be dependant on the specifics of the administrative tradition being studied, the nature of hierarchy exhibits a high degree of commonality across bureaucratic settings (Peters and Pierre, 2003). Importantly, our scale was designed to be applicable across different tiers of government, positions in the hierarchy, and organizational cultures. The scale focuses on general aspects of the public sector, rather than any features specific to the Ethiopian government, where we fielded it. Thus, the scale can be employed in countries with differing government structures but with common bureaucratic features of formal hierarchy, promotion, collegiality, and bureaucratic-political interactions.

The remaining task is therefore to undertake measurement of BLOC across a range of bureaucratic settings. We hope that BLOC will be useful to researchers who are interested in measuring the nature of control in public sector organizations. For example, when studying the rollout of a new public administration reform, enumerating the BLOC instrument to a random subset of affected officials before, during and after the rollout will allow for an assessment of the reorganization's impact on perceptions of individual control. Enumerated across organizations, it will provide a concrete measure of which

managers are most able to make their employees feel that they are empowered. To what extent is BLOC a key determinant of employee engagement? Table 4 illustrates that our BLOC scale was a significant predictor of measures of employee satisfaction and motivation, and of their performance appraisal scores, implying control may be critical to corresponding discussions. Where control does and does not matter for employee engagement and related concepts, or for their performance more broadly, will also provide us insights into the role of public officials in distinct administrative traditions.

As such, BLOC can usefully contribute to the broader conversation in this special issue. Locus of control may also have heterogeneous associations with outcomes of interest across country contexts, in parallel to Meyer-Sahling, Mikkelsen, and Schuster's work (2020). It can also help predict when bureaucrats are more likely to proffer innovations that may be productivity-enhancing (Williams, 2020). That said, Honig's work (2020) suggests that bureaucrats' - at least World Bank bureaucrats' - exercise of their agency may itself have heterogeneous effects depending on the environments in which they interact. It may be that in different environments there are different optimal levels of bureaucratic control across a hierarchy of bureaucrats. And Opalo's piece (2020) leaves open the question of whether and where greater local accountability lowers decentralized bureaucrats' perception of their own control (by shifting power to constituents) or raises it, by facilitating more successful service delivery and thus performance. Whether BLOC's heterogeneity by gender persists when appointments are made to fulfill a gender quota, as described by Hassan & Omealia (2020), also warrants further exploration. BLOC can allow scholars to examine whether and when demands for particular kinds of appointments lead to mere superficial compliance (with bureaucrats appointed under an effort at the diversification of voice and perspective unable to exercise theirs) rather than the actual empowerment of individual officials.

A standardized measurement of bureaucratic control such as BLOC, applied across agencies, countries, and policy contexts will enable the establishment of empirical consistencies and in turn the development of theory to understand who controls the policy implementation process within the executive.

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Table 1: Defining a Bureaucratic Locus of Control

Likert Scales: 1 - strongly disagree, 2 - disagree, 3 - slightly disagree, 4 - slightly agree, 5 - agree, 6 - strongly agree

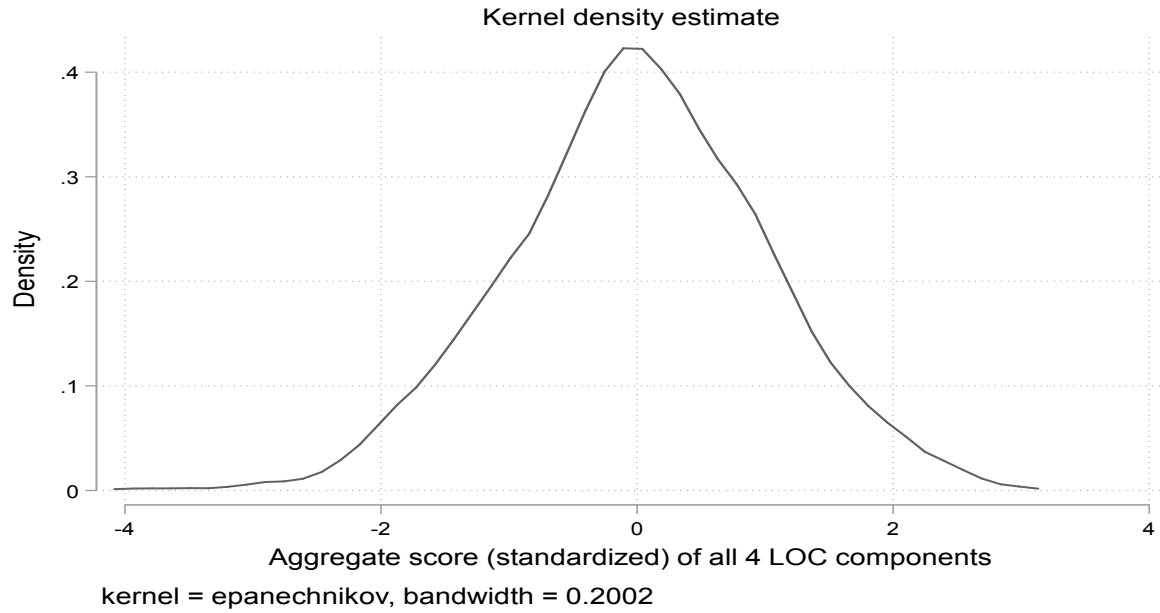
	Item Number	Four-Item Set	Levenson's IPC Scale Item Statement	BLOC Item Statement	Mean	SD	N
Internal							
Internality	1	A	Whether or not I get to be a leader depends mostly on my ability.	Whether or not I am promoted depends mostly on my ability.	3.68	1.62	1602
	2	B	Whether or not I get into a car accident depends mostly on how good a driver I am.	Whether or not I get a query depends mostly on how good a civil servant I am.	4.31	1.34	1600
	3	C	When I make plans, I am almost certain to make them work.	When I make plans, I am almost certain to make them work.	4.43	1.28	1611
	4	D	How many friends I have depends on how nice a person I am.	The bonds I form with my colleagues depend on how nice a person I am.	4.23	1.45	959
	5	E	I can pretty much determine what will happen in my life.	I can pretty much determine what will happen in my life in the civil service.	3.86	1.37	962
	6	F	I am usually able to protect my personal interests.	I am usually able to protect my personal interests.	3.39	1.43	959
	7	G	When I get what I want, it's usually because I worked hard for it.	When I get what I want it is usually because I worked hard for it.	4.62	1.41	1613
	8	H	My life is determined by my own actions.	My life in the civil service is determined by my own actions.	4.08	1.45	1589
External							
Powerful Others	9	A	Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.	Although I might have good ability, I will not be promoted without appealing to those in positions of power.	3.37	1.76	1611
	10	B	Whether or not I get into a car accident depends mostly on the other driver.	Whether or not I get a query depends mostly on other civil servants.	4.13	1.32	1605
	11	C	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.	3.53	1.71	1612
	12	D	If important people were to decide they didn't like me, I probably wouldn't make many friends.	If important people were to decide they didn't like me, I probably wouldn't form many bonds with my colleagues.	3.13	1.5	1605
	13	E	I feel like what happens in my life is mostly determined by powerful people.	I feel like what happens in my civil service life is mostly determined by powerful people.	3.47	1.58	963
	14	F	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	3.79	1.51	901
	15	G	Getting what I want requires pleasing those people above me.	Getting what I want requires pleasing those people above me.	3.13	1.75	1608
	16	H	My life is chiefly controlled by powerful others.	My life in the civil service is chiefly controlled by powerful others.	3.18	1.6	962
Chance	17	A	Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.	Whether or not I am promoted depends on whether I am lucky enough to be in the right place at the right time.	3.45	1.71	1612
	18	B	Whether or not I get into a car accident is mostly a matter of luck.	Whether or not I get a query is mostly a matter of luck.	2.57	1.38	1597
	19	C	It's not always wise for me to plan too far ahead because many things turnout to be a matter of good or bad fortune.	It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	2.76	1.48	1614
	20	D	It's chiefly a matter of fate whether or not I have a few friends or many friends.	It's chiefly a matter of fate whether or not I form with few or many of my colleagues.	2.54	1.37	1608
	21	E	I have often found that what is going to happen will happen.	I have often found that what is going to happen will happen.	3.54	1.47	1591
	22	F	Often there is no chance of protecting my personal interests from bad luck happenings.	Often there is no chance of protecting my personal interests from bad luck happening.	3.16	1.55	1594
	23	G	When I get what I want, it's usually because I'm lucky.	When I get what I want it is usually because I am lucky.	2.41	1.33	1605
	24	H	To a great extent my life is controlled by accidental happenings.	To a great extent my life in the civil service is controlled by accidental happenings.	2.82	1.49	961
Power of the System	25	A	-	Who gets to be the boss often depends on who was in the right place first.	3.21	1.57	1596
	26	B	-	Whether or not I get a query depends on how well I know the civil service.	4.49	1.18	1598
	27	C	-	It is difficult for officials to have much control over their achievements in office.	3.42	1.48	1597
	28	D	-	Formal hierarchies prevent me from forming bonds with my colleagues.	2.79	1.36	1576
	29	E	-	As far as civil service issues are concerned, most of us are victims of forces we can neither understand, nor control.	3.46	1.52	1593
	30	F	-	With enough effort we can wipe out unwanted political interference in the work we do.	3.06	1.61	1596
	31	G	-	Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.	3.95	1.59	1609
	32	H	-	Most civil servants don't realise the extent to which their professional lives are controlled by happenings elsewhere in the service.	3.68	1.35	950

