Does Ability Matter for Discretionary Promotions in Bureaucracies? Evidence from Pakistan*

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Abstract

While state capacity is central for economic development, existing studies have consistently shown that allocations in the developing state are through favoritism or patronage. I examine discretionary promotions of junior Pakistan Administrative Services (PAS) bureaucrats by their seniors and ask whether the juniors' ability matters for discretionary promotions. I compiled unique data on the abilities of junior officers, including both publicly available recruitment exam rank and information on job performance that is private to senior officials. Contrary to the existing literature, results show that ability matters for discretionary fast-track promotions. Results are heterogeneous across teams suggesting that incentives of seniors vary by the teams for which promotion decisions are made. These results suggest that discretion could end up in ability-based promotions when incentives are aligned.

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A well functioning state that can provide public goods, address externalities or provide the foundation for private property and enterprise is key to economic development (Besley and Persson, 2009, 2010; Finan et al., 2017). Unfortunately, state capacity in low-income countries is worse than in high-income countries. For instance, World Bank's Worldwide Governance Indicators (2014) show that the average percentile rank of low-income countries on government effectiveness is just 17.3 compared to 87.9 for OECD countries. There is rampant absenteeism of front-line service providers like teachers and health workers (Chaudhury et al., 2006), increased monitoring has little effect (Callen et al., 2023), and incentives back-fire and sometimes lead to worse outcomes and corruption (Banerjee et al., 2008; Khan et al., 2016).

There is widespread evidence that shows that an important reason for such poor performance of public sector bureaucracies is that most decisions are driven by patronage or corruption: selection is on the basis of bribes (Weaver, 2021) or patronage (Colonnelli et al., 2020; Fisman et al., 2018; Riaño, 2021); bureaucratic transfers are based on connections to the ruling elite (Iyer and Mani, 2012; Akhtari et al., 2022; Brierley, 2020); bureaucrats engage in influence activities for performance ratings (Janvry et al., ming); and overall the more dishonest select into public service and there is corruption (Olken and Pande, 2012; Hanna and Wang, 2017; Niehaus and Sukhtankar, 2013).¹ This is why restricting discretion altogether and relying instead on rules is seen as a second best for such bureaucracies.²

In this paper I study one such bureaucracy in a developing country, the Pakistan Administrative Services (PAS) and ask: Does ability matter for discretionary promotions of junior bureaucrats by their seniors? If it matters, this result will contribute to the existing literature on discretion by showing that there can be contexts and institutional arrangements, even in the public sector bureaucracies in developing countries, in which discretion can work.

The PAS is an elite group of federal civil servants that are responsible for delivering a wide variety of public goods and services. All bureaucrats entering the PAS must first serve as heads of revenue administration responsible for collecting taxes against an annual target. After this they can work in almost any government department like health, education or finance or manage key projects of the government and international financial institutions like the World Bank and United Nations. The most senior civil service positions - the Secretary of Cabinet at the federal and provincial levels, the Chief Secretary of all the four

¹See Finan et al. (2017) for a review of the personnel economics of the developing state.

²This tradition traces its roots to Weber (1922) and is still the dominant argument in public sector bureaucracies today (see Besley et al. (2022) for a review). Bertrand et al. (2020) describe why bureaucracies moved towards rules in the case of Indian Civil Services and Bai and Jia (2016) describe the Chinese rule based recruitment system for elite civil servants. Evans and Rauch (1999) show that meritocratic recruitment and predictable long-term careers are correlated with economic growth. Oliveros and Schuster (2018) present similar results. Meyer-Sahling and Mikkelsen (2016) argue that rules are useful if implemented properly. Xu (2018) shows how even in the context of a developed country administration (the British colonial administration) the promotion and performance gaps disappear after the implementation of rules.

provinces, heads of most provincial and federal government departments - are generally occupied by PAS officers.

Promotions in PAS are generally rule-based, with an exception of fast-track promotions. Historically, fast-track promotions evolved in this bureaucracy as a more flexible institution to overcome constraints imposed by rules. Bureaucrats are fast-tracked within the same bureaucracy. These promotions are at the discretion of senior officials and offer a good opportunity to investigate the role of discretion.

I compiled a unique data-set on the abilities of junior officers, including both publicly available recruitment exam rank and information on job performance that is private to senior officials. I digitized tax performance data for the first time using historical records of the Board of Revenue. The reason that this is the private information of the seniors is as follows: while senior officials meet regularly with their juniors to keep tabs on their performance, the organization can only see the overall averages of collected taxes and not the individual performance of juniors. A junior's individual performance does not makes it to their career files or promotion documents (see, for example, Husain, 2012; Cheema and Sayeed, 2006; Hanif et al., 2016; Tanwir and Chaudhry, 2016 for a discussion on the absence of objective performance measures in evaluation reports or promotion documents).

Top tax collectors are more likely to be awarded 'very good' or 'outstanding' in their performance evaluation, and citizens are more likely to report that they faced better bureaucratic response when receiving services.³ This is not the case for exam performance which is a noisy determinant of performance.

The institution is such that as seniors are promoted they obtain more influence over the fast-track promotions of junior bureaucrats. Therefore, the discretionary power of seniors is quantified as the average official grade of these seniors during their tenure in the organization. However, for such a measure to be causal, both the initial match between the seniors and junior officials has to be random; and changes in the discretion of the seniors has to be exogenous to the unobservables of juniors. I therefore, use an instrumental variables strategy and exploit governmental rules to construct a theoretical rule-based measure: the power of potential seniors as an instrument for such power. Since the rules only apply to the first job of the juniors, the seniors are those that have worked with the juniors in their first job when these juniors were responsible for tax collection.

The instrument has two sources of variation: a cross-sectional variation and a time variation. The government's job allocation rules dictate that newly-recruited bureaucrats can be assigned first jobs when the position is vacant or when the incumbent has spent at least one year on the job.⁴ This gives for each cohort a set of *potential* first seniors with

³Despite this positive correlation, these measures are not a sufficient statistic for tax performance as the correlation between the measures is far from perfect. Tax performance, therefore, carries additional information about the ability of junior that is not captured in entirety by either of these measures.

⁴The Punjab Government Transfer Policy 1980; Inter-Provincial Transfers of DMG/PSP Officers 1988; Government of Punjab Circular Letter 2004; Guidelines for Transfer of Assistant Commissioners 2013.

whom they could have worked in their first job.

I combine this variation with a *theoretical* time variation in the rise of these potential seniors. The rules of the government stipulate that any bureaucrat can get one official promotion at five, twelve, seventeen, and twenty-two years after entering the service.⁵ For each potential senior, this rule helps build their theoretical promotion in the organization over time. The instrumental variable, power of potential seniors combines both sources of variation and is defined as the average theoretical promotion power of potential seniors. I control for cohort fixed effects to account for any cohort specific heterogeneity. Month-year fixed effects are included to control for time trends. For each cohort we can therefore observe the entire decision set of the seniors: the ability of the set of juniors that are promoted and those that are passed over.

The design compares the difference in career trajectory of high and low ability juniors across cohorts whose potential seniors have more and less power to make promotion decisions over time. Comparing the difference in career trajectory of high and low ability juniors across cohorts helps in netting out the effect of other unobservables that may be correlated with the junior's exam and tax performance and affect their careers. The main assumption is the exclusion restriction for the IV, i.e. that the power of potential seniors does not directly affect the junior's promotion through other channels such as through their unobserved ability. The paper presents a series of tests on vacancies at the time of the first job of the juniors as well as a balance table of the junior's baseline characteristics to provide support for this assumption.

Results show that discretionary promotions are based on privately observed measures of ability. Those top 50% tax collecting juniors whose seniors have average power only have a 5% higher probability of being fast-tracked than the bottom 50% (15% of the mean of the outcome and not significant). However, with a one rank above average increase in the power of the seniors a similar high ability junior has a 13% higher probability of being fast-tracked than their low ability colleagues (54% of the mean of the outcome). The effect is both economically and statistically significant (Wild clustered bootstrap *p*-value is close to zero). Since tax collection is an important determinant of performance, these results suggest that local information was harnessed by allowing discretion to seniors. Discretionary promotions are based on exam performance but the magnitude of the effect is small and not statistically significant (Wild clustered bootstrap *p*-value is 0.332). In this context tax collection performance is a less noisy measure than exam rank, therefore, the fact that tax-based measure plays a more dominant role in fast-track promotions of the juniors suggests that even in such bureaucracies ability can play a role in discretionary promotions. I reject similarity of the effect of power for high tax and exam performers (*p*-value of an *F*-test is close to zero). Results also remain robust to including a control for social ties between the seniors and junior bureaucrats.

⁵The Minimum Length of Service Rules, Establishment Division's O.M.No.1/9/80-R.2 dated 2-6-1983

These results are surprising given that a "meritocratic favoritism" or favoritism towards the high ability does not appear to be the norm in this context. According to the Corruption Perception Index (2019), Pakistan ranks below average, with a score of thirty-two out of one hundred (least corrupt) in perceived levels of public sector corruption. These results suggest that under certain conditions such as quantifiable performance measures, trained and competitively selected bureaucrats, discretion can work to promote on the basis of ability. Another reason could be that the incentives of the seniors might be aligned with the organization, either through career concerns or other reputation concerns on referrals of juniors.

I explore such incentives further by studying discretionary promotion decisions for different types of teams. I find that promotions vary by the teams for which promotion decisions are made suggesting that seniors care more about their reputation as a referrer than the talent in their own teams.⁶ While promotions in the seniors' teams are based on ability they are statistically insignificant and of a much lower magnitude than fast-track promotions in other teams. On the other hand, a one rank above average increase in the power of the seniors results in the top 50% tax performing juniors to have a 13% higher probability of being fast-tracked in such teams than the bottom 50%. The effects are both statistically and economically significant (54% of the mean of the outcome). I reject similarity of the effect across the two types of teams for high tax performing juniors (*p*-value of an *F*-test is 0.01). The exam rank of the junior plays an insignificant and less important role in their fast-track promotions in either teams. These results are consistent with the implicit incentives of seniors reducing the principal-agent problem in this setting, resulting in ability-based promotions.⁷

These results have implications for the use of discretion in organizations that extends beyond the context of PAS. For instance to align incentives, organizations can implement information disclosure requirements so that recommendations for promotions by managers are documented and observable to others in the organization. The results in the paper also show how ability-based promotions and the feeling that *"it is not what you know but who you know"* can coexist. While high-ability juniors under powerful seniors get fast-tracked at a higher rate than low ability juniors, those whose seniors are not as powerful do not. A simple policy like a job rotation of juniors can go a long way towards ensuring that seniors promote from within the larger pool of juniors.

These results contribute to the literature on organizational economics of public sector in developing countries and connections. There is a rapidly expanding literature on the organizational economics of the developing state. Multiple studies have investigated ways

⁶One interpretation of this is that these incentives fall as one reaches the top of ones career (Holmström, 1999; Dewatripont et al., 1999a,b) and the variation used is the rise of the senior in the organization.

⁷Previous work has shown that such incentives are important in public sector organization in which there are few explicit incentives (Besley and Ghatak, 2005; Dewatripont et al., 1999b; Khan, 2020; Bertrand et al., 2020; Ashraf et al., 2020; Iyer and Mani, 2012).

to improve selection of bureaucrats (Dal Bó et al., 2013; Ashraf et al., 2020; Deserranno, 2019; Dahis et al., 2020). However, there is very little attention paid to promotions in such organizations in low-income countries.⁸ This is despite the fact that in most bureaucracies there is one point of entry after which talent is allocated through promotions. In a first to show that political system known for patronage can still select competent leaders Jia et al. (2015) show that connections to members of the Politburo Standing Committee (PSC) increases the probability of promotion to political leadership in China, but only for those that have higher performance as measured through economic growth. Political scientists have pushed this research agenda further. Landry et al. (2018) confirm results in Jia et al. (2015), but show that this meritocracy is only operational at the lower administrative tiers. Results in Jiang (2018), however, caution against the use of connections and economic performance as distinct dimensions, largely independent of each other. They show that city leaders who have informal ties with the incumbent provincial secretary deliver significantly better economic performance than those whose connections have either retired or left the province.⁹ This paper complements this literature in three ways. First, instead of studying the role of connections between politicians this study investigates the role of connections between bureaucrats, that have remained largely under-investigated. PAS is closer to the context of other bureaucracies in developing countries with a clear separation between the political and bureaucratic leadership. Second, the measures of ability used in this study are less likely to be outcomes of power of the seniors. Instead of contemporary performance, I consider the juniors' tax performance on their very first job and only use the time-invariant component of that performance.¹⁰ Third, while economic growth is certainly very important however, growth can be the result of multiple people and layers of the bureaucracy. On the other hand both exam and tax collection performance are more of a direct measure of a juniors' ability. Moreover, in this context there is also a clear sense of the visibility of the two measures to the decision-makers. This helps us understand how information from different sources are used in discretionary decisions. Overall results in this paper contribute to a small but growing body of work that shows the importance of autonomy of bureaucrats in public sector bureaucracies for project completion (Rasul and Rogger, 2018), environmental regulation (Duflo et al., 2018) and procurement prices (Bandiera et al., 2020) and suggest that rules have costs for service delivery (Kelman, 1990, 2005; Bandiera et al., 2009). This paper contributes by studying promotion decisions in a typical public sector organizations in a developing country and showing how discretion

⁸Arai and Nakazawa (2021) and Voth et al. (2020) describe promotions in a developed country context i.e., the Japanese civil services and the British Royal Navy. Unlike studies based in weakly institutionalized states in developing countries both studies find that connections lead to better allocations. Studies on patronage in multiple developing countries have shown that the lack of constraints in weakly institutionalized developing states makes the question of discretion very different in the two contexts (Grindle, 2012; Brierley, 2020).

