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Thick Red Tape and the Thin Blue Line:

A Field Study on Reducing Administrative Burden in Police Recruitment

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Abstract

Police departments are struggling to recruit officers and voluntary drop-off of candidates exacerbates the challenge. Using four years of administrative data and a field experiment in the LAPD, we analyze the impact of administrative burden on the likelihood that a candidate will remain in the recruitment process. We find that reducing friction costs to participation and simplifying processes improves compliance, as behavioral science would predict. Applicants who were offered simpler, standardized processes completed more tests and were more likely to be hired. Later reductions to perceived burden led to an 8% increase in compliance at one stage, with a 60% increase in compliance within two weeks. However, removing steps that would have allowed for better understanding of eligibility kept unqualified candidates in the process for longer, thereby reducing organizational efficiency. These results extend the field's understanding of how administrative burden can impact the selection of talent into government.

Evidence for Practice

- Simplifying recruitment processes reduces voluntary drop-offs in police recruitment.
- Removing stages in the process that would have allowed for better self-evaluation increases learning costs, shifting unqualified candidates to later stages in the selection process.
- Participating in expedited testing, in which applicants can complete more than one assessment per day, leads to higher persistence through the recruitment process and is correlated with higher applicant quality.

I. Introduction

Recruiting and retaining law enforcement officers is one of the most prominent challenges facing public safety divisions across the nation (Wilson, Scheer, and Grammich, 2010). Part of the challenge stems from the retirement of baby boomers (McKay 2017), the growth of the economy (Wilson et al. 2010), and agency budget cuts (Police Executive Research Forum 2013). Law enforcement agencies are responding with an equally varied set of tools, ranging from signing bonuses to social media marketing to tuition benefits. These types of responses assume that the decision to apply for a job is a binary one—to apply or not apply—and therefore ignore the very real difficulty of getting a job in law enforcement, once an individual has started the process. The academic literature often makes similar assumptions. While scholars have written extensively about what motivates someone to join the public sector (see for example Houston, 2000; Moynihan and Pandey 2007; Perry and Hondeghem, 2008; Perry and Wise, 1990), the implied model of decision-making is one where a candidate chooses to apply and then is only removed from the process by the recruiting team. In practice, we know that drop-off during recruitment and selection is very common, and much of it is voluntary. Yet, we know very little about what would motivate someone who has already shown interest in a job to drop out of the process.

When asked directly, candidates who voluntarily drop out have cited the lack of clarity in the application process, absence of support from personnel, and length of the application process as the most prominent factors in their decision-making (Swarns, 2015). These three factors fit squarely in recent conceptualizations of administrative burden: specifically, the learning costs, psychological costs, and compliance costs that shape an individual's experience when they interact with government (Moynihan et al., 2015). And while the majority of research on administrative

burden focuses on resident interactions with the state, we argue that the same types of costs shape the candidate experience in recruitment. Specifically, while the majority of the administrative burden literature focuses on resident-state interactions, the friction costs outlined in the recent administrative burden literature can also shape how residents interact with the state when they are trying to become public servants. This study then finds itself at the intersection of red tape literature on administrative delays in government (e.g., Pandey and Scott, 2002; Pandey and Bretschneider, 1997), and the nascent administrative literature on how burdens impact behavior.

We analyze both historical changes to administrative burden as well as experimentally inducing changes in perceived burden in one of the largest police forces in the world, the Los Angeles Police Department (LAPD). We find that reducing administrative hurdles can have significant impact on drop-off rates, even in an environment as high-stakes as hiring. Form standardization early in the process resulted in applicants completing nearly one more step in the recruitment process. Expedited testing is associated with remaining for an additional two steps in the process. A randomized controlled trial reveals that simple, behaviorally-informed nudges to complete a key stage in the process increases overall compliance by 8%, with a 60% increase in compliance within two weeks. However, we also find that removing steps in the process that allow for individuals to evaluate their own eligibility inadvertently increases learning costs, thereby worsening the applicant pool. Individuals who did not have to complete a self-assessment at the beginning of the process completed 0.24 fewer tests overall, with significantly lower likelihood of passing future stages and being hired.

The rest of the paper continues as follows. First, we present a conceptual framework for understanding the relationship between administrative burden and recruitment and selection processes in the public sector. We then present the findings from two separate studies. Study 1 analyzes historical administrative data on changes in the selection process in LAPD. Study 2 presents findings from a randomized controlled trial conducted in collaboration with the City of Los Angeles' Personnel Department to reduce perceived administrative burden. The discussion brings together the findings from both and considers limitations and future directions for this type of research.

II. Conceptual Framework and Literature Review: Understanding the Relationship Between Administrative Burden and Recruitment Processes

Administrative burden and its sister concept, red tape, have been shown to influence government performance at various levels and in multiple domains. Administrative delays and red tape have been associated with lower procedural satisfaction (Kaufmann and Tummers, 2016); may cause reduction in benefits provided to clients (Scott and Pandey, 2000); and may be particularly harmful for equity goals (Brewer and Walker, 2009). Similarly, administrative burdens have been shown to limit program take-up among eligible claimants (Gonzalez-Barrera et al., 2013; Herd et al., 2013; Moynihan et al., 2015); impact perceptions of policy merits (Burden et al., 2012); and influence equity of service delivery (Brewer and Walker, 2010). Moynihan et al. (2015) present a convincing framework for understanding how this happens. According to this framework, administrative hurdles can impose three types of costs: (a) learning costs, which make it difficult for individuals to learn about programs, their own eligibility for such programs, and how to access

them; (b) compliance costs, which make it difficult for individuals to do all the required tasks needed to comply with a government process; and (c) psychological costs, where program processes induce stress, and the framing of a government program impacts perceptions of who “belongs” or who “deserves” a service. While most of the public administration research focuses on describing the nature and extent of administrative burden and its relationship with perceptions of performance, the implied argument is that reductions in administrative burden would improve service delivery.

In a parallel stream of research, behavioral scientists have found evidence that reductions in administrative burdens – through simplification of forms, for example, or simpler language – do, in fact, cause statistically significant changes in compliance with public sector processes (Behavioural Insights Team, 2015; Madrian and Shea, 2001). Bhargava and Manoli (2015), for example, show that simplifying the process for applying for the Earned Income Tax Credit improves take-up significantly. Bettinger and co-authors (2012) show that simplifying the process of filling out FAFSA forms can significantly impact who goes to college by increasing the number of students who fill out the form. Reducing hurdles or friction costs – it seems – has become a central tenet of behavioral science, or as Nobel Laureate Richard Thaler argues, “if you want someone to do something, make it easy” (2015).

Yet, not all administrative burdens are created equal. If we consider administrative hurdles as a series of learning, compliance, and psychological costs as outlined by a Moynihan et al. (2015) framework, a nuanced public manager could theoretically design hurdles in such a way that

reduces costs for those who should be complying with a process, while increasing costs for those who should not be participating in said process. It is noteworthy that these types of costs would not fit Bozeman's (2000) definition of "red tape," which focuses on burdens that "make no contribution to achieving the rule's functional object" but *would* fit Moynihan et al.'s (2015) definition of "burden." Indeed, there is both a theoretical argument and some empirical evidence that administrative hurdles could improve targeting of service delivery by dissuading the "wrong" types of beneficiaries from entering the pool of potential beneficiaries. For example, adding in program requirements that are differentially costly for the rich may dissuade them from trying to access programs that are meant to target the poor (e.g., Besley and Coate, 1992; Nichols and Zeckhauser, 1982). Research from a large field experiment in Indonesia shows that steps in the process that allow for self-targeting may improve the efficiency of a conditional cash transfer program by dissuading richer potential beneficiaries from applying. Yet, in a field experiment, Alatas et al. (2012) find that marginally increasing the size of the burden (the distance to the application site) reduces the number of applicants but does not improve targeting: both poor and rich people are equally dissuaded from applying. As such, it is not necessarily the administrative hurdle itself, but the nature of the cost it imposes that determines the impact of administrative hurdles on individual beneficiaries. Put simply, an administrative hurdle could either increase or decrease learning costs on those who are eligible. If it does the former, it may reduce overall welfare. If it does the latter, as is the case with hurdles that improve self-targeting, it may improve overall welfare. The same argument applies to other types of costs: an administrative hurdle that increases the psychological costs of compliance for the needy may reduce overall welfare. A hurdle that increases the psychological costs of compliance for the rich may dissuade them from entering the process and improve overall welfare by giving more time and resources to those in need.