Table 2: Characteristics of Civil Servants and Their Organizations
Means and standard deviations

	(1) All	(2) Federal	(3) Regional	(4) Local	(5) Managers	(6) Non-managers
Organizational Characteristics						
Number of organizations	373	5	51	317	-	-
Number of bureaucrats per organization	10.07	44.97	7.57	3.52	-	-
Number of managers per organization	1.76	4.62	2.46	0.91	-	-
Number of employees per organization	8.31	40.35	5.11	2.61	-	-
Span of control (employees per manager)	11.46	27.49	16.60	6.23	-	-
Official's Characteristics						
Number of bureaucrats	1616	220	364	1032	418	1198
Gender (female =1)	0.20 (0.40)	0.25 (0.44)	0.22 (0.41)	0.18 (0.38)	0.08 (0.27)	0.24 (0.43)
Age	35.19 (8.83)	35.43 (8.97)	37.88 (8.70)	34.18 (8.65)	38.25 (8.25)	34.12 (8.78)
Years of education	15.85 (1.09)	16.64 (1.05)	16.25 (1.09)	15.54 (0.96)	16.10 (0.98)	15.76 (1.11)
Education (undergraduate degree=1)	0.82 (0.38)	0.98 (0.13)	0.91 (0.29)	0.76 (0.43)	0.90 (0.29)	0.80 (0.40)
Education (Masters degree=1)	0.10 (0.30)	0.33 (0.47)	0.22 (0.41)	0.01 (0.12)	0.15 (0.35)	0.09 (0.28)
Grade	6.11 (2.00)	6.57 (2.65)	7.26 (1.83)	5.61 (1.68)	7.23 (1.73)	5.72 (1.94)
Manager (Manager=1)	0.26 (0.44)	0.10 (0.30)	0.33 (0.47)	0.27 (0.44)	1.00 -	0.00 -
Years in civil service	13.11 (8.88)	12.61 (8.85)	15.32 (8.98)	12.43 (8.74)	16.19 (8.24)	12.03 (8.85)
Years in organization	7.32 (7.13)	5.46 (6.30)	7.98 (7.12)	7.49 (7.23)	8.77 (7.18)	6.82 (7.04)
Years in current position	2.76 (2.56)	2.30 (2.47)	3.00 (2.49)	2.78 (2.60)	2.82 (2.17)	2.74 (2.69)
Number of different organizations	2.08 (1.84)	2.49 (2.12)	2.43 (2.32)	1.87 (1.53)	2.44 (2.16)	1.96 (1.70)
Total score on BSC exam	85.27 (6.92)	86.23 (5.55)	83.77 (9.57)	85.48 (6.37)	86.17 (8.34)	84.99 (6.39)
BLOC score is missing	0.12 (0.32)	0.21 (0.41)	0.16 (0.36)	0.08 (0.27)	0.10 (0.30)	0.12 (0.33)
Bureaucratic Locus of Control Indices						
Aggregate Score	-1.43 (0.57)	-1.54 (0.60)	-1.39 (0.63)	-1.43 (0.55)	-1.38 (0.62)	-1.45 (0.55)
Internality	4.13 (0.81)	3.88 (0.81)	4.12 (0.83)	4.19 (0.80)	4.16 (0.82)	4.12 (0.81)
Powerful Others	3.45 (1.01)	3.58 (0.94)	3.37 (0.99)	3.45 (1.03)	3.42 (1.04)	3.46 (1.00)
Chance	2.91 (0.81)	2.88 (0.79)	2.86 (0.87)	2.94 (0.80)	2.83 (0.83)	2.94 (0.80)
Power of the System	3.50 (0.68)	3.58 (0.66)	3.44 (0.73)	3.50 (0.67)	3.42 (0.71)	3.53 (0.67)

Notes: Standard deviations are in parentheses. The unit of observation in the first panel is the organization, and the second panel is the civil servant. The span of control is taken from the survey question "How many personnel do you manage?"; the average is taken for an organization if there is more than one manager; and the organization-level statistics are reported (each organization has an equal weight). In the second panel, statistics for all civil servants are shown in the first column. Columns 2-4 shows the same statistics broken down by Federal, Regional, and Woreda (District) officials. Only Managers and Employees responded to the information module and hence only these individuals are used for the statistics, and Columns 5 and 6 show the breakdown by Manager and Employee. Heads of organizations were not asked the LOC questions, and are excluded from the analysis. The 2013-14 National Civil Service Human Resource Statistics Abstract (Ministry of Civil Service) records the overall female employee percentage to be 35%; this statistic includes frontline staff. The total score on the BSC includes both a performance score and an attitude score, and is taken from administrative data. Grade is the official civil service grade of the professional civil servant, ranging from 1 to 17 in the sample. We also exclude civil servants who did not respond to at least two thirds of the LOC questions. This leaves us with 1,616 out of the 1,831 civil servants who were surveyed (excluding heads of organizations) as the final LOC sample, and therefore the 'LOC score is missing' for about 12% of the sample. Missing values have been imputed for the education (tertiary and masters) and grade variables. In the third panel, the aggregate score is calculated by subtracting the external LOC indices (Powerful Others, Chance, Power of the System) from the internal LOC index (Internality). Figures are rounded to two decimal places.

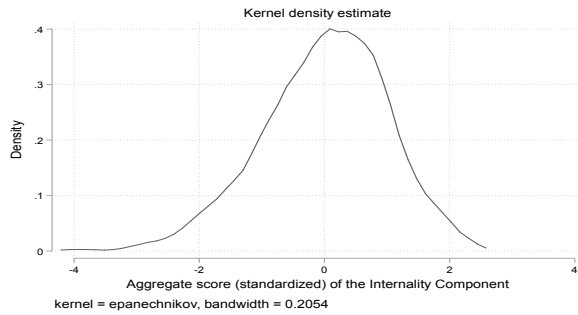
Figure 1A: All Respondents' Aggregate Bureaucratic Locus of Control Scores



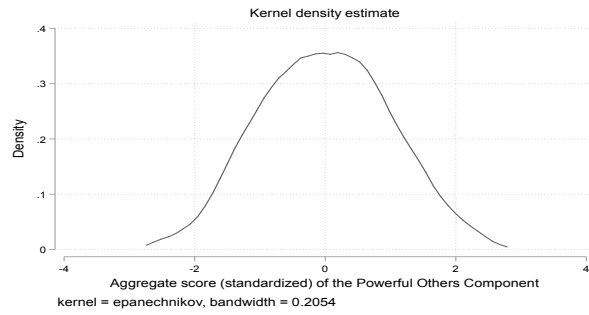
Notes: Figure 1A shows the distribution of the aggregated and standardized LOC score from all 4 components. The LOC sample consists of 1,616 Managers and Employees who responded to at least two-thirds of the LOC questions.

Figure 1B: Components of the Bureaucratic Locus of Control

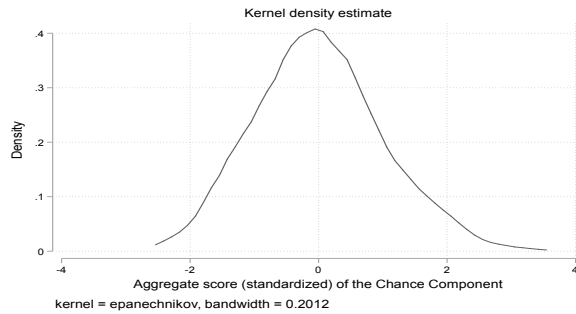
Internality



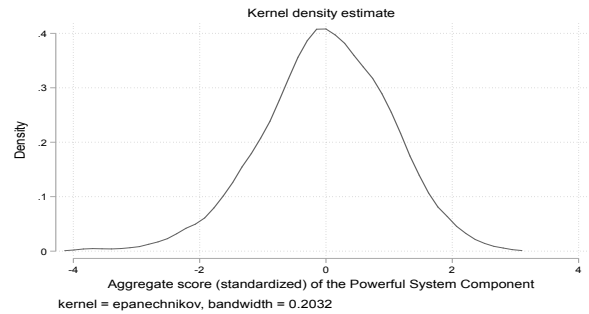
Powerful Others



Chance



Power of the System



Notes: Figure 1B shows the distribution of the aggregated and standardized LOC score for each of the 4 components of the LOC separately (Internality, Powerful Others, Chance, Power of the System). The LOC sample consists of 1,616 Managers and Employees who responded to at least two-thirds of the LOC questions.