⁹A related paper in political science that does not investigate promotions, but shows that patronage can be performance enhancing is by Toral (2022). He shows that politically connected school directors deliver better school quality in Brazil than non-connected directors.

¹⁰All the analysis excludes this first job. I also test and show that this performance is uncorrelated with power of the seniors. (see Table 6).

can allow the use of private information of the senior bureaucrats in talent allocation.

1 Background

The PAS is an elite group of federal civil servants that is very similar to the Indian Administrative Services (IAS). Though not a huge bureaucracy, PAS officials remain key players within the machinery of the government. Therefore, the allocation of talent within this bureaucracy has important implications for the country's welfare as a whole.

PAS recruitment takes place through a competitive exam conducted by the Federal Public Service Commission (FPSC). PAS bureaucrats start their career at rank seventeen and can get promoted all the way to rank twenty-two. Figure 1 presents the timeline of the initial career of a new PAS recruit. After recruitment, PAS civil servants undergo eighteen months of academic training, which is followed by six months of on-the-job training.¹¹ Training is centrally administrated by the Civil Services Academy, as well as the PAS Academy. The length of training and the dates of the start and end of training are determined centrally by these training institutions, under the guidance of the federal government. After twenty-four months of training, new recruits are allocated their first job.

PAS recruits are meant to start their initial career as the heads of the revenue administration in the sub-districts of Punjab. Here, one of their main jobs is to oversee tax collection and manage teams of revenue officials.¹² How the initial allocation of PAS bureaucrats to their first revenue administration jobs is carried out is implied by the Tenure/Transfer Policy of the government. Following this policy, new recruits can only be allocated jobs that are vacant or where the incumbent bureaucrat has been present at least one year. I exploit this policy to obtain variation in the set of seniors.

There are two kinds of promotions in this setting, official promotions and fast-track promotions. Official promotions are based on rules regarding experience, mandatory training, and thresholds of performance based on a subjective performance evaluation of the bureaucrats by their immediate bosses. On the other hand, fast-track promotions are when higher-ranked jobs are allocated to junior civil servants irrespective of their official promotions. The rank of the job is determined by the government at the time that a job is created. In almost all cases the rank of the job is not changed once it is created. While official promotions become a matter of right and cannot be reversed, fast-track promotions can be reversed at any time. There is no cap on the number of fast-track promotions

¹¹This has historically ranged from eighteen weeks to thirty-seven weeks.

¹²While on paper revenue administration is their main task, in reality the government allocates additional tasks to them from time to time. These can include providing assistance in wheat procurement in the spring of every year, monitoring the hoarding of fertilizers in certain months, relief efforts in case of floods, etc. The implications of these extra jobs for the analysis in this paper are discussed in Appendix B.

awarded by senior bureaucrats. The only limit is in the number of high-ranking positions available. The probability that a bureaucrat will be fast-tracked *at least once* in their career is close to one.

Seniors of any rank can formally (in writing) or informally (over the phone or in person) requisition the services of a junior bureaucrat for a higher post in their department or team. Such requests are made to the Services and General Administration Department, where bureaucrats from grade 17 to grade 22 deliberate and express their opinions on the requisition request. This is done using case files. The final confirmation comes from the Chief Secretary of the province (a grade 22 bureaucrat) or, in the case of fast-track promotions to grade 20 and above, by the Chief Minister of the province. Similarly, any senior can refer a junior to another senior who has never worked with that junior before. If the referral is considered favorable, the new senior will then requisition the services of the junior for their own team. This will move through the Services and General Administration Department in a similar manner. The more a senior bureaucrat rises in the organizational hierarchy, the higher the likelihood that their referrals as well as requisition requests will be considered favorably.

2 Data: Key variables and descriptive statistics

2.1 Sample selection

The paper relies on three main datasets that were newly digitized for the study: (1) career charts data from the S&GAD that contain details of the careers and background of both the PAS and provincial services bureaucrats; (2) the recruitment exam rankings of PAS bureaucrats from the Federal Public Service Commission (FPSC); and (3) historical tax collection in revenue circles across Punjab from the Board of Revenue (data details are described in Appendix A). There are no unique bureaucrat level identifiers in either the career charts data or the recruitment exam ranks or historical tax collection records from the Board of Revenue. The exam rank data was matched with the career chart data on name and year of recruitment exam,¹³ while tax collection data was matched on subdistrict-month. Combining these data resulted in a bureaucrat-month panel dataset.

There are three constraints on the sample used in the main analysis in the study. First, recruitment exam rank is only available for PAS bureaucrats. Second, some of the tax collection records were destroyed due to flooding in one of the basement record rooms

¹³It was not possible to match bureaucrats across the two datasets if the way the name was written differed across the two records, e.g. "Muhammad Mehmood" versus "M. Mahmud," and there was no cohort information to verify in the career charts data; or if the person retook the recruitment exam multiple times so that the career charts data had one cohort and the FPSC data had another. I used newspaper archives, interviewed various bureaucrats, and used various online forums (like http://www.cssforum.com.pk) to confirm cohort details and double-check any missing information.

of the Board of Revenue (see Figure 2) and therefore tax collection information is only available for 234 PAS bureaucrats.¹⁴ Third, to identify a causal effect I have to rely on the job allocation rules of the government for a junior's first job and therefore I need information on this job. This further restricts the set of juniors I am analyzing to 99 juniors for whom *tax collection performance information is available for their first job*. These 99 juniors are observed for 63.8 months (5.3 years), resulting in a total of 6,316 observations. All the main tables present results with this subset of juniors first, before including exam rank in the estimation. From these 99 juniors only 87 juniors also have information on their exam rank. These 87 juniors are observed over 63 months (5.25 years) for a total of 5,482 junior-month observations. They are from 30 cohorts that entered the civil services between 1985 and 2013.¹⁵ The sample used in the study is almost 14% of the universe.¹⁶ Since ability measures of the senior are not imperative for the analysis, seniors were drawn from the wider career charts dataset. This data has information on 698 PAS and 1,197 provincial services bureaucrats observed over 154 months (12.8 years) and 134 months (11.2 years) respectively, resulting in 270,081 bureaucrat-month level observations.

Although the number of juniors is 87, observed across 30 cohorts, we observe them over many months, which reduces the sample size needed to detect an effect (McKenzie, 2012). Moreover, the effect size is large and that further explains the statistical significance of the results. Despite that, the small amount of cross-sectional data might still raise two broad issues. First, what type of statistical inference is appropriate given the sample size. Second, whether the sample is too small to be representative. Below I discuss the steps I take to address them.

Statistical inference. The first issue is over using statistical tests that rely on asymptotic arguments in the cross-sectional dimension to justify the normal approximation. By clustering at the cohort level, the standard errors produced might be much smaller, suggesting finite-sample bias due to clustering. Throughout the analysis I use cohort-clustered bootstrap-t procedures as suggested by Cameron et al., 2008 for small clusters and report p-values from 1100 replications of the Wild cluster bootstrap-t procedure. This procedure provides asymptotic refinement and leads to improved inference with cluster-robust standard errors, particularly when there are few clusters.¹⁷ Since then, their method has

¹⁴The tax collection data is at a revenue circle-month level. A few villages together make up a revenue circle. A few revenue circles together form a sub-district. Each junior is in charge of a sub-district. We observe 558 unique revenue circles from 1983-2013, resulting in 30,405 observations. To observe the tax collection related ability of PAS juniors, I collapsed these revenue circle-month observations at a subdistrict-month level and then combined the tax collection and career charts data at a subdistrict-month level. This results in observing the tax collection performance of 644 bureaucrats. 406 of them are provincial services bureaucrats, while 234 are PAS.

¹⁵I define a cohort of juniors as a group that started their on-the-job training together.

¹⁶The universe of PAS bureaucrats between 1985-2013 is 628.

¹⁷Cameron et al., 2008 show, using Monte Carlo simulations as well as real data, that their procedure works quite well even when the number of clusters is as few as six.

been used by studies that have had to work with a small number of clusters (Angrist and Pischke, 2009; Bloom et al., 2013; Angrist et al., 2013).

Representativeness of the sample. To check whether the sample is representative I compare the juniors in the study sample with the broader PAS bureaucracy in a comparable time to the juniors, i.e., between 1985 and 2013 (368 officers). Table 1 shows that these 87 juniors are a random subset of the larger PAS bureaucracy and are broadly representative of them. Most importantly, there are no systematic differences in either the fast-track promotions or recruitment exam ranking across the larger samples, suggesting that the study cohorts are not a more able or more talented group than the wider sample. An F-test of joint significance of all the variables has a *p*-value of 0.3247.

2.2 Ability of juniors

2.2.1 Publicly observable measure of ability of juniors: Recruitment exam ranking

The recruitment exam rank is published in national newspapers. However, for completeness, I collected exam rank documents from the Federal Public Service Commission (FPSC; details in Appendix A). This is measured as the rank of the junior in the recruitment exam. The higher the rank the lower the ability of the junior. In Online Appendix Tables D1 and D2, I present results quantifying exam rank as a dummy for those juniors that are in the top 10% and top 50% of their cohort in the recruitment exam. Results remain robust to either definition.

2.2.2 Privately observable measure of ability of juniors: Tax collection

The privately observed measure of ability used in the study is the tax collection performance of the juniors in their first job. A junior's first job is when they work as the head of the revenue administration in a sub-district and this is the job when seniors view the junior's performance. Each junior collects taxes against annual targets using their team of revenue officials.¹⁸

The source of this data is historical tax collection records of the BOR (see Appendix A for details). The records have information at a revenue circle level. I use the revenue circle-month level data and then aggregate it by taking an average of the tax collected as a percentage of the annual target at the subdistrict-month level. I combine this data with the career charts data at the subdistrict-month-level. Next I create an average, *time-invariant* tax performance of each junior. A junior is considered high ability if their average

¹⁸The tax collection target is based on the farm size or the farmer's income (whichever results in a higher tax collection due).

performance in the first job lies in the top 10% or 50% of their cohort and remains zero otherwise.

Top tax collectors_i = $\mathbb{1}_{\{Junior's avg performance>90\% (50\%) of the juniors in a cohort\}}$

The skill required to do well in tax collection is team management. Since almost all of an official's future career entails managing teams, a junior's ability to do so reveals important information about their talent as a civil servant.

How is this private information of seniors? Tax collection performance is only observed by seniors in the district while the organization only observes the district level aggregates of tax collection. In regular district-level meetings, tax collection performance is discussed with seniors. Therefore, seniors are fully aware of the performance of their juniors. Seniors report the aggregate district-level performance to the Board of Revenue (BOR), with each junior's individual performance included as annexes to the main report. This correspondence from each district is received by clerks at the BOR. Clerks note the aggregate tax collection performance of each district and share it with the organization, while the original letters with the tax collection performance of juniors are put in gunny sacks and dumped in the record room in the basement of the BOR building (see Figure 3).¹⁹ This information does not makes it to the career files of the juniors.²⁰

To check that it is indeed the case I further corroborated facts using government reports and research articles on the issue. In its report on Reforming the Government of Pakistan (Husain, 2012, p.189, para 74), the National Commission for Government Reforms argues that objective measures are missing from both performance evaluation and promotions. The commission proposes that "[an] objective quantifiable Performance Management System (PMS) should be introduced in place of the existing system" for promotions in civil services. Multiple studies also report that objective performance measures are not reported in evaluation reports or form the basis for promotion in this bureaucracy (Cheema and Sayeed, 2006; Hanif et al., 2016; Tanwir and Chaudhry, 2016).

The absence of concrete performance measures as determinants of careers is not unique to the Pakistan Administrative Services. This has also been shown to be the case in other public sector organizations in developing countries like the Indian Administrative Services (Bertrand et al., 2020) and the Chinese local government (Su et al., 2012; Jiang, 2018).

¹⁹Details can be seen in Figure 2 and online at: https://www.shanamanrana.com/research-in-the-field-a-snapshot.

²⁰Why there is no demand for this individual performance information is an interesting question in itself. A number of potential reasons can explain it, including lack of state capacity, apathy, or a desire to only hold the head of the district responsible and allow them to deal with their own team. Motivations of the government behind such a set-up are beyond the scope of this study.