Although most of the research on administrative burden focuses on the relationship between residents and government agencies in contexts where a resident seeks to receive a service, the same arguments could apply to how residents interact with government agencies when they seek to join them. That is, administrative burdens could also impact residents when they apply for positions in government. There are two literatures that speak to this issue. First, there is a vast literature on government workforce perceptions of red tape (Bozeman, 2000) that outline how managers view unnecessary rules. Pandey and Welch (2005) suggest a strong relationship between administrative delay, perceived red tape, and work alienation. Especially when it comes to personnel-related issues, recruitment is seen as a quintessential example where administrative delays may lead to an increase in perceived red tape. This literature often refers to perceptions of red tape from the perspective of the public servant but could be extended to focus on *future* public servants (or candidates). The large literature on who seeks to join government (and why) often emphasizes public service motivation (Kjeldsen and Jacobsen, 2013; Perry and Wise, 1990; Wright and Christensen, 2010), or other aspects of person-organization fit (Cable and Edwards, 2004; Carless, 2005; Christensen and Wright, 2011; Linos, 2017). But rarely is the very real challenge of getting a job in government explored in the academic literature. At the same time, practitioners, policymakers, and academics alike have been calling for a reform of government recruitment platforms precisely because they may impact the quality of applicants who are interested in the public sector (Metzenbaum, 2014; The Volcker Alliance, 2014, 2018).

Recruitment and selection processes in the police provide an excellent case study to better understand how changes to administrative burden impact the number and characteristics of individuals who comply with a given process. First, the administrative burdens of selection are real: on average, the application and training process for large agencies takes 43 weeks (Koper et al., 2011) because of multiple tests, onerous forms, and limited hiring flexibility. Second, there is reason to believe that the nature of the interaction between candidate and agency should affect potential candidates' interest in and perception of the employer. We know that job seekers infer information about the organization through its personnel practices (French, 1987; Murphy and Davidshofer, 1988; Rynes, Heneman, and Schwab, 1980; Smither, Reilly, and Millsap, 1993). When surveyed, job seekers suggest that the candidate experience affects the overall perception of the employer or organization (CareerBuilder, 2017; Gager, Sittig, and Batty 2015; Grossman, Machamer, and Slezak 2017). For instance, interactions with recruiters may signal to candidates how they might be treated by the organization (Breugh and Starke, 2000; Connerley and Rynes, 1997). Thus, the recruiting experience itself provides signals to candidates about what it would be like to work for the employer. Third, because the process itself is a series of steps, and the steps themselves are built to ascertain the quality of candidates, we can study (a) whether administrative burdens in selection have any impact on candidate interest in a job; (b) whether burdens differentially impact some types of candidates, thus changing the quality of the applicant pool; and (c) whether different types of administrative burdens that may produce different types of "costs" are more or less appropriate in supporting organizational efficiency goals.

This study answers all three of these questions by studying the recruitment of police officers in one of the largest police forces in the United States: Los Angeles. Specifically, we consider three

different types of costs associated with administrative burden: learning costs, compliance costs, and psychological costs. While we, too, hypothesize that reductions in these types of costs should improve compliance, it is not a priori obvious that a reduction in overall administrative burden correlates with a reduction in these costs. As we show, certain types of burden may reduce costs, but others may increase costs, leading to changes in who participates in recruitment, and ultimately, who becomes an LAPD officer.

III. Study 1: Analyzing historical recruitment and selection data at the LAPD

Setting and Intervention

This study focuses on one of the largest police departments in the United States – the Los Angeles Police Department (LAPD), which employs approximately 10,000 sworn officers servicing 467 square miles and 3.98 million people. During our study period, the department received over 6,500 applications per year, of which 1,500 applicants were appointed to the Police Academy. The application process took an average of 172 days – nearly six months – for appointees to complete. In recent years, the LAPD has undergone major changes in how it recruits in an effort to reduce and simplify the process of applying.

Prior to October 2017, the application process consisted of nine tests:

- (1) The Preliminary Background Application (PBA): a multiple-choice assessment that was used to help candidates identify areas of the background investigation that may need further explanation, cause delay in the application progress, or affect candidacy;
- (2) the Preliminary Qualification Essay (PQE): a scored writing test;
- (3) the Personal History Statement (PHS): a long (40-page) questionnaire aimed at providing all the information the background investigation team needed to begin their investigation and asks candidates to list references and answer questions about their educational, residential, employment, legal, driving, and financial history;
- (4) a polygraph test;
- (5) a first Physical Abilities Test (PAT1);
- (6) a department interview;

- (7) a medical examination;
- (8) a second Physical Abilities Test (PAT2); and
- (9) a psychological examination.

An analysis of the historical data suggests that most of the voluntary drop-off occurred, unsurprisingly, in the first few stages of this process, and so all the policies to reduce administrative burden also focused on the early stages in the process. For example, in the years we study, 35% of applicants drop out between the PQE and PHS submission, 24% voluntarily.ⁱ The second largest drop-off occurs before the next step, the polygraph test, which only 33% of applicants complete. Approximately 10% of candidates make it to the last test, the psychological exam (see figure 1). When it comes to progress made in the application process, White and Hispanic applicants complete more tests than their American Indian and Black counterparts (see Table 1). Additionally, male applicants complete more tests than their female counterparts, and higher PQE scores correlate with more tests completed.

< Insert Figure 1 about here >

< Insert Table 1 about here >

In June 2015, the department changed the form they used for the Personal History Statement, switching from one that was solely used by this agency to a statewide standardized form. We estimate that over 30% of applicants will have applied to other agencies, and so this change

reduced the compliance costs directly for at least a portion of candidates. By coincidence, the new form was also much shorter, reducing compliance costs for all candidates (see figure 2 for former application process and figure 3 for current application process).

In October 2017, the department eliminated some stages in the process: the PBA and the first Physical Abilities Test (PAT1). However, in place of the eliminated PAT1, candidates must now attend an advancement program and take an “advisory test,” the Personal Fitness Qualifier (PFQ). In practice, therefore, the key change in administrative burden came in October 2017 from the elimination of the PBA, a multiple-choice list of questions aimed at helping candidates identify potential challenges with their applications down the line. For example, it covered some of the areas that are not necessarily disqualifying but may affect the candidate’s ability to pass the background check (e.g., drug use, previous problems in employment). It is noteworthy that the department saw this as an unnecessary step in the process because many candidates were not truthful with their answers, leading them to pass this stage but fail screening in the polygraph based on the same questions. Whether the removal of the PBA had impacts on self-selection into or out of the process is central to this study. That is, the PBA itself provided information on who may be eligible and, as such, whether its elimination may have reduced overall administrative burden but increased learning costs for a given candidate.

< Insert Figure 2 about here >

< Insert Figure 3 about here >

In addition to investigating whether PHS introduction and PBA elimination predict applicant outcomes and quality, this study also analyzes expedited testing. While there is little to no record of when and why expedited testing was offered to individual candidates, it was available to some at various times throughout the study window. The administrative data simply notes if a given candidate participated in expedited testing. Opting to be an expedited candidate is available to some candidates each month and allows those applicants to complete multiple assessments in the same day. There are no requirements beyond indicating interest in expedition at the time of initial application submission. While expedited candidacy is certainly non-exogenous, we do know who selected this option in the data and therefore can create a predictive model of who is most likely to have opted into expedited testing and predict outcomes of expedition using a matched sample of candidates with similar demographic characteristics. This information can give us suggestive evidence of the relationship between expedited testing and applicant progress.

Study design and empirical model. In our analysis of the administrative data, we measure the association of process changes and expedition on the number of tests completed as a measure of dropout. If the administrative process change increases the likelihood of continuing in the process and is associated with a higher quality applicant pool, we should see a reduction in dropout as well as a change in the likelihood of passing future stages of the selection process.ⁱⁱ As such, we also consider whether being under a given administrative regime is associated with an increased likelihood of passing the next stage in the process, for those who reach it, and ultimately the likelihood of being appointed.