Table 3: Basic Determinants of BLOC

Dependent Variable: Bureaucratic Locus of Control Scale

OLS Estimates

Standard Errors: Clustered at the organization level

	(1) Demographics	(2) Experience in the Civil Service	(3) Manager	(4) Sector	(5) Tiers	(6) All
Official's characteristics						
Gender (female =1)	0.178*** [0.0599]					0.217*** [0.0637]
Age	0.00693** [0.00289]					0.0188*** [0.00673]
Education (tertiary education = 1)	0.0629 [0.0650]					0.00979 [0.0656]
Education (masters education = 1)	-0.200** [0.0792]					-0.231** [0.0899]
Years in civil service		0.00168 [0.00323]				-0.0154** [0.00643]
Years in current position		-0.00928 [0.0107]				-0.00932 [0.00985]
Number of orgs in civil service		-0.0108 [0.0145]				-0.00915 [0.0140]
Grade		0.0263* [0.0146]				0.0209 [0.0155]
Hours worked per week		0.0108*** [0.00260]				0.0101*** [0.00257]
Span of control		-0.00226 [0.00237]				0.00368 [0.00352]
Manager			0.137** [0.0578]			0.0880 [0.0654]
Sectors						
Agriculture				-		-
Education				0.117 [0.0872]		0.123 [0.0819]
Health				0.0448 [0.0875]		0.0369 [0.0873]
Revenue				0.138* [0.0833]		0.0580 [0.0810]
Trade				0.0248 [0.120]		0.0305 [0.0977]
Tiers						
Federal					-	-
Regional					0.263** [0.113]	0.234** [0.107]
Woreda					0.190* [0.0986]	0.226* [0.120]
Observations [clusters]	1,616 [373]	1,616 [373]	1,616 [373]	1,616 [373]	1,616 [373]	1,616 [373]
Adjusted R-squared	0.008	0.013	0.003	0.000	0.005	0.027
F Statistic	4.293	4.295	5.602	0.906	2.733	4.230
P-value	0.002	0.000	0.019	0.460	0.066	0.000

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors are in parentheses and clustered at the organization level. All columns report OLS estimates. The dependent variable in all columns is the standardized LOC index containing all 32 items, and adjusted so that higher scores indicate a higher internal LOC. Grade is the official civil service grade of the professional civil servant, ranging from 1 to 17 in the sample. Hours worked asks about working hours in a typical week. The span of control is taken from the survey question "How many personnel do you manage?"; the average is taken for an organization if there is more than one manager; and the organization-level statistics are reported (each organization has an equal weight). 'Manager' refers to managers within the organization. Civil Servants were surveyed from the 5 Sectors within each of the 3 Tiers of Government shown in the table. A small number of missing values have been imputed for the education (tertiary and masters) and grade variables.

Table 4: BLOC on Organizational Environment Variables

Dependent Variable: Bureaucratic Locus of Control Scale

OLS Estimates

Standard Errors: Clustered at the organization level

	(1) Appraisal	(2) Satisfaction	(3) Motivation	(4) Trust	(5) Career Track	(6) Promotion	(7) Award
Total score on performance appraisal	0.00876* [0.00487]						
Satisfaction (employees only)		0.265*** [0.0659]					
Motivation (employees only)			0.451*** [0.117]				
Trust (employees only)				0.197** [0.0831]			
Career track (employees only)					0.00734*** [0.00171]		
Confidence in promotion (employees only)						0.394*** [0.0731]	
Received awards (employees only)							0.267*** [0.0669]
Individual and Noise Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations [clusters]	856 [259]	1,187 [364]	1,198 [365]	1,179 [364]	1,191 [365]	1,189 [365]	1,180 [365]
Adjusted R-squared	0.046	0.059	0.060	0.049	0.067	0.079	0.061
F Statistic	2.509	3.637	3.401	2.927	4.646	3.538	3.287
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors are in parentheses and clustered at the organization level. All columns report OLS estimates. The dependent variable in all columns is the standardized BLOC index containing all 32 items, and adjusted so that higher scores indicate a higher internal LoC. The total score on the BSC includes both a performance score and an attitude score, and is taken from administrative data. `Satisfaction` is a binary indicator for if the civil servant is satisfied or very satisfied with the civil service experience. `Motivation` is a binary indicator for if the civil servant is more motivated now than when s/he first started working in the public service. `Trust` is a binary indicating if the respondent agrees that 'most people in the civil service can be somewhat trusted or trusted a lot'. `Career track` is the response to the following question: "If 100 represents you being on track with your career goals, and 0 is completely off track, what number would you say are you at now?" `Confidence in promotion` is a binary reflecting whether the civil servant is somewhat or very confident in getting promoted, conditional on performance. `Recieved awards` is a binary reflecting whether the civil servant has received any formal or informal, financial or non-financial award in the past year. Individual controls are the individual's gender, age, years of education, tenure in the civil service, an indicator of current grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager. Noise related controls are the time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator's subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects). We also include sector in the list of controls.

Table 5: The Impact of Inequality on Control

Dependent Variable: Organization-Average of the Bureaucratic Locus of Control Index

OLS Estimates

Robust Standard Errors

	(1) GINI Score: Internality	(2) GINI Score: Powerful Others	(3) GINI Score: Chance	(4) GINI Score: Power of the System	(5) GINI Score: All
GINI Score: Internality	-3.751*** [1.310]				
GINI Score: Powerful Others		3.504*** [1.044]			
GINI Score: Chance			1.157 [0.988]		
GINI Score: Power of the System				3.824*** [1.277]	
GINI Score: All					-5.287*** [0.939]
Individual Controls	Yes	Yes	Yes	Yes	Yes
Observations	373	373	373	373	373
Adjusted R-squared	0.050	0.062	0.029	0.051	0.113
F Statistic	3.464	3.642	2.464	2.976	6.354
P-Value	0.000	0.000	0.006	0.001	0.000

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. All columns report OLS estimates. The dependent variable is a standardized LOC index for each organization, containing all 32 items, and aggregated from all managers and employees in an organization, and adjusted so that higher scores indicate a higher internal LOC. The GINI indices in Columns 1-4 is the distribution of the respective internal or external LOC index for each organization. GINI scores are lower when there is more even distribution, and higher when there is unequal distribution. The independent variable in Column 5 is the aggregated GINI distribution scores for all the LOC indices. Individual controls are the individual's gender, age, years of education, tenure in the civil service, an indicator of current grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager averaged to the organizational level.

Online Appendix

Further Discussion of the Importance of a Distinct Bureaucratic Locus of Control

Rotter's original work on the locus of control emphasizes the concept is related to expectancy, the extent to which individuals relate actions to expected outcomes. In a highly routinized setting such as a bureaucracy ruled by bureaucratic procedure, there may be little room for ambiguity in expected outcomes. In contrast to this stylized view, there is substantial evidence that public officials have significant discretion over the course of government policy and over their treatment of other officials with whom they work.⁹ As such, individual bureaucrats frequently face situations in which their actions are not clearly dictated by routine. It is these environments in which the nature of an individual's locus of control dictates their actions, with consequences for their fate within the public service and their implementation of public policy.¹⁰

Rotter, and other researchers building on his work, have emphasized that measures of the locus of control should be aware of the contextual factors in which action is taken. An individual may feel that she has substantial control in her personal life, whilst little control over her fate at work (Martinko and Gardner, 1982). Thus, a bureaucracy-specific scale is appropriate to measure an individual's perceptions of control within their bureaucratic work.

Individual characteristics may interact with bureaucratic structures in a distinct way to those in the realm of personal life. For example, in the personal realm age has often

⁹While initially focused on discretion as a control problem (Gofen, 2013; Thomann et. al., 2018), the public administration literature is increasingly reflective of the idea that high levels of discretion exist among public officials as a necessity of their own implementing role (Lipsky, 1980; Hupe and Hill, 2007; May and Winter, 2009; Bartels, 2017; Thomann et. al., 2018). Although such discretion is well-documented, relatively little research has been conducted on the underlying factors and impact of such discretion, and on how the experience of having that discretion motivates public officials to implement policy (Teodoro, 2011; Gofen, 2013; Song et. al., 2017; Raaphorst, 2018; Thomann et. al., 2018). There is an expanding body of research exploring bureaucratic discretion and the multi-dimensional character of the decision-making system underlying policy implementation (Hupe and Hill, 2007).