Do the tax collection and exam-based ability measures convey anything useful? To test whether the tax performance measure captures anything meaningful about the true underlying ability of the junior I present descriptive evidence on what these measures of ability mean for job performance. Table 3 presents these results. I consider three different outcomes: whether a junior is evaluated as "very good" or an "outstanding" worker throughout their career; whether citizens felt that the attitude of the revenue departmental employees improved; and whether the timeliness of service provided by the revenue department improved when the junior was in charge.

The source for this subjective evaluation is the career records of juniors. Juniors are classified as average, good, very good, and outstanding. I classify subjective evaluation as a dummy variable that equals one whenever a junior is classified as very good or an outstanding worker. Data on this measure is limited, as career records don't always record performance evaluation. In the case of the tax collection sample, I observe subjective evaluations for eight out of thirty cohorts, while in the case of the exam rank sample, it is observed for twenty-five out of forty cohorts.

The data on the citizen perception survey is compiled by Oasis Insights (Private) Limited in 2014. This study was commissioned by the World Bank and carried out a ten to fifteen minute telephone survey, aimed at understanding citizen's perceptions of services delivered by the state, as well as the efficacy of the Citizen Feedback Model (CFM) as an accountability mechanism (Masud, 2015; Beschel et al., 2018). The sampling frame was anyone that had used at least one of eleven different services between September 2012 and February 2014. Out of these eleven services, there was one that is relevant for juniors in this study: the issuance of "*fard*" or land titles. These land titles are delivered by the lowest tier of the junior's team. For this particular service, 900 citizens were surveyed. Data on the performance of each junior's team is available for a maximum of five cohorts. Given the small number of clusters, following Cameron et al., 2008, I report clustered Wild bootstrap *p*-values in all specification.

Month-year fixed effects are included in all specifications. In Columns (1) and (4), I include cohort fixed effects, while in the case of citizen perceptions in Columns (2), (3) and (5), (6), I include district fixed effects. Therefore, in this case I am comparing the perceptions of citizens within the same district, across a high-ability and low-ability junior.

The results in Columns (1)-(3) show that the probability of being a top 10% tax performing junior is correlated with all three dimensions of performance, however, the effect on timeliness of service provided is less precise with a bootstrapped p-value of 0.25.

In the case of exam rank, we see that a one rank higher in the recruitment exam (lower ability) is correlated with a 0.2% lower probability of being evaluated as very good or outstanding in subjective evaluations. The effect is statistically significant but the

magnitude is much smaller than tax performance.²¹ Exam rank has no correlation with citizen's perceptions and the effect is a precisely estimated zero. Compared to the top tax collection performers, exam rank doesn't seem to convey as much information about a person's ability. These results show that in this context the private signal of ability (tax top 10%) is a more precise signal of the junior's ability than the public signal (exam rank). This suggests that if a given senior's incentives are not completely misaligned with the organization then fast-track promotions by them should be more responsive to private signals of the junior's ability than public signals.

2.3 Discretion or power of seniors

It is important for the study to consider how discretion is exercised by people who have information on the junior officials' ability. Therefore, I consider senior officials to be those that have worked with junior officials. In order to identify a causal effect the seniors of interest are those from the junior's first job. The source of this measure is the career records of bureaucrats from the S&GAD (see Appendix A for details). An advantage of using career records is that unlike network surveys I can objectively classify the set of seniors without measurement error and subjectivity bias inherent in network surveys (Jackson, 2013).

To classify the discretion of seniors, I rely on institutional details. The organization is such that the higher the senior is in the rankings, the more discretion or power they enjoy. Therefore, in each time period, the power of seniors is defined as their average official rank.

Power of seniors (
$$\overline{Power}$$
) = $\frac{\sum_{s=1}^{S} Official rank of seniors from junior's firstjob_s}{S}$

where official rank is the rank of the senior based on their official promotions and *S* is the number of seniors from the first job. While this measure has variation in power of seniors for each junior, I aggregate the measure at a cohort-month level. This helps in thinking about the research questions from a cohort perspective in which seniors make promotion decisions across juniors of different abilities. For each cohort, we can observe the entire decision set of these seniors: the ability of the set of juniors that are promoted and the set that are passed over. Using this variation also helps to keep the results comparable with the instrumental variable that is at the cohort-month level. Official promotions move bureaucrats from rank seventeen to twenty-two. I normalize them from 0-5, with 0 being the junior-most rank and 5 being the senior-most rank. Figure 4 shows the variation in the power of first seniors across cohorts.

²¹Exam rank will have to lower by 50 to equal the effects for tax.

2.4 Fast-track promotions of juniors

Fast-track promotions are quantified as a dummy variable that equals one whenever the junior is promoted to a higher rank job. Official ranks are in the career charts²² and rank of each job is notified by the government.²³

Figures 5 and 6 plot the actual and official careers of a sample of cohorts from the 1980s, 1990s, and 2000s. These figures show that fast-track promotions are an important and very frequent part of the careers of PAS civil servants. This is not the case for official promotions that only move civil servants up the career ladder once every few years. Figure 7 shows the variation in fast-track promotion across different cohorts.

3 Empirical Strategy

3.1 OLS Estimation

The effect of power of the seniors on careers of the juniors is estimated for junior i, in cohort c and month-year t as follows:

$$Fast - track_{ict} = \pi \overline{Power}_{ct} \times Tax_i + \alpha \overline{Power}_{ct} \times Exam \ rank_i + \theta \overline{Power}_{ct} + \gamma Tax_i + \mu Exam \ rank_i + \kappa_c + \kappa_t + \rho X_{ict} + \epsilon_{ict}$$
(1)

where $Fast - track_{ict}$ is a dummy variable that takes a value of one whenever the junior bureaucrat is fast-tracked and remains zero otherwise. $Power_{ct}$ is the mean official rank of seniors of a cohort c, in month-year t. Since seniors with a mean official rank of zero is very rare, to keep the results meaningful, I center $Power_{ct}$ by subtracting the mean of the variable for each junior. Tax_i and $Exam rank_i$ are both measures of ability of the junior. Tax_i is a dummy variables that takes a value of one if the junior is in the top 10% (top 50%) of their cohort in tax collection in their first job. $Exam rank_i$ is the junior's rank in the civil services recruitment exam and the higher the rank the lower the ability of the junior.

The estimation includes cohort fixed effect (κ_c). This controls for any time invariant, cohort specific, unobserved heterogeneity such as the total number of seniors in the first job and other time-invariant characteristics of the first job of the juniors. Time-varying characteristics that are similar for all cohorts are captured by κ_t . For example, any policies

²²A sample of dates of promotions in the career charts were double-checked from seniority lists issued by the Establishment Division, and available online at http://establishment.gov.pk/

²³Notifications by the Services and General Administration Department (S&GAD) allowed me to observe the rank of the job. These notifications were personally acquired from the S&GAD. The job rank was manually assigned after going through the notifications.

of the government on the creation of new jobs in higher ranks that affect all cohorts equally are accounted for by κ_t . X_{ict} includes controls such as the annual time trend of the first job, a dummy variable for female bureaucrats, the total number of languages spoken by juniors, the annual experience and experience squared of the junior, the official rank of the junior, and a dummy variable for whether the job is in the field offices. The error term is clustered at the cohort level, as that is the level at which the juniors' first seniors (treatment) are allocated (Abadie et al., 2017).

 π and α are the coefficients of interest. π captures the effect of the power of the senior for those juniors with higher private signals of ability than others in their cohort. While α captures the effect of public information. If $\pi > 0$ and $\alpha < 0$ then the seniors promote based on both their private and public information. Moreover, if $\pi \neq \alpha$ then the effect of power of the senior is different based on the public and private information. On the other hand if $\pi = \alpha = 0$ then promotions are unrelated to ability.

3.2 Identifying variation: Promotion power of potential seniors

The main issue for a causal interpretation of the results is the endogeneity of power of the seniors.²⁴ In this subsection I describe the rules that allow me to construct a theoretical rule-based measure: the power of potential seniors as an instrument for power of seniors.

It is important to use identifying variation, which not only exogenously allocates seniors to juniors, but also ensures that the rise of the senior is orthogonal to the unobservables of the junior. Even conditional on fixed effects and controls, seniors from the first job are not randomly allocated to the juniors.²⁵ If juniors with better unobserved ability are also the ones with a better career and a higher chance of being matched with star seniors then the OLS results in Equation 3 can be an overestimate of the true effect. It is equally possible that the reverse is true in which case the effects can be an underestimate. Even if seniors were randomly allocated, their discretion may still not be random. One potential reason that this may be the case is if the performance of the junior determines the senior's performance evaluation and hence their official promotions and their discretion.

The instrument addresses both the issues highlighted above and therefore has two sources of variation: a cross-sectional variation and a time variation. I exploit the government's job allocation rules for the cross-sectional variation in seniors across cohorts of juniors. These rules dictate that newly recruited bureaucrats can be assigned first jobs

²⁴Equation 3 compares the career trajectory of high and low ability juniors for cohorts whose seniors have more and less power it nets out the effect of other unobservables that may be correlated with the junior's exam and tax performance and affect their careers.

²⁵Fisman et al. (2020) show that particularly when studying the effect of workplace ties, there can be positive selection bias. Homophily, or the tendency of individuals to associate with others that are similar to themselves, has been widely documented in the literature (McPherson et al., 2001; Currarini et al., 2009).

when the position is vacant or when the incumbent has spent at least one year on the job.²⁶ The rules of job allocation gives *for each cohort* a set of "potential" seniors they could have worked with in their first job. Potential seniors are bureaucrats working in districts with open positions at the time of the junior cohorts' end of training and the beginning of their first job, and they are the same for the whole cohort.

In order to have information on open positions I had to digitize data from incumbency boards of each sub-district office across Punjab (refer to Appendix Figure C5 for a picture of one incumbency board).²⁷ Bureaucrats take pride in adding their name to the board, and thus the data is consistent and of good quality. For each position, these boards state the name of the person that held the job along with their tenure. This helps create a daily panel of vacancies and the tenure of each position. I combined this with the dates when training ended for each cohort which is observed from the career chart data. This helped create a set of potential seniors for each cohort.

The mean number of potential seniors is 30. Figure 8 shows the average number of potential and actual seniors per junior across thirty cohorts from 1985-2013. The mean number of seniors in the first job is thirteen. Therefore, for each actual senior, a junior has approximately two potential seniors.

I combine this cross-sectional variation with a *theoretical* time variation in the rise of these potential seniors. The government's rule stipulates that a bureaucrat will get one official promotion at five, twelve, seventeen, and twenty-two years after entering the service.²⁸ For *each potential senior*, this rule helps build their theoretical promotion in the organization. According to this rule, the career of a civil servant is like a step function, as shown in Figure 9.

The instrumental variable, power of potential seniors ($Power^p$), combines both sources of variation and is the average, rule-based rank of potential seniors that the cohorts of juniors could have worked with in their first job.

There is cross-cohort variation in power of potential seniors because the start of the first job of different cohorts is at least a year apart from each other. By the time the new cohort starts their first job, the set of potential places they could be allocated and hence the set of potential seniors (even within the same districts that had vacancies last year) will be different. There is variation over time because the set of potential seniors consists of seniors who are all at different points in their career trajectory. Some potential seniors would have spent for example, 4 years and 11 months in government service, and thus, as per the rule stated above, will be rising one rank in the coming month. This will result in the average theoretical rank of the potential seniors changing. Other potential seniors

²⁶The Punjab Government Transfer Policy 1980; Inter-Provincial Transfers of DMG/PSP Officers 1988; Government of Punjab Circular Letter 2004; Guidelines for Transfer of Assistant Commissioners 2013.

²⁷This data was personally acquired from each sub-district office.

²⁸The Minimum Length of Service Rules, Establishment Division's O.M.No.1/9/80-R.2 dated 2-6-1983

could have spent 5 years and therefore, will get no promotion in the next few years.

Power of potential seniors. In a given month, this variable is defined as the average, rule-based rank of potential seniors that the cohorts of juniors could have worked with in the first month of their first job.

Power of potential seniors
$$(\overline{Power}^p) = \frac{\sum_{\tilde{s}=1}^{\tilde{S}} Rule - based rank of potential seniors in the first job_{\tilde{s}}}{\tilde{S}}$$

 \tilde{S} is the number of potential seniors that work in Punjab during that time period. While the power of seniors is ranked from 0-5, the power of potential seniors is measured between 0-4. This is because these are the ranks to which the Minimum Length of Service Rules apply.

Figure 10 shows the power of potential seniors across cohorts, while Figure 11 shows the time variation in the measure across a sample of four cohorts from the 1970s, 1980s, 1990s, and 2000s. The figure shows that the power of seniors does not just go up; it can come down as well. This can be the case when, for instance, seniors retire. Figure 12 shows the correlation between the power of actual and potential seniors for different cohort of juniors. The figure suggests that the measure is highly correlated.