To analyze the relationship between PHS form standardization and the outcomes and qualities of applicants, we focus on those candidates who applied six months before and six months after the June 2015 change, excluding any applicants who seem to have re-entered the process after having failed in a previous round. We focus on this group because, arguably, applying right before or right after a change of this nature is orthogonal to individual characteristics, and thus the date of the policy change (or who it applies to) is relatively exogenous with respect to any given applicant. We select six months as our main analysis because there can be a significant lag between applying and getting to the PHS stage of the process (median time between PQE and PHS is 35 days), but over 95% will submit the PHS within 6 months of completing the PQE. Changing the sample bounds around this date (to three months before and after, or four months before and after) does not meaningfully change any of the results. Table 2 shows the applicant characteristics of these two groups. Practically, we first run a simple ordinary least squares (OLS) regression, controlling for observable pre-treatment characteristics and removing candidates who have re-entered the process from previous applications outside of the scope of this paper. We then match candidates under the new regime using nearest neighbor matching on observable characteristics as a robustness check (for results see appendix A). While neither of these strategies completely eliminates selection bias from the analysis, this approach allows us to get closer to a causal estimate than merely looking at correlations for all candidates over time.

< Insert Table 2 about here >

Econometrically, the basic model is as follows:

$$Y_{ik} = \beta_0 + \beta_1 \text{AdminChange} + X_{ik} + \varepsilon_{ik}$$

Where:

Y_{ik} = number of tests completed, the likelihood of passing the next stage in the process, or appointment as police officer

β_0 = constant

β_1 = coefficient on new administrative regime change

X_{ik} = vector of control variables that includes race and gender dummies, PQE score, a binary for local applicantsⁱⁱⁱ, and whether the candidate participated in expedited testing

ε_{ik} = the error term

We use an almost identical model to analyze PBA elimination, comparing applicants who applied in the last three months the PBA was required to applicants who applied in the first three months after it was eliminated, excluding applicants re-entering the process after failing a previous round. Because the PBA was formerly the first step, we chose three months to analyze the relationship between the policy change and our outcomes while retaining a sufficient sample size. Our main outcome variables are now the number of tests completed within six months, the likelihood of scoring highly on the PQE, the likelihood of passing the next stage in the process (PHS), and the likelihood of appointment. Table 3 shows the applicant characteristics of these two groups. Last, we run a matched-pair analysis using nearest neighbor matching to measure the impact of receiving expedited testing. We select the variables used to match our sample from a logit regression aimed at predicting who would enroll in expedited testing.

< Insert Table 3 about here >

Data and Results

Switch from Personal History Form to Personal History Statement

Replacing the agency-specific PHF with the standardized PHS is positively correlated with progression through the recruitment process, and these results are statistically significant. Submitting the standardized PHS predicts the completion of approximately one more of the remaining tests than when completing the PHF (see figure 4).

< Insert Figure 4 about here >

While there does not seem to be a statistically significant impact on the likelihood of later passing the department interview (the next “quality” check in the process) among those who reached it, being under the new PHS regime does increase the likelihood of being appointed. Controlling for various other confounders, the new regime also increases the likelihood of being appointed to the Police Academy by 5.5 percentage points. As such, reducing this friction seems to have improved efficiency in the process, increasing the number of people who stay in the process, without any negative impact on the quality of the applicant pool (see table 4).

< Insert Table 4 about here >

Conducting the same analysis with matched pairs using nearest neighbor matching presents very similar results (see appendix A).

Preliminary Background Application Elimination

The elimination of the PBA is associated with a worsening of the applicant pool quality. Applicants who were not required to complete the PBA were predicted to complete .24 fewer tests over the next six months, compared to candidates who were required to take the PBA (see figure 5 and Table 5). Not being required to take the PBA is also correlated with lower PQE scores – an indicator of a lower quality applicant pool - and are less likely to pass the next stage in the process.

< Insert Figure 5 about here >

< Insert Table 5 about here >

Matching candidates using nearest neighbor matching provides similar results (see appendix A).

Expedited Testing

While expedited testing has been available at times throughout the study window, only about 10% of the sample participated in expedited testing. This low rate is a combination of only a small number of applicants being offered expedited testing (based on factors unrelated to applicant quality) and the likelihood of opting into the program. Table 6 shows that participating in expedited testing is correlated with applicant characteristics. Expedited candidates are more likely to have a higher PQE score and importantly, are more likely to live outside of the local area (a 45-mile radius around the Personnel Department's offices). Anecdotally, the Personnel Department made discretionary decisions regarding to whom they would offer expedited testing based on how difficult it would be for the candidate to show up to multiple test dates, and so distance should be a key predictor of who receives expedited testing.

< Insert Table 6 about here >

We use these correlates to match candidates who received expedited testing with other non-expedited candidates with similar backgrounds, using nearest neighbor matching. We then test the association of expedited testing with candidate success outcomes. Unsurprisingly, participating in expedited testing predicts that these candidates complete two more tests than candidates with similar backgrounds but who did not participate in expedited testing (see table 7). This suggests that expedition is not correlated with negative selection and may predict positive selection. Expedited candidates are also more likely to pass their department interview and ultimately, to be appointed.

< Insert Table 7 about here >

In each of the administrative changes described above, we also run interactions between the main administrative burden change and demographic characteristics (see appendix D). Efforts to reduce administrative burden in the application process did not have a differential impact on different racial, ethnic, or gender groups.

IV. Study 2: Experimental Reductions in Administrative Burden

Setting and Intervention

The second study focuses on an experimentally induced change to the email that half of the applicants receive after passing their PQE (the first test in the process), inviting them to submit their PHS. Applicants are assigned a unique identification number at the beginning of the process. These unique identifiers were used to randomize applicants on a weekly basis into control and treatment groups at the individual level. Applicants with odd identification numbers were assigned to the control group and received the original email notification regarding hiring eligibility and next steps. Even-numbered applicants were assigned to treatment and received the modified email. The trial ran from November 2017 to April 2018 and included all 2,608 applicants during this period, of whom 1,275 were assigned to treatment and 1,333 assigned to control.^{iv} Additionally, text message communication data was collected if applicants in the treatment group responded to text reminders.

Treatment for the randomized controlled trial (RCT; see figure 6) was a bundled intervention aimed at reducing some of the psychological costs of compliance consisting of two parts: a modified email and a text message reminder. All applicants receiving a passing score on the PQE received an email from the Personnel Department. The control group received the email communication currently in use (see appendix B, part 1). The control email included the applicants' PQE scores and a notification that the candidate had been placed on the hiring list. It stated the next step in the process, PHS completion and submission, and offered two options for submission, a hyperlink to the online portal and an automatically generated in-person appointment time.

The modified treatment email (see appendix B, part 2) was sent to all applicants with an even-numbered personal identification number. The treatment email differed from the control email in several ways. First, it included an invitation to complete the PHS through the online portal only. There was no mention of a scheduled in-person appointment to submit, although this was still an available option. As such, submitting online became a strong default. Given previous evidence on the power of defaults (e.g., Johnson and Goldstein, 2003; Madrian and Shea, 2001; Momsen and Stoerk, 2014; Spiegler, 2011), we expected this change to increase online submissions specifically. Second, the treatment email stated, "Most people can complete the PHS in two weeks or less." The purpose of this sentence was to create a positive norm around speedy submission, following previous research on social norms (Allcott, 2011; Gerber and Rogers, 2009), while anchoring candidates to a two-week turnaround (Chetty, Saez, and Sandor, 2014; Mussweiler and Englich,

2005; Tversky and Kahneman, 1974), even though PQE scores are eligible for 18 months. We strengthened the anchor by providing a specified deadline, two weeks from the date of the notice, in a salient text box, separated from the rest of the email's text. The treatment email was also considerably shorter in length, containing 215 words, compared to the control email's 450 words, following evidence that mere simplification and clarity could reduce perceived administrative burden and improve compliance (Bhargava, Saurabh, and Manoli, 2015).

The second component of the intervention was a text message reminder to applicants in the treatment group, sent approximately one week following the initial email. It reminded applicants to submit the PHS within the two-week timeframe. The purpose of the text message was to make the nudge salient using another format (that is, in addition to the email), while also providing a timely reminder for compliance. Applicants in the control group did not receive a text message reminder.

< Insert Figure 6 about here >

Study Design and Empirical Methods

We use an OLS model to measure the impact of the treatment on key outcomes, described below.