¹⁰This concept of reinforcement, developed by Julian Rotter, emerged from Albert Bandura's and Rotter's social-cognitive theories of personality, which emphasize the role of cognitive processes, such as thinking, remembering or judging, in the development of personality (Rotter, 1964).

come with a greater sense of control and seniority, whilst in public service that seniority must be bestowed by the promotion process. Though tenure is a strong predictor of promotion, many administrative traditions make management positions scarce. Similarly, discrimination against females in the private realm has been documented in almost every culture. However, when there is self-selection into the public service, the standing of females and their corresponding sense of control may benefit from positive discrimination. These distinctive interactions are another rationale for a distinct scale.

A scale of bureaucratic control cannot be derived from formal rules. Though the literature on control within bureaucracy has traditionally focussed on formal systems and structures (Hogget, 1996; Osborne and Plastrik, 1997; Bradley and Parker, 2000; Hodgson, 2004), there is increasing evidence that bureaucrat's experience of bureaucracy is mediated by many de facto features of their environment (Rogger, 2017; Meyer-Sahling, Mikkelsen, and Schuster's work, 2020). A bureaucratic locus of control captured by surveys to individuals across the public service allows us to investigate mediators of control across settings, and be of particular importance where de jure structures have least bearing on an official's experience.

We also chose to follow Levenson's IPC scale because it is better suited to the bureaucratic context at hand. Levenson's IPC scale differs from Rotter's original I-E scale in several key respects, all of which are central to the measurement of an operational, situation-specific definition of the construct of the locus of control. First, the IPC scale uses a Likert-type scale (allowing the respondent to strongly agree, agree, slightly agree, and so on) instead of the forced-choice structure used by Rotter (whereby the respondent is asked to choose between two options), thus creating substantially more variation in the resulting indices.

Second, Rotter's I-E Scale (1966) is derived from questions on the validity of combining external expectancies of fate, chance and powerful others. Levenson's IPC Scale differentiates between two types of externality, one which is derived from the belief in either the random nature of the world on the hand or the predictability of the nature of the world on the other, and another which is based in the belief that control lies with powerful others.

This is an interesting development on Rotter’s conceptualization of externality because it suggests that being an ‘external’ does not necessarily mean one is “maladjusted” (Rotter, 1966) but rather that a person who believes in the role of powerful others may also perceive enough regularity in the actions of such individuals as to believe that he or she can obtain reinforcements through those powerful others (Levenson, 1981). Levenson’s IPC Scale thus develops on Rotter’s I-E Scale by deconstructing and expanding the dimension of external control that is typically thought to be of critical importance in bureaucratic settings.

Third, the IPC scale makes a “personal-ideological” distinction (Levenson, 1981) whereby the respondent is answering questions in terms of what they themselves think, and not how “people in general” (Rotter, 1966) may think. While Rotter’s scale does not distinguish between those who accurately describe actual situations from those with a distorted perception of objective situations, the IPC scale asks individuals to indicate the determinant of valued reinforcements in situations where the source of personal outcomes is known. Since our aim is to gather information on each individual within a bureaucracy and then appreciate which of these individuals feels most in control of their fate, Levenson’s approach is preferable for our setting.¹¹

The Ethiopian Civil Service

Governance in Ethiopia is centered around three major tiers of government: federal, regional, and district (woreda). Some of the regions have zones, which act as intermediaries between the regional- and district-level governments. Following the enactment of the new Constitution in 1994, the government shifted to a federal state system by sharing powers between the federal government and the ethnically organized regional state governments. As a result, the implementation of a wide range of policies and programs was assigned to the regions.

¹¹Authors have argued other benefits of the IPC scale, such as suffering less from social desirability bias than the original Rotter scale and having a higher internal consistency (tested using the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960).

Over the past decade the civil service in Ethiopia has seen a significant and rapid expansion in staff numbers, at rates higher than population growth in particular. This rapid expansion of the civil service was associated with a very large volume of recruitment to support regional and woreda decentralization and the expansion in service delivery. In some recent years, the civil service has absorbed around 150,000 new recruits. Ethiopia has managed to expand civil service numbers without an excessive expansion of the overall wage bill, which has been contained at around 5 percent of GDP. Despite this, due to the country's low overall revenue collection and expenditures, wages account for about 25% of overall spending. This is in line with regional comparators and signals limited room for expansion, at least prior to an increase in the level of revenue collected. Civil service wages have been adjusted at irregular intervals for inflation and remain among the lowest in the region. Nonwage benefits (pensions, travel allowances) exist, but are relatively small, and in the case of travel allowances, tend to be below actual costs for regular civil servants.

Hiring and other staffing decisions are made by individual Ministries, Agencies and Bureaus, in line with procedures set out in the law, and as prescribed by the Ministry of Public Service, respectively the Bureaus of Public Service at sub-national levels. A merit-based selection is prescribed in principle, and available evidence suggests that patronage-based hiring is not as much a concern as in a number of other countries in the region. Rather, key problems with recruitment appear to be that on the one hand, managers believe that they cannot consistently attract qualified applicants, and on the other hand, some anecdotal evidence suggests that some selections are not fully based on meritocratic criteria, but also on political considerations and other factors.

In terms of promotion, our survey data suggests there is some confidence that staff promotions are merit based, followed by considerations about the length of service both in the public service in general and in a specific organization. Those surveyed perceived the top five most important criteria for promotion to be merit/ performance, quality of relationship with manager, length of service (in the public sector and in the organization), and political connections. Again, there is noticeable variation across regions and sectors

and while civil servants perceive that promotions are overall merit based, confidence in actually receiving a promotion is more limited and divided.

Though embedded within an Ethiopian context, these features are highly reminiscent of bureaucratic settings elsewhere. The major themes of public officialdom that we explore in our survey and in the BLOC scale closely follow those the public administration literature has highlighted as important across a range of settings. The public sector's common hierarchical structures, areas of work and political interface make it possible to design a tool that has broad applicability. At the same time, the distribution of control and corresponding perceptions of that distribution may be mediated by work practices distinct to Ethiopia. Collecting consistent data on the nature of control, as BLOC aims to do, allows for an investigation of the determinants of control across settings and space.

Surveying Public Officials

The Ethiopian Civil Servants Survey (ECSS) was undertaken by the World Bank's Bureaucracy Lab between June and September 2016. The survey targeted professional level staff and directors or heads of federal ministries or agencies, regional bureaus, and woreda (district) offices. It was undertaken in close collaboration with the Ministry of Public Service and Human Resource Development (now the Civil Service Commission). The Ministry was interested in the current state of the civil service across government, and thus supported the full implementation of the survey throughout.

The Ministry of Public Sector and Human Resource Development identified the 5 core sectors that the survey should include: agriculture, education, health, revenue, and trade. The Government of Ethiopia also requested that all 9 regional governments and 2 city administrations be included in the survey (11 'region-level' governments). The decision was made then to plan to interview a sufficient number of individuals from each of those tiers and allocate the remaining funds to woreda-level interviews. 66 woredas (out of approximately 770) were covered. The woredas were a random sample from within each of the 11 regions (6 in each). We necessarily excluded the majority of the Somali region

for security reasons. In each of the departments, we surveyed the relevant director. The survey then utilized random sampling techniques amongst staff to gain a representative sample of officials across the government sectors studied. We worked closely with the Ministry of Public Service and Human Resource Development and employed ex-civil servants within our enumeration teams to facilitate navigation of the public service.

Face-to-face interviews were conducted with 2,154 civil servants, and self-administered LOC questionnaires were collected for 1,616. The target sample for LOC respondents was 2,085 (the total sample minus the heads of organization), resulting in an 77.5% response rate for the LOC study. The data collection was carried out on tablet computers by a team of 20 highly-trained enumerators, split into 5 teams. Each team (enumerator) undertook an average of 431 (108) interviews over the four month period. The teams were assigned regions and woredas and an itinerary was drawn up based on the location of the selected woredas.

Specifically, at the Federal level 325 individuals were planned to be interviewed; 440 at the Region level; and 1,320 at the Woreda level. The target respondents at the Federal level were: The director of the Finance office; The director of the Planning office; The director of the Resource Mobilization office; The director of Service Delivery Directorate 1; The director of Service Delivery Directorate 2; The director of Service Delivery Directorate 3; The director of Service Delivery Directorate 4; The director of Service Delivery Directorate 5; and, 57 randomly selected employees from the above directorates. The target respondents at the Regional offices were: The director of the Finance office; The director of the Planning office; The director of one randomly selected Service Delivery directorate; and 6 randomly selected employees from the above directorates. The target respondents at the Woreda level were: One randomly selected director (many woredas have only one director) and 3 randomly sampled individuals.

We surveyed officials on their basic characteristics and the nature of management practices utilized at their organization. The implementation of the survey was successful across the organizations we visited, with 99.5% of public officials sampled agreeing to be interviewed and 98.2% of interviews being classified by the enumerator as having gone

‘somewhat well’ (26.4%) or ‘very well’ (71.7%). The characteristics of each interview were recorded along with the respondents answers, allowing us to control in regressions for time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator’s subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects).