3.3 Reduced form estimation

Using the power of potential seniors as an instrument for power of seniors, the reduced form estimation is as follows:

$$Fast - track_{ict} = \rho \overline{Power}_{ct}^{p} \times Tax_{i} + \beta \overline{Power}_{ct}^{p} \times Exam \ rank_{i} + \lambda \overline{Power}_{ct}^{p} + \omega Tax_{i} + \delta Exam \ rank_{i} + \tau_{c} + \tau_{t} + \psi X_{ict} + u_{ict}$$
(2)

where all the variables are the same as in Equation 3, except for the instrument: power of potential seniors ($\overline{Power}_{ct}^{p}$) which is the average rule-based rank of potential seniors in the first job. To interpret the results in a meaningful way I center $\overline{Power}_{ct}^{p}$ by subtracting the mean of the variable. As before, Tax_i is a dummy variables that takes a value of one if the junior is in the top 10% (top 50%) of their cohort in tax collection in their first job. $Exam rank_i$ is the junior's rank in the civil services recruitment exam and the higher the rank the lower the ability of the junior.

The estimation includes a cohort (τ_c) and month-year fixed effect (τ_t). X_{ict} includes controls such as the annual time trend of the first job, a dummy variable for female

bureaucrats, the total number of languages spoken by juniors, the annual experience and experience squared of the junior, the official rank of the junior, and a dummy variable for whether the job is in the field offices. The error term is clustered at the cohort level, as that is the level at which the juniors' first seniors (treatment) are allocated (Abadie et al., 2017).

 ρ and β are the coefficients of interest. ρ captures the effect of the power of the potential seniors for those juniors with higher private signals of ability than others in their cohort and β captures the effect for those with higher public signals of ability. If $\rho > 0$ and $\beta < 0$ then the seniors promote based on both their private and public information. Moreover, if $\rho \neq \beta$ then the effect of power of the senior is different based on the public and private information of the potential seniors. On the other hand if $\rho = \beta = 0$ then promotions are unrelated to ability.

Exclusion Restriction and other checks. The main assumption for the instrument to be valid is that the Exclusion Restriction holds i.e., the power of potential seniors does not directly affect a junior's fast-track promotion through, for example, their unobserved ability.

One example of a violation of the Exclusion Restriction can be if vacancies are created for specific star cohorts of juniors, who also enjoy better careers. This would suggest that power of potential seniors is directly correlated with promotions and does not affect careers through the power of actual seniors. This manipulation of vacancies can happen either through the manipulation of when training ends for these juniors or more directly. I find that neither is true in this setting. First, a central agency, rather than the juniors, selects the month and year when the juniors begin their first jobs. The start of the first job is based on the time that training ends and the time duration of training is fixed by central agency for the whole cohort as per rules. Second, I test whether the quantity of vacancies change around the date when training ended and the junior cohort's first job began. Table 4 shows that it is not the case. Third, I also test whether any systematic characteristics of the district determine vacancy and tenure of incumbents. Table 5 presents the results. Columns (1) and (3) presents the results with time fixed effects, while Columns (2) and (4) present the results with both time and district fixed effects. Results show that conditional on district and time fixed effects there are no systematic differences between districts with higher vacancies or districts with a longer tenure of incumbents.

Last, I present results from a balance table. Table 6 shows the average characteristics of juniors at baseline by above- and below-median power of potential seniors. The table shows that there are no systematic differences across power of seniors in almost all other baseline characteristics, except gender and languages spoken.²⁹ Most importantly, there are no systematic differences in tax collection performance across power of seniors, which

²⁹All specifications include these as controls.

suggests that potential seniors are not selected based on ability. In fact, those with high tax performance are less likely (though not statically significantly so) to have potential seniors with above-median power.

Another concern can be that the tax performance measure is confounding actual performance on the job with job characteristics (the assigned revenue circle) that may be correlated with being promoted faster. I test to see whether being a top tax collector is correlated with the characteristics of the first job. Table 2 shows these results. Cameron et al., 2008 bootstrap *p*-values clustered at the cohort level are in brackets. Results show that there is no correlation between the probability of being identified as a top tax collector in the first job and the size of the tax collection target or historical tax arrears in that job. The magnitude of the effect is zero with a *p*-value of almost 0.5. Being identified as a top tax collector is also uncorrelated with the probability of that job being in a large city.³⁰ To be more conservative, in all specifications I included a control for time trend of the first job.

4 Results: Do seniors promote based on signals of ability?

Table 7 presents the OLS and IV results, while Table 8 presents the reduced form and first stage results respectively, using \overline{Power}^p as an instrument for \overline{Power} . The Kleibergen-Paap F statistic from a first-stage regression of power of seniors on the power of potential seniors is 71 in the sample with data on tax collection, while it is 51 in the sample with data on both tax and exam performance. The definition of top tax collectors used in each case is specified at the top of each column. Standard errors clustered at the cohort level are in parenthesis while Cameron et al., 2008 clustered Wild bootstrap *p*-values are in square brackets.

Top tax performers only get fast-tracked when their seniors have above average power to affect careers in the organization. IV results in Column (7) show that those top 50% tax collecting juniors whose seniors are only of average power have a 5% higher probability of being fast-tracked than their low ability colleagues (15% of the mean of the outcome and not significant). However, with a one rank above average increase in the power of the seniors a similar high ability junior has a 13% higher probability of being fast-tracked than low ability juniors (a total effect of 18% or 54% of the mean of the outcome).

Ability measured through exam rank does not seem to play an important role in discretionary promotions by seniors. In Column (8) the coefficient on the interaction of power of seniors and tax increases in magnitude and becomes more precise when we include exam rank. The pattern of promotions is similar based on exam rank as well,

³⁰Large cities are defined as those that are designated as city-district by the government i.e. Faisalabad, Gujranwala, Lahore, Multan, Rawalpindi.

however, the effects are very small in magnitude and are insignificant (Wild clustered bootstrapped *p*-value is 0.332). It would take a junior a fall of 67 ranks in exam for promotions to be equal based on either measure of ability. An *F*-test (reported at the bottom of the table) testing the similarity of the differential effect of power across tax and exam has a *p*-value of zero.

Performance on tax collection carries important information about ability (Table 3) and it is an important variable in the decision of seniors. Given the vast literature on the organizational failings of the public sector bureaucracies in developing countries and rampant human resource misallocation based on connections and patronage, these results are surprising. There is nothing peculiar about PAS and just as other public sector bureaucracies there is no market competition for their public services and there is little or no use of explicit incentives.

4.1 Social ties with the seniors.

While the previous results showed that seniors promote on the basis of tax-based ability, an important question remains: does controlling for social ties dilute the effect of ability in the seniors' decisions? Next I present results controlling for social ties between the seniors and juniors.

Appendix Tables A1 and A2 replicate Tables 7 and 8 but include a control for social ties between the seniors and juniors. Following the literature I consider a shared hometown as a social tie (Fisman et al., 2018; Jia et al., 2015; Fisman et al., 2020). The variable is quantified as the number of seniors from the first job that were from the hometown of the juniors.³¹

Tables A1 and A2 show that the results remain substantively similar to the main results after including a control for social ties between the seniors and the junior. The magnitude of the effects remains almost unchanged. In a parallel set of results (not reported) I find that there is no differential effect of the power of the seniors depending on their social ties with the junior. Together these results suggest that these senior bureaucrats are responsive to signals of ability of the junior bureaucrats even after controlling for social ties between them. To further understand the results I explore the incentives of the seniors and whether these vary by the team for which promotion decisions are made.

4.2 Fast-track promotions across teams

In this subsection I consider the long-run career of junior bureaucrats and test whether they are fast-tracked in the teams of those seniors with whom they had worked in their first job

³¹The average number of seniors that share a hometown with juniors is one, with the maximum being 12. For reference, the number of seniors from the first job are 13 on average.

or in other teams. Teams of seniors are defined as those in which any of the seniors from the first job worked in any position and other teams are those comprising of bureaucrats none of which are from the first job of the junior. Simple averages from the data suggests that the juniors' fast-track promotions are responsive to their tax performance in either types of teams (Figure 13). Below I investigate this in more detail and test the effect of the power of the seniors on careers of juniors across teams.

OLS Estimation. The effect of power of the seniors on the long-term careers of the juniors across teams is estimated for junior *i*, in cohort *c* and month-year *t* as follows:

$$Fast - tracked in M_{ict} = \pi \overline{Power}_{ct} \times Tax_i + \alpha \overline{Power}_{ct} \times Exam rank_i + \theta \overline{Power}_{ct} + \tau Tax_i + \kappa Exam rank_i + \beta_c + \beta_t + \mu X_{ict} + u_{ict}$$
(3)

where $M = \{seniors' teams, other teams\}$. Fast – tracked in seniors' teams is a dummy variable that takes a value of one whenever the junior bureaucrat is fast-tracked in those seniors' teams with whom they have worked in their first job, while Fast – *tracked in other teams* is a dummy variable that takes a value of one whenever the junior bureaucrat is fast-tracked in teams other than those of their seniors from the first job. The reference category in both cases is if the junior was not fast-tracked in any team. \overline{Power}_{ct} is the mean official rank of seniors of a cohort c, in month-year t. Since seniors with a mean official rank of zero is very rare, to keep the results meaningful, this variable is centered by subtracting the mean of the variable for each person. Tax_i is a dummy variables that takes a value of one if the junior is in the top 50% of their cohort in tax collection in their first job. $Exam rank_i$ is the junior's rank in the civil services recruitment exam. The higher the rank the lower the ability of the junior. The estimation controls for a cohort fixed effect (β_c) and a month-year fixed effect (β_t). X_{ict} includes controls such as the annual time trend of the first job, a dummy variable for female bureaucrats, the total number of languages spoken by juniors, the annual experience and experience squared of the junior, the official rank of the junior, and a dummy variable for whether the job is in the field offices. The error term is clustered at the cohort level, as that is the level at which the juniors' first seniors (treatment) are allocated (Abadie et al., 2017).

Reduced Form Estimation. The reduced form effect of power of the seniors on the long-term careers of the juniors is estimated for junior i, in cohort c and month-year t as follows:

$$Fast - tracked in \ M \ teams_{ict} = \rho \ \overline{Power}_{ct}^{p} \times Tax_{i} + \beta \overline{Power}_{ct}^{p} \times Exam \ rank_{i} + \lambda \ \overline{Power}_{ct}^{p} + \eta Tax_{i} + \psi Exam \ rank_{i} + \mu_{c} + \mu_{t} + \zeta X_{ict} + v_{ict}$$
(4)

where all the variables are the same as in Equation 3 except *Power^p*, which is the the power of potential seniors that is an instrument for power of the actual seniors that juniors worked with in their first job. Standard errors are clustered at the cohort level.

Results. Table 9 presents the OLS and IV results for fast-track promotions of juniors across different teams. Columns (1)-(4) presents the results for promotions in teams that do not include the seniors from the first job and Columns (5)-(8) present the results for promotions in seniors' own teams. The reduced form and first stage results are reported in Table 10. Columns (1), (2), (5) and (6) report results from reduced form and first stage for fast-track promotions in other teams, whereas Columns (3), (4), (5) and (6) report the same for fast-track promotions in seniors' teams, respectively. Standard errors are in parenthesis and Cameron et al., 2008 clustered Wild bootstrap p-values are in square brackets.

Results show that discretionary promotions respond to ability in either teams, however, the strength of this result is heterogeneous suggesting that incentives of seniors vary by the team for which promotion decisions are made. IV results in Column (3) show that those top 50% tax collectors whose seniors have average power are 5% more likely to be fast-tracked in other teams than those below median (not significant). However, juniors with a similar ability but whose seniors experience a one rank above average increase in their power have a 13% higher probability of being fast-tracked in other teams than low ability juniors (54% of the mean of the outcome). Column (7) shows that this is not the case in seniors' teams. The effects are not significant and much smaller in magnitude than the effect in other teams. An *F*-test at the bottom of the table comparing these effects (π) across Columns (3) and (7) has a *p*-value of 0.13.

Column (4) includes both tax and the exam rank of the junior. In Column (4), conditional on exam rank, the effect of power for top 50% tax collectors is larger in magnitude and more precisely estimated. A one rank above average increase in the power of seniors leads to a 21% higher probability of being fast-tracked in other teams for the above median tax performing juniors as compared to below median performers (81% of the outcome mean). The effects in seniors' teams in Column (8) are slightly larger than in Column (7) but not significant. An *F*-test at the bottom of the table testing equality of the effects across Columns (4) and (8) has a *p*-value of 0.01.

Results show that the seniors' public information on the ability of the junior i.e., exam rank plays a much less important role in the career of the junior bureaucrats than the seniors' private information. The interaction effect of power with the exam rank of the junior are insignificant (Wild cluster bootstrapped *p*-value >0.1). Reduced form results in Table 10 Columns (1)-(4) present a similar picture. Overall, these results suggest that discretionary promotions are based on the private information of the senior on ability, however, this result is not the same across all teams.