The primary model is

$$Y_{ik} = \beta_0 + \beta_1 \text{Treatment} + X_{ik} + \varepsilon_{ik}$$

Where:

Y_{ik} = whether the applicant submitted the PHS, whether they submitted online, whether they submitted within two weeks, and whether they completed the next step in the application process (all binary outcomes)

β_0 = constant

β_1 = coefficient on treatment arm

X_{ik} = vector of control variables that includes race and gender dummies, application month, PQE score, and a binary for local applicants

ε_{ik} = the error term

Our secondary analysis considers whether the treatment differentially impacted different groups of candidates, as measured by race, gender, and previous test (PQE) score. The primary model for this analysis is:

$$Y_{ik} = \beta_0 + \beta_1 \text{Treatment}_i + \beta_2 \text{Characteristic}_i + \beta_3 \text{Treatment}_i * \text{Characteristic}_i + X_{ik} + \varepsilon_{ik}$$

Where:

Y_{ik} = whether the applicant submitted the PHS, whether they submitted online, whether they submitted within two weeks, and whether they completed the next step in the application process (all binary outcomes)

β_0 = constant

β_1 = coefficient on treatment arm

β_2 = coefficient on applicant characteristic (race/ethnicity, gender, PQE score)

X_{ik} = vector of control variables that observable applicant characteristics, such as distance from Los Angeles City Hall

ε_{ik} = the error term

Data and Results

All candidates who completed the Preliminary Qualifications Essay (PQE) between November 2017 and mid-April 2018 participated in the RCT. Table 8 outlines basic demographics of our treatment and control groups as well as other pre-treatment characteristics such as PQE score and distance from Los Angeles City Hall. The distribution of these baseline observable characteristics across control and treatment groups is relatively even, illustrating randomization was successful.^v

< Insert Table 8 about here >

Our results indicate a positive effect of treatment on Personal History Statement (PHS) submission, online submission, and submission within two weeks of receiving the treatment/control email. Treated applicants were 8% more likely to submit their PHS, 16% more likely to submit online, and 56% more likely to submit within two weeks (see table 9). The results do not change meaningfully with the addition of controls including gender, race/ethnicity, PQE score, distance, and expedition, with fixed effects for application month. Of those that made it to the departmental interview, we see no difference in likelihood of passing the department interview, and no overall impact on the likelihood of being appointed (see table 10). Results using a logistic regression model are similar (see appendix C).

< Insert Table 9 about here >

< Insert Table 10 about here >

To test for differential impact of treatment, we interact treatment with specific racial/ethnic groups, gender, and PQE score in separate regression models, one for each characteristic and outcome. We find the treatment to have no differentially statistically significant effect across race/ethnicity, gender, or PQE score.

V. Discussion

The idea of reducing administrative burden has existed in public administration scholarship for years, and the theoretical principle of simplification has been at the cornerstone of behavioral science since its inception. Yet we are only beginning to quantify how much of an effect simplifying administrative processes can have, and for whom. This study contributes to a growing literature at the intersection of administrative burden and behavioral science by exploring how simplifying selection processes impacts different types of applicants.

Our findings mostly confirm one of the basic principles of behavioral science: that simplification works. All else equal, removing friction costs increases the likelihood that someone will comply with a process. Switching to a simpler, standardized form is associated with less candidate drop-off. Expedited testing is positively associated with how long a candidate remains in the process, but it seems to also be more attractive to high quality applicants. Defaulting to an online process and simplifying instructions for candidates further increases the likelihood that candidates will comply. These effects seem to equally impact candidates from diverse racial and gender backgrounds. This is particularly important because diversity in police recruitment is an important

policy goal for many police departments (Linos et al., 2017). As such, it is plausible that an effort to reduce administrative burdens would have kept more white men (who, on average, have better outside labor market options) in the process, thereby undermining efforts to increase diversity. We do not find this unintended consequence in the given context. Thus, as suggested through the analysis of LAPD application simplification and underscored by the observed effects of nudging at a critical stage in the process, organizations can positively impact applicant retention with relatively small changes and interventions without great cost.

Yet, as this study shows, simplification can be counterproductive if it impacts self-selection in ways that run against organizational efficiency goals. While recruitment and selection processes are designed so that the recruitment team can screen candidates, the process also helps candidates determine if they are likely to succeed in an organization. Removing stages in the process that allow for self-selection increases learning costs and seems to shift unqualified candidates into later stages in the selection process. This outcome has negative impacts on overall organizational efficiency, as it slows down the process for other candidates and takes up precious resources from the recruiting team. It also has negative impacts on candidates themselves who waste time going through a recruitment process in which they will not ultimately succeed. As such, when determining how to make recruitment processes more efficient, personnel departments should identify stages early in the process that can help with self-selection. These assessments can provide the organization with the opportunity to establish expectations of an ideal candidate while allowing applicants to evaluate their own qualifications and act accordingly.

The studies have various limitations. First, although some of the administrative changes were implemented as part of a randomized controlled trial, others are being evaluated ex-post using econometric techniques that cannot fully determine causality. The randomized controlled trial faces the limitation that all randomized controlled trials face: while causality is clear, what specific psychological mechanism is driving the results can only be inferred. Conversely, the additional estimates from the historical econometric analysis face limitations related to causal inference. For example, while it is clear that those who participate in expedited testing seem to stay in the recruitment and selection process longer, we can only provide suggestive evidence of how much of this association is due to selection and how much is causally linked to the expedited testing itself. Still, by combining multiple methodologies based on the existing data, we hope to provide a more nuanced picture of how recruitment changes influence candidates than merely presenting historical data or merely presenting experimental results. Second, the studies focus on one police department – albeit a very large one – where only a handful of specific changes were politically and practically feasible. The external validity of these findings therefore depend on how similar other police departments’ challenges are to the ones faced by the LAPD. For instance, while appointed applicants in our study period took an average of seven and a half months to complete all required assessments, the time from initial application to entrance can range from a few weeks to a year (Morison 2017). Results from the 2000 Police Hiring and Retention Survey suggest the average length for large departments is eleven and a half weeks (Koper et al., 2001). Additionally, the demographics of LAPD recruits differ from those of other large departments. The racial/ethnic makeup of LAPD applicants during our study period was 59% Hispanic, 21% White, 11% Black, and 7% Asian. Women made up 21% of all applicants. A 2013 report on the Law Enforcement

Management and Administrative Statistics Survey found that over a quarter of local police officers were members of a racial/ethnic minority, and 12% were female (Reaves 2015).

In interviews with related staff, the challenges that appear in LA seem to be similar to those found in other police departments. Previous research also suggests that other police departments struggle with the impact of administrative delays on their hiring process (Morison 2017). There may be other changes to the recruitment and selection process that would allow for improved candidate selection in a shorter amount of time. A full exploration of this issue – one for future research – would first consider what is predictive of later performance on the job, and then empirically test whether removing “unnecessary” steps in the selection process changes the overall makeup of candidates and their subsequent behavior. Indeed, measuring the “quality” of a candidate may be flawed if the selection process is not well calibrated for identifying the kind of person who will perform well on the job. This study depends on internal measures of quality – how individuals perform on recruitment tasks, for example. Future research can better capture whether these tasks are in fact predictive of good performance on the job.

Moreover, while these types of low-cost interventions seem to have a disproportionately large effect, they alone will not solve the hiring crisis facing much of the public sector. In 2014, this police department received 7,445 applications. By 2017, the number had dropped to 5,295. This decline reflects national trends affecting police recruitment as well as the rest of the public sector, including low unemployment, a growing economy, and community perceptions of what these jobs entail. As such, while at least part of the puzzle can be solved by considering the administrative

burden of selection, a more holistic understanding of who enters and persists in government requires understanding the experience of employees on the job as well as how they are recruited in the first place. This study provides a practical model for how agencies can ground a holistic approach in empirical research. By breaking up the recruitment process into its individual components and empirically considering drop-off at each stage, this approach brings to light pain points that can then be addressed through targeted intervention. While this study presents an experiment at just one of these points, the approach could be used to target a host of other behavioral pain points as well. More broadly, Pandey et al. (2017) note that experiments in public management research that focus explicitly on red tape are still few and far between, with even fewer being field experiments. This study also provides an academic model for how to build more experimental evidence on this topic, using behavioral interventions as a tool.

Ultimately, our findings suggest that the literature around motivation to enter the public sector may need to more carefully consider how the process of hiring and selection affects candidate decision-making. The administrative burden literature provides a lens to reconsider who joins government that has not yet been fully explored. Future research will need to better explore where in the recruitment process administrative burden makes the biggest difference, and how much of the effects holds true in other parts of the public sector. Future analyses can also begin to quantify the rate of return – both in terms of government resources and applicant quality – of simplifying recruitment processes. Still, by bringing together the administrative burden literature with the behavioral public administration toolkit, this study shows that the war for talent may be less about who wants a job in government and more about who can carry the burden of getting a job in government.