Highlighting Further Results

Table OA4 provides results of the same regressions as we run in Table 4 but includes organizational fixed effects. This restricts our estimating variation to be within the organization, absorbing any differences between organizations in terms of the extent of control public officials perceive. We see that the results are qualitatively very similar to those using cross-sectional variation across organizations.

In Table OA5, we re-run the same regressions again but focussing only on the ‘Power of the System’ sub-scale. Given that this scale is an innovation of this paper, we show that it is predictive of perceptions of control in its own right, with all coefficients bar that on trust (which is still large and positive) being significantly correlated with the sub-scale.

Towards a Refined BLOC Scale

Frequently in the literature related to locus of control scales, an exercise is undertaken to assess what features of the scale are most valuable to enumerate. In other words, what questions from the 32 item scale could be dropped so to increase the ease of enumeration with a ‘minimal’ reduction in the explanatory power of the aggregated scale?

In this section, we investigate the underlying interrelationships between the 32 items in the BLOC scale so to respond to this question. We use factor analysis to determine both the presence and relevance of underlying latent constructs. Furthermore, we attempt to identify a reduced set of items that may measure the same underlying latent constructs. This exercise allows us to recommend a ‘refined’ BLOC scale that would be less cumbersome to enumerate and potentially less taxing on respondents. This reduction

in the number of items that would be asked may be useful for example if BLOC was being administered in an online survey, which are typically shorter than the face-to-face enumerated survey that we have explored in this paper.

We begin by running exploratory factor analysis on all 32 items in the BLOC scale. Figure OA2 shows the scree plot indicating that 2 or 3 factors are relevant, explaining between 86% and 96% of the total variation respectively. Table OA6 shows the factor loadings for each item using both a 2 factor and a 4 factor solution, and items with factor loadings above 0.3 are highlighted. When running factor analysis, we take a more general stance in assuming that the total variance can be described by both a common and unique variance.¹² Similarly, on rotation, we assume that the factors are correlated.

Our main analysis focuses on the 2 factor solution and shows that most items map as expected onto the underlying “internal” and “external” Locus of Control constructs. Some items from the ‘Power of the System’ sub-scale have loadings above 0.5, indicating that they are yielding additional information regarding the nature of control in bureaucratic environments. In particular, factor loadings are highest for the items, “As far as civil service issues are concerned, most of us are victims of forces we can neither understand, nor control.” and, “Unfortunately, an individual’s worth often passes unrecognised no matter how hard he tries.” These are important summary statistics of the underlying rationale for a new sub-scale, implying that systemic forces effect civil servants perceptions of control.

The 4 factor solution helps to display a further break down of “external” constructs. Most “Powerful Others” items loads onto Factor 1, most “Chance” items load onto Factor 2, and most “Internal” items load onto Factor 3. A few items from the “Power of System” sub-scale load onto a new factor, Factor 4, and the other items are distributed across the “Powerful Others” and “Chance” factors. This reflects the fact that while the new sub-scale adds new information, it is also correlated with the other external constructs, and some items load onto these constructs instead. This partly explains the lower internal

¹²This is different from principal component analysis, which assumes only common variance. As a robustness check we find that factor analysis using principal components yields very similar factor loadings.

consistency score for the sub-scale.

One way we tried to address this is to create a refined BLoC incorporating items that load strongly onto the factors – increasing the internal consistency, while maintaining the validity. For this purpose we use the 2 factor solution, and include items with factor loadings above 0.5 to construct a 15 item scale, as shown in Table OA6.

We show how reliability improves by calculating the Cronbach’s alpha scores for the BLOC scales. For all 32 items, the Cronbach’s alpha is 0.82, as shown in Table OA7A. The alpha scores are lower when computed for the individual components of Internality, Powerful Others, Chance, and Powerful System separately. However, we show that these components of BLOC are still correlated as expected in Table OA7B; internality is negatively correlated with the other external components, which are highly positively correlated with each other.

We also compute Cronbach’s alpha scores for the revised scales derived from factor analysis. In particular, we compute the score for the smaller set of 15 items (taken from the 2 factor solution with loadings greater than 0.5). The smaller scale with 15 items has a higher alpha score of 0.83 as shown in Table OA7A, very similar to the alpha score for all 32 items of 0.82.

Given the higher alpha score, and parsimonious nature of the reduced 15 item BLOC scale, we present it as a refined version of our wider BLOC scale. To assess its value as a substitute for the wider scale, we re-estimate the regressions in Table 4 to assess the construct validity of the refined scale. Table OA8 presents the results. We see that the qualitative results are almost unchanged. A survey based on the refined scale would achieve a similar pattern of predictions to that based on the larger scale, and the shorter scale may encourage greater re-use given that it will be quicker to administer.

Table OA1: Breakdown of Civil Service Locus of Control Scale by Category

Four-Item Set	Item name	Objective	Original Item Example	New item Example	Changes	Explanation
A	Progression towards leadership	Understand what civil servants believe determines their own progression towards leadership (moving up the hierarchy, career growth in their organisations/ service).	Whether or not I get to a leader depends mostly on my ability.	Whether or not I am promoted depends mostly on my ability.	'Leader' replaced with 'promoted'	The term 'leader' is appropriately broad for use in a general context as it allows the item to capture general notions on leadership (in a social or professional context). It is not appropriate for use in the civil service context precisely because it is open to interpretation and the purpose of this scale is to capture individuals' beliefs about their lives in the civil service specifically. Civil servants may not have the same understanding on what a leader in the civil service is (a direct supervisor? A mentor? A senior official?). Although the term 'promoted' significantly narrows down the meaning of the item, it can be more uniformly interpreted by respondents as being associated with professional advancement through the attainment of higher positions within an organisation.
B	Determinants of low probability high-cost events	Understand what civil servants believe determines whether they receive a query (citation for a behaviour infraction which remains on an individual's record and can carry significant consequences).	Whether or not I get into an accident depends mostly on how good a driver I am.	Whether or not I get a query depends mostly on how good a civil servant I am.	'Car accident' replaced with 'query'.	In order to determine the bureaucratic equivalent of a car accident we first defined in broad terms the term 'accident': an unexpected, undesirable event which can have significant negative consequences, or a low probability high-cost event. While an accident can have more or less significant consequences depending on the scale and severity, we wanted to capture individuals' beliefs on an event of importance in their professional lives. Rather than keeping the question open-ended (any unexpected event with significant consequences) which could be interpreted differently by respondents (a safety issue, misplacement of important documents, withdrawal of project funding) we narrowed it down to one undesirable event understood by all civil servants: a query. In the civil service setting a query is a citation for an infraction which remains on an individual's record for a set time-period and which can carry significant consequences.
C	Control over the achievement of long-term aims	Understand what civil servants believe determines their likelihood of achieving the long-term objectives they have set for themselves.	When I make plans, I am almost certain to make them work.	When I make plans, I am almost certain to make them work.	None	The term 'plans' in a professional context is both broad and narrow enough to capture an individual's belief of what determines whether they will achieve their objectives (or plans).
D	Quality of relationships in the network in which I operate	Understand what civil servants believe determines whether they form professional/ personal bonds with their colleagues across formal hierarchies.	How many friends I make depends on how nice a person I am.	The bonds I form with my colleagues depend on how nice a person I am.	'Friends' replaced with 'bonds with colleagues'.	Because colleagues are not the professional equivalent of friends given that individuals don't choose their colleagues, we included the term 'bonds' to reflect a connection made with colleagues not by default.
E	Localised self-efficacy	Understand to what civil servants attribute the general direction their professional lives take.	I can pretty much determine what will happen in my life.	I can pretty much determine what will happen in my life in the civil service.	Added life 'in the civil service'.	To restrict responses to the civil service-specific setting.
F	Protection of my personal interests	Understand what civil servants believe determines whether their personal interests are protected.	I am usually able to protect my personal interests.	I am usually able to protect my personal interests.	None	The term 'personal interests' in a professional context is both broad and narrow enough to capture an individual's belief of what determines whether their personal interests in a professional setting are protected.
G	Determinants of reinforcements	Understand what civil servants believe determines the likelihood they will experience favourable outcomes.	When I get what I want it is usually because I worked hard for it.	When I get what I want it is usually because I worked hard for it.	None	N/A
H	Determinants of life events	Understand what civil servants believe determines the events that affect their professional life.	My life is determined by my own actions.	My life in the civil service is determined by my own actions.	Added life 'in the civil service'.	To restrict responses to the civil service-specific setting.