While these results do not rule out other interpretations, they help shed light on the puzzle of ability-based promotions within a public sector bureaucracy like the PAS. Results are consistent with seniors caring about the reputation benefits of referring juniors to other teams and they do so more than the career incentives of setting up the best team for themselves.³²

I next present results controlling for social ties between the seniors and juniors. Appendix Tables A3 and A4 replicate Tables 9 and 10 but include a control for social ties between the seniors and juniors. The definition of a social tie remains the same as before and it is quantified as the number of seniors from the first job that were from the hometown of the juniors. Tables A3 and A4 show that the results remain substantively similar even after including social ties between the seniors and the junior.

4.3 Alternative interpretations

While the main interpretation of the results is that seniors exercise discretion using their private information on ability, there are various alternative explanations as well. This subsection considers several of these.

Experience of the senior or their mentoring of juniors rather than power. An alternative interpretation of the results is that \overline{Power} captures sophistication or just the experience of the senior and not their discretion. This implies that as the seniors become more experienced, they can differentiate and therefore, value high ability juniors. And this is reflected in the greater weight placed on their private information. A related argument can be that as these seniors rise they are able to mentor the more able juniors, making them perform better and earn promotions. While plausible, both explanations seem unlikely in this context. First, the IV exploits the Minimum Length of Service Rules that allow the senior's rank to rise every five, twelve, seventeen, and twenty-two years after entering the service. It appears unlikely that the senior only becomes capable of assessing talent at these distinct points in their career. The mentoring channel appears even less likely as there is a weaker effect in the seniors' team as compared with other teams. In all specifications I

³²This can be a function of how power is defined in the context. While discretion increases with an increase in rank in the organization, career incentives fall. As opposed to career incentives, reputation benefits do not dilute with career advancement. These can be reaped both within and outside the civil services even at later stages of the career.

include month-year fixed effects and experience of juniors to control for any time trends correlated with experience of the seniors.

Corruption incentives of the seniors. A related interpretation is that the results we observe stem from the incentives of the seniors for corruption rather than a value for the ability of the junior. This can be the case if the highest tax collectors are also the most corrupt and it is corruption that is valued rather than the junior's ability. While plausible, it seems unlikely that the seniors' incentives are for corruption alone. If that was the case it is unclear why these juniors are promoted in other teams rather than their own team.

Bias towards high ability juniors. The results in this paper would have been similar if in this bureaucracy favoritism worked unconventionally, i.e. seniors were biased towards high ability juniors. This could be for instance, due to the senior's social preferences towards such juniors or if high ability juniors were better advocates for themselves, especially with powerful seniors. While the results we observe would be due to other reasons, the policy implications we draw would be even stronger. In this case bureaucracies would be better off doing away with rules altogether and allowing complete discretion. Although I cannot completely rule out this channel, as discussed before this does not appear to be the case. First, a lack of a strong effect in the seniors' team suggests that favoritism towards the high ability was not the case. Second, a 'meritocratic favoritism' towards the high ability does not appear to be the norm in this context.

Conclusion

"Strong institutions...are essential to effective development. Well executed policies that are slightly misguided are much more effective than absolutely correct but poorly executed ones." (Larry Summers in Besley and Zagha (2005) p.7)

State institutions and the bureaucrats that execute policy are increasingly seen as a key determinant of economic development (Besley and Persson (2009); Besley and Persson (2010)). By studying the discretionary promotions of civil servants that design and implement policy for 110 million people and showing that these can be based on ability, this paper contributes to the rapidly expanding literature on organizational economics of the state. These results speak to the debates on rules versus discretion in such organizations.

This study opens up further questions surrounding efficiency of discretionary allocations. This is not straightforward to answer. First, it needs further investigation of the senior-junior pair working in a team. Is there positive assortative matching on traits? What happens to the performance of the team that loses a high-ability junior to a senior with more power?

Further work would also need to investigate whether junior workers who are promoted through the discretion of seniors perform better after being promoted. Various interpretations of the Peter Principle suggest that workers who are good at one job are not necessarily good at the job into which they are promoted (Lazear (2004) and Benson et al. (2019)). However, given the amount of time that seniors and juniors spend together, it is quite possible that seniors can observe the more permanent and job relevant component of junior workers' ability. Allowing seniors to exercise discretion in promotions could help organizations promote on the basis of seniors' information, potentially avoiding the pitfalls of the Peter Principle. These ideas require further investigation.

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Tables

Table 1: Representativeness of the PAS sample								
	(1)	(2)	(3)					
	Study Sample	Full PAS Sample	Difference					
	(1985-2013)	(1985-2013)	(1)-(2)					
Fast-track promotions	0.25	0.28	-0.03					
1	(0.23)	(0.24)	(0.03)					
Recruitment exam rank	8.25	9.14	-0.89					
	(5.24)	(5.80)	(0.70)					
Size of overall cohort	173.13	167.11	6.02					
	(46.22)	(44.69)	(5.38)					
Age (years)	30.13	30.01	0.11					
	(3.52)	(3.77)	(0.44)					
Gender (female $= 1$)	0.25	0.15	0.10**					
	(0.44)	(0.36)	(0.04)					
Home is in capital city	0.32	0.35	-0.03					
	(0.47)	(0.48)	(0.06)					
Home is in big city	0.46	0.49	-0.04					
	(0.50)	(0.50)	(0.06)					
Number of languages spoken	3.40	3.46	-0.05					
	(1.15)	(1.20)	(0.14)					
Religion (Islam = 1)	1.00	0.99	0.01					
_	(0.00)	(0.07)	(0.01)					
Observations	87	368	455					
Observations	87	368	455					

Table 1: Representativeness of the PAS sample

*p<0.1, **p<0.05, ***p<0.01. Standard errors in parentheses. F-stat of a joint significance test is 1.15 (*p*-value=0.3247)

Dependent variable:	Top 50% tax collecto				
	(1)	(2)	(3)	(4)	
Tax target in the first job (million PKR)	-0.005			-0.002	
	(0.006)			(0.007)	
	[0.499]			[0.675]	
Tax target arrears in the first job (million PKR)		-0.003		-0.005	
		(0.007)		(0.011)	
		[0.559]		[0.582]	
First job in a large city			-0.145	-0.182	
			(0.141)	(0.158)	
			[0.212]	[0.154]	
Controls	No	No	No	No	
Cohort fixed effects	Yes	Yes	Yes	Yes	
Obs	87	83	87	83	
Cohorts	30	29	30	29	

Table 2: Correlation between characteristics of the first job and the probability of being a top tax performer

* p<0.1, ** p<0.05, *** p<0.01. Cameron et al., 2008 wild bootstrap p-values, clustered at cohort level, in parenthesis.

Notes: The unit of observation is a civil servant. All specifications are restricted to the time in the first job. Top 50% tax collector is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in tax performance, in the first job. Tax target in the first job is measured in million PKR and is the target allocated to a tehsil for agricultural income tax collection. Tax target arrears in the first job is measured in million PKR and is the amount of agricultural income tax that has historically not been collected in a tehsil. First job in large city is a dummy that turns on 1 if the junior was allocated to work in a large city in their first job. Large cities are defined as those that are designated as city-district by the government i.e. Faisalabad, Gujranwala, Lahore, Multan, Rawalpindi. Cohort fixed effects are included in all specifications.

	Dependent variable:									
	Very good subjective	Attitude of staff	Timeliness of service	Very good subjective	Attitude of staff	Timeliness of service				
	performance	with	improved	performance	with	improved				
	evaluation	citizens	1	evaluation	citizens	1				
		improved			improved					
	OLS	OLS	OLS	OLS	OLS	OLS				
	(1)	(2)	(3)	(4)	(5)	(6)				
Tax Top 10%	0.10***	0.33***	0.22							
	(0.00)	(0.07)	(0.14)							
	[0.00]	[0.00]	[0.25]							
Exam Rank				-0.002*** (0.00)	(0.000)	-0.000 (0.00)				
				[0.00]	[0.81]	[0.44]				
Controls	No	No	No	No	No	No				
District FE	No	Yes	Yes	No	Yes	Yes				
Month-year FE	Yes	Yes	Yes	Yes	Yes	Yes				
Cohort FE	Yes	No	No	Yes	No	No				
Mean of outcome	0.92	0.64	0.64	0.80	0.64	0.64				
Person x month	911	103	103	6015	189	189				
Cohorts	8	4	4	25	5	5				

Table 3: Do the tax and exam based ability measures convey anything useful?

Clustered standard errors in parentheses.

Cameron et al., 2008 wild bootstrap p-values, clustered at cohort level, in brackets.

Notes: The unit of observation is a civil servant-month. Tax Top 10% is a dummy that turns on 1 whenever the junior is in the top 10% of their cohort in tax performance, in the first job. Exam Rank is a continuous variable for the civil servant's rank on the recruitment exam.

	0										
		Dependent variable: Vacancies									
	All di	stricts		Large districts							
	(1)	(2)	(3)	(4)							
Training end	-0.001	-0.000	-0.001	-0.000							
-	(0.001)	(0.001)	(0.002)	(0.002)							
Year FE	Yes	Yes	Yes	Yes							
Tehsil FE	No	Yes	No	Yes							
Observations	1173784	1173784	387492	387492							

Table 4: Correlation between end of training and vacancies

* p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at the tehsil level. *Notes:* The unit of observation is a tehsil-month. Training end (dummy) turns on 1 a month before the end of on-the-job training of newly recruited civil servants. It stays zero otherwise. Vacancy is a dummy that turns on 1 whenever the position is vacant in a tehsil. It remains zero otherwise. Large districts include Rawalpindi, Lahore, Multan, Gujranwala, Faisalabad, Sargodha, Bahawalpur and Sialkot.

lable 5: Correlation between district characteristics, vacancies and tenure							
	Dependent variable:						
	Vaca	ure					
	(% pe	er year)	(days pe	er year)			
	(1)	(2)	(3)	(4)			
Whathar districts has large city (dummy)	1 638	6.030	-188 110**	$\frac{(\pi)}{308320}$			
whether districts has large city (duffility)	(1.000)	(25,704)	(79.934)	(674.876)			
	(1.594)	(23.704)	(79.954)	(074.070)			
Real wage (PKR)	0.027	0.062	0.734	0.154			
Teal Mage (TTUR)	(0.034)	(0.046)	(0.770)	(0.994)			
	(0.001)	(0.010)	(0.770)	(0.771)			
Total population estimates (million)	-0.000	-0.000	-0.000	-0.000			
	(0.000)	(0.000)	(0.000)	(0.000)			
	()	()	()	()			
Literacy (%)	-0.039	-0.066	0.217	-0.503			
	(0.062)	(0.076)	(2.601)	(3.966)			
Rural employment (%)	-0.006	-0.066	-0.945	0.995			
	(0.054)	(0.081)	(2.290)	(2.372)			
	0.000						
Number of hospitals	0.080	-0.922	11.576	-28.166			
	(0.228)	(0.887)	(10.084)	(55.007)			
Number of Brunel Health Contours	0.044		0.75(1(220			
Number of Kural Health Centers	-0.044	(0.058)	(7.127)	10.330			
	(0.124)	(0.437)	(7.137)	(20.036)			
Number of new electricity connections	-0.031	-0.037	1 774*	-0.002			
Number of new electricity connections	(0.051)	(0.064)	(1.024)	(2.908)			
	(0.011)	(0.004)	(1.024)	(2.900)			
Number of primary schools	-0.001	0.002	0.092	-0.139			
	(0.001)	(0.006)	(0.077)	(0.296)			
	(0001)	(0.000)	(0.077)	(0.2) 0)			
Primary school enrolment	0.000	0.000	-0.000	-0.000			
5	(0.000)	(0.000)	(0.000)	(0.000)			
	()	x ,		× /			
Terrorist attack (dummy)	0.657	0.748	-2.959	-16.524			
	(1.530)	(2.166)	(37.311)	(46.020)			
Year FE	Yes	Yes	Yes	Yes			
District FE	No	Yes	No	Yes			
Observations	167	167	167	167			

Table 5: Correlation between district characteristics, vacancies and tenure	5

* p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at the district level. *Notes:* The unit of observation is a district-year from 2005-2009. AC vacancy is defined as a percentage of time in a year that AC position remained vacant in a given district. AC tenure is days spent at an AC job on average. Districts with large cities include Rawalpindi, Lahore, Multan, Gujranwala, Faisalabad, Sargodha, Bahawalpur and Sialkot. The provincial capital is Lahore. Data on all variables except terrorism is from the Pakistan Bureau of Statistics. Terrorist attacks data is from the Global Terrorism Data-set. Fiscal yr FE and district FE are included in column (2) and (4).