Endnotes

ⁱ Applicants are considered “voluntary dropouts” if they have not taken a test despite receiving a passing score on the previous test. In this instance, candidates who received a passing PQE score but subsequently failed to submit the PHS are considered to have voluntarily dropped out of the process.

ⁱⁱ Note that the pass rates are determined ex-ante and do not depend on how many other applicants have passed a given stage.

ⁱⁱⁱ Local applicants are those who live within 45 miles of the Personnel Department. Over 75% of applicants are defined as “local.”

^{iv} Personal identification numbers were assigned to applicants for all agencies within the Public Safety Division. Because our RCT focused on just one of those agencies, the number of applicants sorted into the treatment and control groups is uneven, but ID number is orthogonal to our outcomes of interest.

^v It is important to note that the administration of treatment was not uniform for all applicants. Throughout the trial, we ran into technological challenges that caused candidates to receive varying levels of treatment. Candidates who received the treatment email before December 20, 2017 were still able to see an in-person appointment date and time when logging onto the online application portal ($N=592$). This may be why 142 treated applicants submitted the PHS in a format other than the online application, as is instructed in the modified email. Candidates who applied to multiple agencies within this public safety department received multiple emails, one for each agency, from the start of the trial until January 26, 2018 ($N=319$). Finally, applicants who were scheduled to receive the text message reminder during the week of February 19, 2018 only received the modified email, as the text messaging software was not functioning properly at the time. Despite these challenges, however, we still see positive effects for our treated applicants and the results look substantively very similar if we limit our regressions to those who received the “correct” and “full” treatment.

Appendix A

Nearest Neighbor Matching for Robustness Checks

Nearest Neighbor Matching for PHF to PHS Switch

Variables	(1) Total Number of Tests	(2) Department Interview Pass	(3) Appointed
PHF to PHS	.968*** (.0467)	-.0424 (.0376)	.0568*** (.0050)
Observations	4,788	781	4,788

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Nearest Neighbor Matching for PBA Elimination

Variables	(1) Number of Tests within Six Months	(2) PQE Above 75	(3) PHS Pass	(4) Appointed
PBA Elimination	-.243*** (.0543)	-.0677*** (.0162)	-.0383* (.0215)	-.0242*** (.0064)
Observations	3,180	3,180	2,015	3,180

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix B

Randomized Controlled Trial Emails

1. Control Group Email (Original)

CONGRATUATIONS! You have passed the Personal Qualifications Essay (PQE) portion of the selection process.

Date: (Filled in from CAPS)

Candidate name
Candidate's Address
Candidate's Address continued

Police Officer Employment - Personal Qualifications Essay

Congratulations! You have passed the Personal Qualifications Essay (PQE) portion of the selection process.

You have been placed on the hiring list according to your score of (PQE Score from CAPS) (this score includes military credit if you submitted proof of Honorable Discharge) 1. Your next step is to complete the Personal History Statement (PHS). Motivated candidates submit the PHS within two weeks of receiving this notice.

STEP 1 ONLINE SUBMISSION OR APPOINTMENT TIME

Candidates who submit the PHS via the new online portal will be processed more quickly and may not need to appear in-person for the Initial Background Review. To submit your Personal History Statement using our online portal, **click here**.

If you prefer to appear in-person for an Initial Background Review your scheduled appointment is as follows:

Dates: Date from CAPS
Times: Time from CAPS
Duration: 3-4 Hours
Attire: Business

Test and Location: Initial Background Review
Personnel Building

If you chose to appear in-person and would like to schedule an earlier, or more convenient, Initial Background Review appointment date please call (213) 473-9060. Initial Background Reviews are held on Monday, Wednesday, and Thursday at 7:00 am, 9:00 am, and 12:00 pm. There is no advantage to appearing in-person for the Initial Background Review.

If attending the Initial Background Review, read, complete, and bring the PHS Document to your Initial Background Review appointment. You may also need to bring any supporting documents as required.

PHS Document - <http://lib.post.ca.gov/Publications/2-251-phsPeaceOfficers.doc>

STEP 2 COMPLETE THE FITNESS LOG AND NUTRITION GUIDE

Download and review the Fitness Log and Nutrition Guide. You will be asked to present the Fitness Log at the department interview and on the first day of the academy.

IMPORTANT

If you have been through the test process before and have unresolved background issues, please call the Backgrounds Division

Please note, you may receive duplicates of this message if you applied for more than one police agency.

We hope to see you at one of our academy classes soon!

Public Safety Division
Personnel Department

1 Your eligibility on the hiring list expires (PQE Expiration date from CAPS) but you may take the PQE again (3) months from the date of your last PQE if you wish to improve your score. Review of rater comments is not available. Score verification is available weekdays (except holidays) from 12:00 noon to 4:00 pm in Room 150 between (five day review period).

2. Treatment Group Email

<Date>

<ID Number>

Subject: Police Officer Employment – Personal Qualifications Essay

Dear <Candidate Name>,

Congratulations! You have successfully passed the Personal Qualifications Essay (PQE) portion of the selection process to become a police officer.

Based on your score of <PQE Score from CAPS>, we have already placed you on the hiring list for police officer employment. The next step is to complete and submit the Personal History Statement (PHS). The PHS will provide us with an overview of your background so that we can get a thorough perspective of who you are as a person - no one question should be thought of as a disqualifier.



**Most people can complete the PHS in two weeks or less.
Please submit your PHS by <2 weeks from today>.**

To start your Personal History Statement using our online portal, [click here](#).

You're already on your way to becoming a police officer! We hope to meet you at the Police Academy soon!

If you have any questions, we're here to help at 213.473.9060.

Good luck!

Public Safety Division
Personnel Department
Kendra Cantrell, Personnel Records Supervisor

Please note, you may receive duplicates of this message if you applied for more than one police agency.

For more information on the PHS and the overall application process, go to <http://bit.do/additionalinfo>

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Appendix C

Randomized Controlled Trial Results Using Logistic Regression

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	PHS Submission	Online Submission	Two Weeks or Less	Next Step	PHS to DI	Appointed
Treated	.352*** (.0970)	0.429*** (.0857)	.821*** (.0923)	.0774 (.174)	.232 (.319)	.151 (.445)
Male	.169 (.115)	.0987 (.104)	.107 (.111)	-.270 (.240)	.387 (.504)	-.214 (.562)
Black	-.161 (.169)	-.163 (.158)	-.432** (.180)	.434 (.435)	1.207** (.598)	-1.030 (.880)
Hispanic	.365*** (.127)	.300*** (.114)	.0556 (.125)	-.206 (.233)	.653* (.377)	-.986** (.487)
Asian	.260 (.233)	.278 (.204)	.120 (.214)	.181 (.425)	.194 (.611)	-.814 (1.078)
American Indian	-.306 (.522)	-.895 (.549)	-1.526** (.767)	- (.834)	-1.048 (.834)	- (.834)
Filipino	.208 (.348)	-.172 (.283)	-.390 (.344)	-.394 (.660)	-.154 (.785)	-.304 (1.441)
Local Applicant	.228* (.119)	.0370 (.110)	.207* (.119)	-.651** (.260)	.0316 (.341)	-.247 (.462)
PQE Above 75	-.168 (.104)	-0.0828 (0.0929)	0.0793 (0.100)	0.540*** (0.200)	0.418 (0.331)	0.756* (0.407)
Expedited	1.910*** (.316)	-2.242*** (0.200)	-2.225*** (0.280)	0.641** (0.326)	-5.517*** (0.485)	2.411*** (0.480)
Re-entry	1.139*** (.230)	-0.796*** (0.147)	-1.985*** (0.243)	0.908*** (0.252)	-0.00395 (0.482)	1.532*** (0.484)
Constant	.700** (.283)	0.688*** (0.246)	-0.440* (0.250)	1.666*** (0.554)	3.804*** (0.848)	-4.473*** (0.806)
Observations	2,579	2,586	2,577	950	900	1,897