TOA2: List of Surveyed Organizations

Tier of Governance	Region	Organization Name
Federal	-	Federal Ministries of Agriculture; Education; Health; Revenue; and, Trade
Regional	Addis Ababa	Addis Ababa City Administration Bureaus of Education; Health; Revenue; and, Trade
Regional	Afar	Afar Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Amhara	Amhara Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Benishangul Gumuz	Benishangul Gumuz Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Dire Dawa	Dire Dawa City Administration Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Gambella	Gambella Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Harar	Harar Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Oromia	Oromia Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	SNNPR	SNNPR Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Somali	Somali Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
Regional	Tigray	Tigray Regional Bureaus of Agriculture; Education; Health; Revenue; and, Trade
District	Afar	Afar Awash Fentale Agriculture, Education, Health, Revenue, and Trade Offices
District	Afar	Afar Telalak Agriculture, Education, Health, Revenue, and Trade Offices
District	Afar	Afar Teru Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Awabel Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Basona Worana Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Borena (Former Debresina) Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Chefa Gula Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Dejen Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Enarj Enawaga Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Gidane Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Jabitahnan Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Jile Timuga Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Kutaber Agriculture, Education, Health, Revenue, and Trade Offices
District	Amhara	Amhara Simada Agriculture, Education, Health, Revenue, and Trade Offices
District	Benishangul Gumuz	Benishangul Gumuz Dibate Agriculture, Education, Health, Revenue, and Trade Offices
District	Benishangul Gumuz	Benishangul Gumuz Yasso Agriculture, Education, Health, Revenue, and Trade Offices
District	Gambella	Gambella Gambella Zuria Agriculture, Education, Health, Revenue, and Trade Offices
District	Gambella	Gambella Abobo Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Ale Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Amigna Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Arsi Negelle District government Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Babile Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Bako Tibe Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Begi Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Dedessa Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Digluna Tijo Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Gida Ayana (Gida Kiremu) Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Goro Gutu (Goro) Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Guduru Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Haro Maya Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Hitosa Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Jardega Jarte Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Jeldu Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Kofale Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Mesela Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Midaga Tola Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Nono Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Seru Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Siraro Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Tikur Enchini Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Wadera Agriculture, Education, Health, Revenue, and Trade Offices
District	Oromia	Oromia Were Jarso Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Amaro Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Analimo Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Basketo Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Benatsemay Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Bona Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Chere Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Dale Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Decha Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Doyo Gena Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Gomibora Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Hawassa Zuriya Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Kucha Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Shebedino Agriculture, Education, Health, Revenue, and Trade Offices
District	SNNPR	SNNPR Wenago Agriculture, Education, Health, Revenue, and Trade Offices
District	Somali	Somali Afdem Agriculture, Education, Health, Revenue, and Trade Offices
District	Somali	Somali Erer District government Agriculture, Education, Health, Revenue, and Trade Offices
District	Somali	Somali Harshin Agriculture, Education, Health, Revenue, and Trade Offices
District	Somali	Somali Jijiga Zuria District government Agriculture, Education, Health, Revenue, and Trade Offices
District	Somali	Somali Kebri Beyah Agriculture, Education, Health, Revenue, and Trade Offices
District	Tigray	Tigray Erob Agriculture, Education, Health, Revenue, and Trade Offices
District	Tigray	Tigray Gulo Mekeda Agriculture, Education, Health, Revenue, and Trade Offices
District	Tigray	Tigray Hintalo Wajerat Agriculture, Education, Health, Revenue, and Trade Offices
District	Tigray	Tigray Tahtay Koraro Agriculture, Education, Health, Revenue, and Trade Offices
District	Tigray	Tigray Wereilehi Agriculture, Education, Health, Revenue, and Trade Offices

Figure A1: Map of Sampled Districts for Ethiopian Civil Servants Survey

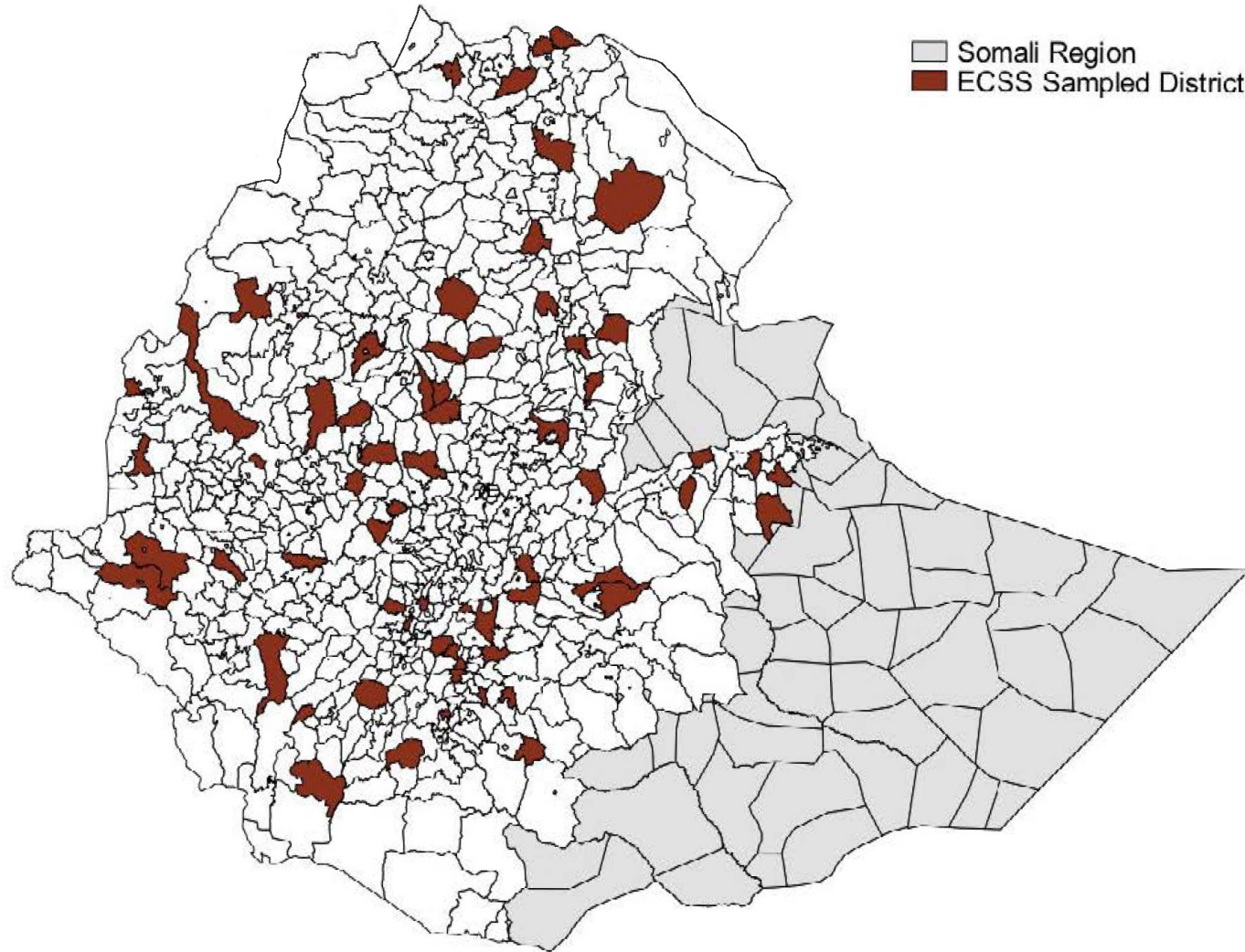


Table OA3: Balance Table

Means, standard deviations and p-values

	Not Missing	Missing	p-value	N
Gender (female =1)	0.20 (0.01)	0.26 (0.03)	0.03	1831
Education (undergraduate degree=1)	0.82 (0.02)	0.84 (0.03)	0.67	1831
Years of education	15.85 (0.06)	16.05 (0.15)	0.11	1829
Age	35.19 (0.32)	36.12 (0.88)	0.29	1831
Total score on performance appraisal	85.27 (0.37)	85.91 (0.77)	0.45	946
Years in civil service	13.11 (0.34)	13.34 (0.84)	0.78	1831
Years in organization	7.32 (0.26)	7.45 (0.51)	0.81	1831
Years in current position	2.76 (0.09)	2.80 (0.24)	0.91	1831
Number of different organizations	2.08 (0.06)	2.12 (0.12)	0.75	1831
Grade	6.11 (0.10)	6.21 (0.32)	0.72	1831

Notes: Standard deviations are in parentheses. We excluded civil servants who did not respond to at least two thirds of the LOC questions from the final analysis. This leaves us with 1,616 out of the 1,831 civil servants who were surveyed (excluding heads of organizations) as the final LOC sample. The 1st column ('Not Missing') are means for the 1,616 civil servants who were included. The 2nd column ('Missing') are means for 215 civil servants who had not completed at least two thirds of the LOC questions. The 3rd columns shows the p-value of the t-test for the comparison of these two groups. Figures are rounded to two decimal places.