	\overline{Power}^p						
	Below median	Above median	Difference				
Fast-track promotions	0.00	0.00	0.00				
	(0.00)	(0.00)	(0.00)				
Recruitment exam rank	9.02	7.47	-1.56				
Tax parformance	(5.68)	(4.68)	(1.12)				
lax performance	(9.97)	9.79	(2.69)				
Size of overall cohort	166.61	179.79	13.18				
	(51.95)	(38.99)	(9.87)				
Age (years)	29.89	30.37	0.49				
	(4.35)	(2.43)	(0.76)				
Gender (female $= 1$)	0.07	0.44	0.37***				
I love a in in consider aiter	(0.25)	(0.50)	(0.09)				
Home is in capital city	(0.32)	(0.32)	(0.01)				
Home is in hig city	(0.47) 0.44	(0.47) 0.47	0.04				
fionte io ni org eity	(0.50)	(0.51)	(0.11)				
Number of languages spoken	3.64	3.16	-0.47*				
	(0.97)	(1.27)	(0.24)				
Religion (Islam $= 1$)	1.00	1.00	0.00				
	(0.00)	(0.00)	(0.00)				
Observations	44	43	87				

Table 6: Balance table: Average characteristics of juniors at baseline

*p<0.1, **p<0.05, ***p<0.01. Standard errors in parentheses.

Dependent variable:	Fast-track Promotion							
Definition of Tax =		Тор	10%			To	op 50%	
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\overline{Power}(\theta)$	-0.032	0.025	-0.015	0.110	-0.060	-0.046	-0.054	0.006
	(0.084)	(0.109)	(0.159)	(0.187)	(0.095)	(0.120)	(0.178)	(0.225)
	[0.706]	[0.790]	[0.948]	[0.633]	[0.555]	[0.731]	[0.794]	[0.984]
$\overline{Power} \times \text{Tax}(\pi)$	0.165**	0.164*	0.196**	0.193*	0.124**	0.187***	0.129**	0.203***
	(0.069)	(0.088)	(0.076)	(0.100)	(0.060)	(0.054)	(0.062)	(0.047)
	[0.076]	[0.284]	[0.072]	[0.273]	[0.091]	[0.000]	[0.074]	[0.000]
\overline{Power} × Exam rank (α)		-0.002		-0.002*		-0.003*		-0.003*
		(0.001)		(0.001)		(0.002)		(0.002)
		[0.218]		[0.161]		[0.256]		[0.332]
Tax	0.053	0.066	0.053	0.073	0.050	0.055	0.050	0.060
	(0.069)	(0.083)	(0.067)	(0.082)	(0.043)	(0.055)	(0.049)	(0.064)
	[0.475]	[0.477]	[0.468]	[0.421]	[0.285]	[0.380]	[0.322]	[0.409]
Exam rank		0.000		0.000		0.000		0.000
		(0.000)		(0.000)		(0.000)		(0.000)
		[0.312]		[0.725]		[0.173]		[0.580]
P val: $\pi = \alpha$		0.07		0.06		0.00		0.00
Mean of outcome	0.33	0.34	0.33	0.34	0.33	0.34	0.33	0.34
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort & month-yr fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Person x month	6316	5482	6316	5482	6316	5482	6316	5482
Cohorts	30	30	30	30	30	30	30	30

Table 7: Do seniors use public or private info in making promotion decisions?

Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (Power) is the monthly average official promotions of the first set of seniors. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position, time trend of the first job. All specifications exclude first job.

Dependent variable:	<u> </u>	Prom	Promotion power of seniors						
Dependent variable.	10	ast-llack		/11	$(\overline{P_{070}}r)$				
						(1)			
Definition of Tax =	Top	10%	Top	50%	Top	10%	Top	50%	
	Reduced	Reduced	Reduced	Reduced	First	First	First	First	
	form	form	form	form	stage	stage	stage	stage	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
$\overline{Power}^{p}(\lambda)$	-0.018	0.081	-0.051	0.006	0.693***	0.755***	0.685***	0.748***	
	(0.114)	(0.148)	(0.129)	(0.177)	(0.090)	(0.075)	(0.075)	(0.068)	
	[0.896]	[0.639]	[0.739]	[0.977]	[0.000]	[0.000]	[0.000]	[0.000]	
$\overline{Power}^p \times \text{Tax}(\rho)$	0.190***	0.209***	0.110**	0.174***	0.087	0.111	0.037	0.045	
	(0.047)	(0.061)	(0.052)	(0.035)	(0.053)	(0.067)	(0.032)	(0.029)	
	[0.000]	[0.001]	[0.082]	[0.000]	[0.159]	[0.255]	[0.292]	[0.111]	
$\overline{Power}^p \times \text{Exam rank } (\beta)$		-0.002*		-0.002*		-0.002		-0.002	
		(0.001)		(0.001)		(0.001)		(0.002)	
		[0.216]		[0.335]		[0.544]		[0.544]	
Tax	0.052	0.073	0.048	0.059	-0.032**	-0.040**	-0.032**	-0.042**	
	(0.068)	(0.082)	(0.047)	(0.062)	(0.014)	(0.016)	(0.015)	(0.017)	
	[0.475]	[0.432]	[0.339]	[0.398]	[0.025]	[0.017]	[0.119]	[0.095]	
Exam rank		0.000		0.000		0.000		0.000	
		(0.000)		(0.000)		(0.000)		(0.000)	
		[0.628]		[0.420]		[0.522]		[0.422]	
P val: $\rho = \beta$		0.00		0.00					
Mean of outcome	0.33	0.35	0.33	0.35					
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Cohort & month-yr fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Person x month	6387	5553	6387	5553	6316	5482	6316	5482	
Cohorts	30	30	30	30	30	30	30	30	

Table 8: Do seniors use public or private info in making promotion decisions?

Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of potential seniors (\overline{Power}^p) is the monthly average rule-based rank of the first set of potential seniors that junior PAS bureaucrats could have worked with in the first job. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Levels of Exam rank and Tax are included. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position, time trend of the first job. All specifications exclude first job.

	Reference category: Not fast-track promoted								
Dependent Variables:	Fast-	tracked i	n other	teams	Fast-tracked in seniors team				
	OLS (1)	OLS (2)	IV (3)	IV (4)	OLS (5)	OLS (6)	IV (7)	IV (8)	
$\overline{Power}(\theta)$	-0.115 (0.108) [0.364]	-0.104 (0.129) [0.511]	-0.056 (0.171) [0.810]	0.001 (0.217) [0.998]	-0.047 (0.032) [0.166]	-0.061 (0.041) [0.145]	-0.012 (0.074) [0.913]	-0.020 (0.090) [0.885]	
$\overline{Power} \times \text{Tax} (\pi)$	0.118* (0.065) [0.145]	0.182** (0.069) [0.055]	0.129** (0.061) [0.066]	0.211*** (0.053) [0.000]	0.030 (0.028) [0.288]	0.038 (0.032) [0.250]	0.039 (0.034) [0.339]	0.048 (0.036) [0.243]	
\overline{Power} × Exam rank (α)		-0.004** (0.002) [0.235]		-0.003* (0.002) [0.295]		-0.000 (0.001) [0.708]		0.000 (0.001) [0.827]	
Tax	0.044 (0.043) [0.338]	0.046 (0.054) [0.435]	0.048 (0.048) [0.331]	0.056 (0.062) [0.419]	0.023 (0.029) [0.529]	0.032 (0.038) [0.517]	0.029 (0.033) [0.501]	0.040 (0.043) [0.485]	
Exam rank		0.000* (0.000) [0.038]		0.000 (0.000) [0.354]		-0.000 (0.000) [0.927]		-0.000 (0.000) [0.643]	
P val: $\pi = \alpha$ P val: col (1) $\pi = $ col (5) π P val: col (2) $\pi = $ col (6) π	0.19	0.01		0.00		0.24		0.20	
P val: col (2) π = col (6) π P val: col (3) π = col (7) π P val: col (4) π = col (8) π P val: col (2) α = col (6) α		0.03	0.13	0.01					
P val: col $(4) \alpha = col (8) \alpha$ Observations	5914	5105	5914	0.02 5105	4592	3930	4592	3930	

Гаble 9: Di s	scretionary	fast-track	promotions	across teams
			•	

Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (Power) is the monthly average official promotions of the first set of seniors. Tax is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. All specifications exclude first job.

	Reference	category: N	Jot fast-trac							
Dependent Variables:	Fast-t	racked	Fast-t	racked	Promotion power of seniors					
	in othe	r teams	in senio	ors team		(\overline{Power})				
	Reduced form (1)	Reduced form (2)	Reduced form (3)	Reduced form (4)	First stage (5)	First stage (6)	First stage (7)	First stage (8)		
$\overline{Power}^p(\lambda)$	-0.060 (0.127) [0.745]	-0.004 (0.169) [0.986]	-0.014 (0.053) [0.874]	-0.006 (0.071) [0.960]	0.691*** (0.077) [0.000]	0.758*** (0.070) [0.000]	0.733*** (0.058) [0.000]	0.791*** (0.064) [0.000]		
$\overline{Power}^p \times \text{Tax} \left(\rho \right)$	0.107** (0.047) [0.043]	0.168*** (0.039) [0.000]	0.030 (0.025) [0.285]	0.033 (0.029) [0.296]	0.040 (0.034) [0.304]	0.046 (0.032) [0.191]	0.022 (0.040) [0.682]	0.029 (0.027) [0.298]		
$\overline{Power}^p \times \text{Exam rank } (\beta)$		-0.003* (0.001) [0.274]		-0.000 (0.000) [0.701]		-0.002 (0.002) [0.543]		-0.002 (0.002) [0.538]		
Tax	0.048 (0.047) [0.344]	0.058 (0.060) [0.388]	0.026 (0.031) [0.525]	0.037 (0.040) [0.502]	-0.031* (0.015) [0.136]	-0.039** (0.019) [0.174]	-0.040** (0.017) [0.108]	-0.039* (0.022) [0.183]		
Exam rank		0.000 (0.000) [0.224]		-0.000 (0.000) [0.594]		0.000 (0.000) [0.452]		0.000 (0.000) [0.459]		
P val: $\rho = \beta$ P val: col (1) ρ = col (3) ρ P val: col (2) ρ = col (4) ρ P val: col (2) β = col (4) β	0.11	0.00		0.26						
Observations	5939	5130	4617	3955	5914	5105	4592	3930		

Table 10: Discretionary fa	rack promotions across teams
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Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (\overline{Power}) is the monthly average official promotions of the first set of seniors. Tax is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. All specifications exclude first job.

Figures

		Distri	ct departments
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month = 0	month =	18 $month = 24$	4
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Recruitment	On-the-job	Junior's start of job	6
&	training	as head of revenue	7
academy		admin in tehsil (AC)	8
training		Rule: assign to 1. vacancy; or 2. where incumbent spent ≥1 yr	36

Figure 1: Timeline of the initial career of PAS newly recruited juniors



Figure 2: Flooded Board of Revenue's (BOR) record room and illegible files.



Figure 3: The Board of Revenue's (BOR) record room.



Figure 4: Variation in promotion power of seniors across cohorts. Red dotted line is the mean power of seniors. The rank of the bureaucrats varies from 0-5, zero being the lowest rank and five being the highest rank.



Figure 5: Actual vs. official rank: The blue line is the actual rank of a cohort while the red line is their official rank.



Figure 6: Actual vs. official rank: The blue line is the actual rank of a cohort while the red line is their official rank.



Figure 7: Variation in fast-track promotion of juniors across cohorts. Red dotted line is the mean of fast-track promotions.



Figure 8: The figure shows the average number of senior bureaucrats per junior bureaucrats.



Figure 9: The figure shows the theoretical rank of seniors according to the Minimum Length of Service Rules. Bureaucrats are expected to get one promotion each after five, thirteen, seventeen and twenty-two years of experience in the government.



Figure 10: Variation in promotion power of potential seniors across cohorts. The rank of the potential seniors varies from 0-4 (the ranks on which Minimum Length of Service Rules apply), zero being the lowest rank and four being the highest rank.