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix D

Study 1 Regression Results with Demographic Interaction Terms

PHS Standardization x Male

VARIABLES	(1) Total Tests	(2) Dept. Interview Pass	(3) Appointed
PHF to PHS	0.936*** (0.0900)	-0.151*** (0.0324)	0.0378*** (0.00918)
PHS to PHS x Male	0.0129 (0.104)	0.168*** (0.0505)	0.0219** (0.0111)
Male	0.170*** (0.0502)	-0.117*** (0.0379)	0.00660 (0.00418)
Black	-0.0974 (0.0867)	0.0157 (0.0429)	-0.00998 (0.00955)
Hispanic	-0.0286 (0.0613)	-0.00933 (0.0291)	-0.00146 (0.00756)
Asian	-0.0749 (0.107)	0.00178 (0.0481)	-0.00318 (0.0127)
American Indian	-0.183 (0.188)	-0.552** (0.243)	-0.0223*** (0.00853)
Filipino	0.398** (0.191)	-0.0993 (0.0807)	0.00266 (0.0212)
LA Local	0.314*** (0.0543)	-0.0397 (0.0276)	0.0249*** (0.00638)
Expedited	2.059*** (0.106)	-0.0573* (0.0303)	0.0743*** (0.0169)
PQE Above 75	0.385*** (0.0542)	0.0558** (0.0241)	0.0276*** (0.00646)
Constant	-0.266*** (0.0755)	1.009*** (0.0414)	-0.0259*** (0.00780)
Observations	4,788	781	4,788
R-squared	0.182	0.032	0.040

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

PHS Standardization x White

VARIABLES	(1) Total Tests	(2) Dept. Interview Pass	(3) Appointed
PHF to PHS	0.933*** (0.0527)	-0.0153 (0.0408)	0.0535*** (0.00569)
PHS to PHS x White	0.0623 (0.107)	0.0658 (0.0884)	0.00708 (0.0126)
Male	0.178*** (0.0568)	0.0398 (0.0327)	0.0192*** (0.00623)
Black	-0.0625 (0.0848)	0.0742 (0.0871)	-0.00619 (0.00796)
Hispanic	0.00678 (0.0555)	0.0497 (0.0849)	0.00257 (0.00481)
Asian	-0.0387 (0.104)	0.0604 (0.0961)	0.00127 (0.0112)
American Indian	-0.151 (0.187)	-0.492* (0.258)	-0.0189*** (0.00716)
Filipino	0.435** (0.190)	-0.0408 (0.114)	0.00768 (0.0204)
LA Local	0.313*** (0.0542)	-0.0410 (0.0275)	0.0249*** (0.00632)
Expedited	2.055*** (0.106)	-0.0578* (0.0303)	0.0740*** (0.0169)
PQE Above 75	0.386*** (0.0542)	0.0577** (0.0242)	0.0278*** (0.00647)
Constant	-0.299*** (0.0773)	0.823*** (0.0881)	-0.0392*** (0.00852)
Observations	4,788	781	4,788
R-squared	0.182	0.031	0.040

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

PBA Elimination x Male

VARIABLES	(1) No. of Tests in Six Months	(2) PQE Above 75	(3) PHS Pass	(4) Appointed
PBA Elimination	-0.165 (0.109)	-0.0415 (0.0362)	-0.0670 (0.0507)	-0.0136 (0.0117)
PBA Elim. x Male	-0.103 (0.127)	-0.0308 (0.0408)	0.0283 (0.0570)	-0.0124 (0.0134)
Male	0.213** (0.0976)	-0.0654** (0.0284)	0.0860** (0.0384)	0.00463 (0.0108)
Black	-0.616*** (0.101)	-0.0538* (0.0322)	-0.178*** (0.0446)	-0.0314*** (0.0113)
Hispanic	-0.226*** (0.0826)	-0.0619*** (0.0231)	-0.0207 (0.0295)	-0.0183* (0.00987)
Asian	-0.325*** (0.126)	-0.00174 (0.0384)	-0.0105 (0.0505)	-0.0396*** (0.0128)
American Indian	-0.980*** (0.0974)	-0.0818 (0.0998)	-0.200 (0.184)	-0.0301*** (0.00949)
Filipino	-0.192 (0.233)	-0.0233 (0.0709)	-0.0758 (0.0928)	0.0161 (0.0329)
LA Local	0.155** (0.0689)	-0.0816*** (0.0221)	0.0111 (0.0297)	0.0279*** (0.00721)
Expedited	1.983*** (0.135)	0.104*** (0.0364)	0.162*** (0.0341)	0.124*** (0.0241)
Constant	0.897*** (0.123)	0.476*** (0.0361)	0.578*** (0.0479)	0.0219 (0.0141)
Observations	2,871	2,871	1,715	2,871
R-squared	0.127	0.025	0.034	0.048

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

PBA Elimination x White

VARIABLES	(1) No. of Tests in Six Months	(2) PQE Above 75	(3) PHS Pass	(4) Appointed
PBA Elimination	-0.239*** (0.0599)	-0.0660*** (0.0185)	-0.0480* (0.0264)	-0.0222*** (0.00595)
PBA Elim. x White	-0.0275 (0.157)	0.00581 (0.0443)	0.0148 (0.0562)	-0.00455 (0.0190)
Male	0.166** (0.0652)	-0.0795*** (0.0206)	0.0989*** (0.0286)	-0.00109 (0.00687)
Black	-0.628*** (0.139)	-0.0504 (0.0399)	-0.171*** (0.0518)	-0.0335** (0.0168)
Hispanic	-0.241* (0.125)	-0.0593* (0.0326)	-0.0136 (0.0391)	-0.0206 (0.0156)
Asian	-0.341** (0.156)	0.000550 (0.0448)	-0.00320 (0.0564)	-0.0420** (0.0173)
American Indian	-0.999*** (0.132)	-0.0804 (0.103)	-0.193 (0.187)	-0.0329** (0.0149)
Filipino	-0.204 (0.252)	-0.0198 (0.0747)	-0.0683 (0.0965)	0.0141 (0.0355)
LA Local	0.155** (0.0690)	-0.0817*** (0.0221)	0.0116 (0.0298)	0.0279*** (0.00721)
Expedited	1.983*** (0.136)	0.103*** (0.0364)	0.162*** (0.0341)	0.124*** (0.0241)
Constant	0.944*** (0.135)	0.485*** (0.0380)	0.561*** (0.0484)	0.0281* (0.0159)
Observations	2,871	2,871	1,715	2,871
R-squared	0.127	0.025	0.034	0.047

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figures and Tables

Figure 1. Test completion as a proportion of applicants.

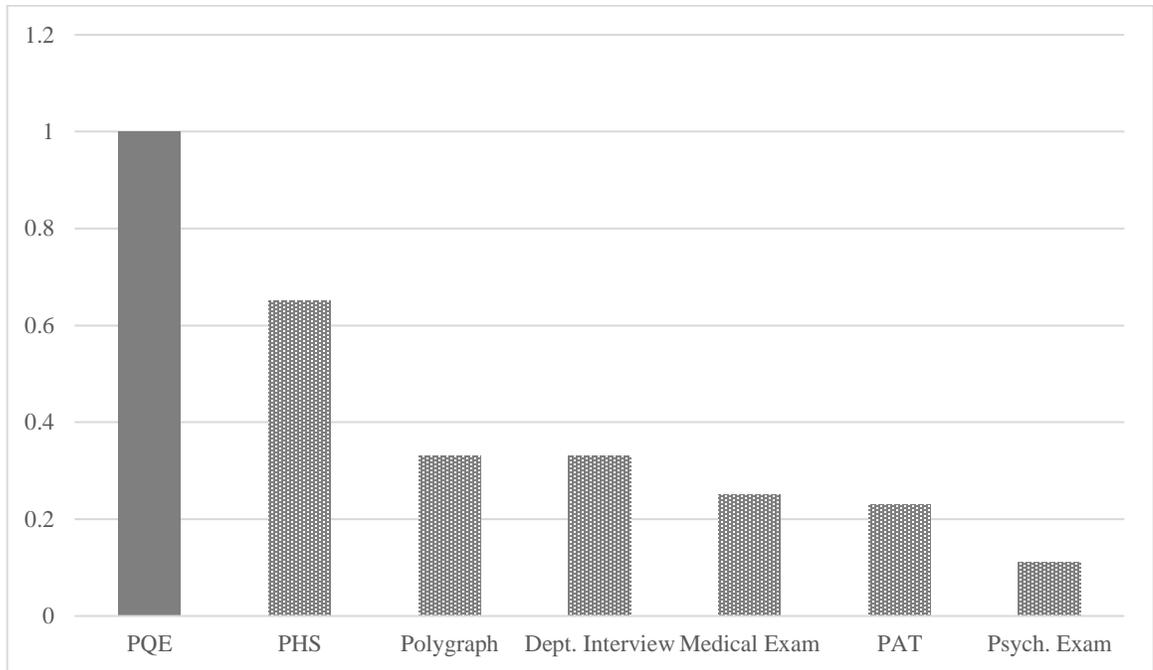


Figure 2. Former application process.