Table OA4: BLOC on Organizational Environment Variables

Dependent Variable: Bureaucratic Locus of Control Index

OLS Estimates

With Organization Fixed Effects

	(1) Appraisal	(2) Satisfaction	(3) Motivation	(4) Trust	(5) Career Track	(6) Promotion	(7) Award
Total score on performance appraisal	0.0131* [0.00787]						
Satisfaction (employees only)		0.300*** [0.0707]					
Motivation (employees only)			0.407*** [0.128]				
Trust (employees only)				0.165* [0.0984]			
Career track (employees only)					0.00508*** [0.00175]		
Confidence in promotion (employees only)						0.339*** [0.0763]	
Received awards (employees only)							0.264*** [0.0780]
Individual and Noise Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Organizational Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations [clusters]	856 [259]	1,187 [364]	1,198 [365]	1,179 [364]	1,191 [365]	1,189 [365]	1,180 [365]
Adjusted R-squared	0.134	0.134	0.122	0.120	0.117	0.136	0.124
F Statistic	1.401	1.700	1.427	1.390	1.385	1.737	1.325
P-value	0.050	0.004	0.038	0.050	0.052	0.003	0.081

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors are in parentheses. All columns report OLS estimates. The dependent variable in all columns is the standardized BLOC index containing all 32 items, and adjusted so that higher scores indicate a higher internal LoC. The total score on the BSC includes both a performance score and an attitude score, and is taken from administrative data. 'Satisfaction' is a binary indicator for if the civil servant is satisfied or very satisfied with the civil service experience. 'Motivation' is a binary indicator for if the civil servant is more motivated now than when s/he first started working in the public service. 'Trust' is a binary indicating if the respondent agrees that 'most people in the civil service can be somewhat trusted or trusted a lot'. 'Career track' is the response to the following question: "If 100 represents you being on track with your career goals, and 0 is completely off track, what number would you say are you at now?" 'Confidence in promotion' is a binary reflecting whether the civil servant is somewhat or very confident in getting promoted, conditional on performance. 'Recieved awards' is a binary reflecting whether the civil servant has received any formal or informal, financial or non-financial award in the past year. Individual controls are the individual's gender, age, years of education, tenure in the civil service, an indicator of current grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager. Noise related controls are the time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator's subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects). We also include sector in the list of controls.

Table OA5: "Power of the System" Sub-Scale on Organizational Environment Variables

Dependent Variable: "Power of the System" scale

OLS Estimates

Standard Errors: Clustered at the organization level

	(1) Appraisal	(2) Satisfaction	(3) Motivation	(4) Trust	(5) Career Track	(6) Promotion	(7) Award
Total score on performance appraisal	0.0117** [0.00568]						
Satisfaction (employees only)		0.218*** [0.0622]					
Motivation (employees only)			0.351*** [0.129]				
Trust (employees only)				0.0877 [0.0769]			
Career track (employees only)					0.00521*** [0.00141]		
Confidence in promotion (employees only)						0.270*** [0.0668]	
Received awards (employees only)							0.134** [0.0675]
Individual and Noise Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations [clusters]	856 [259]	1,187 [364]	1,198 [365]	1,179 [364]	1,191 [365]	1,189 [365]	1,180 [365]
Adjusted R-squared	0.036	0.019	0.019	0.009	0.021	0.027	0.011
F Statistic	1.878	4.202	6.149	4.280	4.487	6.205	6.187
P-value	0.001	0.000	0.000	0.000	0.000	0.000	0.000

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors are in parentheses and clustered at the organization level. All columns report OLS estimates. The dependent variable in all columns is the standardized "Power of the System" scale containing all 8 items, and adjusted so that higher scores indicate a higher internal LoC. The total score on the BSC includes both a performance score and an attitude score, and is taken from administrative data. 'Satisfaction' is a binary indicator for if the civil servant is satisfied or very satisfied with the civil service experience. 'Motivation' is a binary indicator for if the civil servant is more motivated now than when s/he first started working in the public service. 'Trust' is a binary indicating if the respondent agrees that 'most people in the civil service can be somewhat trusted or trusted a lot'. 'Career track' is the response to the following question: "If 100 represents you being on track with your career goals, and 0 is completely off track, what number would you say are you at now?" 'Confidence in promotion' is a binary reflecting whether the civil servant is somewhat or very confident in getting promoted, conditional on performance. 'Received awards' is a binary reflecting whether the civil servant has received any formal or informal, financial or non-financial award in the past year. Individual controls are the individual's gender, age, years of education, tenure in the civil service, an indicator of current grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager. Noise related controls are the time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator's subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects). We also include sector in the list of controls.

Table OA6: Factor Loadings

Theme	Item statement	Factor Loading (2 factor)		Factor Loading (4 factor)				Include in Shorter Scale (i.e. Factor Loading is > 0.5 in 2 Factor Solution)?
		Factor1	Factor2	Factor1	Factor2	Factor3	Factor4	
Internal	My life in the civil service is determined by my own actions.	0.0943	0.3530	-0.0704	0.1028	0.1694	0.2919	
Internal	When I make plans, I am almost certain to make them work.	-0.1317	0.4156	0.0700	-0.2163	0.3914	0.1738	
Internal	Whether or not I get a query depends mostly on how good a civil servant I am.	0.0033	0.5590	-0.0442	-0.0768	0.3258	0.4555	Yes
Internal	When I get what I want it is usually because I worked hard for it.	-0.3025	0.5857	-0.1070	-0.1451	0.5615	0.1291	Yes
Internal	Whether or not I am promoted depends mostly on my ability.	-0.2836	0.4757	-0.2381	0.0797	0.4715	-0.0158	
Internal	I can pretty much determine what will happen in my life in the civil service.	-0.2100	0.5472	-0.0669	-0.0420	0.5550	0.0550	Yes
Internal	I am usually able to protect my personal interests.	-0.2199	0.4738	-0.0714	0.0488	0.5732	-0.1270	
Internal	The bonds I form with my colleagues depend on how nice a person I am.	0.2735	0.2181	0.2748	-0.0400	0.1623	0.2034	
Powerful Others	Whether or not I get a query depends mostly on other civil servants.	0.0908	0.4168	0.0642	0.0235	0.3222	0.2172	
Powerful Others	Getting what I want requires pleasing those people above me.	0.5803	-0.1464	0.4073	0.2354	-0.0980	-0.0526	Yes
Powerful Others	Although I might have good ability, I will not be promoted without appealing to those in positions of power.	0.5826	-0.2179	0.4845	0.1029	-0.1678	-0.0070	Yes
Powerful Others	If important people were to decide they didn't like me, I probably wouldn't form many bonds with my colleagues.	0.5753	0.0364	0.3141	0.2808	-0.0237	0.1069	Yes
Powerful Others	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.	0.5567	-0.0075	0.4981	0.1665	0.0928	-0.0726	Yes
Powerful Others	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	0.5093	-0.0456	0.5293	-0.0660	-0.0272	0.1259	Yes
Powerful Others	I feel like what happens in my civil service life is mostly determined by powerful people.	0.6414	-0.2694	0.8035	-0.1694	-0.1057	-0.0325	Yes
Powerful Others	My life in the civil service is chiefly controlled by powerful others.	0.6891	-0.2227	0.8127	-0.0783	-0.0408	-0.0782	Yes
Chance	Whether or not I am promoted depends on whether I am lucky enough to be in the right place at the right time.	0.2681	0.2468	0.1373	0.2590	0.2591	-0.0216	
Chance	It's chiefly a matter of fate whether or not I form with few or many of my colleagues.	0.3220	0.1062	-0.1862	0.6288	-0.0108	-0.0254	
Chance	I have often found that what is going to happen will happen.	0.2319	0.2788	0.1274	0.1856	0.2561	0.0562	
Chance	It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	0.3676	-0.0953	-0.0076	0.4395	-0.1551	-0.0425	
Chance	When I get what I want it is usually because I am lucky.	0.5375	-0.0212	0.0106	0.6944	-0.0676	-0.1202	Yes
Chance	Whether or not I get a query is mostly a matter of luck.	0.5273	0.1125	0.0043	0.5857	-0.0422	0.0987	Yes
Chance	Often there is no chance of protecting my personal interests from bad luck happening.	0.3722	0.2026	0.1226	0.2598	0.0907	0.1658	
Chance	To a great extent my life in the civil service is controlled by accidental happenings.	0.5487	-0.0873	0.6253	0.0591	0.1069	-0.1683	Yes
Power of the System	Formal hierarchies prevent me from forming bonds with my colleagues.	0.2914	0.0674	-0.0222	0.3435	-0.0330	0.0669	
Power of the System	It is difficult for officials to have much control over their achievements in office.	0.3414	-0.0076	0.0376	0.2355	-0.1607	0.1869	
Power of the System	Whether or not I get a query depends on how well I know the civil service.	0.1075	0.2808	0.0085	-0.1166	0.0213	0.4852	
Power of the System	With enough effort we can wipe out unwanted political interference in the work we do.	0.0768	0.4334	0.2931	-0.0905	-0.1498	0.4050	
Power of the System	Who gets to be the boss often depends on who was in the right place first.	0.3253	0.1509	0.1960	0.2683	0.1963	-0.0739	
Power of the System	As far as civil service issues are concerned, most of us are victims of forces we can neither understand, nor control.	0.5603	-0.0504	0.4237	0.0720	-0.1069	0.1772	Yes
Power of the System	Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.	0.5655	0.0416	0.3891	0.0594	-0.0907	0.3044	Yes
Power of the System	Most civil servants don't realise the extent to which their professional lives are controlled by happenings elsewhere in the service.	0.2916	0.1242	0.2155	0.0620	0.0764	0.1337	

Notes: Exploratory factor analysis conducted using principle factor, and promax rotation in Stata. Factor loadings for 2 factor solutions are shown after rotation. Loadings >=0.3 are highlighted. In the 2 factor solution, Factor 1 is "external" LOC and Factor 2 is "internal". All "Power of the System" scale variables load as expected onto the "external" factor. We show a 4 factor solution to demonstrate further separation of the "external" items. Most "powerful other" items load onto Factor 1, most "chance" items onto Factor 2, most "internal" items onto Factor 3. The items from "Power of the System" load onto a new factor, Factor 4, as well as "powerful others" and "chance" factors.