Figure 11: Time variation in promotion power of potential seniors



Figure 12: Cross sectional correlation between promotion power of potential and actual seniors



Figure 13: Fast-track promotions of various tax performing juniors across teams

Appendix

Dener dent verieble:				Feet Inc	ale Dream	ation			-
Dependent variable:				rast-tra	ск гтоп	lotion			_
Definition of Tax =		Тор	10%			To	op 50%		
	OLS (1)	OLS (2)	IV (3)	IV (4)	OLS (5)	OLS (6)	IV (7)	IV (8)	
$\overline{Power}(\theta)$	-0.032 (0.084) [0.703]	0.026 (0.110) [0.789]	-0.014 (0.159) [0.951]	0.111 (0.187) [0.632]	-0.059 (0.095) [0.555]	-0.042 (0.119) [0.755]	-0.053 (0.179) [0.793]	0.013 (0.225) [0.958]	
\overline{Power} × Tax (π)	0.165** (0.069) [0.077]	0.164* (0.088) [0.281]	0.196** (0.076) [0.072]	0.193* (0.099) [0.273]	0.124** (0.060) [0.091]	0.186*** (0.053) [0.000]	0.129** (0.062) [0.075]	0.202*** (0.046) [0.000]	
\overline{Power} × Exam rank (α)		-0.002* (0.001) [0.215]		-0.002* (0.001) [0.160]		-0.003* (0.002) [0.254]		-0.003* (0.002) [0.332]	
Tax	0.055 (0.071) [0.465]	0.065 (0.084) [0.481]	0.054 (0.069) [0.467]	0.071 (0.083) [0.440]	0.050 (0.043) [0.274]	0.057 (0.053) [0.316]	0.050 (0.049) [0.313]	0.062 (0.062) [0.355]	
Exam rank		0.000 (0.000) [0.323]		0.000 (0.000) [0.726]		0.000 (0.000) [0.193]		0.000 (0.000) [0.613]	
Social ties	0.002 (0.006) [0.744]	-0.002 (0.009) [0.824]	0.002 (0.006) [0.739]	-0.002 (0.008) [0.757]	-0.003 (0.008) [0.725]	-0.007 (0.010) [0.496]	-0.003 (0.007) [0.701]	-0.008 (0.010) [0.432]	
P val: $\pi = \alpha$ Mean of outcome Controls Cohort & month-yr fixed effect Person x month	0.33 Yes Yes 6316	0.07 0.34 Yes Yes 5482	0.33 Yes Yes 6316	0.06 0.34 Yes Yes 5482	0.33 Yes Yes 6316	0.00 0.34 Yes Yes 5482	0.33 Yes Yes 6316	0.00 0.34 Yes Yes 5482	
Conorts	30	30	30	30	30	30	30	30	

Table A1: Do seniors use public or private info in making promotion decisions? (controlling for social ties)

* p<0.1, ** p<0.05, *** p<0.01. Standard errors clustered at the cohort level in brakets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets. *Notes:* The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (Power) is the monthly average official promotions of the first set of seniors. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. Social ties is defined as the number of seniors with whom the junior shares a hometown. All specifications exclude first job.

Dependent variable:	F	ast-track	Promotio	n	Prom	otion po	wer of se	eniors
						$(\overline{Por}$	wer)	
Definition of Tax =	Тор	10%	Тор	50%	Тор	10%	Тор	50%
	Reduced form (1)	Reduced form (2)	Reduced form (3)	Reduced form (4)	First stage (5)	First stage (6)	First stage (7)	First stage (8)
$\overline{Power}^p(\lambda)$	-0.018 (0.113) [0.899]	0.081 (0.147) [0.645]	-0.051 (0.130) [0.739]	0.011 (0.177) [0.961]	0.694*** (0.090) [0.000]	0.754*** (0.076) [0.000]	0.685*** (0.075) [0.000]	0.745*** (0.069) [0.000]
$\overline{Power}^p \times \text{Tax}\left(\rho\right)$	0.190*** (0.047) [0.000]	0.209*** (0.060) [0.001]	0.110** (0.053) [0.084]	0.173*** (0.035) [0.000]	0.087 (0.053) [0.157]	0.112 (0.067) [0.255]	0.037 (0.032) [0.291]	0.045 (0.029) [0.110]
$\overline{Power}^p \times \text{Exam rank} (\beta)$		-0.002* (0.001) [0.215]		-0.002* (0.001) [0.333]		-0.002 (0.001) [0.544]		-0.002 (0.002) [0.543]
Tax	0.055 (0.069) [0.466]	0.072 (0.083) [0.432]	0.048 (0.047) [0.334]	0.060 (0.059) [0.354]	-0.029** (0.014) [0.033]	-0.037** (0.016) [0.015]	-0.032** (0.015) [0.108]	-0.043** (0.017) [0.091]
Exam rank		0.000 (0.000) [0.625]		0.000 (0.000) [0.440]		0.000 (0.000) [0.511]		0.000 (0.000) [0.398]
Social ties	0.003 (0.006) [0.595]	-0.001 (0.008) [0.923]	-0.003 (0.008) [0.722]	-0.007 (0.010) [0.486]	0.004 (0.002) [0.223]	0.004 (0.002) [0.180]	0.005** (0.002) [0.103]	0.005** (0.002) [0.013]
P val: $\rho = \beta$ Mean of outcome Controls Cohort & month-yr fixed effect Person x month Cohorts	0.33 Yes Yes 6387 30	0.00 0.35 Yes Yes 5553 30	0.33 Yes Yes 6387 30	0.00 0.35 Yes 5553 30	Yes Yes 6316 30	Yes Yes 5482 30	Yes Yes 6316 30	Yes Yes 5482 30

Table A2: Do seniors use public or private info in making promotion decisions?(controlling for social ties)

* p<0.1, ** p<0.05, *** p<0.01.

Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of potential seniors (\overline{Power}^p) is the monthly average rule-based rank of the first set of potential seniors that junior PAS bureaucrats could have worked with in the first job. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Levels of Exam rank and Tax are included. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. Social ties is defined as the number of seniors with whom the junior shares a hometown. All specifications exclude first job.

		R	eference c	ategory: N	Not fast-tr	ack prom	oted	
Dependent Variables:	Fast-	tracked i	n other	teams	Fast	-tracked	in senio	rs team
	OLS (1)	OLS (2)	IV (3)	IV (4)	OLS (5)	OLS (6)	IV (7)	IV (8)
$\overline{Power}(\theta)$	-0.113 (0.108) [0.368]	-0.097 (0.128) [0.527]	-0.055 (0.173) [0.822]	0.014 (0.220) [0.953]	-0.051 (0.036) [0.179]	-0.068 (0.051) [0.214]	-0.014 (0.074) [0.905]	-0.027 (0.091) [0.835]
$\overline{Power} \times \text{Tax}(\pi)$	0.118* (0.065) [0.145]	0.179** (0.067) [0.053]	0.128** (0.061) [0.067]	0.209*** (0.052) [0.000]	0.032 (0.029) [0.287]	0.039 (0.032) [0.242]	0.041 (0.035) [0.340]	0.048 (0.036) [0.229]
\overline{Power} × Exam rank (α)		-0.004** (0.002) [0.227]		-0.003* (0.002) [0.299]		-0.000 (0.001) [0.767]		0.000 (0.001) [0.817]
Tax	0.045 (0.043) [0.341]	0.049 (0.051) [0.368]	0.049 (0.048) [0.328]	0.060 (0.059) [0.348]	0.023 (0.030) [0.543]	0.031 (0.038) [0.516]	0.030 (0.034) [0.507]	0.039 (0.043) [0.483]
Exam rank		0.000* (0.000) [0.039]		0.000 (0.000) [0.402]		0.000 (0.000) [0.999]		-0.000 (0.000) [0.710]
Social ties	-0.007 (0.009) [0.473]	-0.014 (0.011) [0.230]	-0.007 (0.009) [0.457]	-0.015 (0.012) [0.241]	0.008 (0.010) [0.606]	0.008 (0.012) [0.582]	0.007 (0.010) [0.617]	0.007 (0.012) [0.618]
P val: $\pi = \alpha$ P val: col (1) $\pi = col (5) \pi$ P val: col (2) $\pi = col (6) \pi$ P val: col (3) $\pi = col (7) \pi$ P val: col (4) $\pi = col (8) \pi$	0.20	0.01	0.14	0.00		0.23		0.19
P val: col (2) $\alpha = col (6) \alpha$ P val: col (4) $\alpha = col (8) \alpha$ Observations	5914	0.01 5105	5914	0.02 5105	4592	3930	4592	3930

Table A3: Discretionary fast-track promotions across teams (controlling for social ties)

Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (\overline{Power}) is the monthly average official promotions of the first set of seniors. Tax is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. All specifications exclude first job.

	Reference	category: 1	Not fast-trac	ck promoted				
Dependent Variables:	Fast-ti	racked	Fast-t	racked	Proi	notion p	ower of s	eniors
	in othe	r teams	in seni	ors team		$(\overline{P} a)$	ower)	
	Reduced form (1)	Reduced form (2)	Reduced form (3)	Reduced form (4)	First stage (5)	First stage (6)	First stage (7)	First stage (8)
$\overline{Power}^p(\lambda)$	-0.059 (0.128) [0.757]	0.006 (0.171) [0.975]	-0.015 (0.053) [0.855]	-0.011 (0.071) [0.919]	0.691*** (0.077) [0.000]	0.756*** (0.071) [0.000]	0.731*** (0.058) [0.000]	0.784*** (0.064) [0.000]
$\overline{Power}^p \times \text{Tax} \left(\rho \right)$	0.106** (0.047) [0.043]	0.167*** (0.038) [0.000]	0.031 (0.026) [0.282]	0.034 (0.029) [0.293]	0.040 (0.034) [0.301]	0.046 (0.032) [0.189]	0.023 (0.040) [0.655]	0.030 (0.027) [0.276]
$\overline{Power}^p \times \text{Exam rank} (\beta)$		-0.003* (0.001) [0.277]		-0.000 (0.000) [0.768]		-0.002 (0.002) [0.543]		-0.002 (0.002) [0.539]
Tax	0.048 (0.047) [0.348]	0.062 (0.057) [0.325]	0.026 (0.032) [0.539]	0.036 (0.041) [0.502]	-0.031* (0.016) [0.139]	-0.040* (0.020) [0.179]	-0.040** (0.017) [0.087]	-0.041* (0.021) [0.149]
Exam rank		0.000 (0.000) [0.261]		-0.000 (0.000) [0.645]		0.000 (0.000) [0.445]		0.000 (0.000) [0.413]
Social ties	-0.007 (0.009) [0.453]	-0.014 (0.011) [0.205]	0.007 (0.010) [0.603]	0.007 (0.011) [0.589]	0.003 (0.003) [0.462]	0.002 (0.003) [0.436]	0.009*** (0.003) [0.000]	0.010*** (0.002) [0.000]
P val: $\rho = \beta$ P val: col (1) ρ = col (3) ρ P val: col (2) ρ = col (4) ρ P val: col (2) β = col (4) β	0.12	0.00		0.25				
Observations	5939	5130	4617	3955	5914	5105	4592	3930

Table A4: Discretionary fast-track promotions across teams (controlling for social ties)

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (*Power*) is the monthly average official promotions of the first set of seniors. Tax is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in tax performance, in the first job. Exam rank is a continuous variable representing the rank of a civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. All specifications exclude first job.

Table A5: What are the determinants	of tax ta	rgets?
	Tax T (millio	arget n PKR)
	OLS	OLS
	(1)	(2)
Past tax collection (%)	0.08 (0.11)	0.57 (0.62)
Election year (dummy)	-5.12 (6.47)	-1.50 (7.44)
Real wage (PKR)	-0.01 (0.08)	-0.02 (0.10)
Total population estimates (million)	-0.98 (1.04)	-7.13 (10.58)
Rural employment (%)	0.47*** (0.16)	0.54** (0.25)
Agriculture production (million tonnes)	0.56*** (0.07)	1.41 (2.29)
Irrigated area (hectares)	0.02** (0.01)	0.10 (0.08)
controls	No	No
district FE	No	Yes
fiscal year FE	Yes	Yes
mean of outcome	8.01	8.01
district x year	83	83
aistricts	30	30

* p<0.1, ** p<0.05, *** p<0.01 Clustered standard errors in parentheses.

Notes: The unit of observation is a district-fiscal year. Tax target is the annual target (in Pak rupees) for juniors. Past tax collection is last fiscal year's average tax collected as a percentage of last fiscal year's target in a district. Election year is a dummy that turns on one in election years. Except for past tax collection, the rest of the independent variables are from data digitized for various years from the Pakistan Bureau of Statistics.

5 Appendix - For Online Publication

Appendix A: Data Sources

FPSC internal documents on exam rank

For this study, exam rank data has been digitized for the first time from the internal records of the Federal Public Service Commission (FPSC). The data has information on the year of the recruitment exam, the overall merit position across different "occupational groups," that take the recruitment exam together in any year, merit position within the PAS cohort, roll number, and name (see Appendix Figure C2 for a snapshot of how these ranks are released in the press).³³

Historical records of BOR on tax collection

I conducted archival research in the Board of Revenue's record room to dig out data on tax collection by bureaucrats and their teams in various tehsils of Punjab. I acquired and digitized this data for the first time for this study. The tax considered is the Agricultural Income Tax (AIT)/ Land Revenue levied on rural areas and collected at each village and revenue circle level by a team of revenue officers, i.e. *patwari*, *naib-tehsildar* and *tehsildar*, headed by juniors.

Data is available on the month, year, revenue circle, tehsil, district, name of revenue official responsible, their designation, annual tax collection target, remission, suspension, irrecoverable, net target, cumulative recovery of taxes, tax collection during the month, total tax collection in the month, balance, and percentage of tax collection against net target. Collection details are available for both the ongoing fiscal year, as well as arrears from past years. Since there is little or no incentive to collect taxes against arrears I do not use this data in the main analysis since this will not be reflective of the junior's performance. Moreover, the annual tax collection target, rather than the net target, is a function of objective measures like number of farms and irrigated areas. I therefore, keep this as the relevant measure against which I measure the performance of juniors. The original tax data is at the revenue circle level. The data is an unbalanced, monthly panel of revenue circles from 1983 to 2013.