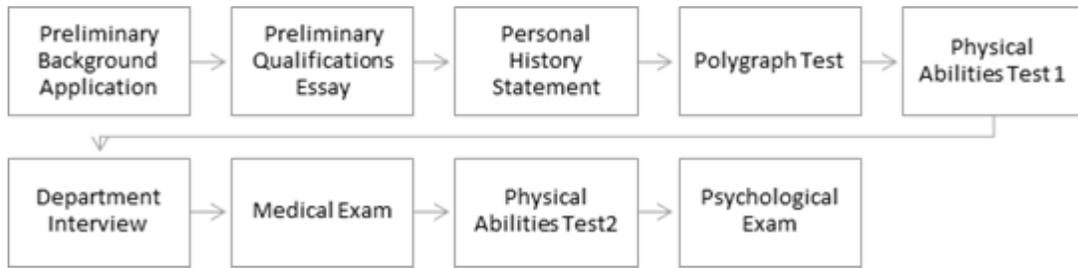


Figure 3. Current application process.

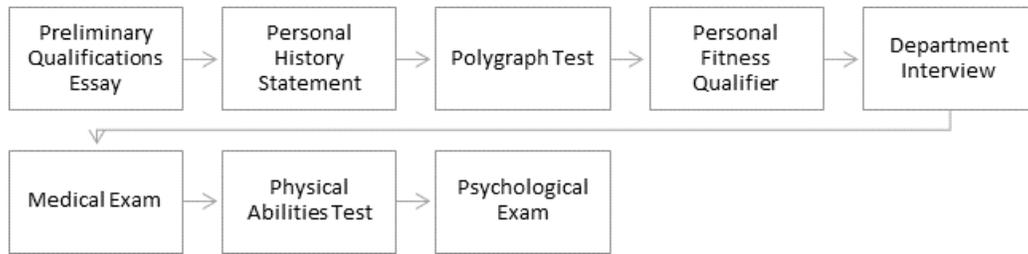


Figure 4. Total tests completed before and after PHS standardization.

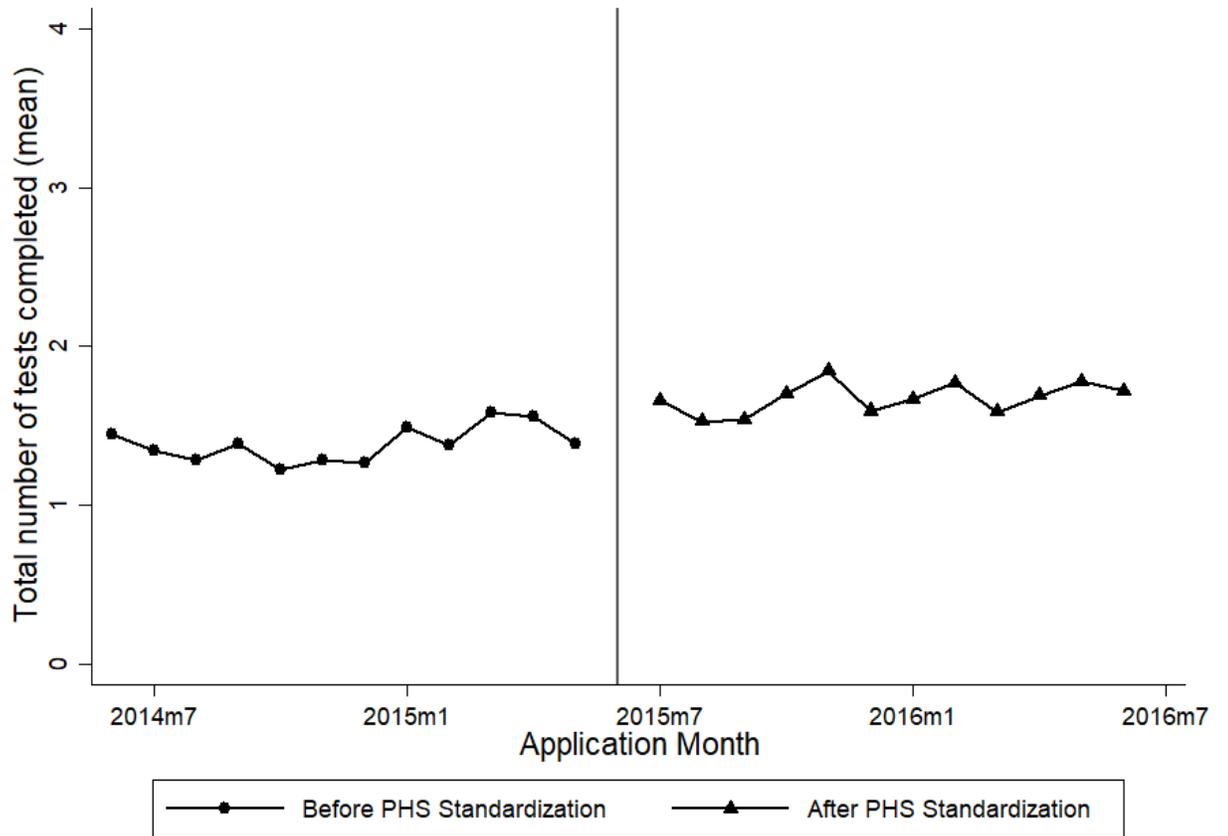


Figure 5. Tests completed before and after PBA elimination

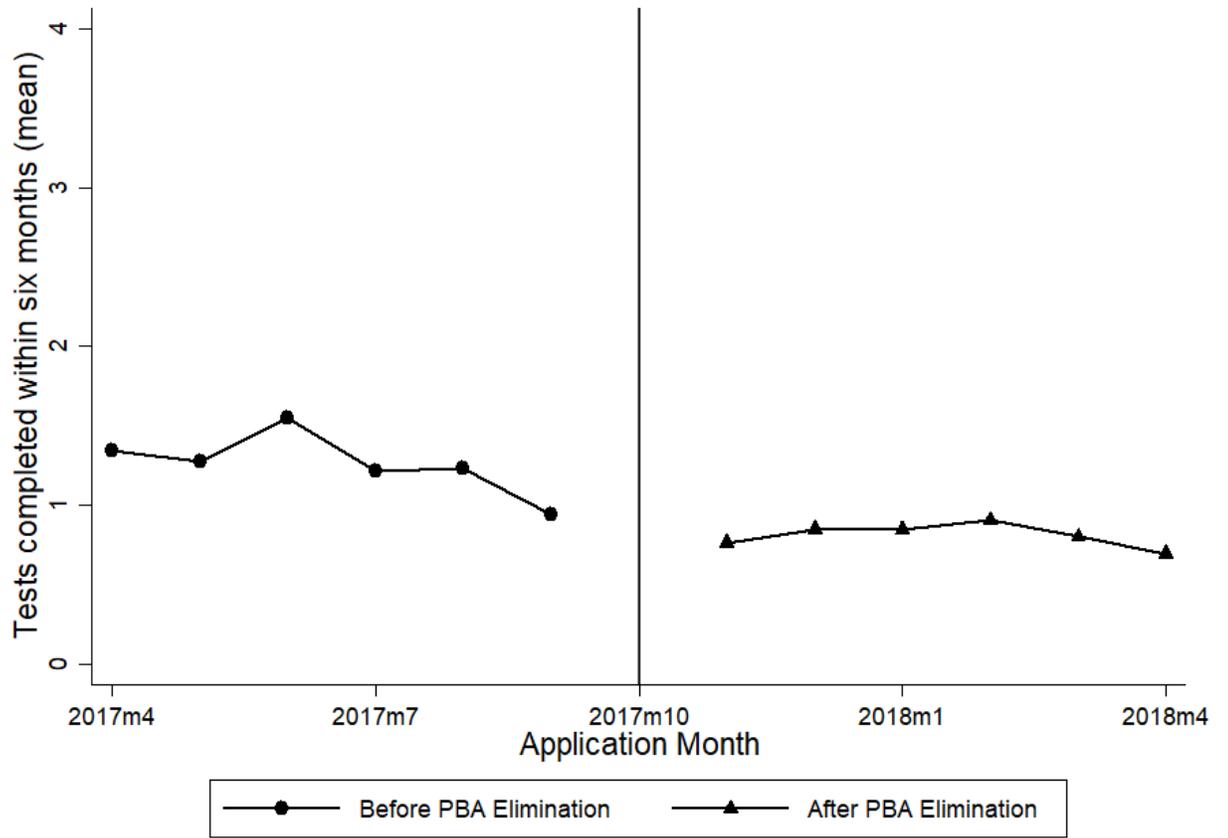


Figure 6. Randomized controlled trial process.