Table OA7A: Alpha Scores

Indices	Cronbach's Alpha
All 4 Components (32 item scale)	0.82
Internality	0.66
Powerful Others	0.77
Chance	0.66
Power System	0.53
All 4 Components (15 item scale)	0.84

Notes: The table shows Cronbach's alpha scores calculated in Stata for the different LOC scales discussed in the paper. The score for the original scale containing all 32 items is shown first, and then separately for the items contained in the internal (Internality) and external (Powerful Others, Chance, Power System) components of the original scale. Alpha scores are calculated using the original non-standardized items. All scores are rounded to 2 decimal places.

Table OA7B: Correlations between the 4 Components of BLOC

	Internality	Powerful Others	Chance	Power System
Internality	1			
Powerful Others	-0.12***	1		
Chance	-0.01	0.53***	1	
Power System	-0.07***	0.54***	0.46***	1

Notes: The table shows the correlations between the standardized indices of the four LOC components in the original 32 item scale. Numbers are rounded to 2 decimal places. *** indicates significance at 1% level.

Table OA8: BLOC on Organizational Environment Variables

Dependent Variable: Refined Bureaucratic Locus of Control Index Containing 15 Items

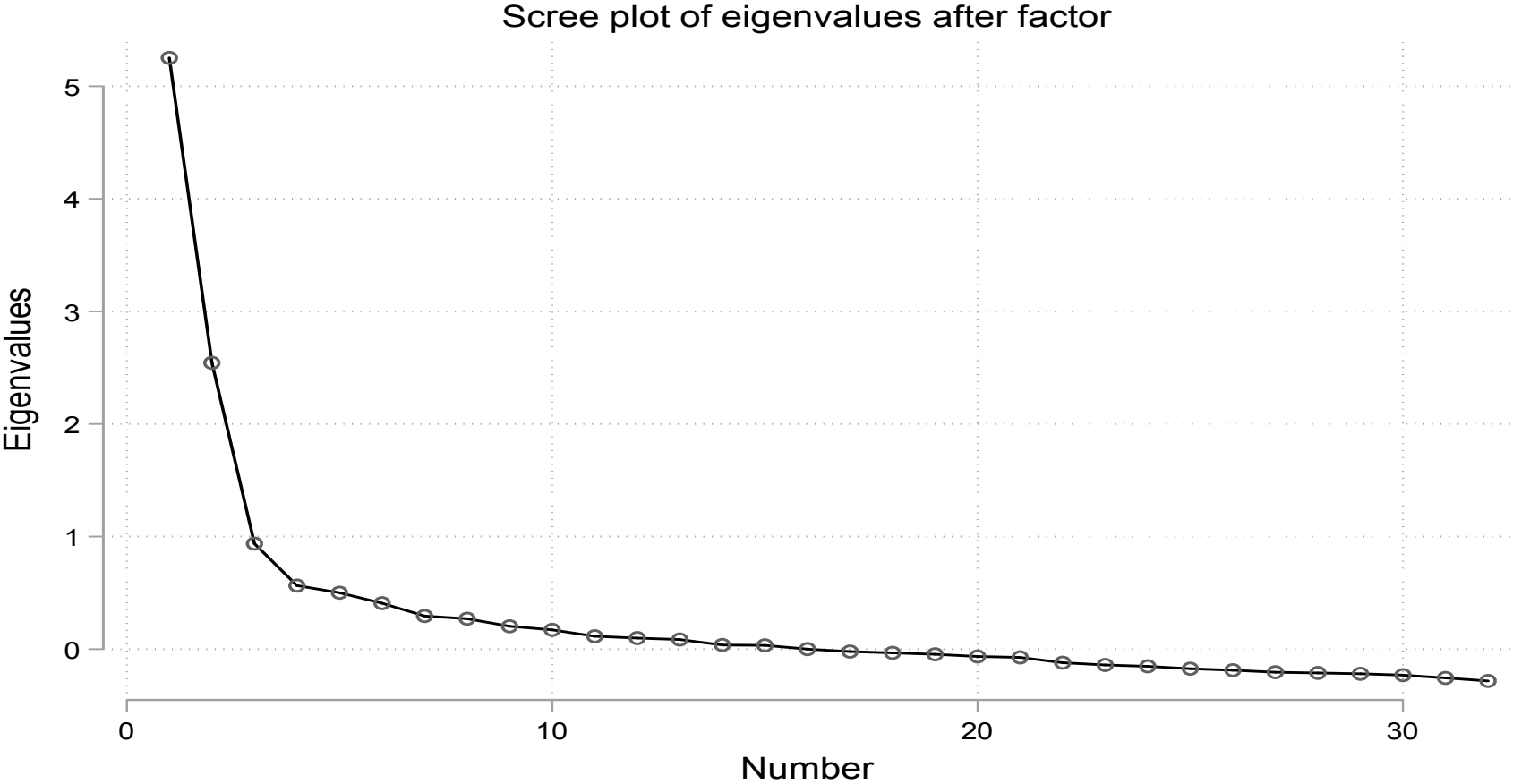
OLS Estimates

Standard Errors: Clustered at the organization level

	(1) Appraisal	(2) Satisfaction	(3) Motivation	(4) Trust	(5) Career Track	(6) Confidence	(7) Award
Total score on performance appraisal	0.00924* [0.00476]						
Satisfaction (employees only)		0.313*** [0.0688]					
Motivation (employees only)			0.358*** [0.110]				
Trust (employees only)				0.160* [0.0833]			
Career track (employees only)					0.00845*** [0.00170]		
Confidence in promotion (employees only)						0.434*** [0.0755]	
Received awards (employees only)							0.208*** [0.0594]
Individual and Noise Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations [clusters]	856 [259]	1,187 [364]	1,198 [365]	1,179 [364]	1,191 [365]	1,189 [365]	1,180 [365]
Adjusted R-squared	0.038	0.081	0.070	0.062	0.090	0.100	0.074
F Statistic	2.434	8.463	6.007	5.583	8.716	6.523	6.536
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors are in parentheses and clustered at the organization level. All columns report OLS estimates. The dependent variable in all columns is the standardized BLOC index containing all 32 items, and adjusted so that higher scores indicate a higher internal LoC. The total score on the BSC includes both a performance score and an attitude score, and is taken from administrative data. `Satisfaction' is a binary indicator for if the civil servant is satisfied or very satisfied with the civil service experience. `Motivation' is a binary indicator for if the civil servant is more motivated now than when s/he first started working in the public service. `Trust' is a binary indicating if the respondent agrees that 'most people in the civil service can be somewhat trusted or trusted a lot'. `Career track' is the response to the following question: "If 100 represents you being on track with your career goals, and 0 is completely off track, what number would you say are you at now?" `Confidence in promotion' is a binary reflecting whether the civil servant is somewhat or very confident in getting promoted, conditional on performance. `Recieved awards' is a binary reflecting whether the civil servant has received any formal or informal, financial or non-financial award in the past year. Individual controls are the individual's gender, age, years of education, tenure in the civil service, an indicator of current grade, the number of different organizations worked in the civil service, and a binary indicating if the individual is a manager. Noise related controls are the time of day of the survey, day-of-survey fixed effects, enumerator fixed effects, an indicator for the enumerator's subjective assessment of the quality of the interview, and an indicator for the duration of the interview (decile of duration fixed effects). We also include sector in the list of controls.

Figure OA2: Distribution of Eigenvalues



Notes: The scree plot was plotted in Stata, and the total number of factors shown is equal to the number of items. The plot shows the importance of the first 2 or 3 factors, and Eigenvalues are greater than 1 for the first 2 factors.