Career records

In this paper, outcomes are only studied for the junior PAS bureaucrats; however, other civil service groups are also included when classifying the seniors of these junior bureaucrats.

³³One recruitment exam is used to select bureaucrats in twelve groups of government bureaucracies together. These are called occupational groups, of which PAS is one.

These other civil service groups include the Provincial Civil Services (PCS), the Provincial Secretariat Services (PSS), the Provincial Management Services (PMS), and the Ministerial Services. To observe their careers, in addition to those of the juniors, their career records were also digitized (see Appendix Figure C1 for a copy of the career chart). The source of the career records is the Services and General Administration Department (S&GAD). Career records include information on the name, date of birth, religion, bureaucracy group, home district, qualifications, training, visits abroad, date and rank of official promotion, and the entire service record, including date and designation of job held, department or team, district, and subjective evaluation by immediate superiors for each official.

Incumbency boards

To observe the vacancy positions and tenure of all the heads of revenue administration in tehsils across Punjab I digitized data from incumbency boards. Each incumbency board in a tehsil has the name of the bureaucrat and the dates when he or she held the job. From here, a daily panel of vacancy and tenure of positions across Punjab was created. This data was combined with the career charts data on the date that training ended for juniors to define the set of potential seniors. Through phone requests to all the heads of tehsil revenue administration, I was able to get images of almost all of the incumbency boards of these offices across Punjab. Using these images, the data was manually entered and digitized for the first time. Appendix Figure C5 shows an example of an incumbency board. Incumbency boards are a tradition from colonial times. They are a status symbol for the civil servant, and every new civil servant takes pride in ensuring their name is up on the board with the dates of their tenure. Therefore, the data is reliable.

Appendix B: Tax performance rank and junior's multiple tasks

While on paper junior's official duties pertain to revenue administration, from time to time they are assigned extra work by the government. The tasks are determined at the highest tiers of political administration and allocated across the province to all juniors in one go with no differentiation by ability or power of the seniors. Like their tax collection performance, the skills required to perform well in almost all of these other tasks is also team management of the revenue officials and clerks that work for juniors. For instance, in the spring of every year in addition to tax collection, juniors play an important role in helping the government procure wheat from farmers. Apart from that, they are tasked with stabilizing the prices of essential commodities from time to time, or put in charge of a seasonal anti-hoarding drive, the setting up of cheap "ramzan" bazaars, or coordinating with the police. There is seasonal variation in how tasks are allocated and the use of time fixed effects in all specifications can help absorb part of this variation. Reassuringly, results

in Table 3 suggest that tax related ability is positively correlated with other dimensions of performance.

Appendix C: Data

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Figure C1: Career record of bureaucrats from Services and General Administration Department (S & GAD)

FEDERAL PUBLIC SERVICE COMMISSION

Aga Khan Road, F-5/1

Islamabad the 10th May, 2017.

PRESS NOTE

 Subject: FINAL RESULT OF COMPETITIVE EXAMINATION (CSS), 2016 FOR

 RECRUITMENT TO POSTS IN BS-17 UNDER FEDERAL GOVERNMENT.

 $\underline{\text{No.F.}2/4/2017-\text{CE}}.$ The roll numbers and names of 199 candidates who have finally qualified the CSS Competitive Examination 2016, are given below in order of merit. Out of them 193 have been recommended by the FPSC for appointment to posts in BS-17 under the Federal Government in the Groups/Services mentioned against each:-

Merit No.	Roll No.	Name	Domicile	Group/Service allocated
1	19052	MALEEHA IESAR	PUNJAB	PAS
2	12639	QURAT UL AIN ZAFAR	PUNJAB	PAS
3	2329	MARIYA JAVAID	PUNJAB	PAS
4	1560	MUHAMMAD EJAZ SARWAR	PUNJAB	PAS
5	14428	ZOHA SHAKIR	PUNJAB	PAS
6	13321	SAYEDA TEHNIYAT BUKHARI	PUNJAB	PAS
7	10316	HAMOOD UR REHMAN	PUNJAB	PAS
8	13932	ΤΑΥΥΑΒ ΗΑΥΑΤ	PUNJAB	PAS
9	15699	AHMED SHAH	K.P.K.	PSP
10	14782	AMEER TAIMOOR	PUNJAB	PAS
11	11051	MARHABA NEMAT	PUNJAB	PAS
12	2521	SAMMAN ABBAS	PUNJAB	PAS
13	11014	MALIK MUHAMMAD DAN'SH FFE I COO	PLINIAB	FSP
14	12632	QUDSIA NAZ	PUNJAB	PAS
15	13416	SHAHMEER KHALID	PUNJAB	PSP
16	6409	UBAID UR RAHMAN DOGAR	PUNJAB	PAS
17	14055	UMMAR AWAIS	PUNJAB	PAS
18	4235	DANYAL HASNAIN	PUNJAB	FSP
19	1625	MUHAMMAD SHAHAB ASLAM	PUNJAB	PAS
20	12288	MUHAMMED ARSLAN SALEEM	PUNJAB	PAS
21	3962	ANISHA HISHAM	SINDH URBAN	PAS
22	8815	ABIDA FAREED	PUNJAB	PAS
23	5189	MUHAMMAD HASSAAN AHSAN	PUNJAB	PAS
24	3704	ABDUL QADEER	PUNJAB	PAS
25	3251	NAWAB SAMEER HUSSAIN LAGHARI	SINDH URBAN	PAS
26	12766	RANA HUSSAIN TAHIR	PUNJAB	PSP
27	12738	RAMEESHA JAVAID	PUNJAB	PAS
28	5770	SAAD ARSHAD	PUNJAB	PSP
29	11957	MUHAMMAD SAAD BUTT	PUNJAB	FSP
30	6613	ZEB UN NISA NASIR	PUNJAB	PAS
31	9390	AQEELA NIAZ NAQVI	PUNJAB	PSP
32	4193	BEENISH FATIMA	PUNJAB	PSP
33	9724	BILAL AHMAD	PUNJAB	PSP
34	2693	ABDUL SAMAD NIZAMANI	SINDH RURAL	PAS
35	5005	MOMIN AZIZ QURESHI	PUNJAB	FSP
36	11400	MUHAMMAD AHMAD ZAHEER	PUNJAB	PCS
37	4495	HASAN ABBAS	PUNJAB	FSP
38	656	MUHAMMAD ALI ASIF	PUNJAB	PCS

Page 1 of 5

Figure C2: Recruitment exam ranking of PAS bureaucrats published in newspapers

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Figure C3: The BOR tax collection pro forma

Head of Account No	Demond	SFOR IE	IE MONTH	I OF Decem	ber. 2007		·Dist	rict D.G.I
011630001173 A.I.T. (Previous)	Demand	Remission	Suspension	Net Demand	Previous Recovery	Recovery during month	Total recovery	Balance
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Figure C4: The BOR tax collection pro forma verified by District Accounts Officer



Figure C5: An example of an incumbency board: Assistant Commissioner Multan.

Appendix D: Exam rank as a dummy

Dependent variable:				Fast-tra	ck Pron	notion		
Definition of Tax, Exam =		Тор	10%			Γ	Top 50%	
	OLS (1)	OLS (2)	IV (3)	IV (4)	OLS (5)	OLS (6)	IV (7)	IV (8)
$\overline{Power}(\theta)$	-0.032 (0.084) [0.706]	0.017 (0.122) [0.914]	-0.015 (0.159) [0.948]	0.035 (0.212) [0.885]	-0.060 (0.095) [0.555]	-0.054 (0.112) [0.656]	-0.054 (0.178) [0.794]	-0.090 (0.212) [0.737]
\overline{Power} × Tax (π)	0.165** (0.069) [0.076]	0.154* (0.079) [0.155]	0.196** (0.076) [0.072]	0.200** (0.096) [0.174]	0.124** (0.060) [0.091]	0.155** (0.070) [0.077]	0.129** (0.062) [0.074]	0.177*** (0.055) [0.000]
\overline{Power} × Exam rank (α)		-0.073 (0.084) [0.459]		-0.046 (0.114) [0.705]		-0.062 (0.071) [0.465]		-0.021 (0.096) [0.856]
Tax	0.053 (0.069) [0.475]	0.076 (0.076) [0.379]	0.053 (0.067) [0.468]	0.076 (0.077) [0.375]	0.050 (0.043) [0.285]	0.062 (0.063) [0.387]	0.050 (0.049) [0.322]	$\begin{array}{c} 0.061 \\ (0.068) \\ [0.441] \end{array}$
Exam rank		-0.074 (0.075) [0.388]		-0.072 (0.076) [0.408]		-0.074 (0.074) [0.397]		-0.076 (0.076) [0.419]
P val: $\pi = \alpha$	0.00	0.01	0.00	0.02	0.00	0.06	0.00	0.11
Niean of outcome	0.33 Vos	0.34 Vos	0.33 Ves	0.34 Vos	0.33 Ves	0.34 Vos	0.33 Ves	0.34 Ves
Cohort & month-vr fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Person x month	6316	5482	6316	5482	6316	5482	6316	5482
Cohorts	30	30	30	30	30	30	30	30

Table D1: **Do seniors use public or private info in making promotion decisions?**

* p<0.1, ** p<0.05, *** p<0.01.

Standard errors clustered at the cohort level in brakets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of seniors (Power) is the monthly average official promotions of the first set of seniors. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in civil servant on the recruitment exam. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. Social ties is defined as the number of seniors with whom the junior shares a hometown. All specifications exclude first job.

Dependent variable:	<u>-</u>	Fast-track Promotion				Promotion power of seniors			
Dependent fullables	-	rast-track r tontotion				(Power)			
Definition of Tax, Exam =	Тор	10%	Top 50%		Top 10%		Top 50%		
	Reduced form (1)	Reduced form (2)	Reduced form (3)	Reduced form (4)	First stage (5)	First stage (6)	First stage (7)	First stage (8)	
$\overline{Power}^{p}(\lambda)$	-0.018 (0.114) [0.896]	0.013 (0.153) [0.945]	-0.051 (0.129) [0.739]	-0.097 (0.144) [0.572]	0.693*** (0.090) [0.000]	0.683*** (0.134) [0.000]	0.685*** (0.075) [0.000]	0.680*** (0.125) [0.000]	
$\overline{Power}^p \times \text{Tax} \left(\rho \right)$	0.190*** (0.047) [0.000]	0.219*** (0.062) [0.000]	0.110** (0.052) [0.082]	0.159*** (0.043) [0.000]	0.087 (0.053) [0.159]	0.130* (0.075) [0.278]	0.037 (0.032) [0.292]	0.027 (0.037) [0.521]	
$\overline{Power}^p \times \text{Exam rank } (\beta)$		-0.012 (0.078) [0.879]		0.026 (0.075) [0.731]		0.011 (0.067) [0.865]		0.019 (0.064) [0.856]	
Tax	0.052 (0.068) [0.475]	0.076 (0.076) [0.369]	0.048 (0.047) [0.339]	0.059 (0.068) [0.450]	-0.032** (0.014) [0.025]	-0.041** (0.017) [0.015]	-0.032** (0.015) [0.119]	-0.037** (0.018) [0.164]	
Exam rank		-0.070 (0.074) [0.425]		-0.073 (0.076) [0.435]		0.011 (0.018) [0.564]		0.002 (0.017) [0.945]	
P val: $\rho = \beta$	0.00	0.01	0.00	0.15					
Iviean of outcome	0.33 Yes	0.35 Yes	0.33 Yes	0.35 Yes	Yes	Yes	Yes	Yes	
Cohort & month-vr fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Person x month Cohorts	6387 30	5553 30	6387 30	5553 30	6316 30	5482 30	6316 30	$5482\\30$	

Table D2: Do seniors use	public or	private	info in m	naking prom	otion d	lecisions?

* p<0.1, ** p<0.05, *** p<0.01. Standard errors clustered at the cohort level in brackets. Cameron et al., 2008 wild bootstrap p-values clustered at the cohort level in square brackets.

Notes: The unit of observation is a civil servant-month. Fast-track promotions is defined as a dummy that turns on one whenever the actual rank of the junior bureaucrat is higher than his or her official rank. Promotion power of potential seniors (*Power*^{*p*}) is the monthly average rule-based rank of the first set of potential seniors that junior PAS bureaucrats could have worked with in the first job. The definition of Tax used in each case is described above the columns and is a dummy that turns on 1 whenever the junior is in the top 10% or 50% of their cohort in tax performance, in the first job. Exam rank is a dummy that turns on 1 whenever the junior is in the top 50% of their cohort in civil servant on the recruitment exam. Levels of Exam rank and Tax are included. Controls include cohort & month-year FE, female dummy, total number of languages spoken, experience, experience squared, official rank of the junior, a dummy for field position and a time trend of the first job. Social ties is defined as the number of seniors with whom the junior shares a hometown. All specifications exclude first job.