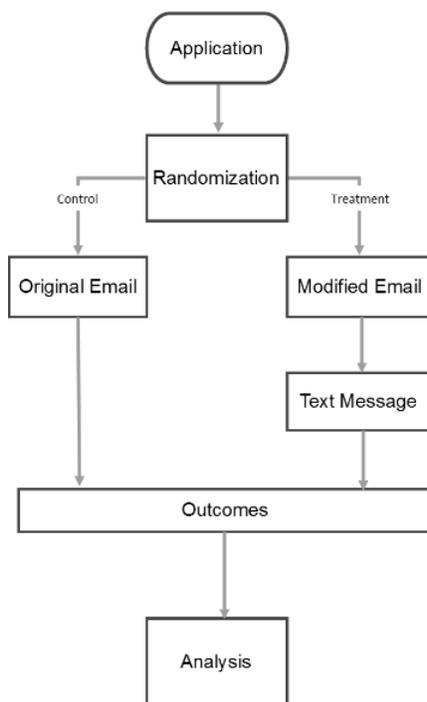


Table 1

Average Tests Completed by Demographic Subgroup

Subgroup	Average Number of Tests Completed
White	1.71
Black	1.26
Hispanic	1.57
Asian	1.80
American Indian	0.82
Male	1.63
Female	1.39

Table 2

Characteristics Across Groups for Study 1 – PHS Standardization

Variables	Before PHS	After PHS	<i>t</i>	<i>p</i>
Male	.808	.786	2.132	.033
Hispanic	.557	.562	-.345	.731
White	.231	.226	.476	.634
Black	.108	.106	.345	.730
Local Applicant	.756	.736	1.779	.075
PQE Above 75	.353	.394	-3.300	.001
Expedited	.100	.097	.470	.639

Table 3

Characteristics Across Groups for Study 1 – PBA Elimination

Variables	PBA Required	PBA Eliminated	<i>t</i>	<i>p</i>
Male	.759	.772	-.822	.411
Hispanic	.618	.597	1.158	.247
White	.179	.196	-1.23	.218
Black	.110	.120	-.887	.375
Local Applicant	.784	.786	-.182	.856
Expedited	.089	.066	2.482	.013

Table 4

Effects of Switching to Standardized Personal History Statement

VARIABLES	(1) Total Tests	(2) Dept. Interview Pass	(3) Appointed
PHF to PHS	.947*** (.0464)	.000307 (.0362)	.0551*** (.00501)
Male	.178*** (.0568)	.0401 (.0327)	.0192*** (.00623)
Black	-.0975 (.0867)	.0166 (.0429)	-.0102 (.00955)
Hispanic	-.0286 (.0613)	-.00896 (.0291)	-.00145 (.00756)
Asian	-.0747 (.107)	.00146 (.0483)	-.00282 (.0127)
American Indian	-.183 (.188)	-.553** (.244)	-.0225*** (.00841)
Filipino	.399** (.191)	-.0992 (.0807)	.00359 (.0212)
LA Local	.315*** (.0543)	-.0400 (.0276)	.0251*** (.00638)
Expedited	2.059*** (.106)	-.0572* (.0303)	.0745*** (.0169)
PQE Above 75	.386*** (.0542)	.0567** (.0241)	.0278*** (.00646)
Constant	-.272*** (.0780)	.867*** (.0591)	-.0361*** (.00887)
Observations	4,788	781	4,788

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5

Effects of PBA Elimination

VARIABLES	(1) No. of Tests in Six Months	(2) PQE Above 75	(3) PHS Pass	(4) Appointed
PBA Elimination	-.244*** (.0558)	-.0649*** (.0168)	-.0449* (.0234)	-.0231*** (.00589)
Male	.166** (.0652)	-.0795*** (.0206)	.0988*** (.0286)	-.00105 (.00684)
Black	-.614*** (.101)	-.0533* (.0322)	-.178*** (.0446)	-.0312*** (.0113)
Hispanic	-.227*** (.0825)	-.0622*** (.0231)	-.0206 (.0294)	-.0184* (.00985)
Asian	-.327*** (.126)	-.00227 (.0384)	-.0100 (.0505)	-.0398*** (.0127)
American Indian	-.985*** (.0966)	-.0832 (.100)	-.201 (.184)	-.0307*** (.00938)
Filipino	-.190 (.233)	-.0227 (.0710)	-.0756 (.0930)	.0163 (.0329)
LA Local	.155** (.0689)	-.0816*** (.0221)	.0114 (.0297)	.0279*** (.00720)
Expedited	1.983*** (.136)	.103*** (.0364)	.162*** (.0341)	.124*** (.0241)
Constant	.933*** (.110)	.487*** (.0329)	.567*** (.0434)	.0262** (.0118)
Observations	2,871	2,871	1,715	2,871
R-squared	.127	.025	.034	.047

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6

Regression on Likelihood of Participating in Expedited Testing

VARIABLES	(1) Expedited
Male	.00571 (.00397)
Black	-.0362*** (.00671)
Hispanic	-.0475*** (.00498)
Asian	-.00847 (.00853)
American Indian	-.0644*** (.0204)
Filipino	-.0255** (.0125)
Local Applicant	-.0888*** (.00501)
PQE Above 75	.0177*** (.00388)
Constant	.112*** (.00922)
Observations	24,578
R-squared	.046

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 7

Outcomes Associated with Expedited Testing

VARIABLES	(1) Total Tests	(2) Dept. Interview Pass	(3) Appointed
Expedited Testing	2.146*** (.0664)	.0787*** (.0140)	.0884*** (.0107)
Observations	22,595	5,644	22,595

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8

Summary Statistics by Group Assignment

Variables	Mean Control	Mean Treatment	<i>t</i>	<i>p</i>
Male	.798	.771	1.691	.091
Hispanic	.607	.618	-.583	.560
White	.191	.185	.405	.686
Black	.111	.115	-.281	.779
Local Applicant	.797	.775	1.339	.181
PQE Above 75	.318	.325	-.362	.717
Expedited	.079	.080	-.116	.908

Table 9

Difference in Proportions Test

	Control	Treatment	Difference	Percent Change	z	$P > z $
PHS Submitted	0.74 (0.01)	0.80 (0.01)	0.06 (0.02)	8%	-3.41	0.001
PHS Submitted Online	0.55 (0.01)	0.64 (0.01)	0.09 (0.02)	16%	-4.53	0.000
Submitted Within Two Weeks	0.27 (0.01)	0.42 (0.01)	0.15 (0.02)	56%	-8.15	0.000

Table 10

Randomized Controlled Trial Results

VARIABLES	(1) PHS Submission	(2) Online Submission	(3) Two Weeks or Less	(6) Appointed
Treated	.0598*** (.0161)	.0945*** (.0184)	.216*** (.0201)	-.00275 (.00232)
Male	.0255 (.0206)	.0202 (.0227)	.0136 (.0244)	.00189 (.00216)
Black	-.0380 (.0322)	-.0361 (.0353)	-.0643* (.0386)	.00650 (.00534)
Hispanic	.0581*** (.0221)	.0648*** (.0250)	.0366 (.0273)	.00354 (.00267)
Asian	.0355 (.0376)	.0612 (.0438)	.103** (.0497)	-.00177 (.00197)
American Indian	-.0640 (.108)	-.206* (.114)	-.285*** (.0890)	-.000425 (.00262)
Filipino	.0366 (.0580)	-.0452 (.0636)	-.00108 (.0768)	.0168 (.0181)
Local Applicant	.0383* (.0211)	.00990 (.0236)	.0543** (.0259)	-.00436 (.00287)
PQE Above 75	-.0279 (.0176)	-.0180 (.0200)	-.000440 (.0220)	.00417 (.00287)
Expedited	.0195*** (.00198)	-.0422*** (.00267)	-.00657 (.00573)	.00128* (.000769)
Reentry	.186*** (.0160)	-.0956*** (.0268)	-.130*** (.0323)	.0171** (.00686)
Constant	.632*** (.0426)	-.0938* (.0516)	-.190*** (0.0572)	-.0154** (.00698)
Observations	2,594	2,594	2,277	2,594
R-squared	.069	.112	.098	.021

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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